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The quality of education leadership doctoral dissertations in the United States: An empirical review

Jessica M. Hanna
hanna56@marshall.edu

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THE QUALITY OF EDUCATION LEADERSHIP DOCTORAL DISSERTATIONS IN THE
UNITED STATES: AN EMPIRICAL REVIEW

A dissertation submitted to
The Graduate College of
Marshall University
In partial fulfillment of
The requirements for the degree of
Doctor of Education
in
Educational Leadership
by
Jessica M. Hanna

Approved by
Dr. Michael Cunningham, Committee Chairperson
Dr. Louis Watts
Dr. Lisa A. Heaton
Dr. Eugenia Damron

Marshall University
December 2015

APPROVAL OF DISSERTATION

SIGNATURE PAGE

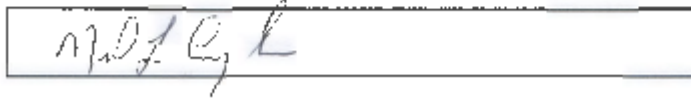
I hereby affirm that the following project meets the high academic standards for original scholarship and creative work established by my discipline, college, and the Graduate College of Marshall University. With my signature, I approve the manuscript for publication.

Project Title: The quality of education leadership doctoral dissertations in the United States:
An empirical review

Student's Name: Jessica M. Hama

Department: Leadership Studies

College: College of Education and Professional Development (COEPD)



Committee Chairperson

Date 11/18/15

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DEDICATION

My grandfather, Mark Hanna, has been an inspiration and guiding force throughout my entire life. He instilled in me his thirst for knowledge, quest for education, and love of life. When I decided to begin my doctoral journey, his unwavering support inspired me to keep persevering no matter what.

About halfway through my program, I lost my grandpa. While I was heartbroken, I could still imagine him telling me to continue my quest.

Thank you, Poppy. While I miss you dearly, your memory lives on, and your legacy is evident in everything I have done, and will do during this lifetime.

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“Anyone who has common sense will remember that the bewilderments of the eyes are of two kinds, and arise from two causes, either from coming out of the light or from going into the light.”

--Plato, The Allegory of the Cave

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ABSTRACT

In the field of education, doctoral programs are expected to prepare the future leaders of the field. With the doctoral process being so unique, a necessary interaction between the student and faculty is essential in order for the student to develop an expert-level understanding of the field. Literature indicates, however, that doctoral programs in education are trending toward being offered as online programs, which is causing many researchers and leaders in the field to worry that the lack of traditional instruction and interaction will have a damaging effect on the quality of educational doctoral programs. This nationwide, cross-sectional exploratory study examined the culminating activity in education leadership doctoral programs, the dissertation, in an attempt to assess the quality of research being produced from online and traditional doctoral programs. This research highlights general areas where education leadership doctoral programs are using similar quality levels of reference sources to produce dissertations and areas where the quality levels differ. The results of this study may provide a foundation for further study in the area of dissertation and doctoral program quality.

Keywords: education leadership, doctoral programs, dissertation quality, online education

Chapter One: Introduction

In the field of education, doctoral programs are designed to prepare leaders who will affect policy and become the scholarly guides to the next generation of educational experts (Gardner, 2009; Kidwell, Flagg, & Stites-Doe, 2014; Nelson & Coorough, 1994). The developmental nature of the doctoral process is unique, and the interaction between the student and faculty is paramount to developing an expert-level understanding of the field (Gardner, 2009; Maddrey, 2012; Perkins & Lowenthal, 2014). With the current online education trend, some researchers worry that the lack of traditional instruction will have an adverse effect on the quality of doctoral programs in education. This study examined the culminating activity in doctoral programs, the dissertation, in an attempt to assess the quality of research being produced from both online and traditional doctoral programs in education.

Online Degree Programs

Online degree programs have become increasingly popular with students as evidenced by the approximately 319% increase in online course enrollments in the United States from 2002 to 2012 (Allen & Seaman, 2013). While part of this large increase is simply because it is a new phenomenon, it is also due to marketing campaigns by institutions that promote online education as a flexible pathway to earning a degree for those whose lifestyles are not compatible with traditional college life (McArdle & Edwards, 2004; Schmidt, Hodge, & Tschida, 2013). This rapid increase in online education enrollment, however, does not mean that it is universally accepted (Bernard, Borokhovski, & Tamim, 2014; Tabatabaei & Gardiner, 2012). There are many opinions, inside and outside academia, regarding the quality of the education that can be delivered in this fashion, and the quality of the institutions providing this education.

To this point of institutional quality, when the first online higher education institution was launched, many academics were skeptical, to say the least, and fought against accepting this new phenomenon (Dolezalek, 2003). Even when Jones International University became the first regionally accredited online institution in 1999, the stigma attached to the online designation remained (Dolezalek, 2003). A year 2000 study on industry reception of online degrees reported that only 40.8% of hiring managers viewed online graduate degrees and traditional graduate degrees as equals; and of the 59.2% who believed traditional degrees were superior, only half believed that online degrees were acceptable for employment purposes (Dolezalek, 2003). A decade later in 2011, Kohlmeyer, Seese, and Sincich found that, despite their growth and popularity, online institutions were still viewed as inferior. This inferiority seemed to be based on the poor reputation earned by a few unscrupulous, for-profit online institutions, and lingered despite any current institution's accomplishments to the contrary.

This prejudice, however, did not thwart the growth or popularity of online degree programs. As higher education institutions realized that their online programs filled a niche in the market, such programs expanded and more online-only institutions opened (McKeown, 2012). In fact, this rising demand opened the door for traditional universities, and eventually first-rate institutions, to branch out into online education (Caruth & Caruth, 2012). In spite of this progress, however, the bias toward online education persisted. While online programs offered by traditional universities had to fight for acceptance, online universities fought for acceptance and respect (Dolezalek, 2003).

Online and Traditional Degree Programs

Researchers were attracted by the mounting competition between online and traditional degree programs and turned their attention toward defining the advantages and disadvantages of

online programs. The findings of multiple studies revealed several advantages and disadvantages to online education compared to traditional programs. To cite an example, online degree programs allow students, who are unable to attend traditional programs, increased access to earn a degree (Beljerano, 2008; Dolezalek, 2003; McArdle & Edwards, 2004; McKeown, 2012). The lack of acceptance of online degrees in the corporate sector, however, is a disadvantage that may make increased access a moot point (Adams & DeFleur, 2006, 2007; Beljerano, 2008).

Researchers also discovered that while institutional leaders view online programs as a way to attract a new demographic of student, many faculty dislike the concept (Dolezalek, 2003; McArdle & Edwards, 2004; McKeown, 2012; Toth, Foulger & Amrein-Beardsley, 2008). This dislike often stems from the difficulty of adapting traditional teaching methods to electronic environments and the belief that students have a harder time learning without face-to-face instruction (Dolezalek, 2003; McKeown, 2012). The inability to translate certain subjects into online courses, for example, is a faculty concern. Not all learning objectives can be translated into online course material. The art of drawing blood, for instance, should be taught with a face-to-face, hands-on approach, and it is not feasible for this type of skill to be converted into online courses with the limitations of current technology (Beljerano, 2008; Dolezalek, 2003; McKeown, 2012).

Many academic professionals also believe that online education limits the academic and social integration that are experienced at a brick and mortar institution (Beljerano, 2008). This belief, however, has been challenged. Several studies have shown that students can learn effectively in an online environment (McKeown, 2012; Toth, et al., 2008). In fact, researchers are just starting to compare the “full” traditional college experience to that of the online college

experience (McKeown, 2012). Until further research on the social aspects of an online degree is explored, this possible advantage or disadvantage remains an enigma.

Another aspect of online degree programs is whether they provide a sufficient amount of self-discipline required of the student (Beljerano, 2008). Many academic professionals believe college is a time to learn self-discipline and self-efficacy; and they argue that an online education prohibits this important type of learning. Other academic professionals, however, view this requirement as an advantage, believing that online education programs demand that students quickly learn how to become disciplined. They contend that students in online programs learn quickly what is required to achieve success in college, while traditional students usually take a few years to figure it out (Beljerano, 2008).

Yet another consideration of online programs is the sentiment of the faculty. Many faculty members begin teaching as a way to develop professional relationships and to achieve a sense of fulfillment as they watch students learn and grow (Beljerano, 2008). With the increase in online courses, faculty lose this intrinsic reward because they cannot develop as meaningful relationships with students. Some faculty, however, argue that switching to online teaching has made their lives more rewarding, citing the ability to teach while travelling and developing relationships with students from different cultures across the world (Beljerano, 2008).

Considering Inherent Bias in the Research

Even though these studies, and numerous others, endeavored to ascertain the advantages and disadvantages of online programs to determine if online education was a feasible option, a recent study argues that bias clouded the results from the beginning (Bernard, Borokhovski & Tamim, 2014). A 2014 study by Bernard, Borokhovski, and Tamim postulated that, in an attempt to answer the natural question of whether or not online education was a wise investment, most

research studies were designed with inherent bias because they used traditional education as the standard to which online education was measured. Furthermore, they contend that researchers were primarily concerned with delivery method as the only independent variable in the two types of education, but failed to adequately account for the extraneous variables of instructional method, course material, instructor ability, students, or some combination of these. They concluded that measuring online programs against traditional programs to determine which is more successful cannot be done with this assumption. They argued, however, that once researchers recognized this bias, the two types of programs can be compared with the intention of understanding student and program outcomes (Bernard, Borokhovski, & Tamim, 2014).

A longitudinal study by Allen and Seaman (2013) supported Bernard, Borokhovski, and Tamim's claim. According to the longitudinal study conducted from 2002 to 2012, the bias towards online education has decreased, but is still very much alive in academia (Allen & Seaman, 2013). In 2003, approximately 10% of academic leaders surveyed reported that online education was inferior to traditional education, and an additional 32.4% claimed it was "somewhat inferior." By 2012, the academic leaders of the same institutions surveyed reported that approximately 5% believed that online education was inferior, and an additional 23% believed it was "somewhat inferior" to traditional education, meaning over one-quarter believed online education to be inferior. Since academic leaders directly influence the culture of their respective institutions, it is clear that this bias against online education still exists (Allen & Seaman, 2013).

Online Graduate Degrees

Notwithstanding the continual negative opinion concerning online education, the popularity and availability have grown. According to Allen and Seaman (2013), in 2002 fewer

than one-half of all higher education institutions had incorporated some form of online program; however, by 2012, 69.1% indicated that online programs had become critical to strategic growth. They also reported that from 2002 to 2012, annual enrollment increases for online programs had increased no less than 9.3% per year, far outpacing higher education enrollment growth in general (Allen & Seaman, 2013). Furthermore, the total enrollment of students taking at least one online course had steadily increased. In 2002, there were approximately 1.6 million students enrolled in online courses and by 2012 that number had jumped to 6.7 million (Allen & Seaman, 2013).

The number of online degree programs offered completely online has also increased. In 2002, only 34.5% of institutions offered complete online programs; however, the percentage soared to 62.4% by 2012 (Allen & Seaman, 2013). These numbers are similar regardless of public nonprofit or private nonprofit classifications.

While these numbers apply to higher education overall, graduate education has also seen dramatic growth in online program enrollments (Allen & Seaman, 2006). According to the National Center for Education Statistics, in 2012, 639,343 graduate students, or 22% of all graduate students, were enrolled in exclusively online courses (IPEDS, 2013). In 2013, these numbers had grown to 685,207 and 27%.

What may be even more surprising is the dramatic growth of exclusively online institutions. In 2006, there were only five exclusively-online institutions offering graduate-level degrees (IPEDS, 2013). As of 2013, their numbers had expanded to 14 institutions. In addition, there were several primarily-online institutions not included in the count. Similarly, the graduate enrollments at these institutions had also increased. From 2006 to 2013, graduate enrollment at

online institutions increased by 143%. As of 2013, their enrollments accounted for 14% of all graduate students in the United States.

The trends for doctoral degrees also show an increasing number of students are selecting online institutions. In 2004, 311 doctoral degrees were awarded from five exclusively online institutions (IPEDS, 2013). In 2013, 2,435 doctoral degrees were awarded from 14 exclusively online institutions; meaning that doctoral graduates from online institutions had increased by approximately 683% in only nine years. While it must be noted that traditional institutions are still producing the majority of doctoral graduates, online institutions' continued growth may indicate that this trend in doctoral education will persist (IPEDS, 2013).

The field of education, specifically education leadership, has also been affected by the emergence of online doctorates. From 2012 to 2014, 4,397 doctorates in education leadership were conferred in the United States (NSF SED, 2013). Of these, approximately 13% were from online institutions.

Doctoral Programs in Education

As the gateway to the terminal degree in a given field, doctoral programs serve to develop scholars and practitioners who can efficiently discover, disseminate and apply new knowledge through research (Gardner, 2009; Shulman, Golde, Bueschel & Garabedian, 2006). In the field of education, the Doctor of Education (Ed.D.) and the Doctor of Philosophy in Education (Ph.D.) are the two types of terminal degrees (Gardner, 2009). Traditionally, the Ed.D. was considered a practitioners degree, while the Ph.D. was intended to prepare researchers and scholars (Gardner, 2009; Nelson & Coorough, 1994). Over time the difference between the two has been diminished, with many saying they are the same in terms of preparing educators to be practitioners, researchers, and scholars (Nelson & Coorough, 1994; Shulman, et al., 2006).

An online doctoral program in education is considerably different than an online bachelors or master's program (Henriksen, Mishra, Greenhow, Cain, & Roseth, 2014). The most obvious difference is in the definition of what constitutes a program being fully online. In the doctoral program realm, the terms hybrid, blended, and online are often used interchangeably (Henriksen, et al., 2014). Research indicates that the majority of "online" doctoral programs are actually hybrids, meaning there are both synchronous and asynchronous components, as well as online and face-to-face course requirements (Kung & Logan, 2014). According to Allen, Seaman, and Sloan (2006), a blended or hybrid course is defined as having 30% to 70% of the material delivered online, whereas an online course is when 80% or more of the material is online.

Kung and Logan (2014) indicated that only 17% of doctoral degree programs in educational technology that were advertised as being online were actually delivered completely online. The other 83% required some type of residency, indicating that the definition of an online doctoral program can be quite different from a regular online master's or bachelor's degree program (Kung & Logan, 2014).

The presence of online doctoral programs is not a trend that is likely to disappear. According to Allen, Seaman, and Sloan (2006), doctoral students are electing to enroll in online courses at an increasing rate. In fact, as of 2006, doctoral students accounted for 13% of total online course enrollments, with doctoral/research level institutions having the highest overall rate of online course enrollments (Allen, Seaman, & Sloan, 2006). Furthermore, the *Doctorate Recipients from United States Universities* report indicates that enrollments in traditional doctoral programs are steadily decreasing (Hoffer, Sederstrom, Selfa, Welch, et al., 2003).

Doctoral Research

The purpose of a doctoral degree program in education is to develop educational leaders who can use research to discover, disseminate, and apply knowledge to the field (Gardner, 2009; Shulman, Golde, Bueschel & Garabedian, 2006). The coursework is typically research-oriented, and culminates in the writing of a dissertation (Nelson & Coorough, 1994).

The dissertation, in design, is a self-directed process that does not have milestone due dates or an academic safety net (Dissertations, 2014). According to Nelson and Coorough (1997), dissertations reflect the most current requirements and prominent research methods used by doctoral programs. The dissertation is also the culminating activity of intellectual inquiry that represents many years of learning within a doctoral program; therefore, it reflects the level and type of skills and knowledge being taught (Gardner, 2009; Germain, 2012). Boote and Beile (2005) assert that a dissertation represents a doctoral candidate's ability to discover and apply scholarly information from synthesized research. Winter, Griffiths, and Green (2000), claim that a dissertation is a representation of intellectual grasp and reasoning coherence, which is directly related to the literature used. Furthermore, a dissertation must be approved by a committee composed mostly of faculty members who must agree that the document is representative of what a university considers scholarly work (Germain, 2012). Therefore, an examination of dissertations can provide an insight into the level of scholarly work being produced by doctoral candidates.

Problem Statement

The research literature indicates that market trends are clearly pushing further towards online education at the doctoral level. With the purpose of doctoral programs in education being to develop scholars and practitioners who can efficiently discover, disseminate and apply new

knowledge through research, the concern is that there is a dearth of information regarding the scholarly quality of the research being produced at these institutions.

According to the National Science Foundation's 2013 Survey of Earned Doctorates (SED), there are 42 sub-fields within the field of education. The variations in program requirements across these 42 sub-fields would make any comparisons impractical. School psychology, for example, could not be compared to urban education because the two sub-fields are vastly different. An examination of the SED revealed that the most popular sub-field in education is education leadership, with 4,397 doctorates awarded from 2012 to 2014 (SED, 2013). Because of the number of doctorates awarded, the sub-field of education leadership was chosen for study.

A nationwide study focusing on examining the scholarly quality of doctoral candidates in the field of education leadership from online institutions would provide needed information. Researchers agree that examining dissertations from graduates of these institutions can provide insight about the level of scholarly work being produced. Unfortunately, the literature indicates that objectively judging the overall quality of dissertations is extremely difficult, with institution self-evaluation being the most common method (Mullins & Kiley, 2002; Nelson & Coorough, 1997; Sipe & Stallings, 1996).

There is a bibliometric method, however, that is widely accepted as an assessment of scholarly quality: citation analysis (Goldfinch, 2012; Haycock, 2004; Moed, 2005). Citation analysis is a technique that can be used to measure the characteristics, type, and scholarly quality of information being acquired and synthesized during the dissertation process (Goldfinch, 2012; Haycock, 2004; Moed, 2005). This method, in conjunction with scholarly source ranking and rating databases, would help provide an objective assessment. Therefore, the purpose of this

quantitative study was to determine the characteristics and scholarly quality of the reference sources used in dissertations written by doctoral graduates in education leadership programs.

Research Questions

1. What are the differences between the quality levels of reference sources used in doctoral student dissertations from traditional education leadership programs and online education leadership programs?
2. What are the differences between the quality levels of reference sources used in doctoral student dissertations in education leadership programs in terms of various demographic factors?

Summary

In order to investigate the concern regarding the scholarly quality of research, a nationwide quantitative study was conducted to examine the scholarly quality of doctoral research in the field of education leadership. A review of the literature indicated the best way to assess reference source quality was by using bibliometric methods. Specific methods were developed and data were collected. The subsequent chapters detail this process, along with a presentation of the results and an analysis of the findings.

Chapter Two: Review of the Literature

In the field of education, doctoral programs are designed to prepare individuals who will become the leaders in the field (Gardner, 2009; Kidwell, Flagg, & Stites-Doe, 2014; Nelson & Coorough, 1994). The doctoral process is considered unique, with the interaction between the student and faculty being essential in the development of an expert-level understanding of the field (Gardner, 2009; Maddrey, 2012; Perkins & Lowenthal, 2014). The current online education trend is causing many researchers to worry that the lack of traditional instruction and interaction will have a detrimental effect on the quality of doctoral programs in education. This study will look at the culminating activity in doctoral programs, the dissertation, in an attempt to evaluate the quality of research being produced from online and traditional doctoral programs in education.

While there are varying definitions of what constitutes an online education, the majority of researchers agree that it is defined as information that is "...delivered primarily over the Internet" (International Association for K-12 Online Learning, 2011, p. 7). In terms of higher education, Allen, Seaman, and Sloan (2006), who operate the Sloan Consortium, the world's leading organization dedicated to quality online learning, define an online course as one with 80% or more of the material being delivered online. Conversely, a traditional course is one with 80% or more of the material being delivered face-to-face, and a blended or hybrid course as having 30% to 70% of the material delivered online (Allen, Seaman, & Sloan, 2006).

Brief History of Online Education

Online education is a direct descendant of distance education, which was intended to increase student access to education by transcending barriers that would otherwise prevent learning (Caruth & Caruth, 2013; Clardy, 2009; Uzun, Unal & Yamac, 2013). Beginning in the

early 19th century, distance education emerged directly after the United States government invested in upgrading the postal service (Clardy, 2009). Over time, distance education has evolved through five stages to become the online education of today (Clardy, 2009).

The first stage, Correspondence Education, relied on the postal service to deliver and return printed materials (Clardy, 2009). The second stage, Multi-media Education, began in the mid-twentieth century with the advent of audio and video technologies. The third stage, Tele-Learning, emerged when synchronous video conferencing and internet conferencing technologies became widespread. The fourth stage, Flexible Learning, was the beginning of online education with interactive, on-line, computer-based materials delivering information to students' personal computers (Clardy, 2009). During this stage, the widespread availability of personal computers and Internet access allowed students to explore the concept of online learning (Uzun, Unal, & Yamac, 2013). The final stage, Intelligent Flexible Learning, encompassed the relatively new learning and course management systems, which have transitioned into companies like Blackboard or Moodle, that allow colleges and universities to create unique synchronous and asynchronous learning environments (Clardy, 2009). It was during the early part of this current stage that online learning, also called e-learning, began to quickly grow in popularity (Clardy, 2009).

Popularity of Online Education

Online degree programs have become increasingly popular with students as evidenced by the approximately 319% increase in online course enrollments in the United States from 2002 to 2012 (Allen & Seaman, 2013). In fact, Carlisle (2009) predicted that enrollments in online programs would increase no less than 20% per year for the foreseeable future. Additionally, a recent internal review by eLearners.com, a free web site that matches students interested in

online degree programs with prospective institutions, revealed that the site received an average of 3 million unique visitors annually, indicating a continued and sustained interest (Tracking the Trends, 2004).

There are many reasons why online education is so popular with students and institutional leaders. The most noted reason is that it fills a niche in the market (Carlisle, 2009; Crawley, Fewell, & Sugar, 2009; Kobayashi, n.d.; McKeown, 2012). Students who are either geographically isolated or whose lifestyles are not compatible with traditional college life can still obtain a college degree through online education (McArdle & Edwards, 2004; McKeown, 2012; Schmidt, Hodge, & Tschida, 2013).

Likewise, many faculty also indicate that they prefer teaching online because of the convenience and flexibility (Schulte, Dennis, Eskey, Taylor & Zeng, 2012). Being able to teach from any location allows faculty more professional options such as travel, teaching for more than one institution, professional development opportunities, or a supplement to early retirement (Schulte, et al., 2012).

Another often cited reason is that institutions are fighting against decreasing funding coupled with an increasing demand for services (Caruth & Caruth 2013). With decreasing federal and state funds and increasing enrollments, institutions are seeking alternative, cost-effective methods to deliver education (Caruth & Caruth, 2013). Since one of the largest and unavoidable expenses at a higher education institution is technology, institutional leaders attempt to leverage this expensive asset in an effective manner by offering online education (Caruth & Caruth, 2013; Kobayashi, n.d.). Many institutional leaders believe that by offering online education they can eliminate much of the overhead costs associated with a brick and mortar classroom (Oberlin, 2001).

This belief that there are cost savings associated with online learning, however, may not always be true due to the unique depreciation structure of technology equipment (Oberlin, 2001). Institutional leaders who understand the financial structure of technology assets can effectively plan for and reduce overhead costs over the lifetime of the equipment, however short-term savings will simply not occur (Funding Information Technology, 2003; Phipps & Wellman, 2001). Cost savings, however, can occur in property and equipment needs (Kobayashi, n.d.). “Less ‘bricks’ with more ‘clicks’” is the newest slogan being promoted by online education proponents (Kobayashi, n.d., p. 1). It means that for every student who transitions to online learning, fewer capital improvements are needed on brick and mortar campuses (Kobayashi, n.d.).

Yet another reason for the popularity of online degree programs is flexible learning. In addition to creating greater access, online learning allows students much more control over how to learn, meaning at their own pace and in their own way (Kobayashi, n.d.). Students become self-directed learners who choose how to complete assignments. This is evidenced by one of the most widely used asynchronous teaching tools, discussion boards, which allow students to determine how much engagement is necessary (Kobayashi, n.d.). This learning flexibility is very appealing to many students who feel uncomfortable in traditional classroom lecture settings (Kobayashi, n.d.).

Despite the rapid growth of online degree programs and the ability of institutions to use expensive technology in an effective manner, online education has not been universally accepted (Bernard, Borokhovski, & Tamim, 2014; Tabatabaei & Gardiner, 2012). There are as many opponents to online education as there are proponents, and researchers have only begun to examine the quality of the institutions that have invested in online education (Dolezalek, 2003).

Online Institutions

Online degree programs offered by traditional institutions are viewed much differently than those offered by online institutions (Barr & Miller, 2015; Dolezalek, 2003). The former struggled for acceptance, while the latter are still fighting for both acceptance and respect (Dolezalek, 2003).

Online institutions are typically structured either as for-profit businesses or as not-for-profit organizations whose product is an education. Traditional institutions are either public or private not-for-profit entities whose product is an education; however, the greater purpose is to serve society in general (Dolezalek, 2003). Recently, the phenomenon of traditional institutions creating exclusively online departments based on a for-profit entrepreneurial model has emerged (List of Accredited Online Colleges & Universities, 2015). Rubin (2013) noted that traditional institutions are beginning to use online departments as a way to generate income for the university, which is how for-profit institutions usually operate. If this is a trend that will continue, then the concerns about online institution quality may extend to the online departments of traditional institutions.

Online Institution Quality

Online institutions have become increasingly popular over the past few years, much to the dismay of many academics (Barr & Miller, 2015). This apprehensiveness is caused by the bad reputation several of the for-profit online institutions have acquired from dishonorable practices including fraudulently obtaining federal financial aid, unethical marketing practices, exorbitantly high tuition and fees, dreadful student outcomes, and high loan default rates (Barr & Miller, 2015; Rosenthal, 2012; Monsters, 2010).

Some researchers admit that this negative image of online institutions does not show the entire picture of institutional quality (Barr & Miller, 2015; Blumenstyk, 2008). According to Barr and Miller (2015), online institutions are uniquely placed to approach the learning process from a technological perspective. They declared that online institutions have an unprecedented access to various technological modalities that not only enhance learning, but surpass traditional institutions in terms of quality (Barr & Miller, 2015). Online institutions devote time and energy into creating a strong sense of community among their online learners through the use of connectedness, interdependency, and socialization because they understand that connected students are satisfied and committed students (Barr & Miller, 2015).

Blumenstyk (2008) admitted that online institutions cannot shed their negative image overnight, but have made strides toward becoming reputable. He focused on the University of Phoenix, which is the largest for-profit institution in North America and has both traditional and online education departments (Blumenstyk, 2008; Kinser, 2006). Blumenstyk (2008) claimed that the University of Phoenix is the standard to which all online institutions should aspire because it is the pioneer of best practices for the online education industry.

Recently, the University of Phoenix released their internal institutional report to the public, highlighting their competitiveness in terms of remedial test scores (Blumenstyk, 2008). According to the report, remedial students entering the University of Phoenix as freshman improved at a greater rate than similar students at traditional not-for-profit institutions (Blumenstyk, 2008). The report also indicated that the University of Phoenix is more diverse in terms of composition of faculty and student populations than traditional not-for-profit institutions (Blumenstyk, 2008). Finally, the report touted an impressively low \$322 annual taxpayer cost per student, as opposed to \$11,700 taxpayer cost per student for public not-for-profit institutions and

\$9,200 taxpayer cost per student for private not-for-profit institutions (Blumenstyk, 2008). These costs were calculated by the University of Phoenix and took into account state financing, Pell Grants, federal loan subsidies, and taxes paid by individual institutions to state and federal governments (Blumenstyk, 2008).

Kinser (2006) shared Blumenstyk's enthusiasm for the University of Phoenix, and also acknowledged that it is a for-profit business that excels at its trade. He stated that this did not make Phoenix a poor quality institution, but a highly effective institution (Kinser, 2006). Kinser (2006) deemed that effectiveness was synonymous with quality in terms of for-profit, online education. He pointed out several business facts as a key reason for Phoenix's effectiveness or quality including that it is the largest for-profit and online institution in the world, four times larger than the next competitor, Devry, citing an enrollment figure over 400,000 students (Kinser, 2006; Wilson, 2010). Kinser (2006) also alleged that Phoenix's ability to grow so quickly since 1976 and grant so many degrees that range from Associate to Doctorate is due mostly to the quality of the education. He concluded that a company with annual profits around \$9 billion would not continue to invest in an institution that is low quality because it would eventually fail and be an unwise investment (Kinser, 2006).

Schulte, Dennis, Eskey, Taylor, and Zeng (2012) took a different approach to gauging the quality of online institutions and assumed that each institution is unique and, therefore, cannot be judged as part of a group (Schulte, et al., 2012). According to Schulte et al., (2012) there are good and bad online institutions, it just depends on the institution's policies and practices. Specifically, faculty who teach in an online environment need specialized training, mentoring, and evaluating (Schulte, et al., 2012). Unfortunately, Schulte et al. discovered that instructor

training and evaluation at online institutions is typically scarce and inadequate. The researchers concluded that the most important criteria in determining an institution's quality is its faculty.

Unfortunately, there is not a lot of unbiased research on the overall quality of online institutions. Most of the literature refers to anecdotal evidence to draw conclusions or focuses on reports published by the online institutions themselves. Neither of these methods can accurately depict the current state of online institution quality.

Perceived Differences Between Online and Traditional Programs

The lack of an answer to the question of online institution quality has not affected the continued growth of online degree programs. In fact, as higher education institutions realized that online programs filled a niche in the market, such programs expanded (McKeown, 2012).

According to a 2007 study by Adams and Eveland, online accredited institutions are leveraging monetary advantages against traditional accredited institutions that have allowed them to aggressively seize over one-third of the online student market. Given the sentiments of many academics that online institutions are inferior to traditional institutions, this is a cause for concern.

There is much debate over the effectiveness of online degree programs as compared to traditional degree programs. According to Clardy (2009), whether a program is delivered online or face-to-face does not have an independent effect on the quality of the program. A study by Dellana, Collins, and West (2000) seemed to confirm Clardy's declaration. In their study, Dellana et al., (2000) delivered the same management science course using two different methods. The first was a traditional face-to-face course using PowerPoint slides and live classroom discussion (Dellana, Collins, & West, 2000). The second was an online course with

the same PowerPoint slides and online discussion board. The results showed that there were no statistically significant differences between exam scores in the two courses.

A meta-analysis by Tallent-Runnels, Thomas, Lan, Cooper, Ahern, Shaw, and Lui (2006) revealed that students in well-designed and properly implemented online courses actually performed as well as students in traditional courses. Furthermore, students in poorly-designed or poorly-implemented online courses performed significantly less than students in traditional courses (Tallent-Runnels, et al., 2006). These findings suggest that the delivery method may not be as important as the overall course design and implementation.

A similar study by Sitzmann, Kraiger, Stewart, and Wisher (2006) that compiled research from 96 separate research reports from 1996 to 2005 discovered that blended or hybrid delivery methods produced significantly better results than either an online or traditional method alone. Furthermore, another meta-analysis by Zhao, Lea, Yan, Lai, and Tan (2006) that looked at research from 51 separate studies found that there were no significant differences between online and face-to-face delivery methods.

All of these studies drew the same conclusion; online courses may be as effective as traditional courses, as long as each delivery method is used correctly. There is, however, another side to the debate. According to a 2006 study by Adams and DeFleur, 96% of employers would select an employee who graduated from a traditional degree program over one from an online degree program. This number is much higher than the 59.2% of hiring managers that prefer traditional degrees in Dolezalek's 2003 study, which led some researchers to question the validity of an online education. If an increasing number of employers prefer traditionally educated employees, then perhaps online programs are inferior, according to some authors (Adams & DeFleur, 2006).

Beljerano (2008) used the Adams and DeFleur study as a basis for compiling research to make some generalizations about online education. He concluded that online courses are inferior to traditional courses because they tend to have much higher enrollment numbers, which detracts from the learning experience (Beljerano, 2008). Beljerano also concluded that the online environment cannot replicate the learning that takes place in a face-to-face environment. While he admitted that online environments demand students become self-disciplined, he argued that independent, self-disciplined learning is not “real” learning and does not count.

Beljerano (2008) also claimed that the faculty play a large part in the inferiority of online degree programs. He alleged that most faculty find online delivery methods too time-consuming and too unrewarding (Beljerano, 2008). He admitted that perhaps the faculty problem could be mitigated if institutions would provide proper training; however, he still believed that online courses were altogether inferior.

A 2002 study by Churkovich and Oughtred found that students in a traditional library instruction methods course performed significantly better than the students in the same class delivered online. Shaffer (2011) noted that the Churkovich and Oughtred study delivered the exact same materials using both delivery methods; however, the materials for the online course were not properly converted for online delivery. She questioned whether the results were valid if the online students were not given appropriately converted materials (Shaffer, 2011). In her own study of a similar design, Shaffer concluded that there were no significant differences between graduate education students learning in terms of delivery method, with the assumption that the materials were properly converted.

Bernard, Abrami, Borokhovski, Wade, Tamim, and Surkes (2009) compiled a meta-analysis on the level of interactions being employed in online education, and concluded that even

with the highest possible levels of instructor mediated interaction, students in online courses still had proportionately lower achievement scores than those in traditional classrooms. Castano-Munoz, Sancho-Vinuesa, and Duart (2013) followed up with a study using over 17,000 students from three universities and determined that online education is not as effective in interactive learning as traditional courses, and is therefore inferior.

Research Bias

Researchers on both sides of the debate have presented compelling arguments about the quality of online education. One issue that has arisen is the question of research bias in studying online versus traditional programs. Bernard, Borokhovski, and Tamim (2014) decided to take a different approach. In their 2014 study on detecting bias in online education research, they claimed that in an attempt to answer the natural question of whether or not online education was as good as traditional learning, most researchers designed their studies with inherent bias because they used traditional education as the benchmark to which all other education was measured. Bernard et al., (2014) believed that researchers should not be concerned with the delivery method, but instead focus on the extraneous variables including instructional method, course material, instructor ability, students, or a combination of these variables. They argued that unbiased research shows, with all four extraneous variables being equal, that online and traditional education can achieve similar results (Bernard et al, 2014). They declared that the true answer lies in understanding how to properly design programs and train faculty regardless of which platform is chosen.

Creating a Successful Learning Environment

The research on either side of the debate is compelling, and there is no definitive answer. However, the fact remains that online degree programs are continuing to grow in popularity.

Given this understanding, the focus then turns to how to make online education successful.

While a plethora of research has been conducted on how to successfully teach in a traditional classroom, researchers are just beginning to venture toward answering the question of how to successfully teach in an online environment.

Stadtlander (1998), one of the earliest researchers to investigate online learning, wrote a lessons learned piece after teaching an online graduate seminar. While he admitted that he did not know how to fix all of his identified problems, he did outline several aspects of teaching online that should be addressed by future online faculty. Students' inability to convey emotion during online discussions created difficult interactions, as well as, Stadtlander's (1998) lack of communication with his students. He recommended that future online instructors be suitably trained on how to communicate with students in online environments and how to improve online discussion (Stadtlander, 1998). He identified communication and interaction as the key elements for successful online learning.

McArdle and Edwards (2004), a proponent of online education, concluded that often faculty and institutions rush into online program design without building a proper foundation. He adamantly supported a four step process where faculty analyze the current needs of the program, select course parameters, design course elements, and develop course components (McArdle and Edwards , 2004). He concluded that an online course can be successfully built only after these four steps are completed.

In addition to carefully developing the courses, McArdle and Edwards (2004) also acknowledged that online education is not for everyone, explaining that students should already have higher education experience in order to be successful. Moreover, students must be self-

motivated and interested in learning; although, McArdle and Edwards (2004) claims that this is also true for traditional courses as well.

Mungall, Green, and Skunza (2001) successfully launched the Ohio State University online Doctor of Pharmacy program; however, after initial success the program ended in failure. In a reflection piece they implored institutions to not give up on online education, but to be aware of the pitfalls of faculty training, course consistency, and creating an online community. All of these, they claimed, are necessary for successful online education (Mungall, Green, and Skunza, 2001).

Stagg and Slotta (2009) also published a reflective article detailing their experience with an online literacy education course. Their experience seemed to validate Mungall, Green, and Skunza's assertion that faculty training and an online community were the most important factors for successful online education (Stagg & Slotta, 2009).

Suhonen and Sutinen (2014) published a similar reflective piece on the sustainability of online doctoral programs. They concluded that extensive faculty mentoring and online learning communities were the two most important factors of successful online education (Suhonen & Sutinen, 2014). This also seemed to validate Mungall, Green, and Skunza's earlier assertions.

Bowden (2012) was one of the first researchers to publish a study that attempted to confirm the reflective lessons learned. He wanted to understand how enhancing online interaction could increase student learning by examining teaching strategies and the building of online learning communities (Bowden, 2012). Bowden discovered that students could in fact learn effectively and even show signs of advanced scholarship when engaged in effective online interaction through effective teaching strategies and extensive online learning communities. He

concluded that students could achieve the same level of learning in an online setting if the material was presented in a format appropriate for online delivery and discussion.

Online Graduate Education

At the undergraduate and first postgraduate level, researchers seem to be more concerned with how marketable an online degree is in the job market. As McKeown (2012) discovered, higher education institutions realized that their online degree programs filled a niche in the market. These students were usually nontraditional students who were typically looking to find better employment, but whose lifestyles were not compatible with traditional degree programs (McArdle & Edwards, 2004; Schmidt, Hodge, & Tschida, 2013).

At the advanced graduate level, however, a doctoral degree fulfills a different purpose. As the gateway to the terminal degree in a given field, doctoral programs serve to develop scholars and practitioners who can efficiently discover, disseminate and apply new knowledge through research (Gardner, 2009; Shulman, Golde, Bueschel & Garabedian, 2006).

In the field of education, doctoral programs are designed to prepare the next generation of leaders who will affect policy (Gardner, 2009; Kidwell, Flagg, & Stites-Doe, 2014; Nelson & Coorough, 1994). Furthermore, doctoral recipients become the mentors and teachers of the next generation of doctoral students, directly affecting the future of the field (Durling & Friedman, 2002).

This developmental nature of the doctoral process is unique (Gardner, 2009). A doctoral committee serves as a student's advisors, teachers, and mentors who guide her throughout the arduous process (Gardner, 2009; Maddrey, 2012; Perkins & Lowenthal, 2014). The interaction of the student with her committee is paramount to developing an expert-level understanding of the

field that some researchers worry is impossible to replicate outside of a traditional setting (Bollinger & Halupa, 2011; Gardner, 2009; Maddrey, 2012).

Maddrey (2012) claimed that after coursework is finished and the dissertation phase begins, most of the student and committee interaction occurs through email and other online means, regardless of the program delivery method. Students in traditional doctoral programs often report feelings of isolation and disconnect at this stage (Maddrey, 2012). Maddrey asserts that these feelings are only intensified in online doctoral programs.

Other researchers, however, believe that it is possible to replicate the unique development of traditional doctoral programs within an online setting (Bollinger & Halupa, 2011; Fuller, Risner, Lowder, Hart, & Bachenheimer, 2014; Perkins & Lowenthal, 2014). Perkins and Lowenthal (2014) attest that online doctoral programs can be successful in the field of education; however, they cannot progress at the same rate as other lower-level online degree programs.

Fuller, et al. (2014) contend that online doctoral programs are the next logical step in the field of education; however, they admitted that there is a shortage of information about their outcomes. They hypothesized that using the current literature regarding online degree programs at lower levels to strategically develop online doctoral programs in education will yield the best results (Fuller et al., 2014). After thoroughly reviewing all available literature, they developed the “Community of Inquiry” model that identifies the three principal elements required for successful online doctoral programs: (a) an extensive social presence, (b) unique processes of information exchange, and (c) a redefined instructor’s role.

While the literature does not provide clear answers about the effectiveness of online doctoral programs, what is known is that the availability of online doctoral programs is increasing (Allen, Seaman, & Sloan, 2006). The *Doctorate Recipients from United States*

Universities report indicated that enrollments in traditional doctoral programs are steadily decreasing, while enrollments in online doctoral programs are increasing (Allen, Seaman, & Sloan, 2006; Hoffer, Sederstrom, Selfa, Welch et al., 2003).

According to the National Science Foundation's 2013 Survey of Earned Doctorates (SED), education leadership is the largest sub-field in education, with 602 doctoral degrees conferred in 2013. Data from the Guide to Online Schools (2015), one of the most comprehensive commercial listings of accredited schools available, listed 35 online doctoral programs in education leadership, with 14 being exclusively online and 11 being hybrid or blended. The remaining seven programs were online, but were also available in a traditional setting (Guide to Online Schools, 2015).

Doctoral Research

The culminating activity in a doctoral program, regardless of online or traditional delivery, is typically the dissertation (Nelson & Coorough, 1994, 1997). The dissertation is a reflection of a candidate's learned ability from taking courses, partaking in research projects, and interacting with faculty, and it reflects the prominent research methods used by a doctoral program (Nelson & Coorough, 1994). Gardner (2009) asserted that the dissertation reflects the research and synthesis skills being taught in a doctoral program. Boote and Beile (2005) concurred that it is a fair representation of a candidate's ability to discover and apply scholarly information from synthesized research. Cleary (1992), an earlier dissertation researcher, argued that better quality universities will ultimately produce better quality dissertations.

Unfortunately, the literature indicates that objectively judging the overall quality of dissertations is extremely difficult (Mullins & Kiley, 2002; Nelson & Coorough, 1997; Sipe & Stallings, 1996). Nelson and Coorough (1997) declared that while the dissertation is the most

vital component of a doctoral program, the quality is extremely hard to appraise. Lovitts (2005) claimed that holistic judgements are made by experienced faculty in regards to dissertation quality, and that the faculty would recognize quality when they saw it. Morley, Leonard, and David (2002) reported that there was a substantial lack of research on how to properly assess a dissertation because there were so many different methods employed depending on university policy. Winter, Griffiths, and Green (2000) attempted to create a list of criteria that could be used to evaluate dissertation quality; however, they discovered that the criteria were too subjective. Specifically, they were able to identify what to look for, but not how to assess it (Winter, Griffiths, & Green, 2000).

Sipe and Stallings (1996), however, took a different approach. They decided not to focus on evaluating the entire dissertation, but only examined the literature review (Sipe & Stallings, 1996). They chose this method because they believed that a well-constructed literature review would provide an indication of overall dissertation quality.

Boote and Beile (2005) followed with a study about the importance of dissertation literature reviews. They concluded that “a substantive, thorough, sophisticated literature review is a pre-condition for doing substantive, thorough, sophisticated research” (Boote & Beile, 2005, p. 3). They deemed that doctoral candidates could not adequately produce quality research without first synthesizing the literature in the field of study. They determined that “the academic community ought to be able to assume that a dissertation literature review indicates a doctoral candidate’s ability to locate and evaluate scholarly information and to synthesize research in his or her field” (p. 4).

As the literature indicates, it is difficult to measure the overall quality of a dissertation; however, the literature review may be a fair representation of a dissertation’s scholarly quality.

Fortunately, there is a bibliometric method known as citation analysis that is widely accepted as an assessment of scholarly quality (Goldfinch, 2012; Haycock, 2004; Moed, 2005).

Citation Analysis

Citation analysis is a bibliometric technique that can be used to measure the characteristics, type, and scholarly quality of information that is acquired and synthesized during the dissertation process (Goldfinch, 2012; Haycock, 2004; Moed, 2005). As early as the 1970s, citation analysis was being used to analyze which research fronts were being studied and to predict the future of various disciplines (Garfield, 1972). Garfield remarked in 1972 that citation analysis could be used to evaluate the quality of a literature review by analyzing the volume and types of citations. According to Haycock (2004), citation analysis can be used to accurately identify and predict which journals are being used the most in dissertations. Goldfinch (2012) stated that citation analysis is based on the assumption that materials that are published in peer-reviewed journals have been vetted by scholars who have acknowledged that the work is of acceptable quality.

Some researchers, however, warn about the possible pitfalls of citation analysis. MacRoberts and MacRoberts (2010) performed a study of citation analysis in the biogeography field and determined that there was a significant amount of material cited that was not included in the traditional citation analysis databases. This meant that much of the material being used could not be successfully classified as high or low quality (MacRoberts & MacRoberts, 2010). Priem, Taraborelli, Groth, and Neylon (2011) also concurred that citation analysis alone was useful, but not sufficient. They recommended using citation analysis in conjunction with other methods, such as quantifiable ranks or ratings, to attempt an adequate calculation of a citation's affect (Priem, Taraborelli, Groth, & Neylon, 2011).

A simple citations analysis consists of sorting the references into groups based on types, including journals, books, newspapers, websites, etc. (Goldfinch & Yamamoto, 2012). Goldfinch and Yamamoto (2012), suggest that this type of simple citation analysis is not adequate for evaluating research. They postulate that a ranking or rating system provides a better alternative.

Goldfinch and Yamamoto (2012) are quick to admit that there is not a perfect ranking or rating system available. A main concern is that such scales only focus on peer-reviewed journals and ignore other sources such as books, newspapers, and websites (Goldfinch & Yamamoto, 2012). Furthermore, there are several rating and ranking databases that use a variety of calculation methods that may not always come to the same conclusion about a citation (Goldfinch & Yamamoto, 2012).

Despite these drawbacks, citation analysis is still considered the main tool for research assessment (Goldfinch & Yamamoto, 2012; Moed, 2005; NCA, 2013; Priem, et al., 2011). Experts acknowledge that citations are an intangible way to pay an intellectual debt, meaning that just as patents track the use of inventions, citations track the use of knowledge (Goldfinch & Yamamoto, 2012). Citation analysis will not provide a final answer about the quality of research; instead it may be used to provide a small piece of the picture. When used with independent ranking and rating databases, it is currently the best way to assess a perceived level of quality and legitimacy granted to research (Goldfinch & Yamamoto, 2012; Moed, 2005; NCA, 2013).

Ranking and Rating Databases

Once a simple citation analysis has been performed on a dissertation's reference list, independent rating and ranking databases can be consulted. In the field of social sciences, there are three such databases: Social Sciences Citation Index (SSCI), SCImago Journal Rankings (SJR), and EigenFactor.

Social Sciences Citation Index Database (SSCI): Impact Factor. The SSCI database was acquired and is maintained by Thomson Reuters, as a part of their Web of Science Core Collection (SSCI, 2015). It is considered the gold standard in citation rating (Goldfinch & Yamamoto, 2012; Moed, 2005; NCA, 2013). The SSCI database is available to institutions for a hefty fee; however, it provides some of the most comprehensive information on over 3,000 social sciences journals (SSCI, 2015). According to Thomas Reuters, if a journal is contained within the database, then it is considered high quality within the social sciences field (SSCI, 2015).

Impact factors for journals are calculated annually to measure the “impact” [sic] a journal has in a field, and to provide a quantified measure of quality (NCA, 2013). While the algorithm for calculating the impact factor is complex, the main objective is to determine “...the average number of times articles from the journal published in the past two years have been cited...” (NCA, 2013, p. 5). If a journal is given an impact factor of 1.0, this indicates that articles from the journal have been published one time within the past two years. The higher a journal’s impact factor, the more influence it has and the higher the level of perceived quality it holds.

It is important to note that some researchers argue that an impact factor is not an adequate measure of perceived quality (Moed, 2005; NCA, 2013). However, there are many other researchers that assert the impact factor is not a complete measure of quality, but is the best measure currently available (Goldfinch & Yamamoto, 2012; Moed, 2005; NCA, 2013). In an effort to obtain a better understanding of a reference source’s quality, other measurements are being consulted.

SCImago Journal Rankings Database (SJR): Quartile Rank, SJR Score, and H-index. The SJR database uses scientific indicators derived from information in the Scopus database (SJR, 2015). Scopus is the world’s largest abstract and citation database, which is

dedicated to collecting data on peer-reviewed literature from journals, books, and conferences.

The SJR database uses various Scopus measures to calculate the SJR Quartile Rank, the SJR, and the H-index.

The SJR Quartile Rank is a quick measure that compares a single journal to all of the other journals within the same discipline over a rolling three-year period (SJR, 2015). The quartile ranks range from Q1 to Q4, with Q1 being the highest quality and Q4 being the lowest quality.

The SJR is a quantified measure of a journal's influence and prestige in its field, and is derived by calculating "...the average number of weighted citations received in the selected year by the documents published in the journal in the three previous years" (SJR, 2015, p. 1). It is not uncommon for the SJR to be large, with several education journals receiving SJRs above 3,000. The higher the SJR, the higher the prestige and influence of a journal (SJR, 2015).

The SJR H-index is a measure of influence and is calculated by counting the number of articles that have received a specific number of citations over a specified period, usually two to three years (SJR, 2015). The number of articles that have received a minimum amount of direct citation, called h , is calculated by a complex algorithm that is not disclosed by the SCImago Journal Rankings database.

EigenFactor Database: Eigen Factor Score and Article Influence. The EigenFactor Score is a quantitative measure of a journal's overall importance to its discipline (EigenFactor, 2012). EigenFactor (2012) calculates scores for all journals that are included in Thomson Reuter's journals database.

A journal's raw EigenFactor is directly related to the number of articles it publishes annually; therefore, a journal that publishes 2,000 articles per year will have a raw EigenFactor

score double that of a journal that publishes 1,000 articles per year (EigenFactor, 2012). Once the raw score is calculated it is converted to a percentile and "...scaled so that the sum of the EigenFactor scores of all journals listed in Thomson's [journals database] is 100" (EigenFactor, 2012, p.1). The lowest EigenFactor percentile score is a 0.01, with a higher score indicating more importance within a field.

Another measure within the EigenFactor database is the Article Influence (AI) score. The AI score measures the average influence a journal's articles has over the first five years of publication (EigenFactor, 2012). The AI score is normalized against the SSCI Impact Factors, meaning that the AI score is converted to a percentile according to how it compares to the SSCI score.

By conducting a citation analysis and combining it with these bibliometric rating and ranking measures, an initial evaluation of the quality of reference sources used in dissertations can be completed.

Summary of the Literature

Online education has developed over several decades; progressing through five distinct stages to become a tool that allows colleges and universities to offer education in a new format. Its popularity has continued to grow as more students are electing online courses and degree programs. Researchers have begun to examine this growing trend, identifying the pros and cons for students, faculty, and institutions.

Despite the rapid growth of online education, it has not been universally accepted. Proponents claim that there is no difference in the quality of education delivered, while opponents fear institutions are sacrificing quality for profits. The debate only intensified once online delivery methods began to be used in graduate education.

As the level of graduate education advances, the more unique the knowledge transfer process becomes. At the doctoral level, specifically in the field of education, the programs are designed to prepare the next generation of leaders who will affect policy. Doctoral recipients become the mentors and teachers of the next generation of doctoral students, directly affecting the future of the field; therefore, it is important to understand the outcomes programs have on doctoral candidates.

Since the culminating activity of a doctoral program is the dissertation, it is reasonable to assume that it represents a candidate's scholarly ability. By using bibliometric methods combined with objective quantitative ratings obtained from independent rating and ranking databases, the sources used to create dissertations can be assessed. This study used these methods to assess the quality of research being produced from online and traditional doctoral programs in education leadership.

Chapter Three: Research Methods

The purpose of this study was to assess the quality of research being produced from online and traditional doctoral programs in education by examining the culminating activity in doctoral programs, the dissertation. It is reasonable to assume that the student's dissertation will reflect a candidate's scholarly effort (Cleary, 1992; Gardner, 2009; Mullins & Kiley, 2002; Nelson & Coorough, 1994, 1997; Sipe & Stallings, 1996). The problem is that there is a substantial lack of research on how to properly assess a dissertation (Morley, Leonard, & David, 2002). There are too many subjective components in a dissertation to create an objective assessment tool; however there is a consensus that a literature review may be a fair representation of a dissertation's scholarly quality (Boote & Beile, 2005; Goldfinch, 2012; Moed, 2005; Winter, Griffiths, & Green, 2000). Fortunately, there are bibliometric methods that are widely accepted as a form of assessment (Boote & Beile, 2005; Goldfinch, 2012; Haycock, 2004; Moed, 2005).

Research Questions

1. What are the differences between the quality levels of reference sources used in doctoral student dissertations from traditional education leadership programs and online education leadership programs?
2. What are the differences between the quality levels of reference sources used in doctoral student dissertations in education leadership in terms of various demographic factors?

Research Design

In order to investigate the concern regarding the scholarly quality of research, a nationwide quantitative study was conducted to examine the scholarly quality of doctoral research in the field of education leadership by using bibliometric methods to assess the quality

of dissertation sources. Since there is a lack of information regarding the scholarly quality, this study employed a cross-sectional exploratory design. The cross-sectional exploratory research design provided a flexible framework to gain substantial background information on this particular topic at this specific point in time, and provided a knowledge foundation for additional research studies (De Vaus, 2001; Trochim, 2006).

The researcher employed bibliometric methods (Goldfinch & Yamamoto, 2012) to collect data from a stratified sample of education leadership doctoral dissertations in the United States. A data collection matrix, created in Microsoft Excel, was used to collect data from dissertations available on ProQuest. This matrix was also used to collect information on every reference source cited in these dissertations, along with various bibliometric measures.

Population and Sample

The population consisted of all approved dissertations from both online and traditional education leadership doctoral programs in the United States from 2012 to 2014 (N=4,397). The researcher used the ProQuest Dissertations & Theses Full Text: Social Sciences (2015) database to identify 4,397 dissertations that met the criteria. This population was identified by setting the subject to “education leadership,” the publication dates to “2012-2014 (years),” and the database to “Full Text: Social Sciences.”

To calculate sample size, the Survey Monkey Sample Size Calculator (2015) was consulted. A population of 4,397, a confidence level of 95%, and a margin of error of 5% were inputted, and a sample size of 354 dissertations was calculated.

After the sample size (n=354) was determined, a sample was selected using stratified sampling. The population was divided into two strata, online doctoral program dissertations and traditional doctoral program dissertations, to represent the division of program types. Traditional

doctoral programs are considered those that present 80% or more of their coursework in a traditional face-to-face format, while online doctoral programs present 80% or more of their coursework in an online format (Allen, Seaman, & Sloan, 2006). Since the literature indicated that 13% of doctoral students were enrolled in online doctoral programs, 13% or 46 samples were selected from the online doctoral program dissertations stratum and 87% or 308 samples were selected from the traditional program dissertations stratum. Data from all 354 dissertations were collected and entered into the IBM SPSS Statistics Version 20 data analysis software.

Data Collection

Data were collected by the researchers using the ProQuest Dissertations & Theses Full Text: Social Science database, the SCImago Database, the EigenFactor database, and the SSCI database. A data collection matrix in Microsoft Excel was used to collect this data. The first step was to locate each dissertation in the ProQuest database and record its demographic characteristics, including the title, publication date, research design, the degree-granting institution, the online status of the institution, public or private status, and for-profit or not for profit status. The second step was to record every reference source used in each dissertation. Each reference source was linked to its corresponding dissertation by a unique identifier. Additionally, information about each reference source was recorded including publication date, first listed author, source type, and, if the source is from a journal, the journal title. The third step was to consult the Carnegie Foundation's website to record each degree-granting institution's Carnegie classification, public or private status, for-profit or not-for-profit status, and the institution's physical location. The final step was to consult each of the independent ranking and rating databases to record each reference source's various bibliometric measures, including

Impact Factor, SJR Quartile Rank, SJR Score, H-index Score, EigenFactor Score, and Article Influence Score.

Data Analysis

A multiple correlation was used to determine that all of the quantitative measures from the independent bibliometric databases were highly and significantly correlated. A mean Impact Factor score was calculated for each dissertation. Using the mean Impact Factor scores to complete further data analysis, comparisons were conducted to answer the research questions.

Descriptive statistics were calculated by the IBM SPSS Statistics Version 20 data analysis software. One-Way Analysis of Variance tests (ANOVA) and means comparison tests were performed using the mean Impact Factor scores to determine significance among groups in terms of program type, title of degree conferred, research design, degree-granting institution, Carnegie Classification, public or private institution status, and for-profit or not-for-profit institution status. Specifically, the ANOVA and means comparisons among the groups were used to answer each of the research questions. These tests were executed at a confidence level of $p < .05$.

Summary of the Methods

This study was designed to assess the quality of research being produced from online and traditional doctoral programs in education. To accomplish this, a data collection matrix was created and bibliometric methods were employed to collect data from dissertations available on ProQuest. The data came from completed dissertations during the time frame of 2012 to 2014, and were collected during June, July, and August 2015. This research study employed descriptive statistics and quantitative methods to analyze the data.

Chapter Four: Presentation and Analysis of Data

In the field of education, doctoral programs are expected to prepare the future leaders of the field (Gardner, 2009; Kidwell, Flagg, & Stites-Doe, 2014; Nelson & Coorough, 1994). With the doctoral process being so unique, a necessary interaction between the student and faculty is essential in order for the student to develop an expert-level understanding of the field (Gardner, 2009; Maddrey, 2012; Perkins & Lowenthal, 2014). Literature indicates, however, that doctoral programs in education are trending toward being offered as online programs, which is causing many researchers and leaders in the field to worry that the lack of traditional instruction and interaction will have a damaging effect on the quality of education doctoral programs. Therefore, the purpose of this study was to ascertain the quality of research being produced from online and traditional doctoral programs in education by analyzing the quality levels of reference sources used in the culminating activity of education leadership doctoral programs, the dissertation.

In order to achieve this, bibliometric methods were employed to collect data from a nationwide sample of dissertations. Findings are organized accordingly: (a) data collection, (b) sample characteristics, (c) major findings, and (d) summary of the findings.

Data Collection

The population for this study ($N = 4,397$) consisted of all approved dissertations from both online and traditional education leadership doctoral programs in the United States within the last three years. These dissertations were identified using the ProQuest Dissertations & Theses Full Text: Social Sciences database. The entire population list was downloaded into a Microsoft Excel workbook, and a stratified random sample ($n = 354$) was selected. In accordance with the literature, 13%, or 46 samples, came from online doctoral programs and 87%, or 308 samples, came from traditional doctoral programs.

Data collection was completed in three successive steps. First, demographic data from each dissertation was collected and recorded. This demographic data consisted of the dissertation title, publication date, research design, and the degree-granting institution. Along with this information, demographic data from the degree-granting institutions were also recorded, including online status, public or private classification, profit classification, Carnegie classification, and physical location. During this step it was discovered that three of the dissertations from online doctoral programs and 36 of the dissertations from traditional doctoral programs had been misclassified by the ProQuest Dissertations & Theses database. Even though these dissertations could not be included in the data collection, the composition of the sample still remained 13% from online doctoral programs and 87% from traditional doctoral programs.

Once this dissertation-specific demographic data had been collected, the second step was to record every reference source used in each dissertation. This data consisted of each reference's author, date, source type, and if the source was a journal, the journal title. The third step required accessing Thomson Reuter's Social Sciences Citation Index (SSCI) database to gather quantitative rating data on journal reference sources. The data collected from this database consisted of the total citations (total cites), Impact Factor, Impact Factor without self-cites, five-year Impact Factor, Eigen score, and Article Influence score.

The final data collection step was to collect quantitative ranking and rating data for the journal reference sources from two additional independent databases: the SCImago database and the EigenFactor database. The SJR Quartile Rank and the SJR H-index Score were acquired from the SCImago database, while the EigenFactor Percentile Score and the Article Influence Percentile Score were recorded from the EigenFactor database.

The Impact Factor, SJR Quartile Rank, and SJR H-Index Score were used because they are purported to quantitatively assess the overall impact or influence of journal reference sources to the social sciences field. The Eigen Factor Score, Article EigenFactor Influence Score, Percentile Score, and Article Influence Percentile Score were selected because they quantify the importance and prestige of the journal reference sources in regards to the social sciences field.

Sample Demographics

Upon completion of the data collection, there were 36,718 references cited from 315 unique education leadership doctoral dissertations. Among these dissertations, there were 169 qualitative, 101 quantitative, 43 mixed-methods, and 2 “other” in terms of research design. The two dissertations categorized as “other” did not fall into any of the three common categories because they were not research-based dissertations. Instead, they consisted of group capstone dissertation projects that used a type of action research based design to develop and implement a solution to a problem.

Universities’ Demographics

The 315 dissertations were conferred by 154 distinct universities from 41 states and the District of Columbia. These 154 universities represented eight of the Carnegie Classifications, including Baccalaureate/Associate’s (Bac/Assoc), Master’s Colleges and Universities with larger programs (Master’s L), Master’s Colleges and Universities with medium programs (Master’s M), Master’s Colleges and Universities with smaller programs (Master’s S), Research Universities with very high research activity (RU/VH), Research Universities with high research activity (RU/H), and Doctoral/Research Universities (DRU).

In addition to the Carnegie classification, 136 universities were classified as “Private” and 179 as “Public.” In terms of profit status, 29 universities were categorized as “For-profit” and 286 as “Not-for-profit.”

Major Findings

In order to determine if all three of the independent rating and ranking databases were measuring the same type of information, a multiple correlation was completed. It was determined that the Impact Factor from the Thomson Reuter’s SSCI database was significantly and strongly correlated with all of the other measures. It is important to note that Impact Factor and SCI Quartile Rank are inversely correlated because they use opposite scales. A rising Impact Factor indicates that a journal has an increased impact or influence. Conversely, an SCI Quartile Rank of Q1 has a much higher impact or influence than one rated as Q4. Table 1 summarizes the correlation findings from the sample.

Table 1 *Correlation Data from Education Leadership Doctoral Dissertations Sample*

		Eigen Factor Score	Article Influence Score	SCI Quartile Rank	SCI H-index	EigenFactor Percentile Score	Article Influence Percentile Score
Impact Factor	Pearson Correlation (r)	.552	.901	-.427	.845	.576	.558
	Sig. (2-tailed)	.0001	.0001	.0001	.0001	.0001	.0001
	N	36,718	36,718	36,718	36,718	36,718	36,718

Once it was determined that the three databases were measuring very similar aspects of quality, it was decided that the Impact Factor would be the primary measure used for data analysis. This decision was based on the fact that the SSCI’s Impact Factor is considered the gold standard in citation rating (Goldfinch & Yamamoto, 2012; Moed, 2005; NCA, 2013).

Therefore, in order to accurately assess the data, a mean Impact Factor score was calculated for

each dissertation. Each dissertation’s mean Impact Factor score was used for the remaining data analysis.

Research Question 1 (RQ1): What are the differences between the quality levels of reference sources used in doctoral student dissertations from traditional education leadership programs and online education leadership programs?

The mean Impact Factor score for each dissertation was grouped according to either online or traditional education leadership doctoral program classification. A comparison of the two groups’ means was achieved by using the IBM SPSS Statistics Version 20 data analysis software. It was revealed that with a p-value of .681, there was no significant difference between the quality levels of reference sources used in dissertations completed at online education leadership programs and traditional education leadership programs. Table 2 summarizes the findings.

Table 2 Difference Between Online and Traditional Doctoral Programs

Program Type	Impact Factor Mean	N	Significance
Online	.3574	43	.681
Traditional	.3823	272	

Research Question 2 (RQ2): What are the differences between the quality levels of reference sources used in doctoral student dissertation in education leadership in terms of various demographic factors?

Demographics for both dissertation and degree-granting institutions were collected. The demographics examined based on dissertation characteristics were research design, degree conferred, and degree-granting institution. The demographics investigated based on institutional characteristics consisted of Carnegie Classification, public or private status, and for-profit or not-

for-profit status. As with research question one, the computed means of each dissertation's Impact Factor were used for this data analysis.

Research Design. There were four categories of research design: Qualitative, Quantitative, Mixed-methods, and Other. The largest group was Qualitative design, comprising 53.7% of the sample, followed by Quantitative design with 32%. Mixed-methods design and Other design encompassed 13.7% and 0.6% of the sample, respectively.

The p-value of 0.043 from a one-way ANOVA of the groups' Impact Factor means indicated that there was a significant difference among quality of the reference sources used within the research design groups. Post-hoc testing suggested that the difference occurred between the means of the Qualitative (0.336) and Quantitative (0.453) research design groups. While post-hoc testing also revealed that the mean of the Other research design group was the highest at 0.719, both the Tukey HSD and Bonferroni post-hoc tests showed no significant difference between this group and any of the others. This lack of significance is likely due to its groups size (n=2). Finally, the post-hoc tests revealed an Eta Squared value of .026, meaning the effect size was a relatively small 2.6%. The mean, ANOVA, and Eta Squared statistics are reflected in Table 3.

Table 3 *Research Design Demographic Analysis*

Design	Impact Factor Mean	N	F	Significance	Eta Squared
Qualitative	.336	169	2.742	.043	.026
Quantitative	.453	101			
Mixed-methods	.356	43			
Other	.379	2			

Title of Degree Conferred. The two types of doctoral degrees offered in the field of education leadership are the Doctor of Education (Ed.D.) and the Doctor of Philosophy (Ph.D.). Within the sample for this study, 239 dissertations were from Ed.D. programs and 76 dissertations were from Ph.D. programs.

In order to determine if there were any differences between the two groups, a comparison of the two means was achieved using SPSS. It was discovered that with a p-value of .330 there was no significant difference between the Impact Factor means of Ed.D. and Ph.D. programs. The specific mean statistics and significance value are reflected in Table 4.

Table 4 *Degree Demographic Analysis*

Degree	Impact Factor Mean	N	Significance
Ed.D.	.367	239	.330
Ph.D.	.415	76	

Degree-granting Institution. This study’s sample of 315 dissertations consisted of doctoral programs completed at 154 different institutions. A one-way analysis of the institutions’ Impact Factor means was completed to determine if there were differences among the quality of reference sources used at these specific institutions. It was determined that the differences among the Impact Factor means were significant at the 0.0001 p-value level. Furthermore, the Eta Squared was 0.611, indicating a 61% effect size.

Due to the large number of groups, post-hoc testing could not be accomplished. However, by examining the Impact Factor means at the 154 universities, it was discovered that the range between the smallest Impact Factor mean (0.012) and largest Impact Factor mean (4.1) was 4.088. In addition, the majority of the 154 institutions’ Impact Factor means are below 0.50, with only 24 above this level. This seems to support the p-value of 0.0001 calculated by the SPSS software.

Carnegie Classification. Each degree-granting institution is assigned to a basic classification by the Carnegie Foundation. The Carnegie classifications represented in this sample are Baccalaureate/Associate's (Bac/Assoc), Master's Colleges and Universities with larger programs (Master's L), Master's Colleges and Universities with medium programs (Master's M), Master's Colleges and Universities with smaller programs (Master's S), Research Universities with very high research activity (RU/VH), Research Universities with high research activity (RU/H), and Doctoral/Research Universities (DRU).

It is interesting to note that the majority, or approximately 76%, of the dissertations were completed at research universities (RU/VH, RU/H, and DRU). This was followed very closely by master's colleges and universities with larger programs at approximately 21%. Finally, approximately 3% of the dissertations were completed at master's colleges and universities with smaller or medium programs and at baccalaureate/associate institutions (Master's M, Master's S, and Bac/Assoc).

A one-way ANOVA was performed to assess the differences between the Impact Factor means of the dissertations within each group. It was ascertained that with a p-value of 0.533, there were no significant differences among the groups. The mean statistics, as well as the F-statistic and significance value are displayed in Table 5.

Table 5 *Carnegie Classification Analysis*

Carnegie Classification	Impact Factor Mean	N	F	Significance
Bac/Assoc	.100	2	.867	.533
Master's L	.304	66		
Master's M	.383	3		
Master's S	.231	3		
RU/VH	.406	84		
RU/H	.377	80		
DRU	.430	75		

Public or Private Institution Status. Each of the institutions that approved a dissertation in the sample was assigned a public or private institution status, as determined by the Federal Government. Of the 315 dissertations, 136 (43%) were completed at a private institution and 179 (57%) were completed at a public institution.

A comparison of the Impact Factor means revealed that with a p-value of 0.373, there was no significant difference between education leadership dissertations completed at public institutions and private institutions. The mean statistics and significance value are displayed in Table 6.

Table 6 *Institutions' Public and Private Demographic Analysis*

Public or Private Status	Impact Factor Mean	N	Significance
Public	.363	179	.373
Private	.400	136	

For Profit or Not for Profit Institution Status. Similar to the public or private institution status, the Federal Government also determines if an institution is considered a for-profit or not-for-profit organization. In the sample for this study, 29 (9%) of the dissertations were from for-profit institutions, while 286 (91%) were from not-for-profit institutions.

An evaluation of the Impact Factor means for the two groups was completed using the Means Comparison analysis in SPSS. The analysis showed a p-value of 0.494, indicating no significant difference between the quality levels of reference sources used in dissertations completed at for-profit and not-for-profit institutions. Table 7 illustrates the mean statistics and significance value.

Table 7 *Institutions' For-profit and Not-for-profit Demographic Analysis*

For-profit or Not-for-profit Status	Impact Factor Mean	N	Significance
For-profit	.424	29	.494
Not-for-profit	.374	286	

Summary of the Findings

This study used extant data to explore the quality levels of reference sources used in education leadership doctoral dissertations. During this process a wide variety of demographic information was collected. An Impact Factor mean was calculated for each dissertation and used to compare these dissertations according to the various demographics.

Using means comparison tests and ANOVA, it was determined that there was a significant difference in the quality levels of references sources used in education leadership doctoral dissertations based on research design and specific university. It was also determined that there were no significant differences based upon several other demographics including online or traditional program type, degree completed, Carnegie Classification, public or private institution status, and for-profit or not-for-profit institution status.

Chapter 5: Summary, Discussion of Findings, and Recommendations

Doctoral programs in Education are designed to prepare leaders who will affect policy and become the scholarly guides to the next generation of educational experts (Gardner, 2009; Kidwell, Flagg, & Stites-Doe, 2014; Nelson & Coorough, 1994). This developmental process within doctoral programs is unique, with the interaction between faculty and students creating a path toward expert-level understanding (Gardner, 2009; Maddrey, 2012; Perkins & Lowenthal, 2014). Changing program delivery models like online teaching have become more popular and therefore more competition for traditional programs. Some educators worry that the lack of traditional instruction and interaction will negatively affect the quality of these doctoral programs. This study examined dissertations from education programs, specifically those in education leadership, in an attempt to assess the quality of research being produced from online and traditional doctoral programs.

The Study

As the culminating activity in doctoral programs, it is reasonable to assume that a student's dissertation reflects a candidate's scholarly effort (Cleary, 1992; Grander, 2009; Mullins & Kiley, 2002; Nelson & Coorough, 1994, 1997; Site & Stallings, 1996). The issue is that there is a substantial lack of research on how to properly assess a dissertation (Morley, Leonard, & David, 2002). Since dissertations frequently have widely varying subjective components, it is impossible to create a single objective assessment tool (Boote & Beile, 2005; Goldfinch, 2012). There is, however, a consensus that a literature review may be a fair representation of a dissertation's scholarly quality (Boote & Beile, 2005; Goldfinch, 2012). Fortunately, there are bibliometric methods that are accepted as a form of assessment (Boote & Beile, 2005; Moed, 2005). Therefore, this study used the bibliometric method of citation analysis

combined with statistical analysis to assess the quality levels of reference sources used in education leadership dissertations.

Using the population (N = 4,397) of all approved dissertations that were classified by the ProQuest Dissertations & Theses database as from online and traditional education leadership doctoral programs in the United States from 2012-2014, a stratified random sample (n = 354) was selected. Thirteen percent or 46 samples were selected from online doctoral programs and 87% or 308 samples were selected from traditional doctoral programs. During data collection, 39 dissertations were removed from the sample due to misclassification by the ProQuest database.

Demographic data from each dissertation were collected and recorded, along with demographic data from each degree-granting institution. Once all of this data were collected, every reference source used in each dissertation was recorded. A total of 36,718 reference sources from 315 unique education leadership doctoral dissertations were collected. Finally, quantitative rating data from three independent bibliometric databases were collected for each journal reference source.

In order to determine if all three of the independent rating databases were measuring similar types of information, a multiple correlation was completed. The results of this analysis indicated a high correlation among the scores from all three methods of examination. Given this correlation, the Impact Factor rating method was used for the data analysis portion of this study. The analysis was based upon a mean Impact Factor score tabulated for each dissertation.

Discussion of Findings

Research Question 1 (RQ1): What are the differences between the quality levels of reference sources used in doctoral student dissertations from traditional education leadership programs and online education leadership programs?

The calculated mean Impact Factor scores for the online and traditional education leadership doctoral program groups were compared. It was discovered that there were no significant differences between the quality levels of reference sources used. This suggests that, in terms of quality levels of reference sources, dissertations produced by candidates enrolled in traditional education leadership doctoral programs are similar to those enrolled in online education leadership doctoral programs.

While the literature indicated that there are specific advantages and disadvantages to online education, the concern that these disadvantages are adversely affecting the scholarly quality of research being produced by candidates enrolled in online education leadership doctoral programs may be unfounded. It cannot be concluded that these disadvantages were mitigated during the development of online doctoral programs; however, this study's findings do help to support the conclusions by Zhao, Lea, Yan, Lai, and Tan (2006) that determined there were no significant differences between online and face-to-face degree programs.

Research Question 2 (RQ2): What are the differences between the quality levels of reference sources used in doctoral student dissertation in education leadership in terms of various demographic factors?

Demographics for both dissertation and degree-granting institutions were collected. The dissertation demographics that were examined included research design, degree conferred, and degree-granting institutions. The institutional demographics analyzed consisted of Carnegie Classification, public or private status, and for-profit or not-for-profit status. The computed means of each dissertation's Impact Factor were used for the data analysis.

Research Design. Among the four categories of research design considered for this study, Qualitative, Quantitative, Mixed-methods, and Other, a one-way ANOVA comparing each

group's Impact Factor mean revealed that there was a significant difference in the quality of reference sources used. Post-hoc testing revealed that significant difference occurred between the means of the Qualitative (mean=0.336) and Quantitative (mean=0.453) research design.

This finding suggests that candidates electing to complete a dissertation with a quantitative research design are selecting higher quality reference sources than those completing qualitative dissertations. This finding, however, does not mean that quantitative research is superior to qualitative research. An Eta Squared of .026 shows that the effect size is only 2.6%. In other words, more than 97% of the variance between the means is due to extraneous factors.

This low effect size could be attributed to the nature of quantitative and qualitative research. According to Bogdan and Biklin (2007), qualitative research is selected when the data to be collected are "soft," meaning it includes rich descriptions that are conveyed using words, whereas quantitative data are steadfast numbers that can be analyzed using statistical procedures. Furthermore, quantitative studies evolve from research questions that are created by operationalizing variables through prior research (Bogdan & Biklin, 2007; Smeyers, 2001).

In order to complete a quantitative study, a researcher must first understand all aspects of the variables (Smeyers, 2001). Qualitative research questions develop as data are observed and collected, as researchers seek to understand a phenomenon and identify variables through the research (Bogdan & Biklin, 2007). These differences between qualitative and quantitative research seem to support the findings of this study. The Quantitative research design group may have a higher Impact Factor mean because those researchers sought to understand the variables before developing their studies. The Qualitative research design group may have a lower Impact Factor mean because those researchers were seeking to identify variables that had not previously been identified or researched.

Title of Degree Conferred. The Doctor of Education (Ed.D.) and the Doctor of Philosophy (Ph.D.) are the two titles of terminal degrees offered in the field of education. Within the sample of this study, 76% of the dissertations conferred were Ed.D. degrees, while 24% were Ph.D. degrees. A comparison of the two groups' Impact Factor means revealed that there was no significant difference between the quality levels of reference sources used. This finding supports previous research by Nelson and Coorough (1994) and Shulman (2006), which discovered there were no longer any significant differences between the two types of degrees in terms of preparing educators to be practitioners, researchers, and scholars.

Degree-granting Institution. This nationwide study's sample of 315 dissertations was comprised of education leadership doctoral programs completed at 154 unique institutions. A one-way ANOVA of the institutions' Impact Factor means revealed that there were significant differences among the institutions. Furthermore, significance was found at the 0.0001 p-value level with an Eta Squared of 0.611. This indicates an effect size of 61%, meaning that only 39% of the variance between the Impact Factor means was unaccounted for in this analysis.

Due to the large number of groups, post-hoc testing could not be accomplished; however, an examination of the Impact Factor means revealed a large range of 4.088 between the lowest and highest rated institution. Additionally, a majority of the institutions had Impact Factor means below 0.50, with only 15% rated above this level. This finding suggests that individual institutions have a high level of control regarding the quality of dissertations being produced.

Carnegie Classification. Every degree-granting institution is assigned a basic classification by the Carnegie Foundation that denotes key characteristics. All of the research university classifications (RU/V, RU/H, and DRU) and master's classifications (Master's L, Master's M, and Master's S) were represented in this sample. In addition, the

Baccalaureate/Associate's (Bac/Assoc) and Specialized/Other (Spec/Other) classifications were represented.

Approximately 76% of the dissertations in the sample were completed at research universities. This finding was not surprising, given that the research universities are assigned to the classification because a majority of the faculty's efforts are devoted to research. It was surprising, however, that a few of the dissertations were completed at Baccalaureate/Associate and Specialized/Other institutions. These universities tend to focus on two-year, four-year, and technical education programs.

Despite the variety of Carnegie Classification groups, a one-way ANOVA revealed that there were no significant differences among the quality levels of reference sources used in the dissertations completed at institutions assigned to each Carnegie Classification. This may be an important finding because institutions assigned the RU/VH, RU/H, and DRU classification are considered superior regarding the level of research activity and the number of doctoral-level degrees awarded (Carnegie Description, 2010). These research-oriented, doctorate-granting institutions can only achieve this ranking if they award at least 20 research-based doctoral degrees per year and engage in substantial research activities (Carnegie, 2010). Since there were no significant differences found, it may indicate that Master's classifications, which are granted to institutions that award at least 50 master's degrees and less than 20 doctoral degrees per year, and Baccalaureate Colleges, which award fewer than 50 master's degrees per year, are producing education leadership doctoral candidates that choose reference sources of similar quality levels.

Public or Private Institution Status. According to the Federal Government, every higher education institution is considered either public or private. The sample for this study was

comprised of 136 dissertations (43%) conferred by private institutions and 179 dissertations (57%) conferred by public institutions.

A comparison of the Impact Factor means indicated that there was no significant difference between education leadership dissertations conferred by public and private institutions. This implies that the quality of reference sources being used in dissertations is not affected by an institution's public or private status.

For-Profit or Not-for-Profit Institution Status. As with the public or private status of an institution, the Federal Government also determines if an institution is classified as for-profit or not-for-profit. The sample for this study was very disproportionate regarding profit status. There were only 29 dissertations (9%) completed at for-profit institutions. Despite the unbalanced groups, a comparison of the Impact Factor means revealed no significant differences between the quality levels of reference sources used.

Given the literature berating the quality of for-profit institutions, this finding is fascinating. Many researchers are apprehensive about for-profit institutions, citing the bad reputation several have acquired (Barr & Miller, 2015; Rosenthal, 2012). Rosenthal (2012) and Barr and Miller (2015) point out that for-profit institutions are notorious for engaging in dishonorable practices including fraudulently obtaining federal financial aid, unethical marketing practices, exorbitantly high tuition and fees, dreadful student outcomes, and high loan default rates.

Conclusions

This study determined that there were no significant differences between dissertations produced in online education leadership doctoral programs and traditional education leadership doctoral programs. Given the increasing number of students electing to enroll in online education

leadership doctoral programs, the findings are somewhat reassuring to those concerned about the future of the profession.

A shift in how education delivery models for education is currently well underway, particularly in higher education, and doctoral education is no exception. Despite how leaders, scholars, and faculty may view online education, academia must adapt to this growing trend. Several researchers have already identified specific advantages and disadvantages to online education. In order to be successful, these advantages must be embraced and the disadvantages mitigated.

Additionally, this study discovered that, while there were significant differences in the quality levels of reference sources used among the various research designs of dissertations and among specific doctorate-granting institutions, there were no significant differences found between the type of degree conferred, among the Carnegie Classifications assigned, between public or private status, and between for-profit or not-for-profit status. These findings suggest that the degree-granting institution is the driving force behind the quality of research being produced in education leadership doctoral programs.

The fact that the demographic characteristics of these degree-granting institutions do not affect the quality levels of reference sources used is fascinating as these classifications are often thought to have importance. For instance, Carnegie Classifications are not randomly assigned, but earned by assessing the activities being completed. This seems to imply that a Carnegie Classification of RU/VH signifies a superior level of research. The results of this study; however, may cast doubt on this implication.

The same can be said about for-profit and not-for-profit institutions. This study found that there were no significant differences between the quality levels of reference sources being used

in education leadership dissertations from for-profit and not-for-profit institutions. Many researchers automatically discount for-profit institutions as adequate options for education, citing their negative reputations associated with alleged previous dishonorable practices. It may be time, however, to reassess the practicality of for-profit institutions. If education leadership doctoral programs at for-profit institutions are teaching their candidates to produce research of similar quality to that of not-for-profit institutions, then their doctoral programs may also be of comparable quality.

The lack of significant differences in terms of Carnegie Classification and for-profit or not-for-profit status leads to the intriguing conclusion that the most important variable in the quality of research being produced by candidates in education leadership doctoral programs is the degree-granting institution itself. Therefore, administrators and educational leaders must assess the rigor of their programs in an effort to assess the quality. Instead of looking outward, program leaders need to look inward to assess their own strengths and weaknesses.

Implications

An increasing number of doctoral students are electing to enroll in online programs. The *Doctorate Recipients from the United States Universities* report indicated that enrollments in traditional doctoral programs are steadily decreasing, whereas enrollments in online doctoral programs are increasing (Allen, Seaman, & Sloan, 2006; Hoffer, Sederstrom, Selfa, Welch, et al., 2003). According to the National Science Foundation's 2013 Survey of Earned Doctorates (SED), the number of doctorates awarded from online programs in the field of education leadership is continually increasing.

If these trends continue, more institutions will consider offering online doctoral programs, making it necessary to understand how online doctoral programs can be successful.

This cross-sectional exploratory research study provides a substantive background of information on this topic, and provides a knowledge foundation for additional research studies. This research highlights general areas where education leadership doctoral programs are using similar quality levels of reference sources to produce dissertations and areas where the quality levels differ. The results of this study may provide a foundation for further study in the area of dissertation and doctoral program quality.

Limitations of the Study

This study was designed to explore the scholarly quality of doctoral candidates in the field of education leadership by examining dissertations from graduates of these programs. This study is limited in that it only examines one aspect of dissertation quality, the reference sources.

For the study, the researcher sampled from education leadership doctoral programs designated as traditional or online. This designation was determined by each institution self-identifying whether its education leadership doctoral program was classified as online or traditional. It was assumed that each institution correctly self-identified its doctoral programs. In addition, dissertations from hybrid programs were not part of this study's population; therefore, they were not included in the sample.

Finally, the researcher collected reference source data from education leadership doctoral program graduates' dissertations. The researcher assumed that each reference source citation was complete and accurate.

Recommendations for Further Study

As a cross-sectional exploratory study, the new background knowledge gained provides an abundance of opportunities for further research. This study could be replicated using different sub-fields in education or using fields besides education. This study could also provide the basis

for administrators to conduct their own program assessment of research being completed by comparing their own Impact Factor means to the ones presented here.

Further study is also needed to identify which factors of education leadership doctoral programs affect overall research conducted by program candidates. Furthermore, additional study is also needed to determine best practices for creating and implementing online doctoral programs.

As discussed, assessing the quality of dissertations is very difficult due to numerous subjective measures. Supplementary investigation is needed to identify other dissertation factors that can be used for assessment purposes.

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Appendix A: Institutional Review Board Approval Letter



Office of Research Integrity

July 7, 2015

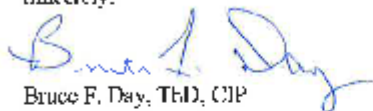
Mike Cunningham, Ed.D.
Leadership Studies/Adult & Technical Education
Marshall University

Dear Dr. Cunningham:

This letter is in response to the submitted dissertation abstract for Jessica Hanna entitled *"The quality of education leadership doctoral dissertations in the United States: An empirical review."* After assessing the abstract it has been deemed not to be human subject research and therefore exempt from oversight of the Marshall University Institutional Review Board (IRB). The Code of Federal Regulations (45CFR46) has set forth the criteria utilized in making this determination. Since the study does not involve human subjects as defined in DHHS-regulation 45 CFR §46.102(f) it is not considered human subject research. If there are any changes to the abstract you provided then you would need to resubmit that information to the Office of Research Integrity for review and determination.

I appreciate your willingness to submit the abstract for determination. Please feel free to contact the Office of Research Integrity if you have any questions regarding future protocols that may require IRB review.

Sincerely,



Bruce F. Day, PhD, CIP
Director

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Appendix B: Vita

Jessica M. Hanna

Education

- **Doctor of Education, Leadership Studies, Marshall University**
Graduation: 2015
Admitted to Candidacy: September 2014
Major: Community College Administration
Minor: Technology
Dissertation: The quality of education leadership doctoral dissertations in the United States: An empirical review
- **Master of Business Administration, Ohio University**
Graduation: 2006
Major: General Business
- **B.B.A., Business Administration, Ohio University**
Graduation: 2003
Major: Management Information Systems

Teaching Experience (2010 – Present)

- **Assistant Professor, 2015 – Present**
Marshall University
Adult & Technical Education
Online Courses: Developing Local Training Plans, Evaluation of Adult & Technical Instruction, Practicum, Human Resources, Externship
Other Duties: Advising students, program planning, website design
- **Adjunct Faculty, 2013 – 2014**
Marshall University
Leadership Studies and Adult & Technical Education
Online Courses: Human Relations in the Workplace, Leadership Specialist
Capstone, Adult Instruction Environmental & Personal Aspects
- **Co-instructor, 2014**
Marshall University
Curriculum & Instruction
Course: Graduate Statistics (hybrid course)
- **Adjunct Faculty, 2010 – 2012**
Central Ohio Technical College (COTC)
Courses: Introduction to Marketing*, Introduction to Computers*
Online Courses: Introduction to Management, Team Building
*Course was taught in both face-to-face and online formats

Research & Presentations

Cunningham, M., Damron, E., & Hanna, J. (2013). Education reform in West Virginia and the effect of district takeover. Paper presented at the Southern Regional Council on Educational Administration conference in Oklahoma City.

Cunningham, M., & Hanna, J. (2014). Distinctions between EdD and PhD programs. Paper presented at the Southern Regional Council on Educational Administration conference in Atlanta.

Online Course Design

- Marshall University**
 - Learning Management System: Blackboard
 - Designer of ATE 609 Developing Local Training Plans
 - Designer of ATE 671 Evaluation of Adult and Technical Instruction
 - Co-designer of LS 532 Human Relations
 - Co-designer of CIEC 562 Revolutionizing Your Classroom with Multimedia

- Central Ohio Technical College**
 - Learning Management Systems: Angel & Moodle
 - Developer of BMT 2021 Principles of Management
 - Developer of BMT 2022 Principles of Marketing

Website Design

- Website Design Platform: WordPress
 - Designer of the Marshall University COEPD Doctoral Website
<http://www.marshall.edu/edd>
 - Co-designer of the Marshall University College of Education and Professional Development Website: <http://www.marshall.edu/coepd>
 - Builder of the 2014 Diversity Symposium Website:
<http://www.marshall.edu/diversitysymposiu>

Professional Service

- Chairperson of the 2013 Doctoral Student/Faculty Seminar (Marshall University)
- Advisor to the 2015 Doctoral Student/Faculty Seminar Committee (Marshall University)
- Committee Member of the 2012 & 2014 Doctoral Student/Faculty Seminar (Marshall University)
- ATD Member 2014-Present
- Created business and marketing plans for PetPromise, 2006
- Co-designed the PetPromise website, 2006
- Completed marketing analysis for Cleveland, Ohio non-profit organization, 2005