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Online Education, Accrediting Standards, and Student Success: An Examination of the Relationship Between the Southern Association of Colleges and Schools Commission on Colleges Standards for Online Education and Student Success

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

ONLINE EDUCATION, ACCREDITING STANDARDS, AND STUDENT
SUCCESS: AN EXAMINATION OF THE RELATIONSHIP BETWEEN THE
SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS COMMISSION
ON COLLEGES STANDARDS FOR ONLINE EDUCATION AND STUDENT
SUCCESS

A dissertation submitted in partial fulfillment of the

requirements for the degree of

DOCTOR OF EDUCATION

in

HIGHER EDUCATION

by

Michael Porter

2015

To: Dean Delia C. Garcia
College of Education

This dissertation, written by Michael Porter, and entitled Online Education, Accrediting Standards, and Student Success: An Examination of the Relationship Between the Southern Association of Colleges and School Commission on Colleges Standards for Online Education and Student Success, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

Benjamin Baez

Hilary Landorf

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Erskine Dottin, Major Professor

Date of Defense: March 17, 2015

The dissertation of Michael Porter is approved.

Dean Delia C. Garcia
College of Education

Dean Lakshmi Reddi
University Graduate School

Florida International University, 2015

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DEDICATION

I dedicate this study to my deceased parents, Maurice and Pansy Porter. My mother, a veteran teacher for over 25 years, was the most influential person in my educational life, and the best teacher I have ever had. She imparted to me the desire to conquer every challenge through faith, prayer, discipline, and passion. I am eternally grateful for a mom who shaped me into the individual I am today. My father made sure, from very early in my life, that I had all the resources I needed in order to succeed. As a boy growing up, he also motivated me to complete all of my chores and school assignments before I could go to the playground, something that has to date instilled discipline in me, and helped me to work assiduously towards accomplishing set goals.

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ABSTRACT OF THE DISSERTATION
ONLINE EDUCATION, ACCREDITING STANDARDS, AND STUDENT
SUCCESS: AN EXAMINATION OF THE RELATIONSHIP BETWEEN THE
SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS COMMISSION
ON COLLEGES STANDARDS FOR ONLINE EDUCATION AND STUDENT
SUCCESS

by

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Miami, Florida

Professor Erskine Dottin, Major Professor

Prior to 2000, there were less than 1.6 million students enrolled in at least one online course. By fall 2010, student enrollment in online distance education showed a phenomenal 283% increase to 6.1 million. Two years later, this number had grown to 7.1 million. In light of this significant growth and skepticism about quality, there have been calls for greater oversight of this format of educational delivery. Accrediting bodies tasked with this oversight have developed guidelines and standards for online education.

There is a lack of empirical studies that examine the relationship between accrediting standards and student success. The purpose of this study was to examine the relationship between the presence of Southern Association of Colleges and Schools Commission on College (SACSCOC) standards for online

education in online courses, (a) student support services and (b) curriculum and instruction, and student success.

An original 24-item survey with an overall reliability coefficient of .94 was administered to students (N=464) at Florida International University, enrolled in 24 university-wide undergraduate online courses during fall 2014, who rated the presence of these standards in their online courses. The general linear model was utilized to analyze the data. The results of the study indicated that the two standards, student support services and curriculum and instruction were both significantly and positively correlated with student success but with small R^2 and strengths of association less than .35 and .20 respectively. Mixed results were produced from Chi-square tests for differences in student success between higher and lower rated online courses when controlling for various covariates such as discipline, gender, race/ethnicity, GPA, age, and number of online courses previously taken. A multiple linear regression analysis revealed that the curriculum and instruction standard was the only variable that accounted for a significant amount of unique variance in student success. Another regression test revealed that no significant interaction effect exists between the two SACSCOC standards and GPA in predicting student success.

The results of this study are useful for administrators, faculty, and researchers who are interested in accreditation standards for online education and how these standards relate to student success.

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CHAPTER ONE: INTRODUCTION

“If the only tool you have is a hammer, you tend to see every problem as a nail.”

(Maslow, n.d.)

The sweeping influence of the digital era has transformed the landscape of the higher education enterprise through technological tools that have advanced online learning. Prior to the current digital age, the primary teaching-learning tool, bricks and mortar classroom, tended to pose certain problems, for policy makers and educators. The 1983 *A Nation At Risk* report revealed some of these problems such as dilution of the curricula, declining performance on standardized test, shortage of science, math, technology, and engineering (STEM) teachers, inequality, and race achievement gaps. However, with the introduction and use of new technological tools in education, the spectrum of educational problems has become increasingly complex.

Quality, student engagement, student retention, and student success represent a few of the problems associated with online distance education. For the purpose of this study, the term “online distance education” is defined as a special form of distance education where all instruction and interaction between the learning group is done using online internet communication in either a synchronous or asynchronous manner (Larreamendy-Joerns & Leinhard, 2006). In this study, online distance education is used interchangeably with online education or online learning.

During the mid-1980s, computer networking had taken root in higher education, and by 1989, the Open University in the United Kingdom had established the first computer networking application to be used in distance education (Hassim, 2000; Holmberg, 2002). The decades of the 1990s and 2000s saw the emergence of a wealth of technological resources, such as computer networking, emails, and the World Wide Web, which accelerated the rise of virtual communities and online education. Undoubtedly, the introduction of technology into education carries vast potential benefits as well as unique challenges. However, in order to maximize the gains and minimize the problems associated with technology in education, it is critical that appropriate changes are made to the planning, development, and delivery of distance education (Moore & Kersley, 2012).

The quality and effectiveness of online distance education have been under much scrutiny particularly in light of its significant growth within the past two decades. The quality assurance of this non-traditional form of education has taken a central position in the discourse of higher education systems (Eaton, 2001; Parker, 2008; Simonson, 2007; U.S. Department of Education, 2006b). In 2009, the Council for Regional Accreditation Commissions (C-RAC) in collaboration with eight regional accreditation bodies developed guidelines and criteria for the evaluation of distance education and correspondence courses. C-RAC in its document titled “Guidelines for the Evaluation of Distance Education (On-line Learning)” set out guidelines for institutions offering distance education, and an assessment framework for use by institutions and evaluators. The

importance of such a development was not lost on individual regional accrediting associations. Two years later, the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) approved its *Guidelines for Addressing Distance and Correspondence Education*. These guidelines outlined various standards for distance education.

The purpose of this study was to examine the relationship between two of SACSCOC standards for online education and student success in online education. This introductory chapter presents the background to the problem, the statement of the problem, the purpose of the study, and the primary research questions. Next, it discusses the underpinning theoretical framework, the significance of the study to the higher education field, delimitation, assumptions, and definition of key terms.

Background to the Problem

In the United States, a voluntary, non-governmental, and decentralized system of quality assurance (QA) exists based upon two types of accreditation: institutional and program accreditation. Institutional accreditation is conferred by regional accrediting bodies whereas program accreditation is typically conferred by specialized accrediting bodies that evaluate disciplines such as engineering, law, business, teacher education, and medicine. The goal of both types of accreditation is to ensure that the quality of education offered by an institution or its program is of an acceptable standard (Eaton, 2008). In some instances, an overlap of accrediting responsibilities may occur between regional accrediting bodies and specialized bodies when programs under the jurisdiction of

specialized accreditation are offered through universities and colleges that are under the jurisdiction of regional accrediting bodies. However, regardless of whether such an overlap occurs, when programs or institutions are being accredited, standards play a central role in the accreditation process (El-Khawas, 2001).

The origin of U.S accreditation goes back to the late nineteenth century when regional associations comprised of senior university personnel came together for different purposes. These purposes included forging closer relationships among university administrators and between university administrators and high school administrators, setting criteria for determining whether students applying to colleges were sufficiently prepared for the rigors of college study, and developing standards for how to prepare for college instruction (Petersen, 1978). Therefore, the focus of regional associations, at that time, was not one of accreditation, but one of collaboration and ensuring that students were adequately prepared for college.

The standards used in the earliest history of accreditation were very basic and tended to address issues of endowment size, program length, the number of faculty, and college admission requirements in the terms of the number of years that applicants should attend high school (Petersen, 1978). These standards were essentially quantitative and appeared to have addressed a very limited aspect of educational quality at the institution. Given the nature of the standards and the focus of the regional accrediting bodies in this era, “the accrediting function was quite limited in scope” (El-Khawas, 2001, p. 30). The scope of

accreditation is, therefore, seen as related to the type of standards and focus of the accrediting body. The concept of the scope of accreditation being linked to standards and focus of the accrediting body can be further recognized in the difference between program and institutional accreditation. For example, in program accreditation, the standards are very program specific and deal with a number of related indicators whereas institutional accreditation is generally evaluated based on the institution's mission and its operational capacity to fulfill that mission.

During the early twentieth century and leading up to 1986, the regional accrediting associations tended to focus only on education delivered in a traditional classroom setting via brick and mortar universities and colleges. Lezberg (2003) stated "for the first three-quarters of the 20th century, the regional accrediting associations concentrated almost exclusively on quality control of the site-based education offered by their members" (p.427). A possible reason for such an exclusive focus on traditional education by regional accrediting bodies was that higher education was still largely delivered via this mode. Consequently, distance education was not an area addressed by regional accrediting bodies. Another reason was that distance education was still very much in its inchoate stages prior to the 1980s (Lezberg, 2003).

Following the reauthorization of the GI Bill in 1952, several key developments in higher education occurred, and influenced changes in regional accrediting bodies. For example, in 1950, there was a total enrollment of 2.7 million students in higher education, but in the three decades, 1950s through

the 1970s, following the GI Bill, of which many veterans and their children took advantage, student enrollment grew to approximately 12 million, representing about 500% increase (Synder & Dillow, 2013). In fact, the percentage increase in higher education enrollment was higher than the country's population increase during the corresponding period (El-Khawas, 2001). This substantial growth in higher education participation meant that institutional expansion was on the rise and that there were increased academic offerings by colleges and universities to cater to the needs of the rising number of students. In addition, in 1952, several accrediting agencies, including the six regional accrediting bodies were formally recognized by the federal government as independent and reliable authorities on the quality of education offered by institutions. One of the roles of these accrediting bodies was to accredit institutions or their programs, thereby enabling eligible institutions or programs to access federal funds.

The Southern Association of Schools and Colleges, the accrediting body whose standards for distance education was examined in this study, is one of six widely known and accepted regional accrediting bodies responsible for institutional accreditation¹. In fall 2014, 797 higher education institutions across the 11 Southern states were listed as accredited by SACSCOC. These institutions spanned private not-for-profit (308), private for-profit (15), and public (481) institutions and offered a suite of academic degrees ranging from the associate to the doctorate (SACSCOC, 2014). Significantly, the majority of

¹ The five other regional accrediting bodies are the Middle States Commission on Higher Education, New England Association of Schools and Colleges, North Central Association of colleges and Schools, Northwest Commission on Colleges and Universities, and Western Association of Schools and Colleges.

higher education institutions in SACSCOC's jurisdiction, as well as nationally, also offer online distance education, which means that they are required to conform to standards set by SACSCOC for traditional and online distance learning.

According to SACSCOC, flexibility and responsiveness are two fundamental characteristics of the U.S accrediting system (SACSCOC, 2012a). With the emergence and growth of online education, new demands have been imposed upon the accreditation system and have tested the system's ability to respond (Schray, 2006). Over the last three decades, there has been a proliferation of online education with much of the exponential growth coming within the first decade of the 21st century. Prior to 2000, there were fewer than 1.6 million students enrolled in at least one online course (Allen & Seaman, 2013). However, by the end of the first decade of the 21st century, student enrollment in online education showed a phenomenal 283% increase to 6.1 million students (Allen & Seaman, 2013; Synder & Dillow, 2013).

In fall 2011, there were approximately 21 million students enrolled in U.S. higher educational institutions (Synder & Dillow, 2013). Synder and Dillow reported that of these 21 million students, 6.7 million were enrolled in at least one online course, which represents an increase of almost 600,000 online students from fall 2010, and an increase of more than five million online students during the last 10 years. By fall 2011, student enrollment in online distance education accounted for 32% of total student enrollment in higher education institutions (Allen & Seaman, 2013). This 32% included students who were enrolled in at

least one online course, and based on the recent trends; this figure is projected to increase even more. These statistics suggest that online distance education has risen rapidly to a place of prominence in higher education during the past decade. Moreover, the growth in total student enrollment at higher education institutions (HEIs) has come primarily from online courses, partly as a result of more universities and colleges turning to online education in keeping with their strategic plan to boost student enrollment (Allen & Seaman, 2013; Parker, 2012).

Several reasons exist for the prolific growth in online distance education within such a relatively short period. First, technological advancements have made possible the upward growth seen in online enrollment. Second, student demands have been a dominant factor. The flexibility of online education in allowing students to maintain their jobs without having to be physically present in classes is a strong advantage of online distance education, and students may consider that they save money and time by not having to commute to classes. Allen and Seaman (2010) highlighted that more than 50% of respondents in their study indicated that the economic instability was the reason for them pursuing online courses and programs. Therefore, student demand has factored into how institutions have incorporated online distance education into their strategic plan (Parker, 2012) to meet student needs. Third, online distance education can cater to rising student enrollment without the added financial burden of institutions having to construct new facilities. Therefore, many universities and colleges have a keen interest in developing and expanding online distance education

because a greater number of students can be accommodated at a significantly reduced cost (Green, 2010).

Concomitant with this growth phenomenon have been challenges to establishing the credibility and legitimacy of online distance education (Parker, 2012). Parker argued “online education carries the dual burdens of rapid growth and deepening suspicion about its quality” (p.63). Accordingly, universities and colleges as well as accrediting bodies have demands placed on them in effectively managing these burdens in order to counter skepticism and improve the quality of online distance education in relation to its instructional effectiveness and student learning outcomes.

Between 1980 and 2000, the relevance and quality of higher education systems have been questioned by governments worldwide (El-Khawas, 2001). In 2004, Stella and Gnanam contended that the quality assurance of online distance education was uncharted territory for accrediting bodies. Furthermore, the Spelling’s Commission on the Future of Higher Education acknowledged that while accreditors were increasingly placing attention on learning assessments, the accreditation system had “significant shortcomings” (U.S. Department of Education, 2006a, p.14) that could not be left unaddressed, such as a marginal role in institutional learning assessments, imbalanced focus on processes rather than outcomes or cost, and the public non-disclosure of accreditation reviews. The commission also noted that the accreditation system was large and complex and that at times, it can stymie innovation and suppress needed capital investments.

Statement of the Problem

Although becoming more widely accepted, online distance education still faces mixed reviews, challenges, and skepticism about its quality (Parker, 2012). Moreover, the rapid expansion of student enrollment in online education has created concerns about how institutions employ quality assurance systems and standards to review and improve the quality of their online courses (Hirner & Kochtanek, 2012). A frequently debated shortcoming of standards is “regional accreditation standards and distance education guidelines tend to focus on similarities between site-based and distance education” (Eaton, 2000, p. 53). Real and assumed differences between online and traditional learning have also contributed to the debate as to whether standards currently being used in traditional learning should apply across both environments, whether new standards specific to online distance education should be developed, or whether there should be a broad set of standards that encompass both environments (Hirumi, 2009). Without a clear recognition of and appreciation for the differences between these two media of learning, there is a likelihood of treating the two delivery forms the same. One of the main concerns of accrediting bodies is to ensure that educational quality is not bifurcated along the lines of traditional or online learning (Swail & Kampits, 2001).

Numerous studies have examined online distance education in terms of comparisons with face-to-face education (Moore, Dickson-Deane, & Galyen, 2011; Parker, 2012; Rovai, 2004; Wilson & Allen, 2011). However, there is a need for more research on the use of standards in accreditation (El-Khawas,

2001). More specifically, there is a paucity of empirical research addressing the relationship between accrediting standards for online distance education and student success in online education. The majority of the current research about standards for online education has been directed towards perceptions of faculty, student characteristics, and student satisfaction. Other studies addressing standards in online education have sought to examine and develop a comprehensive set of standards that measure quality and learning in online education (McGorry, 2003) or that support student satisfaction in online education (Clawson, 2007). However, these standards are different from the standards devised by accrediting bodies. In light of the abovementioned factors, there was a compelling reason for undertaking a study that examined standards for online education developed by accrediting bodies.

Purpose of the Study

The purpose of this study was to examine the relationship between two of SACSCOC standards for online education, student support services and curriculum and instruction, and student success in online education. This study utilized an ex-post facto correlational research methodology, which was deemed appropriate in answering the five primary research questions stated below. According to Fraenkel and Wallen (2003), the key “purpose of correlational research is to clarify our understanding of important phenomena by identifying relationships among variables” (p.339).

Research Questions

The research questions governing this study were as follows:

1. To what extent are the two SACSCOC standards for online education, student support services and curriculum and instruction, for online education present in online courses at Florida International University?
2. Is there a relationship between the two SACSCOC standards for online education, student support services and curriculum and instruction, and student success (as measured by expected course grade) in online education?
3. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards?
 - a. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of discipline?
 - b. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of race/ethnicity?
 - c. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher

rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of GPA?

- d. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards than online courses that have a lower rating of SACSCOC standards, independent of student gender?
 - e. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of student age?
 - f. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards than online courses that have a lower rating of SACSCOC standards, independent of the number of online courses previously taken?
- 4. Are the two SACSCOC standards, student support services and curriculum and instruction, for online education predictive of student success in online education as measured by expected course grade?
 - 5. Is there a significant interaction between the two SACSCOC standards, student support services and curriculum and instruction, and GPA in predicting student success in online education as measured by expected course grade?

Conceptual Framework

The literature on standards-based education and student success draws attention to the importance of accountability, which has its origins in the business world. Beginning in the 1970s, the notion of accountability was applied to education as part of a U.S educational reform movement, which favored standards-based education (Watters, 2006). The conception of standards-based education and accountability are further elucidated by the principal-agent theory (PAT), also known as principal agency theory or agency theory. “Principal-agent theory has become a widely used paradigm for analyzing public accountability” (Gailmard, 2012, p. 2). The contribution of principal-agent theory to the field of higher education is noted in the literature addressing higher education governance, accountability, funding, and performance in higher education systems (Eisenhardt, 1989; Gailmard, 2012; Lane & Kivisto, 2008; Liefner, 2003). PAT is used as a conceptual framework grounding this study because of its utility in examining the nature of the relationship between universities and accrediting bodies with respect to accountability and the use of standards for online distance education.

“Usage of PAT in the public realm aids in identifying and understanding the complex relationship among the various actors involved in public bureaucracies” (Lane & Kivisto, 2008, p.149). In applying PAT to understand the relationship between the accrediting agency (SACSCOC; principal) and the University (FIU; agent), unique insight can be derived from oversight

mechanisms including performance criteria (standards) set out by the principal and results obtained by the agent in satisfying the performance criteria.

In its simplest form, PAT focuses on a contractual relationship between an actor (agent) who performs the mandate of another actor (principal). The agent is accountable to the principal to fulfill goals set by the principal, and the principal in turn has authority to make decisions or take actions that can influence the actions of the agent (Gailmard, 2012). For example, the agent can be rewarded with incentives or encounter restrictions imposed by the principal. Within the PAT, the contractual relationship is explained in terms of the interests and motivations of both principals and agents (Lane & Kivisto, 2008). The contractual relationship can be established as either a behavior-based or an outcome-based contract. In a behavior-based contract, the principal sets up different information systems and monitoring mechanisms in order to be aware of what the agent is doing and thus ensure that the agent's actions conform to the principal's interest. With outcome-based contracts, outcomes can be easily identified and measured, and agents are rewarded based upon the attainment of specific outcomes (Eisenhardt, 1989).

PAT emphasizes the importance of oversight, a central component of accountability. The relative importance of oversight in the PAT is further noted in its description as a "lynch pin" of the PAT (Lane & Kivisto, 2008). In the absence of the principal's oversight power or oversight mechanisms "the agent has little incentive to pursue the goals of the principal and the principal has no means to ensure that its goals are being pursued by the agent" (Lane & Kivisto, 2008, p.

146). PAT, therefore, assumes that in the absence of incentives (negative or positive) provided by the principal, the agent will lack the motivation to undertake tasks assigned by the principal. Consequently, for the principal's goals to be fulfilled, some form of external accountability or oversight is required, which is specified by the relationship between the principal and the agent.

The degree of oversight and monitoring mechanisms employed in a principal-agent relationship is associated with the extent of stability or uncertainty within the environment of the principal and agent (Borgos, 2013). According to Borgos, environments with greater stability or lower uncertainty carry less risk for the principal, and thus these environments do not require the same level of oversight and monitoring mechanisms as environments that carry greater risks for the principal. PAT is, therefore, valuable in helping to understand the type of environment in the principal-agent relationship by addressing the extent of and types of oversight mechanisms used by the principal.

PAT further sheds light on two problems that may arise in the principal-agent relationship: goal conflict and informational asymmetries (Eisenhardt, 1989). Within the context of the accrediting body- university relationship, goal conflict may arise when the accrediting body (principal) has an emphasis on quality enhancement, whereas for the University (agent), the central emphasis may be more on access and program expansion without the same amount of attention given to establishing or maintaining internal quality assurance systems to promote or assure quality. If no goal conflict exists, the agent is likely to act in the best interest of the principal. On the other hand, if strong goal conflicts exist

between the two entities, outcome based-contract is more likely to be used in the relationship in order to ensure that the agent acts in the best interest of the principal (Eisenhardt, 1989; Lane & Kivisto, 2008).

The second problem in the principal-agent relationship, informational asymmetries, arises when one entity in the relationship does not possess the same degree of knowledge as the other entity. This informational gap can create difficulties or inefficiencies in terms of decision-making, action taken, as well as proper checks and balances (Eisenhardt, 1989; Gailmard, 2012). The nature of the contractual relationship and the use of different types of oversight (accountability) mechanisms allow these problems to be identified and understood through the lens of the principal-agent theory (Gailmard, 2012).

Significance of the Study

This study offers insight into the relationship between two of SACSCOC standards for online education, student support services, and curriculum and instruction, and student success in online education. Policy makers at both institutional level and regional accreditation level can give attention to reviewing SACSCOC accreditation guidelines and requirements so that institutions are aware of the standards and indicators that account for the greatest variance in student success in online education.

Knowledge of accrediting standards that are associated with student success will be especially valuable for faculty and digital instructors when developing or revising online courses to ensure emphasis that is given to embedding these standards into all online courses. These standards can serve

as a platform for furthering the discussion among academicians about the inclusion of standards in online courses that are clearly linked to student success. The study, therefore, contributed an additional body of knowledge to the higher education field about accrediting standards for online education in relation to student success.

Researchers can extend this study beyond the undergraduate level to determine whether the same or a different set of quality standards exists for online education at the graduate level. This study can also be replicated in various populations to arrive at a comprehensive set of online standards that are predictive of student success in online education. Therefore, universities and colleges will be better positioned to achieve higher levels of student success in online education.

By determining the correlation between SACSCOC quality standards and student success in online education, administrators will be able to evaluate the nexus between theory and practice. With the increasing use of “Quality Matters” (QM) as an option for internally certifying the quality of online courses, institutions can use this study as a framework to review the QM certification process to determine whether QM standards can be embedded into online courses, alongside the accrediting standards, with the intent of improving student success.

Delimitations of the Study

This study was conducted at Florida International University (FIU) and was confined to examining two standards for online distance education, curriculum and instruction and student support services, developed by SACSCOC. The

data set for this study was delimited to undergraduate students enrolled in online courses at FIU during fall 2014.

Assumptions of the Study

The following underlying assumptions are found in this study:

1. Measures of accountability are related to improvement.
2. The quality of a program or course can be demonstrated through validating that the program or course satisfies set standards.
3. Students can rate the presence of standards in their courses.
4. Accreditation cannot have a legitimate basis in the absence of standards.
5. The fidelity of the accreditation process is linked to value judgments about the attainment of standards.
6. Accrediting standards are developed to enhance institutional and student learning performance.

Definition of Key Terms

The following terms have been utilized within the context of this study.

Accountability: Accountability is understood in this study as “the means by which individuals and organizations report to a recognized authority (or authorities) and are held responsible for their actions” (Edwards & Hulme, 1996, p.967).

Accreditation: Accreditation is defined as a “higher education self-regulatory mechanism that plays a significant role in fostering public confidence in the

educational enterprise and student learning in maintaining minimum standards, and in enhancing institutional effectiveness” (SACSCOC, 2012a, p.1).

Distance education: There is no singular agreed upon definition for distance education (Larreamendy-Joerns and Leinhard, 2006), but SACSCOC defines distance education in the following way:

Distance education is a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance education course may use the internet; one-way and two-way transmissions through open broadcast, closed circuit, cable microwave, broadband lines, fiber optics, satellite, or wireless communications devices; audio conferencing; or video cassettes, DVD's and CD-ROMS if used as part of the distance learning course or program. (SACSCOC, 2012a, p. 6)

Two different components underlie SACSCOC definition: the nature of the instruction and the different types of technologies used to support instruction.

SACSCOC definition highlights that the majority of instruction in distance education is subjected to some form of geographic separation between students and instructor. Whereas the term majority can be taken to mean from 50% to 100%, SACSCOC's definition does not indicate a lower limit. Within the context of this definition, instruction may involve an interactive or non-interactive component delivered through a wide range of technological modalities. Although SACSCOC does not provide an explicit definition of online education or online learning, SACSCOC refers to the use of the Internet as part of learning, which could be interpreted to include online education.

Online distance education: In this study, online distance education is defined as a special form of distance education where all instruction and interaction between the learning group is done using online Internet communication in either a synchronous or an asynchronous manner (Larreamendy-Joerns, & Leinhard, 2006). In this study, online distance education is used interchangeably with online education or online learning.

Quality assurance: Quality assurance (QA) refers to a systematic review of educational programs to ensure acceptable standards of education, scholarship, and infrastructure are being maintained (International Network for Quality Assurance Agencies in Higher Education; INQAAHE, 2007). In this paper, QA means a series of processes, mechanisms, and interventions used to manage, validate, and promote quality in universities and colleges.

Quality standards: Excellence in services, exceptional services, value for money, fitness of purpose, fitness for purpose, compliance with specifications, incorporating added value, satisfying customers' needs, perfection, and integrity of process from the first time (IHEP, 2006). In this paper, quality standards refer to explicit benchmarks for quality that are intended to be incorporated in courses taught either traditionally or online.

Student success: In this paper, student success is defined as student achievement measured by expected course grade.

Operational Definitions

The following operational definitions have been utilized within the context of this study.

Class size: The number of students enrolled in an online course, which is represented as a continual variable using a ratio scale.

Course grade: These were the self-reported expected course grades ranging from the letter grade A to F: A was coded as 1, A⁻ as 2, B⁺ as 3, B as 4, B⁻ as 5, C⁺ as 6, C as 7, D⁺ as 8, D as 9, D⁻ as 10, and F as 11.

Discipline: Discipline was represented by 12 academic units at FIU. CARTA was coded as 1, CASCI as 2, CBADM as 3, COE as 4, CEngr as 5, CLAW as 6, HWCAM as 7, CNHS as 8, CPHSW as 9, Honors College as 10, School of Hospitality and Tourism Management as 11, and School of Journalism and Mass Communication as 12.

Gender: Male was coded as 1 and female was coded as 0.

GPA: The student's current GPA was measured in one of four different categories: 2.00-2.49 was coded as 1, 2.50-2.99 as 2, 3.00-3.49 as 4, and 3.50 to 4.00 as 4.

Number of Fully Online Courses: This referred to the number of online courses that a student would have taken prior to enrolling in the online course being assessed for SACSCOC standards. This number was represented as a continual variable using a ratio scale.

Main variables in the study: The following variables were used in the study: SACSCOC standards (student support services and curriculum and instruction), discipline (College of Architecture and the Arts-CARTA, College of Arts and Sciences-CASCI, College of Business Administration-CBADM, College of Education-COE, College of Engineering and Computer Science-CENGR, College

of Law-CLAW, College of Medicine-HWCOM, College of Nursing and Health Sciences-CNHS, College of Public Health and Social Work-CPHSW, Honors College, School of Hospitality and Tourism Management, and School of Journalism and Mass Communication), race/ethnicity (Asian, Black, Hispanic, Native American, White and other), GPA, gender, age, class size, and the number of online courses previously taken.

The two SACSCOC standards were measured by the use of an original 24-item instrument (see Appendix B) developed for the purpose of this study. Students in selected online courses used the instrument to rate the presence of the two SACSCOC standards in those courses. Students self-reported data for the other independent variables (discipline, ethnicity, GPA, age, gender, and the number of online courses previously taken) in the demographic section of the instrument. Class size data for each online course was obtained from information accessible to FIU students through FIU Panthersoft.

The dependent variable, student success, was measured by the students' expected final course grades on FIU's Undergraduate 11-point grading scheme: A 4.00, A⁻ 3.67, B⁺ 3.33, B 3.00, B⁻ 2.67, C⁺ 2.33, C 2.00, D⁺ 1.33, D 1.00, D⁻ 0.67, and F 0.00. The dependent variable was the self-reported expected final grades of students.

Online Education: This term was operationalized by online courses being offered at FIU.

Race/Ethnicity: Race/Ethnicity was measured by five groups: Asian was coded as 1, not Asian coded as 0; African or Black-American was coded as 1, not

African or Black-American, coded as 0; Hispanic or Latino was coded as 1; not Hispanic or Latino coded as 0, Native American was coded as 1, not Native American coded as 0; and White (Caucasian) was coded as 1; not White (Caucasian) coded as 0.

SACSCOC standards: Statements by SACSCOC that express benchmarks of quality for online education (see Appendix A). More specifically, SACSCOC standards in this study refer to the two SACSCOC accrediting standards for online education, student support services and curriculum and instruction.

CHAPTER TWO: REVIEW OF THE LITERATURE

The review of the literature in this chapter examined the scholarly literature on the relationship between two of SACSCOC standards for online education and student success in online education. It addressed the following topics: (a) accountability, (b) approaches to quality assurance in higher education, and (c) quality of online distance education.

Accountability

Trends in higher education reveal that in the past two decades, there has been growing interest in issues of accountability within higher education institutions. The Organization for Economic Cooperation and Development (OCED; 2008) reported the following trends that have triggered a greater interest in institutional quality and accountability: expansion of higher education systems, increase in for-profit institutions, new educational delivery systems, and greater heterogeneous student populations. The expansion of higher education through the rapid growth of online distance education is one of the reasons for an extra layer of accountability introduced into higher education.

Accountability is a fundamental principle of quality assurance (Harvey, 1999), and because accreditation is a form of quality assurance, accountability is inherent in the accreditation process, which involves the use of standards and evaluation procedures to ascertain the quality of education. Accountability refers to “the means by which individuals and organizations report to a recognized authority (or authorities) and are held responsible for their actions” (Edwards & Hulme, 1996, p.967). In accountability, there is an underlying assumption that

the agents (individuals or organizations fulfilling the mandate of the principal) are duty-bound to function within acceptable parameters of performance and behavior set by the principal, and that the principal will impose sanctions if the agents choose to act in a contrary manner (Grant & Keohane, 2005). The purpose of accountability is threefold: ensuring that the agent acts in ways prescribed by and acceptable to the principal or stakeholders, assuring the quality of a product, and ensuring there is value for money (Eaton, 2008; Grant & Keohane, 2005).

In 2005, the National Commission on Accountability in Higher Education described the system of accountability in higher education as “cumbersome, over-designed, confusing, and inefficient. It fails to answer key questions, it overburdens policymakers with excessive, misleading data, and it overburdens institutions by requiring them to report it” (National Commission on Accountability in Higher Education, 2005, p.6). More than half a decade later, evidence of elements of the commission’s unsettling description of accountability still exists (Eaton, 2012; Ebrahim, 2010; Orosz, 2012; Rabovsky, 2012), which raises questions about the effectiveness of the current system of accountability and what changes may be necessary for addressing the key challenges present within the system.

Components of Accountability

There are four principal components of accountability necessary for sustaining an effective system of accountability:

1. Transparency. This component largely addresses trust by presenting a transparent data or information system that provides stakeholders with accurate and timely data that withstands public scrutiny.
2. Answerability. This component requires that actors are made to give a justification for their decisions and course of action.
3. Compliance. This component involves procedural steps, expected outcomes, and reporting requirements.
4. Enforcement. This component provides oversight and support for ensuring that the other three components are fulfilled by stipulating sanctions.

(Ebrahim, 2010, p.3)

Although there is a tendency to believe that the enforcement component is the driver or key component that holds the other components together and without which the system will falter (Ebrahim, 2010), collectively, each of these components allows for a better functioning system of accountability.

In reality, some accountability systems may overemphasize one or more of these components at the expense of others. For example, there have been increased demands for more data by higher education stakeholders including parents, board of trustees, board of governors, state departments, and accreditors (Ketcheson, 2001; McLendon, Hearn, & Deaton, 2006). However, one of the caveats worth underscoring is that an increase in data does not necessarily mean that there is greater accountability taking place. Furthermore, having increased or more rigorous forms of accountability, while desirable in some instances, may not necessarily lead to the achievement of intended

outcomes. Consequently, a misguided overemphasis or imbalance on accountability will not engender enhanced performance (National Commission on Higher Education Accountability, 2005).

Institutional Accountability

Universities and colleges receiving federal funds are held accountable by three regulatory bodies: the State in which they have been licensed to operate, the Federal government, and a legitimate accrediting body. These three bodies have different accountability requirements that institutions must fulfill in order to maintain their approved status. With the passage of the 1952 Higher Education Act, a nexus was developed between an institution's accreditation status and its eligibility for federally funded student aid. This requirement essentially metamorphosed an institution's participation in accreditation from a voluntary to an obligatory process.

Accountability from an internal perspective can be looked at as the need for colleges and universities to satisfy the requirements of principal actors such as federal government, state departments of education, board of trustees, board of governors, funding agencies, major donors, and last but not least, accreditors. Accreditation is an essential part of the accountability process for institutions, and institutions are careful to comply with set standards and procedures in order to maintain prestige, receive federal and state funds, and demonstrate its delivery of an acceptable quality education. On the other hand, accountability from an external perspective brings into focus issues of institutional transparency, stewardship, and performance.

Following the Spelling's (2005) Commission on higher education, the federal government became more involved in higher education institutional accountability and has required more of accrediting bodies with respect to how institutions and or programs are accredited. Measures of accountability include an institution's demonstration of attaining specified student learning outcomes such as graduation rates, retention, and job placement. These accountability measures apply equally to traditional learning as well as to distance education that offers students the opportunity to receive 50% or more of their credits in a distance-learning format (SACSCOC, 2012a).

As part of external accountability, the U.S Senate (2012) report on for-profit providers of education revealed that "the contrast between low levels of academic success among students and high levels of business success among some companies highlights that the current regulatory environment is fundamentally insufficient to ensure that for-profit colleges are focused on an educational mission" (p.88). One measure of academic success in the U.S Senate's report was student retention, which for several of the for-profit institutions ranged as low as 16% to 34% in 2010. The Senate's investigation into standards for student support services further revealed resources invested in student support services were shockingly inadequate at several higher education institutions with noted examples of no form of academic support being provided to students by two for-profit companies offering online distance education (U.S. Senate, 2012).

Having recognized some grave deficiencies associated with standards, the Senate committee recommended that higher education institutions be required to comply with “a set of minimum standards of student services, including tutoring, remediation, financial aid, and career counseling and job placement” (U.S Senate, 2012, p.94). The accrediting bodies considered the vanguard of collegiate quality (El-Khawas, 2001) and a major player in the higher education regulatory environment was deemed inadequate to assure the quality of online distance education, in particular at for-profit colleges, because of low student success. It is, therefore, the expectation, as expressed by the U.S. Senate that the regulatory environment will hold institutions accountable in remaining focused on their educational mission and achieving acceptable levels of academic success among their students.

The way that universities and colleges respond to input and output measures has a direct bearing on accountability and measures of effectiveness (Birnbaum, 1988). According to Birnbaum, “nothing is likely to happen...if graduates learn less (a measure of output), but the college is likely to respond when alumni complain (an input) that they have not been well prepared for their careers” (p.181). Birnbaum’s notion suggests that in universities and colleges, input measures can take a more central role than output or outcomes measures. In fact, often stakeholders make key decisions about universities and colleges based on input measures instead of outcomes (Schray, 2006). Consequently, an improper balance between input and output measures can generate failure in quality management initiatives (Eaton, 2008). Therefore, the way that

universities measure and respond to system inputs, outputs, and outcomes need to be monitored closely to ensure that quality enhancement occurs, thus ensuring a higher degree of effectiveness.

Empirical Studies of Accountability

The empirical literature on accountability in higher education is sparse; much of the literature on accountability “remains largely descriptive in nature, prescriptive in tone, and anecdotal in content” (McLendon, Hearn, & Deaton, 2006, p.2). One of the reasons for the existence of few empirical studies is that there is difficulty in attempting to analyze the effects of accountability mechanisms, particularly in relation to student achievement (Hanushek & Raymond, 2004). Thus, there are gaps in our empirical understanding of this phenomenon (Rabovsky, 2012).

According to Hanushek and Raymond (2004), “it is not possible to understand the impact of newly introduced accountability systems without considering the range of other factors influencing achievement” (p.7). In addition to the range of interacting factors to consider, many accountability systems undergo systematic changes, which may overlap with previous accountability mechanisms thus making the effects from the new accountability mechanisms even more difficult to analyze. In the few instances where these studies have been conducted, the impact of accountability on higher education institutional performance and behavior has been determined to be relatively small, at best (Orosz, 2012). The majority of the studies conclude that the accountability

effects on performance are either marginal or non-significant (Orosz, 2012; Rabovsky, 2012; Shin, 2010; Volkwein & Tanberg, 2008).

Performance funding is an accountability measure that has become widespread in accountability regimes (McLendon, Hearn, & Deaton, 2006; Orosz, 2012). In this type of accountability measure, institutions that have demonstrated the attainment of specific goals or targets set by the principal (state, the federal government, etc.) receive a specified amount of funding. Although most of the studies around performance funding in higher education show that student learning outcomes are not significantly improved by these accountability measures, a few scholars argue that “the introduction of accountability systems into a state tends to lead to larger achievement growth than would have occurred without accountability” (Hanushek & Raymond, 2004, p.2). Hanushek and Raymond’s assertion is plausible since their observation was focused at the elementary and middle schools levels. However, studies focused beyond the school level conclude that the achievement growth resulting from accountability measures is less than significant.

Shin’s (2010) study analyzing the impact of states’ new accountability standards on changes in institutional performance in higher education produced results that indicated there was no noticeable increase in institutional performance by universities that had adopted new state accountability measures. Using hierarchical linear modeling to analyze graduation rate (dependent variable) for 467 higher education institutions (HEIs) and research productivity (external research funding as the second dependent variable) for 123 HEIs, the

study showed that accountability measures by the state accounted for only 15% of the institution's graduation rate and approximately 6% of research funding. Shin determined that the new performance-based accountability standards did not contribute significantly to the variance in either graduation rate or research funding; instead, 76% of the variance in graduation rate is explained by institutional characteristics such as the institutional mission, freshman's academic background, cost of in-state tuition and dorm facility. Shin concluded that the institutional performance was more linked to internal institutional characteristics than the external accountability measures. The author then drew upon resource dependence and neo-institutional theories to explain the failure of state performance based accountability to translate to significant changes in higher education institutional performance.

Volkwein and Tanberg (2008) studied the association between states' accountability practices and the performance of higher education institutions by analyzing a large cross sectional data set from 2000 to 2006. The researchers concluded that there is no statistical significant relationship between accountability and institutional performance as it relates to enhanced student learning outcomes. Therefore, according to Volkwein and Tanberg, the accountability movement through performance funding policies has generated no significant improvement in student learning, and thus it can be classified as ineffective.

A quantitative study by Rabovsky (2012) exploring whether adoption of state accountability mechanism augmented institutional performance concluded

like several studies (Orosz, 2012; Shin, 2010; Volkwein and Tanberg, 2008) that accountability measures in higher education systems have not been positively correlated with enhanced institution's performance. However, Rabovsky took his analysis further by arguing that similar research focusing on the adoption of the accountability mechanism have failed to examine all of the steps in the causal chain, particularly the intermediate links. Therefore, conclusions about the effects of accountability on improving institutional performance have limitations.

Dickison et al. (2006) in a study examining the relationship between accredited paramedic education program and students' achievement of a passing score (minimum of 70%) on a national exam for paramedics concluded that students' enrollment into accredited parametric education programs was associated with attaining a passing score. Using multivariate logistic regression, the researchers determined that enrollment into an accredited program was independently and positively correlated with a passing score, even after controlling for possible confounding variables such as age, sex, race, education level, level of experience, and number of attempts at passing the exam. According to this study, students were much more likely to be successful in programs that were accredited compared to unaccredited programs.

In noting that accreditation was not mandatory for paramedic programs, the authors concluded that one of the likely reasons for a significant difference in students' passing rate between accredited and unaccredited paramedic programs was because "accreditation may only be a tool for identifying excellent education programs" (Dickison et al., 2006, p.227). According to the

researchers, only exceptional paramedic programs would submit to the timely and consuming voluntary accreditation process, and students attending these exceptional programs would likely perform better.

An analysis of Dickison et al.'s (2006) study would allow one to draw a few additional conclusions in light of the results. First, accredited programs reflect a greater amount of accountability than unaccredited programs by submitting to the process of accreditation, which is a form of external quality assurance and accountability. Second, accredited programs reflect a higher degree of quality in relation to student achievement than unaccredited programs. These conclusions are supported by the assumption that "accreditation standards imply an organizational intervention for change" (Rivera & Huertas, 2008, p.2). This change is detected in the accredited paramedic programs' preparation of their graduates for success on the national paramedic exam. The analysis of the data on the success of students at the national exam for both accredited and unaccredited parametric education programs should also lead to continuous improvement, which is a form of accountability.

Approaches to Quality Assurance in Higher Education

Two extant approaches to quality assurance are internal and external quality assurance. Internal quality assurance refers to a system of monitoring, evaluating, and enhancing quality through internal mechanisms established by the institution. In contrast, external quality assurance refers to the systems and practices established and conducted by a legitimate approved body that seeks to validate the quality of a college or university. The goal of external and internal

quality assurance is to assure stakeholders that the institution and its programs have met or exceeded threshold standards (Eaton, 2008).

El Khawas (2001) described seven core characteristics of quality assurance found in colleges and universities:

- Accountable to external regulatory bodies
- Clearly established standards and criteria
- Preparation of a self-study report
- External review by an accrediting agency
- Recommendations for improvement identified
- Emphasis is given to product and process
- Public report available (pp.130-131)

The presence of these core features in colleges and universities lends to transparency and promote quality enhancement, which are two essential principles of quality assurance (Harvey, 1999).

Internal Quality Assurance

Universities and colleges primarily exercise authority over their internal QA processes. The institution's philosophy and chosen model of QA inform the QA processes adopted by the institution in meeting the quality standards and requirement of an external agency. Consequently, internal QA processes will vary from institution to institution but there are some common characteristics existing within these processes. Shared characteristics of internal QA include data collection and evaluation systems that aim to ensure that quality standards and policies are met with respect to these aspects: (a) systems of governance,

(b) management and administration, (c) curriculum, (d), quality of staff, (e) teaching and learning, (f) resources, and (g) student support (Al Hassanawi, 2010; Anderson et al., 2009).

Universities and colleges that demonstrate evidence of complying with the requirements of external regulatory bodies are considered to have internal quality assurance processes that are effective and trustworthy in adhering to prescribed standards. Every college and university stands to benefit from having a rigorous internal quality assurance process (Anderson et al., 2009). These benefits include new or continued funding by the federal government, an image of credibility within the academy, and a higher degree of public confidence by stakeholders (Eaton, 2008; Parker, 2012).

External Quality Assurance

Bodies with legitimate status and authorizing power such as regional accrediting bodies, state departments of education, or program accreditation bodies carry out external QA processes. In higher education, the aim of the external review process is to examine HEIs for quality assurance and quality enhancement. The review process is conducted at various stages through start-up licensure, accreditation, re-affirmation of accreditation, and program approval. Within these processes, five main characteristics of external quality assurance are identified: (a) self-study, (b) peer-review, (c) site visit, (d) judgment by external body, and (e) continuous monitoring (Eaton, 2008, Parker, 2012).

External QA processes tend to work more effectively when the external agency operates as a developmental body and as such encourage HEIs to

strengthen their internal QA processes (Chalmers & Johnston, 2012). In its quest to function effectively as an external QA agency, one of the questions that accreditors and state departments of education grapple with is how to balance institutional autonomy with increasing demands for public accountability (Fielden, 2008). This is not a simple matter for either regulators or institutions as it spotlights tensions between concepts of higher education autonomy and accountability as well as raises the deeper issues of who really controls academe (Schmidtlein, & Berdahl, 2005).

According to Woodhouse (2004), the external body that conducts accreditation and quality assurance should possess these characteristics:

- a mission that is well defined and relevant to the sphere of the body's authority
 - a decision-making process that is non-bias, comprehensive, independent and fair
 - an evaluation process that takes into account the institution's self-analysis and other external references
 - respect for institutional autonomy and integrity while offering support
 - an effective flow of communication with the public
 - a high standard of public trust and accountability in its review of colleges and university accreditation decisions
 - clearly defined minimum standards for accreditation and improvement
 - well-defined policies, procedures, and criteria that are publicly available
- (p.80).

Of Woodhouse's (2004) eight desirable characteristics that accreditors should possess, the presence of well-defined minimum standards for accreditation and improvement is most central to the quality of online programs and courses offered by institutions. In the absence of well-defined standards, various interpretations of what represents quality may emerge. These varying interpretations may then lead to goal conflicts between accreditors and institutions, particularly if institutions believe that they have satisfied the standards.

Efforts to establish quality standards and best practices for online education have been admirable (Parker, 2008). Yet, even after arriving at some consensus on what quality ought to look like in higher education as prescribed by state departments of education and accreditation bodies, further challenges still exist for measuring the quality of online education. According to Parker (2008) traditional quality measures applied in quality assurance systems used by accreditors and state departments, are incongruous with the online teaching-learning environment. These regulatory bodies in their efforts to regulate and assure the quality of distance learning have adopted alternative standards for distance learning that mirror standards for traditional campus based education (Eaton, 2000). According to Eaton, accreditors have been cited for using standards designed for face-to-face education and applying them to learning that occurs online. Nevertheless, the importance of having standards specifically tailored to online education cannot be overemphasized. However, fundamental differences between the two environments should not be overlooked (Rovai,

2004) even as there is growing consensus favoring one quality assurance methodology being applied to the two forms of education (Stella & Gnanam, 2004).

Quality in Online Distance Education

Most scholars concur that assessing or evaluating the quality is a highly complex issue (Brink, 2010; Tsinidou, Gerogiannis, & Fitsilis, 2010). Initiatives aimed at measuring or enhancing quality must be accompanied by a clear understanding of the dimensions, dynamics, and parameters that affect the quality in higher education (Zaki & Rashidi, 2013). A wide range of factors influences quality in higher education (Al-Hassanawi, 2010; Parri, 2006), and these factors must be closely examined in order to determine the impact made on quality. Consequently, research efforts to measure quality have been challenging because of the various dimensions and intangible constructs of quality that exist (Al-Hassanawi 2010; Mc.Gorry, 2003; Parker, 2008). Three measures of quality of online distance education are discussed in this section: accrediting standards, student success, and quality matters.

Accrediting Standards

The practice of “applying QA and accreditation processes to open and distance learning is a relatively new phenomenon” (Latchem & Jung, 2012, p.13). The practice is considered new in the sense that QA and accreditation processes were historically applied to traditional learning. When evaluating the quality of online distance education, emphasis must be centrally given to student learning while including other variables that serve as indicators of quality learning in an

online environment (Meyer, 2002). Accreditors have articulated these variables or measures of quality as benchmarks or quality standards that institutions or their programs must satisfy.

In 2001, eight U.S regional accrediting bodies including SACSCOC developed the “Statement of Commitment for the Evaluation of Electronically Offered Degree and Certificate Programs” that affirmed their commitment to assuring the quality of distance learning programs. This commitment was expressed by the following seven values:

(a) education is best experienced within a community of learning where competent professionals are actively and cooperatively involved with creating, providing, and improving the instructional program; (b) learning is dynamic and interactive, regardless of the setting in which it occurs; (c) instructional programs leading to degrees having integrity are organized around substantive and coherent curricula that define expected learning outcomes; (d) institutions accept the obligation to address student needs related to, and to provide the resources necessary for, their academic success; (e) institutions are responsible for the education provided in their name; (f) institutions undertake the assessment and improvement of their quality, giving particular emphasis to student learning; and (g) institutions subject themselves, voluntarily, to peer review. (C-RAC, 2001, pp. ii-iii)

The abovementioned seven values underpinning quality standards encapsulate the essence of a flexible framework for evaluating distance education, and they are regarded as important for catering to learning across both upgraded campus-

based electronic programs and new types of delivery in distance education (C-RAC, 2001). However, the appropriateness of this framework to evaluate various forms of distance learning is questionable given that accreditors have been cited for using standards designed for traditional learning and applying them to learning that takes place online (Eaton, 2000).

In 2011, SACSCOC approved its *Guidelines for Addressing Distance and Correspondence Education*. These guidelines addressed nine standards for distance education: (a) mission, (b) organization structure, (c) institutional effectiveness, (d) curriculum and instruction, (e) faculty, (f) library/learning resources, (g) student support services, (h) facilities and finances, and (i) federal requirements. Since the development of these standards, researchers have conducted numerous studies on online education (Allen and Seaman, 2013; Hirner and Kochtanek, 2012; Latchem and Jung, 2012), which have shaped our understanding of factors contributing towards student success in online distance education. However, it is less clear the relationship between these SACSCOC standards and student success. This study examines the relationship between two of the SACSCOC standards (curriculum and instruction and student support services) and student success in online education.

Student Support Services. According to SACSCOC standard for student support services, the following key components should be addressed: (a) access to a range of support services, (b) course of action for resolving conflicts or complains, (c) information about programs and services, (d) procedures for maintaining security of students' personal information and course grades, and (e)

technological skills and or assistance to use the required technology (SACSCOC, 2012b). These five components, according to SACSCOC, form the core of student support services and ought to be demonstrated by institutions offering online education.

According to LaPadula (2003) the student support service for students enrolled in distance learning has not been given the level of attention that it deserves, but distant educators were beginning to give a renewed interest in its place within distant learning environment. In 2011, the Instructional Technology Council found that, even though, online enrollment is increasing, student services for online students were not keeping abreast with this increase and in fact were diminishing across some higher education institutions. This decrease has implications for students being able to access adequate services and thus this SACSCOC standard may be compromised. Nonetheless, educational institutions are increasingly being made to account for student learning outcomes and standards associated with student support services (SACSCOC, 2012a; U.S. Department of Education, 2006; U.S. Senate, 2012)

Curriculum and Instruction. SACSCOC standard for curriculum and instruction has eight indicators (see Appendix A). These indicators address policies regarding credit hours and appropriate program length, intellectual property, faculty's oversight of courses, content matter, and use of technology (SACSCOC, 2012b). There are three categories of indicators related to standards for higher education institutions' functions and characteristics: institutional context indicators, performance indicators, and participation and

social equity indicators (Nunan & Calvert, 1992). An analysis of the curriculum and instruction standard and its indicators reveal that much emphasis is given to policies issues and institutional structures. The eight indicators can be categorized as institutional context indicators and participation as well as social equity indicators instead of performance indicators. Because the SACSCOC curriculum and instruction indicators tend to be more aligned with institutional characteristics and policies instead of a strong focus on student outcomes, a likelihood exist that there is little or no association between the SACSCOC curriculum and instruction standard and student success.

Student Success

There is no single factor that can be attributed to student success. However, various approaches to online distance education may result in different outcomes for student success. For example, the achievement of higher levels of student learning in online distance learning is most likely to occur when students are significantly engaged in their education, and seek out opportunities for analyzing as well as applying materials presented in a variety of settings (Kuh, Kinzie, Schuh, & Whitt, 2010). Because there are neither geographical nor time bound restrictions in the online environment, multiple opportunities exist for students to become intensely involved in interacting with other students, faculty, and subject content. The level of collaboration and engagement, therefore, demonstrated by the student including employing multiple skills become vital for fostering student success.

Measures of student success include GPA, final course grade, and student retention (Kerr, Ryneason, & Kerr, 2006; Kruger-Ross & Waters, 2013). Several models exist for predicting student success such as Schrum and Hong's (2002) student characteristic model; Marks, Sibley, and Arbaugh's (2005) structural equation model; Kerr, et al. (2006) test of online learning success (TOOLS); and Kruger-Ross and Waters' (2013) situational theory of publics. Proponents of these studies modestly contend that their model represents a valid predictor of student success in online education.

Moore and Kearsley's (2012) comprehensive study cast doubt on the aforementioned models by concluding that educational background is one of the best predictors of student success in distance education. Moore and Kearsley argued that higher levels of formal education are associated with increased likelihood of completing a distance education course or program, whereas personal characteristics of students, though important, are less reliable predictors of student success. On the contrary, Yukselturk and Bulnut (2007) argued that the level of a student's educational background as a predictor of student success in distance education has not been sufficiently demonstrated in the literature around student success. Instead, Yukselturk and Bulnut conclude that student's self-regulation (cognitive strategy use and self-motivation) is a more valid predictor of student success.

Successful online learners exhibit the primary characteristics of taking ownership for their learning, reading well, writing proficiently, effectively managing their time, being self-directed, and motivated (Kerr, et al., 2006; Rovai,

2004). These are all essential characteristics of a quality learning experience that lead to student success in online education. The online distance learning environment must, therefore, be designed in such a manner as to encourage and provide opportunities for learners to develop the habits and dispositions that lead to their success. In the literature, frequent mention is made to self-directedness of learners contributing to student success.

Some colleges and universities including Florida International University have commenced using an e-readiness tool, which is an assessment tool to measure a student's aptitude, self-efficacy, and technological competence prior to enrolling in an online course. The tool is intended to determine whether the student has the prerequisites dispositions to succeed in online studies. This tool is a form of student support that allows students to make decisions about the likelihood of succeeding in online studies. DeTure (2004) found that cognitive style and technological self-efficacy, components of the e-readiness tool, were not statistically significant in predicting the success of students in online education. Based on DeTure's findings, the tool has limited utility in predicting the likelihood of student success in online studies, and it is, therefore, not a very valuable instrument for student support.

By drawing upon Moore's (1993) Transactional Distance Theory, DeTure (2004) explained the difference between what she described in her study as field dependent or less autonomous students and field independent or more autonomous students. DeTure found that students who are more field independent demonstrated higher levels of online technological capabilities, but

they were not more successful than field dependent students with lower levels of online technological capabilities. Field dependent students, according to DeTure, require greater levels of interaction and student support in order to be more successful in online learning.

Wilson and Allen's (2011) article "Success Rates of Online Versus Traditional College Students" makes a contribution towards our understanding of differences in student success between online and traditional learners. Wilson and Allen examined success rates across two groups of learners in terms of completion and withdrawal while also considering background variables such as GPA and gender. The researchers found that there was a significant difference in student success rates between online distance education and traditional education with student withdrawal rates and failures being significantly higher in online distance education classes. They also found that grade point average (GPA) was the greatest predictor of success regardless of the type of learning environment. One of the strengths of Wilson and Allen's study was the profile of the different groups of learners with the characteristic of online learners being portrayed as generally female, older, and having earned more credit hours than traditional learners. In addition, several statistical techniques- t-tests, ANOVA, and multiple regression were used to analyze the data. However, a few weaknesses existed in Wilson and Allen's study. The study was limited to a small sample size of only 100 students enrolled in two online courses and two face-to-face courses, which were all taught by different professors. In addition, there was neither randomized sample selection nor a control group. As a result,

the research design was potentially vulnerable to confounding variables beside the learning environment and GPA.

In a study of student success in online distance education, Yuselturk and Bulut (2007) examined the relationship between 13 predictor variables (gender, age, level of education, locus of control, dominant learning style, intrinsic goal orientation, extrinsic goal orientation, control beliefs, task value, self-efficacy, test anxiety, cognitive strategy use, and self-regulation) and student success in an online course. One of the strengths of the study was its significance in offering valuable insight into student characteristics and how they related to success in online distance education so that administrators and faculty could understand how best to advise and support student who select online distance courses. The authors found that of the 13 variables; only self-regulation was a statistical significant predictor of student success in online distance learning. One of the notable weaknesses of this study was a small sample size of 80 students enrolled in one online course at one university, which had implications for generalization from the study. In addition, the online course used in the study “Data Structure and Algorithms with C” was an advanced course offered as part of an online certificate in computer programming, which suggests that students had background knowledge of computer programming and functioning in an online environment. This characteristic of the sample size could have easily biased the study because students may have been more comfortable with this format of educational delivery. Moreover, students received one aspect of their assessments, to determine student success-the dependent variable, by

completing a final exam administered in a paper-based format in a face-to face environment. In addition, there were two other occasions where students were required to complete assessments in a face-to-face environment. Although the effects of such a design on the results of the study are uncertain, the research design for a study of online learning appears questionable based on convenience sampling, participants' orientation, and the administration of a paper-based test in a face-to-face setting.

Student retention, one measure of student success, was found to be much lower at institutions that provide solely online education than at institutions providing face-to-face instruction (Latchem & Jung, 2012). Additional studies support Latchem and Jung's finding by reporting higher student retention rates in traditional learning than in online learning (Allen & Seaman, 2013; Parker, 2012). The high attrition rate in online distance education has been frequently cited in the literature (Kruger-Ross & Waters, 2013; Latchem & Jung, 2012; Parker, 2012; Rovai & Downey, 2010). Reasons offered by researchers for these high attrition rates in online education include students' feelings of isolation and disconnection, inadequate technological support, poor course instructional design, faculty under preparation to teach online, limited student-instructor interaction, low student motivation, and lack of self-discipline. Effective online distance education will be cognizant of these factors when designing and delivering online courses in order to mitigate high attrition and cater to student success.

Quality Matters

Quality Matters (QM) is a certification process, specifically created for online courses, which aims to improve the quality and accessibility of online education. QM is sufficiently important to discuss in this study because of its increasing use by universities that offer online distance education. QM has been steadily gaining broad acceptance as a tool for evaluating the quality of online courses. QM is defined as “a faculty-centered, peer review process that is designed to certify the quality of online and blended courses” (Maryland Online, 2014, para 4). QM identified five primary objectives of its program:

- a) Development of research-supported, best practice-based quality standards and appropriate evaluation tools and procedures; b) Recognition as experts in online education quality assurance and evaluation; c) Fostering institutional acceptance and integration of QM standards and processes into organizational improvement efforts focused on improving the quality of online education; d) Provision of faculty development training in the use of QM rubric(s) and other quality practices to improve the quality of online hybrid courses; and e) Provision of quality assurance through the recognition of quality in online education.
- (Maryland, 2014, para. 3)

According to Maryland Online, QM focuses on the design of online courses, and the certification process relies upon faculty involvement combined with guided support and peer review. Online courses that have been

successfully reviewed received the QM certification and are deemed have a QM mark of approval. The QM peer review process for certifying an online course involves three QM certified reviewers, one of whom must be a content specialist and one of the other two reviewers belonging to a different institution (Maryland Online, 2014).

The QM approach to evaluating quality is designed around eight standards: course overview and introduction, learning objectives, assessment and measurement, instructional materials, learner interaction and engagement, course technology, learner support, and accessibility. Each standard is scored on a three-point rubric. QM's eight standards and 41 sub-standards are subsumed within the broader standards of accrediting bodies. Studies have shown a correlation between these eight standards and student satisfaction of their experience in online courses that feature these standards (Monroe, 2011; Simpson, 2012). However, one of the drawbacks of QM is that the certification cannot be done for a new online course because only courses taught several times before can be considered for review (Maryland Online, 2014). Therefore, students who enroll in courses that are entirely new online courses would not gain the associated benefits of the courses being QM certified.

Empirical Studies on Quality in Online Distance Education

Studies that simply compare student outcomes in online learning to student outcomes in traditional learning are prone to incomplete analysis and are poorly designed (Meyer, 2002). Meyer's critique contended that studies having this design generally tend to ignore interacting factors and confounding variables,

and oftentimes these studies present the classic “no significant” difference phenomenon. The distance education literature is pervasive with studies addressing the difference between online learning and traditional learning. Russell (1999) presented a comprehensive comparative review of 355 research reports that supported the *no significant difference phenomenon*. In light of the foregoing, this section considers the major no significant difference studies but emphasizes studies that went beyond the comparative no significant difference design.

Gayton and McEwen (2007) conducted a descriptive research study *Effective Online Instructional and Assessment Strategies* that surveyed a sample size of 85 faculty members and 1963 students. Gayton and McEwen found that four main strategies contributed to maintaining online instructional quality: open communication lines, similar course rigor to traditional instruction, multiple instructional techniques, and group work. According to Gayton and McEwen, integrating these strategies into the design of online courses would enhance student achievement.

One of the largest studies undertaken of online education, the U.S Department of Education (2010) commissioned report, *Evaluation of Evidence Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies*, concluded that learning outcomes, in fully online or hybrid courses, are on average much better than traditional courses. The meta-analysis examined 50 studies, 43 of which dealt with older learners. The study issues a caveat about its focus being primarily on learning at the K-12 education level. As

such, these claims cannot be appropriately extended to learning at the university and college level. Nonetheless, these findings contradict numerous studies, which conclude that either there is no significant difference between traditional and online education or that online education lags behind traditional education with respect to student learning outcomes.

In Clawson's (2007) study *Does Quality Matter? Measuring Whether Online Course Quality Standards are Predictive of Student Satisfaction in Higher Education*, the author examined instructional design quality standards for online education and developed a taxonomy for online course quality that included 18 standards and 109 sub-standards. Some of the 18 instructional design standards such as *instructional strategies, student/instructor support, course progress, assessment, and course material* appear in other studies found in the literature.

Clawson's quantitative correlation research method together with the Mann-Whitney test was appropriately used to answer her research question about the extent to which instructional design quality standards in online courses were predictive of student satisfaction with the online learning experience. Clawson found that of the 18 quality standards only instructional strategy standard was predictive of student satisfaction with the overall online learning experience. Gayton and McEwen's (2007) findings on strategies associated with maintaining online instructional quality support Clawson's results. However, Clawson concluded that possible explanations for 17 of the quality standards not

being statistically significant were the small sample size of selected courses (12) and many of the standards did not affect student satisfaction.

Clawson's second reason advanced for 17 of the quality standards not being statistically significant is problematic on the basis that it is supported by circular reasoning. The author essentially contended that there was no relationship between the 17 standards and student satisfaction because the standards did not affect student satisfaction, which is in effect the same as arguing that there is no relationship between the 17 standards and student satisfaction because no relationship exists between the 17 standards and student satisfaction. Perhaps one of the underlying reasons for the non-significant result was the author's instrumentation to measure the various constructs of quality standards and levels of student satisfaction, which were not discussed fully with respect to item internal consistency, reliability, or content validity. Importantly, the study drew attention to the need for quality standards in evaluating online distance learning.

With respect to instrumentation for quality standards in online distance education, McGorry (2003) developed a 60-item questionnaire to obtain a summary of indicators for measuring quality in online programs. These indicators were then organized into a model comprising seven constructs (flexibility, responsiveness and student support, perceived learning (self-reported by students), interaction, technological usefulness (perceived) and user friendliness, technical support, and student satisfaction). McGorry's 60-item questionnaire showed internal inconsistency with 12 items. These 12 items

exhibited low correlation loadings and were subsequently eliminated. The reliability of this revised instrument comprising 48 items was 0.96, which is a strong reliability coefficient. Beside the high reliability coefficient, McGorry's instrument is well-supported as evidence by variants of these seven constructs found in the literature on quality in online education (Hirner & Kochtanek, 2012; Hurumi, 2009; Monroe, 2011).

Lord and Volery (2000) examined success factors in online education by considering the following three components: technology, instructor characteristics, and student characteristics. The researchers used survey research design to collect data from 47 students enrolled in an online business course and found that there was a significant correlation between effective instruction and the characteristics of faculty as well as between effective instruction and technology.

Lord and Volery (2000) concluded that the degree of interaction between instructor and students "appeared predominant in online delivery" (p.222). The researchers' findings and conclusion are well supported by findings of instructional effectiveness in other studies such as Gayton and McEwen (2007), and Marks, et al. (2005). However, Lord and Volery's study had a few deficiencies. The main weakness of this study was that although the course was described as an online course, it was not a fully online course. Referring to the course, Lord and Volery stated, "although the course content is available online, a series of four intensive one-day seminars is conducted throughout the semester" (p.219). Because the study did not control for those who attended the

seminars and who took the course fully online, the results of the study were potentially flawed. The small sample size of 47 students also affected the researchers' ability to make generalizations about their findings.

Chapter Summary

Economic downturns leading to cuts in state budgets, increasing demands by stakeholders, expansion of higher education systems, increase in for-profit institutions, growth in student enrollment, and increase concerns about human development capacity have contributed to the adoption of accountability mechanisms in higher education. However, few empirical studies exist about the relationship between accountability and performance outcomes. There have been mixed findings regarding the association between accountability practices and institutional performance, particularly student learning outcomes. The majority of studies have concluded that the correlation between these variables is weak.

Higher education in the U.S. is accountable to three layers of regulatory bodies, with accrediting bodies considered the vanguard of collegiate quality (El-Khawas, 2001). Measuring quality is complex because of its various constructs and dimensions, but the presence of well-defined standards is critical to having an unambiguous understanding of quality.

Although gaining broader popularity and widespread acceptance, the quality of online education has come under much skepticism and scrutiny. Institutions have increased their online offerings, and there has been a proliferation in the number of students enrolled in online courses. Accreditors in

their efforts to evaluate quality in this form of educational delivery have faced challenges in terms of developing standards, balancing institutional autonomy with public accountability, and ensuring that online distance learning is held to the same or even higher standards of quality than traditional face-to-face learning.

CHAPTER THREE: METHODOLOGY

The purpose of this study was to examine the relationship between two of SACSCOC standards for online courses and student success in online education. Therefore, this study utilized an ex-post facto correlational research methodology, which was deemed appropriate in answering the research questions stated below. The key aim of a correlational study is to provide a better understanding of relationships among variables (Fraenkel & Wallen, 2003). Having an understanding of the nature of the relationship between student success and standards for online education developed by accrediting bodies, in particular SACSCOC, was central to the purpose of this study.

In an ex-post facto design (Newman, Newman, Brown, & McNeely, 2006), also known as “after the fact” study, there is no random assignment, and the researcher is unable to manipulate the variables of interest (Howell, 2013). This study did not attempt to infer causation; therefore, an ex-post facto design was apropos. There are three types of ex-post facto research: (a) without hypotheses, (b) with hypotheses, and (c) with hypotheses and alternative hypotheses (Newman et. al, 2006). This study utilizes the third type of ex-post facto research. According to Newman et. al (2006), ex-post facto research without hypotheses is weak with respect to internal validity, but ex-post facto research that has hypotheses and alternative hypotheses makes the most meaningful contribution of the three types of ex-post facto research. Kerlinger and Lee (2000) also underlined the importance of ex-post facto research by

arguing that by its very nature, ex-post facto research can address some of the major societal issues because in these instances, the variables of interest have already occurred and cannot be manipulated.

For the dependent variable, a self-reported grade (expected course grade) was utilized in this study because of its high correlation with actual grade ranging from .74 to .94 (Anaya, 1999; Kuncel, Credé, & Thomas, 2005; Shaw & Mattern, 2009). In addition, if the rank positions of the self-reported grades and actual grades are placed on two separate ordinal scales, the ordinal rank of each self-reported grade and the ordinal rank of each actual grade will be the same.

According to Chan (2009) in the book chapter titled "*So Why Ask Me? Are Self-Report Data Really That Bad*", there is a misguided belief by some researchers that the use of self-reported data has low validity because such data misrepresent measures of the intended construct and lack the capacity to offer accurate estimates with respect to interconstruct relationship. Chan argued that "it is a myth to take as a fact that the correlations among self-report measures are always inflated estimates of the true interconstruct relationship" (p. 318). Chan concluded that this myth is a product of a "bidirectional equivalence fallacy" that incorrectly assumes that a high correlation among self-reported measures simply occurs because the measures are self-reported. Chan acknowledged that while self-reported data are theoretically susceptible to random and systematic errors, as with other measures of data, there is no reason to conclude that "some of these errors will always exist or exist to a serious extent for all self-report measures" (p.314).

Research Questions

The research questions governing this study were as follows:

1. To what extent are the two SACSCOC standards, student support services and curriculum and instruction, for online education present in online courses at Florida International University?
2. Is there a relationship between the two SACSCOC standards, student support services and curriculum and instruction, for online education and student success (as measured by expected course grade) in online education?
3. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards?
 - a. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of discipline?
 - b. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of ethnicity?
 - c. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher

rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of GPA?

- d. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards than online courses that have a lower rating of SACSCOC standards, independent of gender?
 - e. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of age?
 - f. Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards than online courses that have a lower rating of SACSCOC standards, independent of the number of online courses previously taken?
4. Are the two SACSCOC standards, student support services and curriculum and instruction, for online education predictive of student success in online education as measured by expected course grade?
5. Is there a significant interaction between the two SACSCOC standards, student support services and curriculum and instruction, and GPA in predicting student success in online education as measured by expected course grade?

Instrumentation

This study utilized a survey questionnaire design to measure the two independent variables (student support and curriculum and instruction). A 24-item instrument with a reliability coefficient of .76 (developed and pilot tested by the author of this study in Spring 2014) was used to measure the two SACSCOC standards for online distance education (See Appendix B). Ten items were used to assess the first standard (student services), and 14 items were used to assess the second standard (curriculum and instruction). The covariates (discipline, ethnicity, gender, GPA, age, and number of online classes previously taken) were also measured in the demographic section of the instrument.

Using the 24-item instrument, participants from the 40 randomly stratified selected online courses evaluated the courses in which they were enrolled to ascertain the extent to which the courses met the two SACSCOC online standards. The data were measured on a 5-point Likert scale ranging from one (1) strongly disagree to five (5) strongly agree.

To facilitate the instrument having the most accurate estimates of validity and reliability, the following three procedures were applied: Delphi-Validation technique (Powell, 2003) in conjunction with a table of specifications (Newman, Lim, and Pineda, 2013), factor analysis (Green and Salkind, 2008), and Cronbach alpha reliability test (Howell, 2013). The instrument's content validity was measured by the Delphi-Validation technique, the construct validity and internal consistency of items in the instrument were assessed through the Factor Analysis, and the estimate of reliability was obtained through the Cronbach Alpha

test. To enhance the estimate of validity and to address possible multicollinearity, composite measures of student support services and curriculum and instruction were created. These procedures are further discussed in the pilot study section below. Variables measured by the instrument are shown in Figure 1; see page 21-23 for how these variables were coded.

Figure 1 Variables Measured by the Instrument

Course	College	Age	Race/ Ethnicity	Gender	GPA	# of Online Courses Taken	Expected Course Grade	SACSCOC Standard	
								SSS	CI

Pilot Study

During spring 2014, I conducted a pilot test of an instrument to measure the extent to which online courses met three of SACSCOC standards for online education. The procedure to develop and estimate the validity of the instrument began by conducting a literature review of quality standards and indicators in online education with respect to faculty, student support, and curriculum and instruction. An instrument was then developed to reflect the items found in the literature that were closely related to online quality standards and SACSCOC standards in particular. The instrument first went through a Delphi-validation

procedure (Powell, 2003) then pilot tested with participants from nine randomly selected online undergraduate courses offered by the College of Education at FIU during Spring 2014. These nine courses were selected randomly from the 73 online undergraduate courses, offered by the College of Education, by numbering the courses from one to 73 and using a random generator (Urbaniak and Plous, 1997) to generate nine random numbers. The courses corresponding to the nine selected numbers were then extracted as the sample courses to be used in the pilot study. An informational letter, including an active link to the survey, was sent to all 226 students enrolled in the nine courses via notifications posted online by the course instructors. The link was active for 4 weeks and follow-up reminders were done twice. A total of 54 participants, representing a response rate of 23.9%, responded to the survey questionnaire via Qualtrics. Data from the respondents were downloaded from Qualtrics into SPSS to conduct a factor analysis (Green and Salkind, 2008) and Cronbach alpha reliability test (Howell, 2013).

Delphi-Validation

Delphi-validation has utility in establishing the content validity of the instrument by relying on a panel of experts (Powell, 2003). Eight experts, employed university-wide at FIU as faculty, administrators, and quality assurance practitioners, who possessed broad experience in teaching, online education, accreditation, and program review, were invited to participate in the Delphi-validation procedure. Seven of the eight experts consented to participate. Experts on the panel were given the opportunity to assess each of the items and

assign a score of 0-3 to indicate the extent to which they considered the item a good fit for the construct being measured. They also offered qualitative feedback and recommendations for improving the instrument.

After receiving the responses of the expert panel members, the instrument was revised in keeping with the assessment and recommendations provided. The review of experts and their agreement were summarized in the table of specifications (see Appendix B). Overall, there was strong agreement on all of the items, except items relating to the faculty standard. An agreement of 80% is considered an acceptable estimate of the validity when using a panel of experts (Newman et al. 2013). The instrument was then redistributed for a second round of review. This rigorous process was followed to facilitate the instrument having an acceptable estimate of content validity in measuring SACSCOC standards for online education. The judges gave the faculty standard and its associated items an average agreement rating of 57.1%. The factor analysis also showed that several of the items measuring the faculty construct loaded onto the two other constructs. Therefore, in the final revision of the instrument, the faculty standard was omitted because of its low construct validity measured by the factor analysis and the below average level of its content validity rated by the panel of judges. The percent agreement among judges for the student services construct was initially 55%. However, when the first and seventh items in the construct, rated low in percent agreement by the judges, at 28.6% and 38.0% respectively, were eliminated from the construct, the overall content validity rating of the construct improved to 63.3% (see Appendix B). This change marked a significant

improvement in the content validity of the construct. Items in the student support services construct were further revised after a second round of Delphi-validation, which produced a higher content validity rating by the judges of 85.4%. For the content validity of the curriculum and instruction construct, the percent agreement by the judges was initially 75.2%. When the 15th and 16th items were eliminated from the construct because of low validity estimates by the judges, the overall content validity for the construct improved to 81.6%.

Factor Analysis

Factor analysis is a statistical technique commonly used in the definition and development of measures of dimensions that underlie various constructs (Green & Salkind, 2008). Factor analysis was utilized in this study in order to establish the instrument's construct validity. One of the main goals of factor analysis is to "discover optimal weightings of the measured variables so that a large set of related variables can be reduced to a smaller set of general summary scores that have maximum variability and reliability" (Floyd & Widarman, 1995, p. 287). Therefore, factor analysis was applied as an appropriate technique for developing and analyzing the factors in the instrument for consistency in measuring the specified construct. Using SPSS version 20, the *R* factor analysis was applied to the item responses from participants. The factors were then extracted by using the Principal Component Analysis and rotated through the Varimax method. The Principal Component Analysis and Varimax method are useful tools for extracting and rotating items because they provide clarity in

understanding the correlation between the items and factors of the construct (Fraenkel & Wallen, 2003; Green & Salkind, 2008).

In applying factor analysis to the instrument, insight was gained into the combinations of variables that would be aligned most appropriately with each of the two main factors (student support, and curriculum and instruction). The results of the factor analysis showed that the three factors explained 55% of the variance in the dependent variable. The results indicated that 10 of the items (Q.24, Q.13, Q.12 B, Q.15 B, Q.6, Q.2, Q. 8, Q.9, Q.10, and Q.12A) had a correlational loading value of less than .4. When these 10 items were removed from the instrument and a Cronbach's alpha test was done again, the overall reliability of the instrument improved by 5.3% from .836 to .88. The component loadings further indicated that items 18B, 17, 19, 18A, 3, 20, 7A, and 23 were highly correlated with factor one (faculty). On the other hand, items 7B, 4, 1, 5, 11, and 15A were better correlated with factor two (student support services). Finally, items 23A, 21, 16, 24, and 22 were more suitably correlated to factor three (curriculum and instruction).

Cronbach's Alpha Estimate of Reliability

A reliability test was applied to the instrument to determine Cronbach's alpha, which provides a coefficient of internal consistency as an estimate of the reliability of the instrument. A Cronbach's alpha above 0.7 is regarded as acceptable (Fraenkel & Wallen, 2003). The Cronbach's alpha reliability coefficient for the instrument was found to be 0.76, which is an acceptable level

of reliability. Table 1 shows the estimated reliability of each subscale of the instrument.

Table 1

Reliability Estimate of the Pilot Instrument

Factor Component	Number of Items	Alpha
Faculty	8	.743
Student Services	10	.692
Curriculum and Instruction	12	.836

Sample

The source of data for this study was students enrolled in undergraduate online courses at Florida International University (FIU). Each semester, FIU offers approximately 800 undergraduate online courses. In fall 2014, FIU offered 826 undergraduate online courses (FIU Online, 2014). These 826 courses comprised courses that ranged from one credit hour to nine credit hours.

All students enrolled in each of the 40 selected online courses were invited to participate in the study. Consenting participants comprised male and female undergraduate students across all disciplines offering online courses at FIU. Participants completed a survey to rate each online course on a Likert scale with respect to the extent that the online course met SACSCOC standards identified in the instrument. Given that the survey instrument had a total of 24 items, the sample size for this study was an estimated minimum of 240

participants, based on the rule of thumb of a minimum of 10 observations per item (Howell, 2013). However, this study targeted a minimum of 380 participants in order to have an appropriate effect size.

A random stratified sampling procedure was used. In the selection of the sample using this procedure, the following criteria were applied: a sample size of 40 undergraduate online courses, only mainstream credit hours courses such as 3-credit, 4-credit, or 5-credit hours, and courses taught during the fall 2014 semester. Both FIU 1.0 and FIU 2.0 online courses were included in the sample.

The first step in the sampling procedure was to eliminate online courses that were 1-credit, 2-credit, or 9-credit hours. These online courses were not considered in this study because they were atypical of the majority of online courses offered and are usually lab courses, internships, or seminars. Therefore, only 3-credit, 4-credit, or 5-credit hours undergraduate online courses were sampled. Second, the remaining number of undergraduate online courses (779 courses) was divided into subgroups based upon the 12 identified university-wide disciplines (see Table 3). From, these 779 undergraduate online courses, 40 courses, representing approximately 5% of the total online offering, were sampled by random proportionate stratified sampling.

Third, to have a random proportionate stratified sample (see Figure 2.0 on page 71), the percentages of online courses offered in each of the 12 disciplines/schools were preserved within the sample. The 40 undergraduate online courses, across the 12 disciplines, were randomly selected by using a free online random generator tool known as the research randomizer, which was

accessible through the website www.randomizer.org. Each online course within each of the 12 disciplines was assigned a number. These numbers were entered into the randomizer, which then randomly selected online courses. Because of proportional representation, only online courses offered by seven of the 12 disciplines (colleges/schools) were represented in the sample of selected online courses.

Table 2

Number of Online Courses Offered in Fall 2014 by Discipline

College/Discipline	Overall number of online courses (3, 4, 5 credits offered in fall 2014)	Number of online courses represented in
College of Arts and Architecture (CARTA)	69	4
College of Arts and Sciences (CASI)	347	18
College of Business Administration (CBADM)	175	9
College of Education (COE)	64	3
College of Engineering and Computing (CENGR)	18	1
College of Law (CLAW)	0	0
College of Medicine (COM)	0	0
College of Nursing and Health Sciences (CONHS)	38	2
College of Public Health and Social Work (COPHSW)	9	0
Honors College (HC)	0	0
School of Hospitality and Tourism Management (SHTM)	51	3
School of Journalism and Mass Communications (SJMC)	9	0
Total Online Courses	779	40

Five of the colleges/disciplines were not represented in the stratified random sample because they offered either very low numbers of online courses or no online courses altogether. The 40 sample courses from which students were recruited to participate in the study are shown in Table 3. The total student enrollment in these 40 classes was 1949.

Figure 2 shows the percentage representation of the online courses by discipline within the randomly stratified sample. The College of Arts and Sciences offered the highest percentage of undergraduate online courses (45%), the College of Business Administration offered the second highest number of online courses (22%), the third highest percentage of online courses was offered by the College of Art and Architecture (10%). The remaining nine colleges combined for 23% of the online undergraduate courses offered during fall 2014.

Figure 2. Undergraduate Online Course Offerings in the Sample

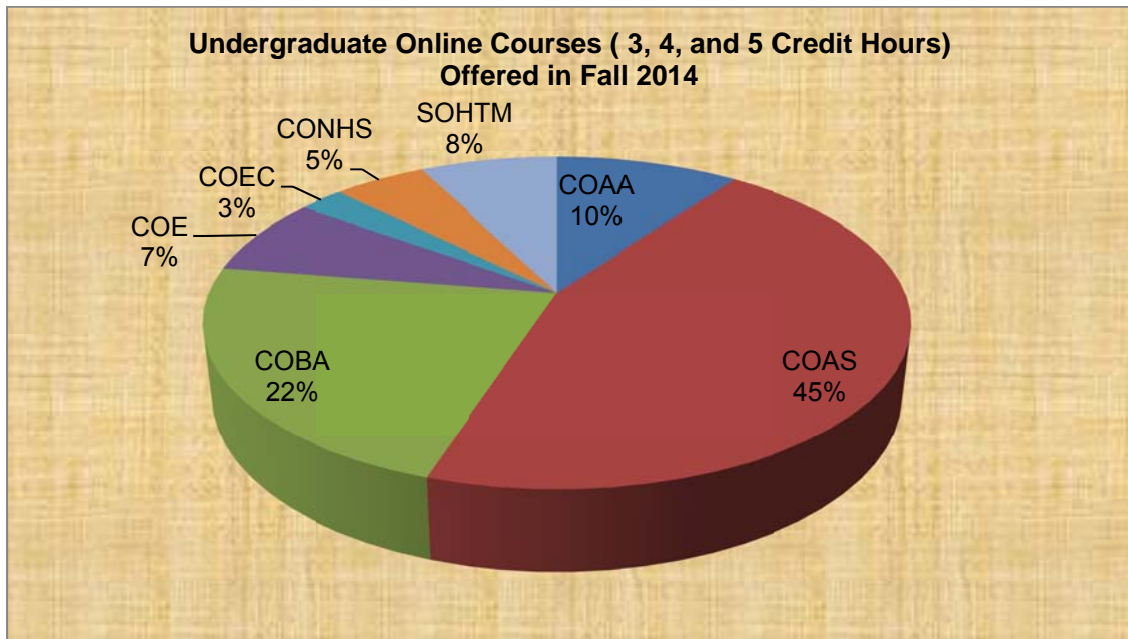


Table 3

List of Sample Courses

Sample Course				Discipline/College	Class Size
#	Course ID	Cr	Course Title		
1	MUL1010RVC	3	Music Literature/Music	Architecture & Arts	70
2	COM 4462 RVC	3	Conflict Management	Architecture & Arts	50
3	COM4620 RVC	3	Communications on Ethics	Architecture & Arts	17
4	SPC3210RVC	3	Communication Theory	Architecture & Arts	49
5	AFA2004RVC	3	Black Popular Cultures:Global	Arts & Sciences	28
6	AMH2041RVC	3	Origins of American Civilization	Arts & Sciences	43
7	AMH4571RVC	3	African American History	Arts & Sciences	18
8	ASN3410RVC	3	Introduction to East Asia	Arts & Sciences	34
9	CCJ3666RVC/RPC	3	Victimology	Arts & Sciences	53
10	CCJ4361RVC	3	Death Penalty	Art & Sciences	79
11	CCJ4700RVC	3	Research Methods in Criminal	Arts & Sciences	70
12	CJL3512RVC/RPC	3	The Courts	Arts & Sciences	30
13	CLP4134RPC	3	Childhood Psychopathology	Arts & Sciences	10
14	DEP2000RVC	3	Human Growth and	Arts & Sciences	64
15	DEP4182RVC/RPC	3	Socio-emotional Development	Arts & Sciences	57
16	ECS3431RVC	3	Economics of the Caribbean	Arts & Sciences	28
17	PAD3003RVC	3	Introduction to Public Admin	Arts & Sciences	43
18	PAD4704RVC	3	Applied Statistics for Policy	Arts & Sciences	46
19	PPE3003RVC	3	Theories of Personality	Arts & Sciences	70
20	SOP3015RVC	3	Social and Personality	Arts & Sciences	70
21	SYO3400RVC	3	Medical Sociology	Arts& Sciences	41
22	SYP3530RVC	3	Delinquency	Arts &Sciences	41

Continued

Table 3 (Continued)

List of Sample Courses

			Sample Course	Discipline/College	Class Size
#	Course ID	Cr	Course Title		
23	FIN4303RVE	3	Financial Markets and Institutions	Business Administration	50
24	FIN4502RVC	3	Securities Analysis	Business Administration	50
25	ISM3012RVC	3	Introduction to Decision and Information Systems	Business Administration	49
26	MAN3100RVC	3	Happiness at Work	Business Administration	65
27	MAN4301RVE	3	Human Resource Management	Business Administration	49
28	MAR4503RVC	3	Consumer Behavior	Business Administration	50
29	MAR4354RVE	3	Marketing Yourself in Today's Competitive Job Market	Business Administration	50
30	QMB3200RVC	3	Application of Quantitative Methods in Business	Business Administration	101
31	REE4103RVC	3	Appraisal of Real Estate	Business Administration	45
32	EDF3251RVC	3	Classroom Management	Education	29
33	EEC3204RVC	3	Issues in Early Childhood Education	Education	36
34	RED4100RVC	3	Emergent Literacy	Education	30
35	BME4503RVC	3	Computer Data Analysis	Engineering & Computing	51
36	HSA3180RVC	3	Leadership and Management for Health Professionals	Nursing & Public Health	88
37	SPA4011RVC	3	Speech and Hearing Science	Nursing and Health Sciences	49
38	HFT1000RVC	3	Introduction to Hospitality and Tourism Management	Hospitality and Tourism Management	47
39	HFT2220RVC	3	Human Resources Management for Hospitality	Hospitality and Tourism Management	50
40	HFT3503RVC	3	Hospitality Marketing Strategy	Hospitality and Tourism Management	49
				1949	
Total Number of Students in Sampled Courses					

Procedure

All students in the 40 randomly selected online courses were recruited to participate in the study. Students were recruited through electronic communication sent to them in their online class with their professors' consent. An active survey questionnaire link (using Qualtrics) along with an informational letter was included in the communication sent to students. This link was active for a 5-week period from October 7, 2014 through November 11, 2014. Faculty responsible for teaching these selected online courses were asked to provide bi-weekly reminders to their students for participation in the study with an additional reminder during the final week of the data collection period. At the end of the five weeks, the survey questionnaire link was deactivated, and the data collection period concluded.

All participants were required to give consent to their participation in the study. Data collected from participants were anonymous and were treated confidentially. At no time was personal identifying information utilized in this study. Because the study had an ex-post facto design, participants were not required to undergo any form of treatment and were informed that at any point in the study they could have either declined or withdrew, without fear of being penalized in any way.

The survey instrument took approximately 10-15 minutes to complete. All responses to the survey were submitted in an electronic form through the Qualtrics link, which was set up to guarantee the anonymity of all participants. Qualtrics served as a temporary database to which participants' responses were

uploaded. Each survey response submitted to Qualtrics was automatically assigned a response identification number. The main independent variables, the covariates, and the dependent variable were all collected by the survey questionnaire administered through Qualtrics.

Hypotheses and Statistical Analysis

Data were downloaded from Qualtrics into SPSS version 20 for analysis. The measurements of the main independent variables, SACSCOC standards, were combined to have an overall score for each course. The score for each item, using the 5-point Likert scale ratings by respondents, was added together to create an index with a score for each of the standards. The scores for each of the two SACSCOC standards were then combined to give an overall score for each course. All items were weighted equally based on a factor analysis that showed each item loading onto only one factor.

By having a score for each item within the two quality standards as well for the main quality standards, the data were statistically analyzed to determine the relationships between each factor and student success. More importantly, the data were primarily analyzed to ascertain whether a significant relationship existed between the two SACSCOC online distance education standards and student success, which was essential to answering the research questions.

Descriptive, inferential, and correlation statistics were employed in this study. Because this study was intended to understand relationships among variables, a correlational analysis was appropriate (Fraenkel & Wallen, 2003). In a similar study by Clawson (2007) that analyzed the relationship between online

quality standards and student success, correlation and multiple regression statistical analysis techniques were used. Type I errors were controlled by utilizing a Bonferroni adjustment. Type II errors were minimized by making sure that the study was designed with an appropriate power (see Table 4 on page 80). The tests being used to analyze the data were two-tailed in directionality because the direction of the correlation was not yet known to be either positive or negative.

The General Linear Model (GLM) was selected as the statistical procedure in this study because of the breadth of its versatility and accompanying statistical benefits (McKneil, Newman, & Kelly, 2008). In analyzing the data, the GLM provided a R^2 coefficient that helped the researcher to understand the amount of variance that can be attributed to specific variables in the study. Degrees of freedom can be easily calculated using the GLM, unlike other models. In addition, the researcher was free to apply the GLM to analyze data that may have either continuous or categorical variables as the predictor variables. The predictor variables of interest used in this study were both categorical and continuous; hence, the GLM was found to be most helpful in analyzing data for this study.

The first research question regarding the extent to which online courses meet SACSCOC two standards for online distance education was answered by using descriptive statistics to analyze the data.

For the second research question about whether there is a relationship between the SACSCOC standards for online distance education (student

support, and curriculum and instruction) and student success in online distance education, the Pearson correlation test was applied to test the following two hypotheses:

Alternative Hypothesis 1: There is a relationship between the SACSCOC student support services standard and student success as measured by expected course grade; $H_1: \rho \neq 0$ or $H_1: \rho < 0$ or $H_1: \rho > 0$.

Alternative Hypothesis 2: There is a relationship between the SACSCOC curriculum and instruction standard and student success as measured by expected course grade; $H_1: \rho \neq 0$ or $H_1: \rho < 0$ or $H_1: \rho > 0$.

The third research question “Is there a significant difference in student success (as measured by expected course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards?” was answered by using a Chi-square test. Each of the associated questions, questions 3a to 3f, were also answered by applying Chi-square tests.

Alternative Hypothesis 3: There is a significant difference in student success between online courses that have a higher rating of SACSCOC standard and online courses that have a lower rating of SACSCOC standards; Chi-square $\neq 0$.

Multiple linear regression analysis was used to answer the fourth research question, “Are the two SACSCOC standards predictive of student success in online education”. The alternative hypotheses for this research question along with a regression model are stated below.

Alternative Hypothesis 4: $H_1: \beta_1 \neq \beta_2 \neq 0$

Regression model:

Full model; $R^2=.033$; $Y_{\text{(expected grade)}} = \alpha_0\mu + \beta_1(\text{student support services}) + \beta_2$
 $(\text{curriculum and instruction}) + E$

Restricted model; $R^2=0$; $Y_{\text{(expected grade)}} = \alpha_0\mu + E$

The final question “Is there a significant interaction between the two SACSCOC standards (student support and curriculum and instruction) and GPA in predicting student success in online education?” was answered by using a multiple linear regression test with a focus on an interaction between the two SACSCOC standards and GPA.

CHAPTER FOUR: RESULTS

This chapter presents the results of the study. The purpose of this study was to examine the relationship between two of SACSCOC standards for online education and student success in online education. As previously stated in Chapters 1 and 2, five main research questions governed this study.

Data Set

Data for this study were collected through an online survey questionnaire distributed via Qualtrics to students enrolled in undergraduate online courses at FIU. The data collection period ran for five weeks from October 7, 2014 to November 12, 2014. Using the Dillman (2007) approach for enhancing survey participation, the researcher sent three reminders via the class professors to participants at 2-week intervals and one final reminder in the last week of the data collection period. These reminders were considered necessary for increasing the response rate. At the end of four weeks, 354 responses were received, but with the final reminder, an additional 157 responses were received.

A total of 40 undergraduate university wide courses at FIU were selected for the study through a random proportionate stratified sample (refer to Table 3). In these 40 courses, participation invitations were sent to 1949 students. However, of the 40 courses surveyed, 511 students from 24 courses participated (see Table 4). Because of missing data and invalid course identification responses, only 464 surveys were completely valid, thereby giving a response rate of 23.8% (464/1949), which was comparable to the pilot study that yielded a 23.9% response rate.

Power Analysis

A power analysis was done using Cohen's estimate for small, medium, and large effect sizes (McNeil, Newman, & Kelly, 1996). Utilizing Cohen's approach for determining effect sizes f^2 , the minimum power required to detect a difference when a difference is actually present (given $\alpha = .05$ and $N = 464$) is shown in Table 4. In calculating the power estimate for an interaction when α is .05 and $N=464$, the large and medium effect remained the same as in Table 4, but f^2 was .02 and the power was .74.

Table 4

Power Estimate for Three Different Effect Sizes

Effect Size	f^2	Power
Large	.35	.99
Medium	.15	.99+
Small	.02	.09

Reliability Estimate of the Instrument

The overall reliability estimate of the instrument was Cronbach's alpha .942. The Cronbach's alpha for the student support services standard, represented by 10 items (items one through seven) was .879 and for the curriculum and instruction standard, which was represented by 14 items (items 8 through 17), it was .916. Table 5 shows the instrument's reliability estimate.

Table 5

Reliability Estimate of the Instrument

Factor Component	Number of Items	Alpha
Student Services	10	.879
Curriculum and Instruction	14	.916
Overall Instrument	24	.942

Demographics of Sample

College/Discipline

The College of Arts & Sciences (CASCI) represented the highest number of respondents from all the colleges with a total of 215 participants. The second highest number of respondents was 79 from the College of Education. The third highest group was the College of Business Administration (CBADM) with 72 respondents. The School of Hospitality and Management had a total of 43 respondents. For the College of Law (CLAW), there were 16 respondents. There were 12 respondents from the College of Nursing and Health Sciences (CNHS). A total of 10 respondents participated from the College of Public Health and Social Work (CPHSW). Nine respondents were from the School of Journalism and Mass Communication (SJMC). Three respondents were from the College of Engineering and Computer Science (CENG). There were two respondents from the College of Architecture and the Arts (CARTA). There were two respondents from the Honors College (HC), and one respondent from the College of Medicine (HWCOM). Table 6 shows the number of respondents per college.

Status in the Classroom

Full-time students were present in the sample almost thrice as much as their part-time counterparts: there were 346 full-time students (enrolled for 12 or more semester credit hours) and 118 part-time (enrolled for fewer than 12 semester credit hours).

Table 6

Number of Respondents per College/Discipline

College/Discipline	Number of Participants	Percent
College of Architecture and the Arts	2	.4
College of Arts and Sciences	215	46.3
College of Business Administration	72	15.5
College of Education	79	17.0
College of Engineering and Computer Science	3	.6
College of Law	16	3.4
College of Medicine	1	.2
College of Nursing and Health Sciences	12	2.6
College of Public Health and Social Work	10	2.2
Honors College	2	.4
School of Hospitality and Tourism Management	43	9.3
School of Journalism and Mass Communication	9	1.9
Total	464	100.0

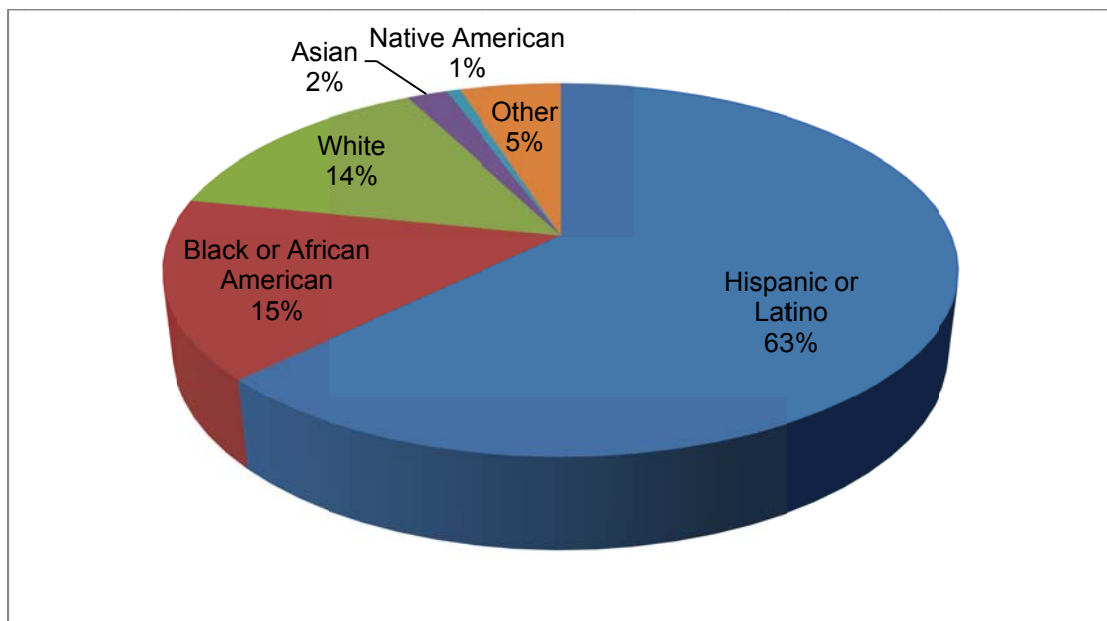
Gender

Of the 464 valid responses, there were responses from 332 women and 132 men. Female students accounted for slightly more than two and a half times the number of male students.

Race/Ethnicity

With respect to race/ethnicity, the highest number of respondents, 291 students, identified themselves as Hispanic or Latino, the second highest number of respondents, 72 students, identified themselves as Black or African-American, 66 identified themselves as White (Caucasian), nine identified themselves as Asian, three identified themselves as Native American, and 23 identified themselves as other. The smaller groups comprising of Asian, Native American and Others were placed into one group for statistical analysis. Figure 3 shows the race/ethnicity of respondents by percentage.

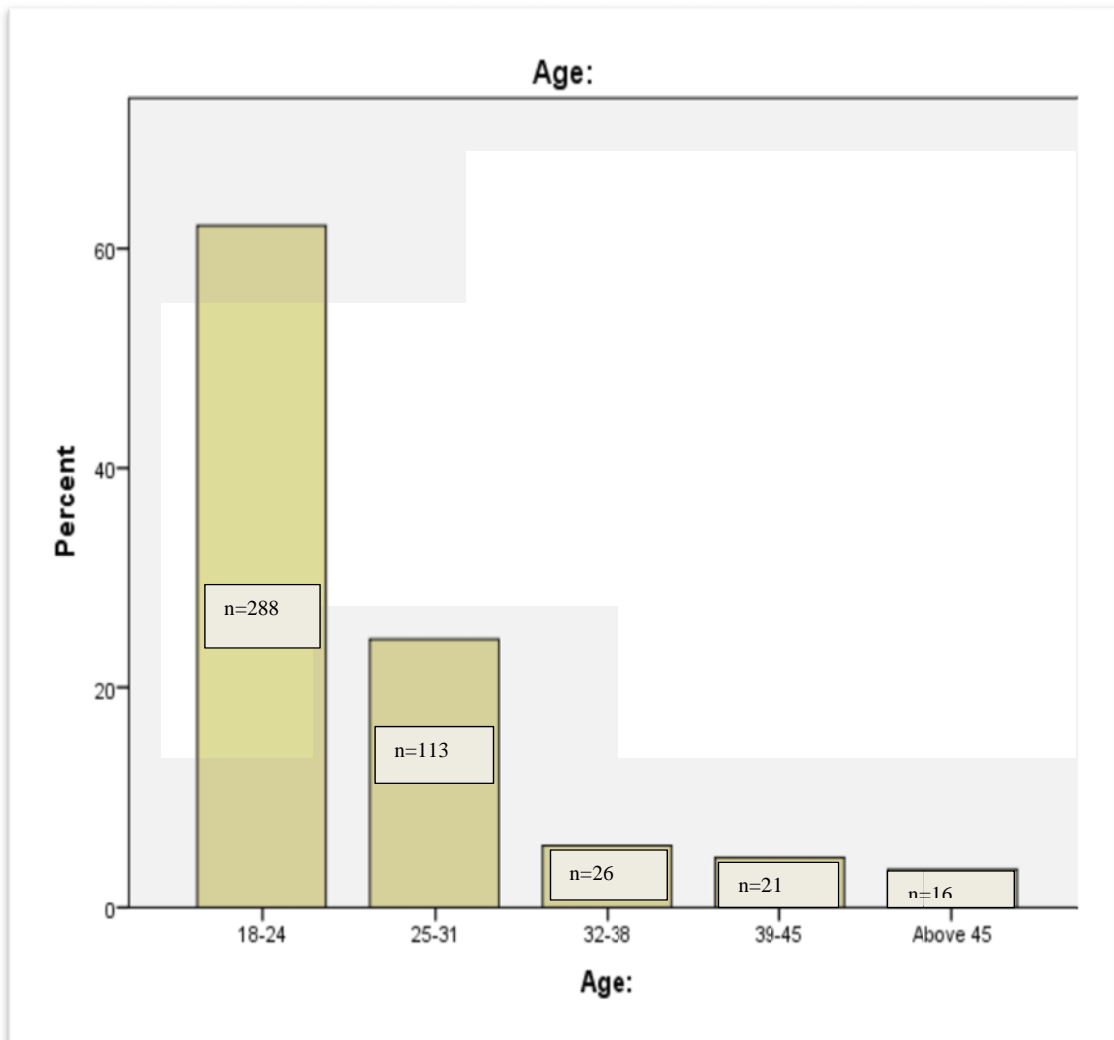
Figure 3. Race/Ethnicity of Respondents by Percentage



Age

The traditional college age group 18-24 was the largest with 288 students. One hundred thirteen students were in the 25-31 age group, twenty-six students were in the 32-38 age group, twenty one students were in the 39-45 age group, and 16 students were above age 45. For statistical analysis, these groups were merged into two categories: 18-24 (288 students) and above 24 (176 students). Figure 4 illustrates the percentages within each group.

Figure 4. Age Group of Respondents



Number of Online Courses Previously Taken

One hundred thirty students reported previously taking 0-2 online courses. One hundred twenty-six students indicated previously taking 3-4 online courses. The majority of students, 208, reported taking more than four online courses. This number represents almost one and half-times the number of students who had previously taken 0-2 courses. Table 7 shows the number of online courses previously taken by respondents.

Table 7

Number of Online Courses Previously Taken by Respondents

Number of Online Courses Previously Taken	Frequency	Percent
0-2	130	28.0
3-4	126	27.2
more than 4	208	44.8
Total	464	100.0

Distribution of Expected Grades

Of the 464 students participating in the study, 180 expected grade A, 98 expected grade A⁻, 68 expected grade B⁺, 63 expected grade B, 34 expected grade B⁻, 12 expected grade C⁺, seven expected grade C, one expected grade D⁺ and one expected grade D. For statistical analysis, the students with expected grades C⁺, C, D⁺, and D were combined into one group called *Below B⁻*, which comprised a total of 34 students. Almost half of the students within the sample (49.9%) expected either grade A or grade A⁻, 35.6% of participants expected B⁺, B, or B⁻, and only 4.5% of the students (21/464) expected grades below a B⁻ grade.

Results for Research Question 1

“To what extent are the two SACSCOC standards, student support services and curriculum and instruction, for online education present in online courses at Florida International University?” In answering this research question, 24 items were used as indicators to measure SACSCOC quality standards. Items 1 to 7 measured the student support standard whereas items 8 to 24 measured the curriculum and instruction standard. Descriptive statistics were then used to report on the frequency, means, and standard deviation of respondents’ answers to these items.

Student Support Services Standard

Item 1: My institution provides students with access to a range of support services (e.g., training, technical assistance, information, and academic support) for their online study. Results 1: One hundred ninety-four (194) respondents strongly agreed, 224 respondents agreed, 20 respondents disagreed, and 26 respondents strongly disagreed with this indicator ($m=3.26$, $SD=.786$).

Item 2: Technical support for online students is always accessible. Results 2: One hundred seventy-one (171) respondents strongly agreed, 242 respondents agreed, 28 respondents disagreed, and 23 respondents strongly disagreed with this indicator ($m=3.21$, $SD= .765$).

Item 3a: My institution has policies and procedures for online students to resolve complaints or conflicts. Results 3a: One hundred thirty-three one (133) respondents strongly agreed, 217 respondents agreed, 83 respondents neither disagreed nor agreed, 16 respondents disagreed, and 15 respondents strongly

disagreed with this indicator ($m=3.94$, $SD=.945$). Item 3b: My institution has policies and procedures for protecting students' personal information (e.g., Course grade, GPA). Results 3b: One hundred ninety-three (193) respondents strongly agreed, 188 respondents agreed, 65 respondents neither disagreed nor agreed, four respondents disagreed, and 14 respondents strongly disagreed with this indicator ($m=4.17$, $SD=.915$).

Item 4a: Prior to enrolling in an online course; students receive professional advice about what is required to succeed. Results 4a: One hundred forty-nine (149) respondents strongly agreed, 204 respondents agreed, and 84 respondents disagreed, and 27 respondents strongly disagreed with this indicator ($m=3.02$, $SD=.858$). Item 4b: Prior to enrolling in an online course; students receive professional advice about the minimum technology required for succeeding in the online course. Results 4b: Two hundred nine (209) respondents strongly agreed, 196 respondents agreed, 42 respondents disagreed, and 17 respondents strongly disagreed with this indicator ($m=3.29$, $SD=.779$).

Item 5: My institution has an adequate number of trained personnel to provide admission or enrollment counseling to online students. Results 5: Ninety-nine (99) respondents strongly agreed, 268 respondents agreed, 73 respondents disagreed, and 24 respondents strongly disagreed with this indicator ($m=2.95$, $SD=.759$).

Item 6: My institution provides services that assist students to use the technology required for online courses. Results 6: One hundred thirty-five (135)

respondents strongly agreed, 287 respondents agreed, 25 respondents disagreed, and 17 respondents strongly disagreed with this indicator ($m=3.16$, $SD=.682$).

Item 7a: Online students can access orientation sessions about online learning and the required technology. Results 7a: One hundred ninety-six (196) respondents strongly agreed, 233 respondents agreed, 24 respondents disagreed, and 11 respondents strongly disagreed with this indicator ($m=3.32$, $SD=.682$). Item 7b: Online students can access the necessary equipment (software/hardware) for the course. Results 7b: One hundred ninety (190) respondents strongly agreed, 249 respondents agreed, 15 respondents disagreed, and ten respondents strongly disagreed with this indicator ($m=3.33$, $SD=.646$).

Curriculum and Instruction Standard

Item 8: My institution's faculty assumes primary responsibility for teaching this online course. Results 8: One hundred forty-eight (148) respondents strongly agreed, 263 respondents agreed, 36 respondents disagreed, and 17 respondents strongly disagreed with this indicator ($m=3.17$, $SD=.718$).

Item 9: My institution has a quality assurance system that enhances the quality of its online courses/programs. Results 9: One hundred seventeen (117) respondents strongly agreed, 159 respondents agreed, 149 respondents neither disagreed or agreed, 23 respondents disagreed, and 16 respondents strongly disagreed with this indicator ($m=3.73$, $SD=1.01$).

Item 10a: Online professors make sure that the course content is appropriate for the level of learning. Results 10a: One hundred sixty-seven (167) respondents strongly agreed, 260 respondents agreed, 25 respondents disagreed, and 12 respondents strongly disagreed with this indicator ($m= 3.25$, $SD=.673$). Item 10b: Online professors make sure that instructional strategies for the course are appropriate to identified learning objectives. Results 10b: One hundred eighty-three (183) respondents strongly agreed, 241 respondents agreed, 27 respondents disagreed, and 13 respondents strongly disagreed with this indicator ($m=3.28$, $SD=.698$).

Item 11: This course utilizes technology that is appropriate to the course. Results 11: One hundred ninety-four (194) respondents strongly agreed, 251 respondents agreed, eight respondents disagreed, and 11 respondents strongly disagreed with this indicator ($m=3.35$, $SD=.637$).

Item 12a: My institution has clear policies regarding intellectual property of new material created for online courses. Results 12a: One hundred forty-three (143) respondents strongly agreed, 160 respondents agreed, 142 respondents neither disagreed nor agreed, nine respondents disagreed, and 10 respondents strongly disagreed with this indicator ($m=3.90$, $SD=.937$). Item 12b: My institution has clear policies regarding compensation for professors who teach online courses. Results 12b: Eighty-six (86) respondents strongly agreed, 105 respondents agreed, 225 respondents neither disagreed nor agreed, 25 respondents disagreed, and 23 respondents strongly disagreed with this indicator ($m=3.44$, $SD=1.01$). Item 12c: My institution has clear policies regarding the use

of revenue derived from intellectual property related to online courses. Results 12c: Eighty-six (86) respondents strongly agreed, 110 respondents agreed, 221 respondents neither disagreed nor agreed, 28 respondents disagreed, and 19 respondents strongly disagreed with this indicator ($m=3.47$, $SD=.994$).

Item 13: My institution provides specialized academic support services for students enrolled in online education. Results 13: One hundred twelve (112) respondents strongly agreed, 254 respondents agreed, 79 respondents disagreed, and 19 respondents strongly disagreed with this indicator ($m=2.99$, $SD=.759$).

Item 14: The instructional duration of this online course is appropriate to the level of the course. Results 14: One hundred sixty-two (162) respondents strongly agreed, 268 respondents agreed, 19 respondents disagreed, and 15 respondents strongly disagreed with this indicator ($m=3.24$, $SD=.679$).

Item 15a: My institution offers online courses/programs that are compatible with the institution's mission. Results 15a: One hundred sixty-two (162) respondents strongly agreed, 237 respondents agreed, 54 respondents neither agreed nor disagreed, 19 respondents disagreed, and 15 respondents strongly disagreed with this indicator ($m=4.17$, $SD=.780$). Item 15b: My institution offers online courses/programs that reflect credit hours equivalent to traditional courses. Results 15b: One hundred eighty-four (189) respondents strongly agreed, 224 respondents agreed, 30 respondents neither agreed nor disagreed, 13 respondents disagreed, and 8 respondents strongly disagreed with this indicator ($m=4.23$, $SD=.828$).

Item 16: Online professors make sure that the online course is taught in a rigorous manner. Results 16: One hundred forty-six (146) respondents strongly agreed, 256 respondents agreed, 51 respondents disagreed, and 11 respondents strongly disagreed with this indicator ($m=3.16$, $SD=.704$).

Item 17: My institution has sound policies and practices for determining the level of credits/credit hours for an online course. Results 17: One hundred forty (140) respondents strongly agreed, 225 respondents agreed, 80 respondents neither agreed nor disagreed, and 10 respondents disagreed, and 9 respondents strongly disagreed with this indicator ($m=4.03$, $SD=.858$).

Table 8 summarizes the descriptive statistics for the presence of the student support services SACSCOC standard and the curriculum and instruction SACSCOC standard in the sampled online courses. In summary, the results indicated that for the sampled online courses at FIU, the presence of the student support services standard was rated slightly higher ($m=3.95/5$, $SD=0.68$) than the presence of the curriculum and instruction standard ($m= 3.90/5$, $SD=0.64$), but there was greater variability with the student support services standard. For the student support services standard, with the exception of a low reported rating for the indicator addressing adequacy of trained personnel to provide admission or enrollment counseling, students rated all the other indicators at 3 or above. For curriculum and instruction, with the exception of the a low reported rating for the indicator addressing specialized academic support services, students rated all the other indicators at 3 or above.

Table 8

Descriptive Statistics of the Presence of the Two SACSCOC Standards in Online Courses

Item	N	Mean	Std. Deviation
Standard: Student Support Services			
Indicator 1	464	3.26	.786
Indicator 2	464	3.21	.765
Indicator 3a	464	3.94	.945
Indicator 3b	464	4.17	.914
Indicator 4a	464	3.02	.858
Indicator 4b	464	3.29	.779
Indicator 5	464	2.95	.759
Indicator 6	464	3.16	.682
Indicator 7a	464	3.32	.682
Indicator 7b	464	3.33	.646
Standard: Curriculum & Instruction			
Indicator 8	464	3.17	.718
Indicator 9	464	3.73	1.005
Indicator 10a	464	3.25	.673
Indicator 10b	464	3.28	.698
Indicator 11	464	3.35	.637
Indicator 12a	464	3.90	.937
Indicator 12b	464	3.44	1.012
Indicator 12c	464	3.47	.994
Indicator 13	464	2.99	.759
Indicator 14	464	3.24	.679
Indicator 15a	464	4.17	.780
Indicator 15b	464	4.23	.828
Indicator 16	464	3.16	.704
Indicator 17	464	4.03	.858

Results for Research Question 2

“Is there a relationship between the student support services, the curriculum and instruction SACSCOC standards for online education and student success in online education (as measured by expected final course grade)?

A Pearson r correlation test was done to answer this question. The results showed that a significant correlation at the .05 level existed between the student support services standard and expected final grade, $r(462)=.111$, $p=.017$. A significant correlation was also found to exist, at the .05 and the .01 levels, between the curriculum and instruction standard and expected final grade, $r(464)=.176$, $p<.001$. There was a significant correlation between the student support services and curriculum and instruction standards, $r(462)=.781$, $p<.001$.

Table 9 shows the correlation between the standards and expected final grade.

Table 9

Correlation Between SACSCOC Standards and Expected Grade

Variable	Correlation	SSS	CI	Expected Grade
SSS	Pearson Correlation	1	.781**	.111*
	Sig. (2-tailed)		.000	.017
	N	464	464	464
CI	Pearson Correlation	.781**	1	.176**
	Sig. (2-tailed)	.000		.000
	N	464	464	464
Expected Grade	Pearson Correlation	.111*	.176**	1
	Sig. (2-tailed)	.017	.000	
	N	464	464	464

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

SSS-Student support services standard; CI-Curriculum and instruction standard

Results for Research Question 3

“Is there a significant difference in student success (as measured by expected final course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards?” Chi-square tests were used to analyze the data for any significant differences in student success (as measured by expected final course grades) between higher rated and lower rated SACSCOC online courses. Higher rated courses were coded as 1 and represented online courses that were rated with a score above the median of 92.5, the overall median for all courses. Lower rated courses were coded as 0 and represented online courses that were rated with a score below the median of 92.5.

Without controlling for any of the covariates, the results of the Chi-square test indicated that the expected grades of students in higher rated SACSCOC courses were significantly different from the expected grades of students in lower rated SACSCOC courses; χ^2 (5, N=464)=16.560, $p<.01$. The distribution of frequency showed that there were 259 students in the lower rated SACSCOC courses as compared to 205 students in the higher rated SACSCOC courses.

Results for Question 3a

“Is there a significant difference in student success (as measured by expected final course grade) between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of discipline?” The results of the Chi-square test indicated that overall, the expected grades of students in higher rated SACSCOC

courses were not significantly different from the expected grades of students in lower rated SACSCOC courses, independent of discipline. When controlling for the College of Arts and Sciences, the results indicated $\chi^2 (5, N=215)=6.026$, $p>.05$; the frequency of the higher rated courses was 114 and the frequency of the lower rated courses was 101. When controlling for the College of Business Administration, the results indicated $\chi^2 (5, N=72)=5.418$, $p>.05$; the frequency of the higher rated courses was 17 and the frequency of the lower rated courses was 55. When controlling for the College of Education, the results indicated $\chi^2 (5, N=79) =2.362$, $p>.05$; the frequency of the higher rated courses was 26 and the frequency of the lower rated courses was 53. When controlling for the School of Hospitality and Tourism Management, the results indicated $\chi^2 (5, N=43)=9.344$, $p>.05$; the frequency of the higher rated courses was 23 and the frequency of the lower rated courses was 20. When controlling for Other Colleges, which jointly comprised eight colleges with small numbers of respondents (College of Architecture and the Arts, College of Engineering and Computing Sciences, College of Law, College of Medicine, College of Nursing and Health Sciences, College of Public Health and Social Work, Honors College, and the School of Journalism and Mass Communication), the results indicated $\chi^2 (5, N=55) =10.457$, $p>.05$; the frequency of the higher rated courses was 25 and the frequency in the lower rated courses was 30.

Results for Question 3b

“Is there a significant difference in student success between online courses that have a higher rating of SACSCOC standards and online courses

that have a lower rating of SACSCOC standards, independent of race/ethnicity?”

The results of the Chi-square test indicated that with the exception of Hispanics or Latinos, the expected grades of students in higher rated SACSCOC courses were not significantly different from the expected grades of students in lower rated SACSCOC courses, independent of race/ethnicity. When controlling for Hispanic or Latino, the results indicated $\chi^2 (5, N=291) = 23.614, p < .001$; the frequency of the higher rated courses was 138 compared to 153 in the lower rated courses. The Hispanic or Latino was the only race/ethnicity with a significant difference. When controlling for Blacks or African Americans, the results indicated $\chi^2 (5, N=72) = 6.136, p > .05$; the frequency of the higher rated courses was 31 compared to 41 in the lower rated courses. When controlling for Whites, the results were non-significant, $\chi^2 (5, N=66) = 4.247, p > .05$; the frequency of the higher rated courses was 27 compared to 39 in the lower rated courses. When controlling for Others, a group jointly comprised of smaller numbers of ethnicities such as Asians, Native Americans, and respondents who did not self-identify with any race/ethnicity, the results were also non-significant, $\chi^2 (5, N=35) = 2.645, p > .05$; the frequency of the higher rated courses was 26 compared to 9 in the lower rated courses.

Results for Question 3c

“Is there a significant difference in student success between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of GPA?” The results of the Chi-square test indicated that with the exception of students whose

reported GPA was between 2.50 and 2.99, the expected grades of students in higher rated SACSCOC courses was not significantly different from the expected grades of students in lower rated SACSCOC courses, independent of GPA. When controlling for GPAs between 2.0-2.49, the results of the Chi-square test indicated $\chi^2 (5, N=108) = 10.230, p>.05$; the frequency of the higher rated courses was 49 compared to 59 in the lower rated courses. When controlling for GPAs between 2.50 and 2.99, the results indicated $\chi^2 (5, N=188)=12.561, p<.05$; the frequency of the higher rated courses was 79 compared to 109 in the lower rated courses. When controlling for GPAs, between 3.0 and 3.49, there was a non-significant results, $\chi^2 (5, N=131)=3.419, p>.05$; the frequency of the higher rated courses was 59 compared to 72 in the lower rated courses. When controlling for GPAs, between 3.5 and 4.0, there was also a non-significant results, $\chi^2 (5, N=37)=2.603, p>.05$; the frequency of the higher rated courses was 18 compared to 19 in the lower rated courses.

Results for Question 3d

“Is there a significant difference in student success between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of gender?” The results of the Chi-square test indicated that the expected grades of students in higher rated SACSCOC courses were significantly different from the expected grades of students in lower rated SACSCOC courses, when controlling for males, $\chi^2 (5, N=132) = 12.803, p<.05$; the frequency of the higher rated courses was 55 compared to 72 in the lower rated courses. On the other hand, the results of the

Chi-square test indicated that there was no significant difference between expected grades of students in higher rated SACSCOC courses and the expected grades of students in lower rated SACSCOC courses when controlling for females, $\chi^2 (5, N=332) = 7.849, p>.05$; the frequency of the higher rated courses was 150 compared to 182 in the lower rated courses.

Results for Question 3e

“Is there a significant difference in student success between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of age?” For a statistical analysis of this question, respondents were classified into the 18-24 age group (288 students) and the above 24 age group (176 students). The results of the Chi-square test indicated that the expected grades of students in higher rated SACSCOC courses were significantly different from the expected grades of students in lower rated SACSCOC courses, when controlling for students in the 18-24 years age group, $\chi^2 (5, N=288)=25.959, p<.001$; the frequency of the higher rated courses was 127 compared to 161 in the lower rated courses. On the other hand, the results of the Chi-square test indicated that there was no significant difference between expected grades of students in higher rated SACSCOC courses and the expected grades of students in lower rated SACSCOC courses when controlling for students in the above 24 years age group, $\chi^2 (5, N=176) = 9.099, p>.05$; the frequency of the higher rated courses was 78 compared to 88 in the lower rated courses.

Results for Question 3f

“Is there a significant difference in student success between online courses that have a higher rating of SACSCOC standards and online courses that have a lower rating of SACSCOC standards, independent of the number of online courses previously taken?” With the exception of the 3-4 number of online courses previously taken, the results of the Chi-square test indicated that the expected grades of students in higher rated SACSCOC courses were not significantly different from the expected grades of students in lower rated SACSCOC courses, independent of the number of online courses previously taken. In the 0-2 number of online courses previously taken category, $\chi^2(5, N=130) = 3.240, p > .05$; the frequency of the higher rated courses was 53 compared to 77 in the lower rated courses. For the 3-4 number of online courses previously taken, the expected grades of students in higher rated SACSCOC courses were significantly different from the expected grades of students in lower rated SACSCOC courses, $\chi^2(5, N=126) = 14.418, p < .05$; the frequency of the higher rated courses was 61 compared to 65 in the lower rated courses. In the group of more than four online courses previously taken, the results of the Chi-square test indicated that the expected grades of students in higher rated SACSCOC courses were not significantly different from the expected grades of students in lower rated SACSCOC courses, $\chi^2(5, N=208) = 6.787, p > .05$; the frequency of the higher rated courses was 91 compared to 117 in the lower rated courses.

Table 10 shows a summary of variables by frequency and their p value when using a chi-square test and controlling for various covariates. Of importance to note is that only four of the variables were significant when controlling for them: Hispanics, 18-24 age group, males, and students who had previously taken 3-4 online courses.

Table 10

Summary of Variables by Frequency

Variables	High Rated Courses	Low Rated Courses	p value
Discipline			
CASCI	114	101	.063
COBADM	17	55	.304
COE	26	53	.797
SHTM	23	20	.053
Other colleges	25	30	.063
Race/Ethnicity			
Black	31	41	.293
Hispanic	138	153	.000*
White	27	39	.541
Other	9	26	.755
GPA			
2.00-2.49	49	59	.069
2.50-2.99	79	109	.028*
3.00-3.49	59	72	.636
3.50-4.00	18	19	.761
Gender			
Female	150	182	.165
Male	55	72	.025*
Age			
18-24	127	161	.000**
Above 24	78	88	.105
Number of courses			
0-2	53	77	.663
3-4	61	65	.013*
Above 4	91	117	.237

*significant at the .05 level; ** significant at the .01 level

Results for Research Question 4

“To what extent are the SACSCOC standards (student support services and curriculum and instruction) for online education predictive of student success (as measured by expected final grade) in online education?” The results of the regression test indicated that the student support services standard was negative and non-significant in predicting student success as measured by expected final grade, $p=.346$. On the other hand, the curriculum and instruction standard was significant in predicting student success as measured by expected final grade, $p=.002$. The R^2 value was .033, and the adjusted R^2 value was .029 with a significant F statistics, $F=(2, 461)=7.837, p=.000$. Table 11 shows the coefficients of the predictor variables and their statistical significance.

Table 11

SACSCOC Standards as Predictors of Student Success as Measured by Expected Course Grade

Predictor Variable	Expected Final Grade		
	β	t	p
Constant (3.929)		8.925	.000
Student Support Services	-.069	.943	.346
Curriculum & Instruction	.230	-3.138	.002*

Note. * $p < .05$

The regression model based upon the coefficients of the predictor variables is as follows: Y (expected final grade) = $3.929 - .69X_1 + .230X_2 + E$, where X_1 represents the SACSCOC student support services standard and X_2 represents the SACSCOC curriculum and instruction standard.

Results for Research Question 5

“Is there a significant interaction between the two SACSCOC standards and GPA in predicting student success (as measured by expected course grade) in online education?” The results of the multiple linear regression showed that there was no significant interaction effect between the two SACSCOC standards and GPA in predicting student success, $F(1, 464) = 2.188, p > .05$. In addition, no significant interaction was found between the student support services standard and GPA in predicting student success, $F(4, 464) = .753, p > .05$, or between the curriculum and instruction standards and GPA in predicting student success, $F(8, 464) = .578, p > .05$. The adjusted R^2 value was .436. Follow-up tests were not done because no significant interaction effect was found.

Table 12

Interaction Effect Between SACSCOC Standards and Student Success

Source	Type III Sum of Squares	Df	Mean Square	F	Sig
Corrected Model	1003.047 ^a	422	2.377	1.848	.009
Intercept	1626.078	1	1626.078	1263.966	.000
SSS_std1	166.058	83	2.001	1.555	.060
CI_std2	257.463	110	2.341	1.819	.016
GPA	23.840	3	7.947	6.177	.001
SSS_std1 * CI_std2	39.175	28	1.399	1.088	.396
SSS_std1 * GPA	3.876	4	.969	.753	.562
CI_std2 * GPA	5.944	8	.743	.578	.790
SSS_std1 * CI_std2 * GPA	2.815	1	2.815	2.188	.147
Error	52.746	41	1.286		
Total	3798.000	464			
Corrected Total	1055.793	463			

a. R Squared=.950

CHAPTER FIVE: DISCUSSION

The purpose of the study was to examine the relationship between accrediting standards and student success. The study was conducted with a sample of 464 students enrolled in 24 undergraduate online courses at FIU during fall 2014. This chapter presents an overview of the problem, a brief summary of the results of the study, and an interpretation of the results within the context of the underlying conceptual framework and the literature reviewed earlier. It concludes by discussing implications and recommendations for future research.

Overview of the Problem

As previously highlighted in Chapter 1, the last two decades, 1990 to 2000 and 2000 to 2010, have seen a phenomenal rise of online education along with projections of continued increase. Concomitant with this growth have been calls for greater scrutiny and higher levels of accountability of online education. Accrediting bodies, the vanguard of collegiate quality, form the cornerstone upon which quality is assured in higher education. As part of their role in assuring quality in online education, SACSCOC developed standards for distance education of which two (student support services and curriculum and instruction) were examined in this study to understand the relationship to student success.

The literature is replete with studies that examine online education in terms of comparisons with face-to-face education (Moore, Dickson-Deane, & Galyen, 2011; Parker, 2012; Rovai, 2004; Wilson & Allen, 2011). These studies have contributed to our understanding of factors that are associated with student

success in online education. However, with the rapid rise of online education, skepticism about its quality, mixed reviews about its effectiveness, and the lack of empirical research addressing the relationship between accrediting standards for online distance education and student success, this study sought to address the gap in our understanding about this relationship.

Summary of the Results

This study sought to determine the association between two of SACSCOC standards for online education, student support services and curriculum and instruction, and student success. With respect to the presence of the two SACSCOC standards in the 24 online courses examined in the sample, the student support services standard was found to be rated 3.95/5, SD=0.68, whereas the curriculum and instruction standard received a slightly lower rating; 3.90/5, SD=0.64. A significant and positive relationship exists between the two SACSCOC standards for online education and student success as measured by expected grades, which supported two of the study's alternative hypotheses.

In evaluating whether a significant difference existed in student success between online courses rated higher in meeting SACSCOC standards and online courses rated lower in meeting SACSCOC standards, the results indicated that overall there was a significant difference, $\chi^2(5, N=464)=16.56, p<.01$ in student success between high and low SACSCOC online courses, with 205 students in the high group and 259 students in the low group. However, in controlling for discipline, no significant difference was observed. In controlling for race/ethnicity, with the exception of Hispanic/Latino, there was no significant

difference in the expected grades among students of other race ethnicity in higher rated and lower rated SACSCOC courses. In controlling for GPA, with the exception of students whose GPA ranged from 2.50-2.99, there was no significant difference in the expected grades between students having different GPAs in higher rated and lower rated SACSCOC courses.

When controlling for gender, there was a significant difference in the expected grades among male students, but for women there was no significant difference. However, in controlling for age, there was a significant difference in the expected grades of students between higher and lower rated SACSCOC courses, for the 18-24 group, but there was no significant difference in expected grades of students between these course groups, for students above age 24. In controlling for the number of online courses previously taken, with the exception of students who previously took 3-4 online courses, there was no significant difference in expected grades between students in higher and lower rated SACSCOC courses across any number of courses previously taken.

The results indicated that student support services were non-significant in predicting student success but curriculum and instruction was significant in predicting student success. The results also indicated that there was no significant interaction effect between the two SACSCOC standards and GPA in predicting student success as measured by expected grade. In examining the standards individually, there was no significant interaction between the student support services standard and GPA in predicting student success or between the curriculum and instruction standards and GPA in predicting student success.

Presence of the Two SACSCOC Standards in Undergraduate Online Courses

An understanding of the extent to which the two SACSOCS standards for online education, student support services and curriculum and instruction were present in online courses at FIU served as a platform to derive a sense of how accountability measures with respect to accrediting standards are implemented in a higher education institution. The student support services standard was rated slightly higher ($m=3.95/5$, $SD=0.68$) than the curriculum and instruction ($m=3.90/5$, $SD=0.64$), but there was greater variability with the student support services standard. Overall, the descriptive statistics indicated that for these two standards, there was little deviation in students' responses and that students rated the two standards as present to a high degree in their online courses.

An analysis of the indicators comprising each standard showed that the highest rated indicator was "My institution offers online courses/programs that reflect credit hours equivalent to traditional courses" ($m=4.23$, $SD=0.828$), followed by the second highest rated indicator "My institution offers online courses/programs that are compatible with the institution's mission" ($m=4.17$, $SD=0.780$). The high ratings for these two indicators suggest that at a structural level, the online courses at FIU are in accordance with the institution's mission and acceptable credit hour norms for face-to-face classes. With respect to the principal-agent theory, these results provide additional evidence of FIU (the agent) fulfilling the mandate of SACSCOC (the principal) in terms of

program/course alignment with its institutional mission and its compliance with established credit hour norms for courses.

By contrast, the lowest rated indicator was “My institution has an adequate number of trained personnel to provide admission or enrollment counseling to online students” ($m=2.95$, $SD=0.759$). Almost 100 students expressed disagreement or strong disagreement with this indicator, by far the only indicator that received such a strong negative review. The second lowest rated indicator was “My institution provides specialized academic support services for students enrolled in online education” ($m=2.99$, $SD=0.759$). These results were both below the neutral level on the 5-point Likert scale and are consistent with the findings of the Instruction Technology Council (2011) results, which indicated that student support services across several higher education institutions were not consistent with the increasing number of students enrolled in online education. Students’ lack of access to a full range of student support services represents one of the largest gaps in online education (LaPadula, 2003).

The results of this study suggest that although the student support services standard received a strong overall rating, there is still room for the improvement of this standard at FIU, the setting of this study, in the critical areas aforementioned. With the emphasis of accreditors on student support services for online education, it is critical that universities seek to give the appropriate level of attention to developing their student support services, especially when taking into consideration that undergraduate on-campus students typically have access to a greater number of resources than their online counterparts do. For

example, on-campus students have access to internship assistance, resume critique and development, career fairs, counseling and psychological services, and one-one academic success support in reading, writing, study skills, as well as several other subject areas.

Relationship Between the Two SACSCOC Standards and Student Success

The results of the Pearson r correlation test indicated that a significant correlation exists between each of the SACSCOC standards and student success. For the student support services, there was a positive correlation with alpha at the .05 level, $r(464)=.111, p=.017$. Similarly, a positive correlation result with a strong significance level was obtained between curriculum and instruction and student success, $r(464)=.176, p<.001$. These results essentially mean that high ratings in the student support services or curriculum and instruction standards will be associated with high scores in students' expected final grade. Similarly, low scores in either of these standards will be associated with low scores in students' expected final grade.

The Pearson r correlation coefficient for each standard was slightly above .1: .111 for student support services and .176 for curriculum and instruction. Pearson r correlation coefficient can range from -1 to +1 with values closer to either -1 or + 1 suggesting a stronger relationship between the variables under consideration. There is a range of interpretations of the correlation coefficient and at times criticisms arise because of the lack of an explicit interpretation of its range of coefficients (Lee & Nicewander, 1988). Accordingly, Pearson r correlation coefficient must be interpreted with due caution and without ascribing

unjustified meanings or strengths of association to it (Howell, 2013). Typically, when interpreting strength of associations, coefficients from .01 to .1 are considered as having a negligible relationship between variables, with the strength of the association becoming stronger as the Pearson r value approaches 1 (Howell, 2013; Moore, McCabe, & Craig, 2012).

Given the low Pearson r correlation coefficients for both of these standards, it may be argued that the strength of the association between these standards and student success is minimal, negligible, or even meaningless. However, it is advisable, particularly with low r correlation values, to square the correlation in order to arrive at a clearer understanding of the strength of the association between the variables (Moore et al. 2012). When squared, the R^2 value for the student support services standard was .01 or 1% and the R^2 for the curriculum and instruction standard was .03 or 3%.

Although the R^2 values for both standards were found to be small, a low R^2 value ought to be thoroughly examined before thoughts of its dismissal or negligible effects are entertained (Newman & Newman, 2000). This contention does not downplay the importance of having a large R^2 , rather it points out that low R^2 value can be meaningful, particularly in the social sciences. According to Newman and Newman, “predictive efficiency has been shown to have relatively little practical value in the social sciences, since many of the predictor variables tend to have small effects” (p.3). While not negating the desirability of a large R^2 , what is important in the social sciences, is if the small R^2 values can be replicated with consistency, which would give it a huge effect over time (Newman

& Newman, 2000). Rosenthal and Rosnow (1991) illustrate the significance of a low R^2 value by highlighting a medical study about a drug that helps to improve organ transplant retention. In this study, Rosenthal and Rosnow demonstrated that even though the transplant drug had a low 1% effect size (which was similar to the small R^2 values found with the student support services and curriculum and instruction standards), there was a tremendously large outcome in saving the lives of approximately 10,000 patients per year. This supports Newman and Newman's argument that practical value may exist even in low R^2 values.

Other studies examining the association between other accountability measures and student achievement have concluded that accountability measures are rarely the main contributor, and in fact, their effects are typically marginal or non-significant (Orosz, 2012; Rabovsky, 2012; Shin, 2010; Volkwein & Tanberg, 2008). However, Hanushek and Raymond (2004) temper these conclusions by suggesting that accountability measures, including standards, make possible higher levels of student achievement than would have occurred in the absence of these accountability measures. In this study, although a low correlational value was found between each of the SACSCOC standards and student success as measured by expected grades, this study endorses Hanushek and Raymond's conclusions as well as Rosenthal and Rosnow's (1991) position on the basis that accreditation standards are intended to serve also as benchmarks for improvement. Therefore, overtime, the 1% or 3% variance attributed to the two SACSCOC standards could yield potential improvement in student success.

Difference in Student Success Between Online Courses That are Rated High in SACSCOC Standards and Online Courses That are Rated Low in SACSCOC Standards

The purpose of testing whether a difference exists in student success between higher and lower rated SACSCOC courses was to determine whether there is a relationship between the two SACSCOC standards and student success. In this respect, the underlying assumption was that if a significant difference exists then it means that the standards are related to student success. This assumption is supported by the claim that “accreditation standards imply an organizational intervention for change” (Riveras & Huertas, 2008, p.2).

It is important when examining new accountability systems to consider the range of multiple factors that could have a stake in influencing student achievement (Hanushek & Raymond, 2004). The various components of this research question, 3a-3f, thus sought to provide a clearer perspective on the role that covariates such as discipline, race/ethnicity, GPA, gender, age, and number of previously taken online courses play in relation to student success.

Without controlling for any of the covariates, the results of the Chi-square test revealed that there was a significant difference in student success (as measured by expected course grade) between courses rated high and courses rated low in meeting the two SACSCOC standards. A further analysis of these results showed that this difference arose specifically from students, with expected course grades below B, being twice as likely to be found in low rated SACSCOC as high rated SACSCOC courses. These findings support the

alternative hypothesis that a significant difference exists in student success between online courses rated low and online courses rated high in meeting SACSCOC standards. Moreover, the results support one of the underlying assumptions of this study that accrediting standards are intended to enhance institutional and student learning performance. The results further affirm Rivera and Huertas' (2008) claim that accrediting standards are guideposts for organizational improvement. In addition, these results are consistent with the results of the simple correlations for research question 2, which indicated a positive and significant relationship between each of the SACSCOC and student success as measured by expected course grade.

In controlling for discipline, there was no significant difference in student success (as measured by expected course grade) between low rated and high rated SACSCOC courses. This means that students' choice of discipline is not related to student success between low rated and high rated SACSCOC courses. Thus, student performance was comparable across the 12 disciplines examined in this study. These results suggest that no one particular discipline can be considered as being favorably predisposed to having a greater degree of student success in online education than another discipline. Because of the comparable performance in student success (as measured by expected course grades) across the various disciplines, it is likely that there other factors above and beyond the course quality (as measured by the two SACSCOC standards- student support services and curriculum and instruction) that are more important in influencing student success in online education.

With respect to race/ethnicity, there was a significant difference in student success (as measured by expected course grade) between low rated and high rated SACSCOC online courses, only when controlling for Hispanics. These results indicate that there is a relationship between student success as measured by expected course grade and the SACSCOC rating of online courses for Hispanic students taking online courses. Given that almost 63% (291/464) of the students in the sample were Hispanics, it was likely that even small differences in student success for low rated and high rated SACSCOC could be found to be statistically significant for Hispanics. However, a further analysis of the results revealed that of the 68 Hispanic students with expected grades below B+, there were 49 Hispanic students in low rated SACSCOC courses compared to only 19 Hispanic students (a significant difference) in the high rated SACSCOC courses. This analysis suggests that Hispanic students in high rated SACSCOC courses were less likely to have expected grades below B+ than were Hispanic students in low rated SACSCOC courses. According to the results, Hispanic students appeared to be more sensitive to course quality, as measured by the two SACSCOC standards, than were non-Hispanic students.

When controlling for the other race/ethnicities under investigation in this study (Asians, Black/African-American, Native-Americans, and Whites), there was no statistical significant difference in student success between low and high rated SACSCOC online courses. This means that there was no relationship between the SACSCOC rating of online courses and student success when for Asians, Black/African-Americans, Native-Americans, and Whites. These results

suggest that there are other existing factors, besides course quality, that are more important in influencing student success for this group of online students.

Research on the subject of ethnicity in online education with respect to student success has produced mixed results with some studies positing that a significant relationship exists (Patterson and McFadden, 2009; Urtel, 2008) while others concluded that no such relationship exists (Amro, Mundy, & Kupczynski, 2015; Kupczynski, Gibson, Ice, Richardson, & Chaloo, 2011). Future research should aim at examining differences in student success across the various race/ethnicities in a sample drawn from the equal representation of the different race/ethnicities.

In controlling for GPA, with the exception of students whose GPAs ranged from 2.50-2.99, there was no significant difference in the expected grades between students having different GPAs in higher rated and lower rated SACSCOC course. There is thus a significant relationship between higher and lower rated SACSCOC online courses and student success for GPAs from 2.50-2.99. For GPAs within the range 2.50-2.99, the significant difference in student success between low and high rated SACSCOC online courses arose from students who had expected course grades less than B. Of the 42 students with GPAs within the range 2.50-2.99 and having expected grades below B, 32 students were found to be in courses rated lower in meeting SACSCOC standards while only 10 students were found in the higher rated SACSCOC courses. Thus, the results indicated that students in this GPA range (2.50-2.99) appeared to be more sensitive to SACSCOC standards in their online courses

than were students outside of this GPA range. These results suggest that faculty and administrators should seek to give adequate attention, particularly, to students within the 2.50-2.99 GPA range that are enrolled in online courses so that these students receive appropriate levels of student support services and quality instruction.

No difference in student success as measured by expected course grade was found to exist between higher and lower rated SACSCOC online courses when controlling for GPAs outside of the 2.50-2.99 range. This means that course quality was a non-significant factor in influencing student success for students with GPAs 2.00-2.49, GPAs 3.00-3.49, and GPAs 3.50-4.00. These results suggest that the course quality, as measured by the two SACSCOC standards, do no matter for students averaging B and above, and for those students averaging C⁺ and below. It appears then that there may be other salient factors influencing the performance of these groups of students. For example, it is possible that students averaging B and above in their online courses are intrinsically motivated to a high extent and as such the course quality, whether high or low, makes no difference to their performance. On the hand, the performance of students averaging C⁺ and below may be more likely influenced by the degree of interaction with the instructor and other students, the course structure and types of assignments whether groups based or individual, learning at their own pace, or the nature of feedback provided than they are influenced by the course quality, as measured by the two SACSCOC standards.

Previous studies examining the relationship between GPA and student success (Wilson and Allen, 2011; Wojciechowski and Palmer, 2005) have concluded that there is a significant correlation as well as predictive validity between GPA and student success in online courses. Although both of these aforementioned studies acknowledged that higher GPAs are associated with higher student grades, neither of them examined the relationship between specific ranges of GPAs and student success. On the other hand, the results of this research indicate that students with GPAs in the 2.50-2.99 are more sensitive to student support services as well as curriculum and instructional quality standards in their online courses than students outside of this GPA range. In addition, students with GPAs in the 2.50-.2.99 range with expected grades below B⁺ are three times likely to be found in online courses rated low in meeting SACSCOC standards than in online courses rated high in meeting SACSCOC standards.

When controlling for gender, there was a significant difference in the expected grades between high and low rated SACSCOC courses for male students, but for women there was no significant difference. Male students enrolled in online courses rated low in the two SACSCOC standards tended to be less likely to have expected course grades above a B than their male colleagues who were enrolled in online courses rated high in the two SACSCOC standards. These results indicate that the rating of online courses for SACSCOC standards and student success (as measured by expected course grade) do make a difference for male students. From the results of the study, male students are,

therefore, likely to need higher course quality, in terms of these two SACSCOC standards, in order to succeed than their female counterparts would need.

There was no association between online courses rated low or high in meeting the two SACSCOC standards and student success for female students. Female students appeared to be less sensitive to course quality in terms of the two SACSCOC standards than were male students. From the results of this study, it is likely that there are other existing factors besides course quality, as measured by the two SACSCOC standards, which are important in influencing student success in online education for female students.

These results were partially contrary to previous research (Volery and Lord; 2000, Yukselturk and Bulut; 2007), which concluded that there is no significant relationship between gender (including male and female) and student success. One possible explanation, for the partially conflicting findings with gender, is that the studies by Volery and Lord as well as Yukselturk and Bulut did not attempt to examine differences in student success from a course quality perspective when controlling for gender. Although a few studies have reported a relationship between gender and student success in online education (Tekinarslan, 2011; Chung, 2007), the majority of the studies reviewed in this research (Daymont and Blau, 2008; Patterson and McFadden, 2009; Volery and Lord, 2000; Yukselturk and Bulut; 2007) concluded that there is no relationship between these two variables. Thus, mixed findings exist.

When controlling for age, there was a significant difference in the expected grades of students in the 18-24 years age group between higher and

lower rated SACSCOC courses. The results for students in the 18-24 age group showed that significantly far more students expected grades above B in high rated SACSCOC online courses than in low rated SACSCOC online courses. Therefore, the quality of online courses, as measured by SACSCOC standards, do appear to make a difference for traditional students (18-24 years old).

For students above age 24, there was no significant difference in their expected grades between higher and lower rated SACSCOC courses. Therefore, it is highly likely that the performance of students above age 24, non-traditional students, are more influenced by other salient factors than course quality, as measured by the two SACSCOC standards. It is possible that non-traditional students are more responsive to other factors such as the relevance of course material to their job area or the degree of flexibility afforded by taking online classes than course quality. The majority of prior studies have tended to conclude that no association exists between students' age and student success (Amro et.al, 2015; Urtel, 2008; Yukselturk & Bulut, 2007). On the other hand, these results showed that differences do exist but only for students age 18-24.

In controlling for the number of online courses previously taken, with the exception of students who previously took 3-4 online courses, there was no significant difference in expected grades between students in higher and lower rated SACSCOC courses across any number of courses previously taken. Therefore, a relationship exists between the number of online courses previously taken by students and student success (as measured by expected course grade) for students who had previously taken 3-4 online courses. Students who had

previously taken 0-2 or more than five online courses were less sensitive to course quality than were students who had previously taken 3-4 online courses. It is possible that students who had previously taken only 0-2 online courses do not feel comfortable taking online courses, and they are more influenced by other factors than course quality such as the perceived straightforwardness of the course. It is also likely that students had taken more than five online courses do enjoy taking online courses, and as such, the quality of the course may matter very little to them, except that the course is offered online.

Studies show a significant association between the number of online courses and student achievement (Beyrer, 2010; Wojciehowski & Palmer, 2005). On the other hand, the results of my research indicated that this association was true but only for students who had previously taken 3-4 online courses. Previous research by Dickison et al. (2006) concluded that students enrolled in accredited paramedics programs tended to outperform students enrolled in non-accredited paramedic programs. However, the focus of Dickison et al.'s study was not on accrediting standards but on differences in student success between accredited and non-accredited programs, whereas this section of my study examined differences in student success between higher and lower rated SACSCOC courses. The results of Dickison et al.'s research could be logically interpreted within the context of my study to mean that students in courses rated higher in meeting accrediting standards will perform significantly better than students perform in courses rated lower in meeting accrediting standards, which is consistent with the overall findings of research question 3 of this study.

Predictive Validity of the Two SACSCOC Standards

Multiple regression analysis was used to determine the extent to which the independent predictor variables (SACSOC standards), student support services and curriculum and instruction, predict the dependent variable, student success. The overall model with the two SACSCOC standards was significant in predicting student success, $F(2, 461) = 7.837$, $p < .001$ and $R^2 = .033$, which meant that at least one of the SACSCOC standards was significant in the model. When the contribution of each standard to the model was examined, curriculum and instruction was a significant predictor in the model with coefficient $\beta = .230$ and $p = .002$. Thus, for every one unit change in the curriculum and instruction SACSCOC standard, when controlling for the student support services standard, there will be .230 unit change in student's expected grade.

From the results of this study, the curriculum and instruction SACSCOC standard was determined to be a valid predictor of student success (as measured by expected grade). The results of the curriculum and instruction standard being predictive of student success were not surprising because of the consistency with previous research that identified effective instruction as a major quality indicator and a common denominator in enhancing student achievement in online education (Gayton & McEwen, 2007; Lord & Volery, 2000; Marks, Sibley & Arbaugh, 2005). These studies placed a great emphasis on the instructor-student interaction as a central component of effective instruction for online education.

A closer examination of the SACSCOC curriculum and instruction standard (see Appendix A), however, reveals that that with the exception of two indicators, all of the other six indicators tend to focus on institutional policy issues and program features instead of indicators more directly related to student learning outcomes or course instructional design. These six indicators can be regarded as being more input related rather than process or outcome based. This observation together with studies that identify student-instructor interaction, student-student interaction and student-content interaction as essential to student success raises questions about whether SACSCOC standard comprising indicators that focus directly on student learning outcomes and instructional design would enhance its predictive validity.

The other predictor variable, student support services, was statistically non-significant in the model with $\beta=-.069$ and $p=.346$, even though it was found to be significantly correlated with student success, $r=.111$ and $p=.009$. One possible explanation for this result is multiple collinearity between the student support services and curriculum and instruction standards, which was reflected in a high correlation between these two standards, $r=.781$.

According to the regression model that was used to help answer research question 4 on page 76, it appears that the partial regression weight was negative ($\beta=-.069$) but statistically non-significant ($p=.346$), which means that the student support services standard was non-significant when controlling for the curriculum and instruction standard, such that the higher the score on the student support services standard, the lower the expected course grade. If one looks at the

simple correlations, the relationship is positive for student support services as well as curriculum and instruction, which infers that the unique variance being predicted by the student support services standard that is not accounted for by the curriculum and instruction standard is negatively related to student success as measured by expected course grade. This occurrence is counter to what was expected given that the simple correlations were positive and previous research identified student support services as a major quality indicator and a common denominator in optimizing student achievement in online education (LaPadula, 2003; Lee, Srinivasan, Trail, Lewis, & Lopez, 2011).

The aforementioned results are difficult to interpret pragmatically because we cannot identify the variance specifically accounted for by the student support services when controlling for the curriculum and instruction standard. Moreover, the results do not align with the researcher's expectations of what should happen in light of the simple positive correlations. Yet, at times, it is possible for a coefficient in the regression model to be significantly or non-significantly negative (Howell, 2013). According to Howell, when this occurs, the coefficient is referred to as a suppressor variable, meaning that it has a stronger correlation with the residual of the expected grades than with the expected grades. As such, one needs to speculate the unique variance that is being accounted for by the suppressor variable, in future research.

Previous research examining predictors of student success in online education have presented several models and reached varying degrees of conclusion about their predictive validity. For example, Moore and Kearsley

(2012) portended that a student's educational background was the best predictor of student success in online education compared to other personal student characteristics. On the other hand, another model concluded that students' cognitive strategy use and self-motivation are more valid predictors of online student success (Yukselturk and Bulnut, 2007) than a student's educational background. The validity of a student's cognitive style as a predictor of student success was examined in another study, which concluded that "cognitive style scores and online technologies self-efficacy scores were poor predictors of student success in online distance education courses" (DeTure, 2004, p. 21).

Although these conflicting models provide insight into how a student background including personal characteristics relate to their chances of being successful in online education, they do not provide insight into how factors directly related to the course such as accountability measures inclusive of accreditation standards influence students' chance of success.

It is of immense salience to be able to assess the likelihood of students succeeding in online education so that appropriate academic and student support services can be provided to students, particularly to those students who may be at risk of performing poorly in an online environment. Being able to predict a student's chance of success even prior to enrolling in an online course or program will allow administrators to make key decisions and advise students accordingly. Thus, models that accurately predict student success in online education are very useful especially if they integrate factors directly related to the course with factors related to students' background characteristics.

Interaction Effect Between SACSCOC Standards and GPA in Predicting Student Success

Applying an interaction effect within a regression model introduces further clarity on the nature of the relationship between or among variables. Interaction effects are described as “often among the most interesting results we obtain” (Howell, 2013, p. 412). In fact, it is accepted that an interaction effect could generate higher levels of interest than the main effect (Howell, 2013). Since it was previously established that only the curriculum and instruction SACSCOC standard had predictive validity for student success, it was interesting to determine whether the interaction between these standards and GPA had any significant relationship to student success.

The study’s results showed a non-significant interaction effect between the two SACSCOC standards and GPA in predicting student success. In addition, when considering the standards individually, no significant interaction effect was found with GPA. This non-significant interaction effect was a bit surprising given that one of the variables tested in the interaction model was undergraduate GPA, a key variable well documented in the higher education literature as having predictive validity for student achievement. It was theorized, within this study that if one of the SACSCOC standards was predictive of student success, and it is widely accepted that GPA is predictive of student success then it was likely that the interaction of the standards and GPA would possibly yield a significant interaction effect. However, this expectation was found to be inconsistent with the results of the study, which revealed a non-significant interaction. Given that a

two-tailed test of significance was used in this study, utilizing a one-tailed test of significance would have possibly altered the statistical significance findings of this non-significant interaction effect.

Limitations

This study was conducted with a sample of 464 students across seven disciplines enrolled in undergraduate online courses at FIU. Consequently, the most appropriate generalizations are limited to the population of undergraduate students enrolled in online courses at FIU. The 24 courses that were selected were taught during fall 2014, which may limit conclusions about courses in other semesters, past or future, due to courses being revised periodically and they may reflect different standards within any given semester.

Another limitation of the study was that the instrument utilized did not seek to ascertain whether the online course in which the student was enrolled was a core course or an elective. It is possible that students' performance may have varied significantly depending on whether the course was a core course or elective for them.

This study examined two of the nine SACSCOC standards for online education. Therefore, conclusions were limited to the two standards under examination without inferences being drawn to the remaining seven standards. In addition, this study was designed to investigate correlations among variables; therefore, causal statements could not be drawn from its results and analyses.

Implications

One of the key principles of accountability in accreditation acknowledged by the Council for Higher Education Accreditation (CHEA) is “a strong institution-accreditor relationship is central to assure that institutions, in carrying out their academic leadership responsibilities, are appropriately scrutinized with regard to achieving their goals” (CHEA, 2011, p.1). The principal-agent theory, interwoven within CHEA’s accountability principle of goal scrutiny, postulates that oversight power or oversight mechanisms are set up by the principal to ensure that its goals are being carried out by the agent. In the context of this study, the oversight mechanisms used by SACSCOC are the accrediting standards prescribed by SACSCOC for institutions offering distance education.

Although the application of quality assurance procedures and accreditation standards to online education is still in its inchoate stages (Latchem and Jung, 2012), the proliferation of online education and projections of further increase suggest that online education will remain a permanent and viable feature of the higher education landscape. Therefore, establishing systems in order that the delivery of online education meets acceptable definitions and norms of quality is of paramount importance for institutions and accreditors.

The significance of accrediting standards for online education becomes even more relevant when taking into consideration that the majority of chief academic officers at colleges and university acknowledged “that regional and specialized accreditation standards and expectations were the main drivers of outcome assessment initiatives on their campuses” (Provezis, 2010, p.5). If

institutions outcome assessment systems are driven largely by accreditation standards then it is important that the standards being used have a well-defined association with student learning and program outcomes.

The results of this study showing a positive correlation between each standard (student support services and curriculum and instruction) and student success, as well as the predictive validity of the curriculum and instruction standard highlight, to a certain extent, the utility of accrediting standards for online education. Moreover, the results provide an empirical basis upon which an institutional strategy for student success can be formulated.

Implications for practice. In fall 2014, there were 17,042 students taking at least one online course at FIU (FIU Office of Planning and Institutional Research, personal communication, October 7, 2014). This number represents approximately 45% of the total undergraduate student enrollment for the fall 2014 semester. Moreover, in fall 2013, FIU offered 671 undergraduate online courses and by fall 2014, this number increased to 826 courses, which represents a 23% increase in undergraduate online courses (FIU Online, 2014). The rising number of student enrollment and course offerings at FIU suggests that increase demands will be placed upon resources required to deliver online education in an effective way.

According to SACSCOC, one of the fundamental characteristics of accreditation is a clear expectation that an institution establishes appropriate systems so that “its programs are complemented by support structures and resources that allow for the total growth and development of its students”

(SACSCOC, 2012, p.3). Underlying this expectation is the assumption that given the right types of institutional support structures and resources, students' development and growth will occur. The results of the study support this assumption by establishing a positive association between the two SACSCOC standards for online education (student support services and curriculum and instruction) and student success.

The principal-agent theory discussed in Chapter 1 highlights two main problems that may occur between the principal and agent: goal conflict and informational asymmetries (Eisenhardt, 1989). From the results of the study, goal conflict was not identified as problematic in the relationship between the principal (SACSCOC) and the agent (FIU). For goal conflict to have emerged as an issue, the agent (FIU) would have to be pursuing an agenda that is different from its stated institutional mission and the SACSCOC prescribed standards for online education. No evidence was found of the agent being non-compliant in implementing the two SACSCOC standards or pursuing an alternate institutional mission.

According to the results of the study, it can be argued that informational asymmetries exist with respect to the student support services standard. A close examination of the results for the indicators associated with the student support services standard revealed that on average, students disagreed that they "have adequate access to the range of services appropriate to support the programs offered through distance and correspondence services" (SACSCOC, 2012b, p.3). The inadequacy of access to a range of student support services for students

enrolled in distance or online education, as expressed by students in this study, appears to be information that is knowledgeable to the agent, at least at the level of students. However, internally at the level of administrators and externally at the level of the principal, this awareness may be less evident.

The results of the first research question helped to shed light on the extent that the two SACSCOC standards were present within online courses as reported by a sample of students taking these online courses. These results revealed that both of the SACSCOC standards examined in this study were present to a significant extent in FIU's online courses with the exception of a few indicators associated with these two standards. Consequently, the results suggest that goal conflict was absent but informational asymmetry was present to an extent with respect to the two SACSCOC standards, student support services and curriculum and instruction, examined in this study. However, the results of the study do not advance or imply that goal conflicts and or informational asymmetries may or may not exist with respect to the other seven SACSCOC standards that were not examined in this study.

Based upon the results of this study, the two SACSCOC standards ought to be regarded as more than simply a point of reference or token compliance with a regulatory oversight authority. Although marginal, both student support services and curriculum instruction standards were found to have positive correlations with student success. Academic units at FIU ought to attach the requisite level of significance in the implementation and regular assessment of these standards within online courses so as to maintain compliance with

SACSCOC and enable its online students to be more successful in their online education. In this respect, practitioners need to give the correct level of emphasis and attention to the implementation, monitoring, and evaluation of indicators linked to each of these standards, particularly with respect to student support services in critical areas such as student advising and having adequate trained personnel.

Implication for theory and research. A frequently debated shortcoming of accrediting standards is that the online education standards tend to address similarities between face-to-face education and online education (Eaton, 2000; Lezberg, 2003). This study underscores that although similarity may exist between the standards for these different mediums of instruction and learning, the SACSCOC standards for online education were ascertained to be positively correlated with student success. This study, therefore, contributes to the existing body of literature on accountability measures and online education by examining accreditation standards for online education and student success.

Given that the curriculum and instruction SACSCOC standard was found to be significant in predicting student success, new knowledge was added to theories about student success in online education and the designs of online courses with respect to accreditation standards. Currently, there is no theory of accrediting standards with respect to online education; researchers can use the results of this study as a basis for developing such a theory.

Recommendations for Future Research

Concerns about retention rates, completion rates, and students' access to adequate student support services have precipitated doubts and skepticism about the quality and effectiveness of online education. The research design utilized and the results obtained from the study have been informative in advancing eight key recommendations for future research that would address some of these concerns.

One of the first recommendations would be to have this study replicated with students' actual grades rather than with their expected grades. The degree of acceptability of the study's results would likely be increased when actual grades are used. Although the use of self-reported measures of grades and GPA is not uncommon within the literature, the utilization of self-reported grades in this study was justified on the basis of a high correlation (.74 to .94) to actual grades (Anaya, 1999; Kuncel, et al., 2005; Ventura, Shute, & Kim, 2012). In the same vein, the use of students' actual GPA instead of their reported GPAs would also likely enhance the acceptability of the overall results to skeptics who criticize the use of self-reported measures. At the same time, however, the use of students' actual grades and GPA would probably result in a much lower response rate than in this study, due to students' possible concerns about releasing personal information via an online survey.

Second, although the majority of growth in online education comes from undergraduate students (Radford, 2011), a study that builds upon this one by including graduate online education with the same set of standards would offer a

broader perspective on the association of the two SACSCOC standards with student success. The data from this study revealed that a positive correlation, though marginal, exists between the two SACSCOC standards and student success within the context of undergraduate online education. However, it is possible that for graduate online education, these results could be entirely different. On the other hand, if the results are the same then the claims of this study could be extended to the graduate level.

Third, future studies should aim at examining whether students' performance in online education vary by whether students' are enrolled in elective or core courses. Findings from such a study would make an important knowledge contribution to faculty and administrators because insight will be provided as to whether students are performing better or worst in online courses that are elective courses or in courses that are core courses. Consequently, depending on the outcome of the results, appropriate intervention can be made into these two types of courses.

Fourth, future research should consider incorporating a broader definition of student success that encompasses not only students' final grades, but also includes student retention. The 2012 U.S. Senate Committee on Health, Education, Pension, and Labor reported very low student retention in several for-profit institutions offering online education, with rates as low as 16%. Expanding this study to encompass student retention will shed light on the state of online student retention for public non-profit institutions, which offer online education

and how student retention in the public non-profit context compares to the other types of institutions offering online education.

Fifth, this study focused on two of SACSCOC standards and involved the cross-sectional survey and analysis of student data to draw inferences about the association of these standards with student success, and it was argued that utility exists in determining student success by examining the types of standards that are built into online courses. Consequently, future research should expand these standards to include faculty because faculty are the main drivers of the curriculum and instruction process and for online education, the role and significance of the faculty cannot be overstated. However, although faculty play such a major role in the curriculum and instruction process, “all regional accreditation standards are weak in respect to means of assuring such [faculty] involvement” (Provezis, 2010, p.13). Therefore, it will be helpful to understand how the SACSCOC faculty standard in its current form is associated with or predictive of student success and whether Provezis’ claim of deficiency with respect to the faculty accrediting standard has any merit.

Sixth, in light of conflicting models from previous research that have been presented as a basis for predicting student success in online education, further research is needed to arrive at models that are considered valid and have broad based support within the online community. Most of the models predicting student success in online education have been derived from studies conducted at one institution or in one discipline. Therefore, oftentimes, these models conflict because of their limited generalizability and findings from other

institutions or disciplines that support other conclusions. Consequently, future research that is multi-institutional and cross-disciplinary will likely have higher estimates of validity and reliability.

Seventh, future research with a mixed-method design that examines the same two SACSCOC standards or additional SACSCOC standards could be valuable in discovering and analyzing data that may have been more difficult to capture and analyze in a quantitative correlational study, such as this one. In addition, the inclusion of a qualitative component to this study will be helpful in clarifying and expanding on participants' responses to some of the survey questions. For instance, instead of responding to closed-items on a 5-point Likert scale about the student support services SACSCOC standard, students in an interview or focus group could identify the support services areas that they believed were absent, required improvement, or were critical to their success as online students. Students could also identify aspects of the curriculum and instruction SACSCOC standard that they regard as most or least beneficial to their success. Undoubtedly, such data will generate greater insight, from students' perspective, as to whether the two SACSCOC standards, other course design features, or students' personal characteristics have more of a significant role in their success in online education.

Finally, I recommend to FIU that its student support services for online students be comprehensively examined to identify areas that need to be strengthened and reformed to enhance student success as well as improve student satisfaction.

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APPENDIX A: SACSCOC STANDARDS FOR DISTANCE EDUCATION

Standard: Student Support Services

- a) Students have adequate access to the range of services appropriate to support the programs offered through distance and correspondence education.
- b) Students in distance or correspondence programs have an adequate procedure for resolving their complaints, and the institution follows its policies and procedures.
- c) Advertising, recruiting, and admissions information adequately and accurately represent the programs, requirements, and services available to students.
- d) Documented procedures assure that security of personal information is protected in the conduct of assessments and evaluations and in the dissemination of results.
- e) Students enrolled in distance education courses are able to use the technology employed, have the equipment necessary to succeed, and are provided assistance in using the technology employed.

Standard: Curriculum and Instruction

- a) The faculty assumes primary responsibility for and exercises oversight of distance and correspondence education, ensuring both the rigor of programs and the quality of instruction.
- b) The technology used is appropriate to the nature and objectives of the programs and courses and expectations concerning the use of such technology are clearly communicated to students.
- c) Distance and correspondence education policies are clear concerning ownership of materials, faculty compensation, copyright issues, and the use of revenue derived from the creation and production of software, telecourses, or other media products.
- d) Academic support services are appropriate and specifically related to distance and correspondence education.
- e) Program length is appropriate for each of the institution's educational programs including those offered through distance education and correspondence education.
- f) For all degree programs offered through distance or correspondence education, the programs embody a coherent course of study that is compatible with the institution's mission and is based upon fields of study appropriate to higher education.
- g) For all courses offered through distance or correspondence education, the institution employs sound and acceptable practices for determining the amount and level of credit awarded and justifies the use of a unit other than semester credit hours by explaining its equivalency.
- h) An institution entering into consortial arrangements or contractual agreements for the delivery of courses/programs or services offered by distance or correspondence education is an active participant in ensuring the effectiveness and quality of the courses/programs offered by all of the participants.

APPENDIX B-TABLE OF SPECIFICATIONS FOR INSTRUMENT

#	Evidence (Indicator)	Concept (SACSCOC Standard 1: Student Services)	% Agreement of Average of all Judges
1	Online technical support is always accessible	S1.a	57.1%
		S1.e	76.2%
2	The institution has policies and procedures for online students to resolve complaints	S1.b	85.7%
3	Prior to enrolling in an online course, students receive professional advice about a) what is required to succeed	S1.c	52.3%
	b) the minimum technology required for succeeding in the online course	S1.c	47.6%
4	The institution has an adequate number of trained personnel to provide admission or enrollment counseling to online students	S1.c	71.4%
5	Multiple opportunities exist for students to receive support from the course instructor	S1.a	38.0%
6	Students are able to a) access orientation sessions about online learning and the required technology	S1.e	61.9%
	b) use the technology utilized in the course		71.4%
	c) access the equipment		71.4%

#	Evidence (Indicator)	Concept (SACSCOC Standard 2: Curriculum and Instruction)	% Agreement of Average of Judges
7	The institution's faculty assumes primary responsibility for the delivery of online courses	S2.a	83.3%
8	The institution has a quality assurance system that ensures quality of its online courses/programs	S2.a	77.8%
9	Faculty ensures that a) the course content is appropriate for the level of learning	S2.a	66.7%
	b) instructional strategies for the course are appropriate to identified learning objectives	S2.a	66.7%
10	The course utilizes technology that is appropriate to the course	S2.b	83.3%
11	The institution has clear policies regarding a) intellectual property	S2.c	94.4%
	b) faculty compensation	S2.c	77.7%
	c) use of revenue derived from intellectual property	S2.c	94.4%
12	The institution provides academic support services specifically for students enrolled in online education	S2.d	88.9%
13	Online course length equals or exceeds length of face- to-face section	S2.e	61.1%
14	The institution offers online courses/programs that a) are compatible with the institution's mission	S2.f	83.3%
	b) reflect credit hours equivalent to traditional courses	S2.f	94.4%
15	The institution has a quality control mechanism and policies to regulate online courses/programs delivered through a third party.	S2.g	88.9%

APPENDIX C- Revisions to Instrument

Item	Revision
Items 1-8	Items 1-8 representing the faculty standard were deleted from the pilot instrument.
Old Item 9 to new Item 1	Changed from students are satisfied with the range of support services available for their online study” to “my institutions provides students with access to a range of support services (e.g., training, technical assistance, information, and academic support) for their online study”.
Old Item 11 to new Item 3	Expanded to include policies and procedure to protect students’ personal information.
Old Item 14 to new Item 8	Changed to “the institution provides services that assist students to use the technology required for the course”
Old Item 22 to new Item 20	The item was changed from “online course length equals or exceeds length of face-to-face section” to “online course length is appropriate to the level of the course”.
Item 25 to new item 24	Replaced with “My institution has sound policies and practices for determining the level of credits/credit hours for an online course”.

APPENDIX D-THE STUDY'S INSTRUMENT

Online Quality Standards and Student Success Survey Instrument

Hello Participant

Thank you for taking the time to do this survey. The following questions will give you the opportunity to share your experience with online course (s) and certain quality standards for online courses. Please answer openly and truthfully. Remember that all responses will remain anonymous.

Consent to take part in the study

- Yes
- No

College/School:

- College of Architecture and the Arts
- College of Arts & Sciences
- College of Business Administration
- College of Education
- College of Engineering and Computer Science
- College of Law
- College of Medicine
- College of Nursing and Health Sciences
- College of Public Health and Social Work
- Honors College
- School of Hospitality and Tourism Management
- School of Journalism and Mass Communication

Enter your course title here: _____

With which gender do you self-identify?

- Male
- Female

Age:

- 18-24
- 25-31
- 32-38
- 39-45
- Above 45

Race/Ethnicity:

- Asian
- Black or African-American
- Hispanic or Latino
- Native American
- White
- Other

Status in the classroom:

- Part-time student (Fewer than 12 semester credit hours)
- Full-time student (12 or more semester credit hours)

Enter expected final course grade for this course:

- A
- A_
- B+
- B
- B-
- C+
- C
- D+
- D
- D_
- F

Current GPA

- 3.5-4.0
- 3.0-3.49
- 2.5-2.99
- 2.00-2.49

Number of fully online courses taken previously:

- 0 (This is my first online course)
- 1-2
- 3-4
- 5-6
- More than 6

Q1. My institution provides students with access to a range of support services (e.g., training, technical assistance, information, and academic support) for their online study

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q2 Technical support for online students is always accessible

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q3. My institution has policies and procedures for

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A) online students to resolve complaints or conflicts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) protecting students' personal information (e.g., Course grade)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4. Prior to enrolling in an online course, students receive professional advice about

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A) what is required to succeed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) the minimum technology required for succeeding in the online course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5. My institution has an adequate number of trained personnel to provide admission or enrollment counseling to online students

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q6. My institution provides services that assist students to use the technology required for online courses

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q7 Online students are able to

	I Don't Know	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A) Access orientation sessions about online learning and the required technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) Access the necessary equipment (software/hardware) for the course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 My institution's faculty assumes primary responsibility for teaching this online course

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q9. My institution has a quality assurance system that enhances the quality of its online courses/programs

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q10 Online professors make sure that

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A) the course content is appropriate for the level of learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) instructional strategies for the course are appropriate to identified learning objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q11. This course utilizes technology that is appropriate to the course

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q12. My institution has clear policies regarding

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A) intellectual property of new material created for online courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) compensation for professors who teach online courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C) use of revenue derived from intellectual property related to online courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13. My institution provides academic support services specifically for students enrolled in online education

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q14. The instructional duration of this online course is appropriate to the level of the course

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q15. My institution offers online courses/programs that

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A) are compatible with the institution's mission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B) reflect credit hours equivalent to traditional courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16. Online professors make sure that the online course is taught in a rigorous manner.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

Q17. My institution has sound policies and practices for determining the level of credits/credit hours for an online course

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

APPENDIX E: FIU 11-POINT GRADING SCALE

A: 4.00

A⁻: 3.67

B⁺: 3.33

B: 3.00

B⁻: 2.67

C⁺: 2.33

C: 2.00

D⁺: 1.33

D: 1.00

D⁻: 0.67

F: 0.00

APPENDIX F: INFORMATIONAL LETTER

Hello Participants,

My name is Michael Porter, and I am a graduate doctoral student in the Higher Education Administration program in the College of Education at Florida International University. You have been chosen at random to participate in a research project that seeks to investigate the relationship between accrediting standards for online education and student success in online education.

If you give your consent to participate in this research project, you will be one of approximately 1,500 participants and will be asked to complete a survey questionnaire, which will take approximately 10-15 minutes of your time. You will be required to indicate on a 5-point Likert scale the extent to which you agree or disagree with 24 statements about your online course. A link is provided below to complete the survey. However, the survey link will be available to participants only for two (2) weeks. Therefore, it will be very helpful if you click on the link very early while it is still active.

There are no foreseeable risks to you for participating in this research project. There is no cost or payment to you. However, it is expected that this research project will benefit you and society by providing information, which can be used to evaluate the utility of online quality standards in relation to student success in online education.

You *will* remain anonymous. Your response will be submitted online via a Qualtric Link, and it will remain anonymous. The link to the survey is provided below. If you have any questions in relation to this study or the quality standards, please write to me at email (XYX) or contact me via phone at (XYX). If you would like to talk with someone about your rights of being a subject in this research study or about ethical issues with this research study, you may contact the FIU Office of Research Integrity by phone at 305-348-2494 or by email at ori@fiu.edu. Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop. You may keep a copy of this form for your records.

Thank you in advance for agreeing to participate in this study. Please proceed to the link below.

Sincerely,

Michael Porter.

VITA

MICHAEL O. PORTER

1999-2003	Bachelor Arts- Religious Education with Minors in Human Resource Management and Psychology and Counseling Caribbean Nazarene College Santa Cruz, Trinidad & Tobago
2004-2005	International Diploma for Teachers and Trainers Cambridge University Cambridge, UK
2004-2006	Master of Arts in Education Commonwealth Open University British Virgin Islands
2006-2009	Director Decentralized Continuing Studies Program Caribbean Nazarene College Extension Campus Georgetown, Guyana
2007-2009	Education Officer Ministry of Education Georgetown, Guyana
2009-2010	Accreditation Officer Guyana National Accreditation Council Georgetown, Guyana
2009-2010	Graduate Diploma in Public Policy and Management University of York Heslington, UK
2010-2011	Master of Art in Public Policy and Management University of York Heslington, UK
2011	Graduate Training in Quality Assurance Systems University of Melbourne Australia
2010-2012	Senior Accreditation Officer Accreditation Officer

Guyana National Accreditation Council
Georgetown, Guyana

- 2012-Present Graduate Assistant
Florida International University
Miami, Florida
- 2014- Present Reviewer
South Florida Education Research Conference
Florida International University
Miami, Florida

PRESENTATIONS

Porter, M. (2012, April). *The role and functions of an accrediting body in assuring quality in post-secondary education*. Paper presented at the Rotary Club: Meeting, Georgetown, Guyana.

WORKS IN PROGRESS

Dottin, E., & Porter, M. (In review). *Learning as knowledge and skills and grades: But what about dispositions?* Submitted March 20, 2015 to the Internal Journal of TESOL and learning.

Porter, M. (In review). *Towards an understanding of faculty perceptions about factors that influence student success in online education at a predominantly Hispanic serving institution*. Paper submitted to the 14th Proceedings of the South Florida Education Research Conference.

Porter, M. (In review). *Accountability, quality, and student success in online education: A systemic literature review of empirical studies*. Paper submitted to the 14th Proceedings of the South Florida Education Research Conference.

MANUSCRIPTS IN PROGRESS

Long, H., Pang, W., & Porter, M. (in progress). *Teachers' perspective of creativity in* To be submitted to the Journal of Teaching and Teacher Education.

Porter, M. (in progress). *Student characteristics or course design: Valid predictors of student success in online education*. To be submitted to the Journal of Assessment and Evaluation in Higher Education.