THE PERCEIVED IMPORTANCE AND IMPACT OF INSTRUCTOR ACTIONS IN ONLINE GRADUATE, EDUCATION STUDENTS' SATISFACTION

By

Rochelle Franklin

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

This study examined the impact of online instructor actions on student satisfaction in online, graduate education courses. Students at an online institution that offers graduate degrees in Educational Leadership, Curriculum and Instruction, and Educational Technology completed the Priority Survey of Online Learners, which included questions about various aspects of their online learning experience, specifically focusing on timeliness, responsiveness and frequency of online instructor actions. This causal-comparative, quantitative research study employed survey strategy of inquiry. The sample consisted of 256 graduate, education students at an online, private institution. Paired *t*-tests were employed in data analysis. The results of this study revealed that online instructor actions in the areas of frequency, responsiveness and timeliness are statistically significant on online, graduate education student's satisfaction.

Descriptors: Student Satisfaction, Distance Education, Adult Learner, Graduate Education

Dedication

This dissertation is dedicated to my husband, parents and in-laws, who have continued to support me in my endeavors.

Acknowledgements

I would like to acknowledge Liberty University for providing the means and opportunity to pursue my educational dreams. To my family, thank you for your patience and prayers through this process. To the best husband anyone could ask for, Roman, thank you for your unwavering support during this longer-than-anticipated journey. I would like to thank Dr. Ackerman for her continued support and overseeing this process and both of my committee members, Dr. Thomason and Dr. Oster, for their words of encouragement and suggestions for improvement. Finally, I would also like to thank God who gave me the perseverance and wisdom to press on.

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CHAPTER ONE: INTRODUCTION

Education is constantly changing and evolving, as evidenced by the variety of models to deliver content such as a traditional model, web facilitated, blended/hybrid or fully online program. This study focused on online education and used the definition provided by the Sloan Consortium as "online courses are those in which at least 80 percent of the course content is delivered online" (Allen & Seaman, 2011, p. 11). Figure 1.1 is presented to classify and define the other models of learning.

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course where no online technology used –– content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30 to 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Figure 1.1. Going the Distance: Online Education in the United States, 2011
Source: Sloan-C, (2011)

Online learning appeals to a variety of non-traditional students. The number of courses offered via the Internet is constantly increasing. Perceived as a viable option for many students, online education is growing in the number of courses offered over the Internet (Carr, 2000), where the majority of interaction between students and instructors takes place exclusively in

online virtual learning environments. The popularity of the Internet has strongly impacted various aspects of society, including higher education.

The demand for online learning is growing exponentially. Continuing to grow at an alarming rate, online course enrollments have exceeded the total higher education student population (Baker, 2010; Sloan-C, 2011). From Fall 2007 to Fall 2008, the 12.9% increase for online enrollment far exceeded the 1.2% growth of the higher education student population in the United States (Allen & Seaman, 2008). The 2011 Survey of Online Learning shows that in Fall 2010, 31.3% (6,142,280 individuals) of all students were taking at least one online course (Sloan-C, 2011, see Figure 1.3).

The Sloan Consortium's 2011 Survey of Online Learning key report findings include:

- Over 6.1 million students were taking at least one online course during the Fall 2010 term, an increase of 560,000 students over the previous year.
- The 10% growth rate for online enrollments far exceeds the 2% growth in the overall higher education student population.
- 31% percent of higher education students take at least one course online.
- Reported year-to-year enrollment changes for fully online programs by discipline show most are growing.
- Academic leaders believe that the level of student satisfaction is equivalent for online and face-to-face courses.
- 65% of higher education institutions say online learning is a critical part of their long-term strategy.

- There continues to be a consistent minority of academic leaders concerned that the quality of online instruction is not equal to courses delivered face-to-face. (p. 1)

Institutions of higher learning are responding to this growth explosion by developing educational opportunities through Web-based instruction. The percentage of two-year and four-year education institutions offering distance education courses increased from 33% to 44% between the Fall of 1995 and 1997 to 1998 (U.S. Department of Education, 2000). During the same time, the number of different distance education course offerings increased from 25,730 to 52,270 (U.S. Department of Education).

As the demand for online courses grows, so does the demand for trained faculty to facilitate these online courses. Sloan-C (2011) reported that 72.0% of training for faculty teaching online is through internally run training courses and 87.2% of training at institutions of 1,500 or more students is through internal training.

Background

Presenting a challenge to online instructors is the task of providing effective feedback to students with whom they interact only via online technologies. Interactive instructional technologies like two-way audio/video courses and Web-based instruction via the Internet dominate distance learning. A 2004 Sloan Consortium survey of higher education institutions revealed that over 1.9 million students enrolled in United States higher education online courses in the Fall of 2003 (Sloan Consortium [Sloan-C], 2004), and these institutions expect online enrollment growth to continue to accelerate at a rapid pace. This means more students and instructors will be separated (physical or temporal separation) during the course of the students'

learning experience. As a result, there needs to be a paradigm shift of teaching pedagogy and a deeper investigation into the quality of online education.

As students migrate to distance education as a viable option, many opponents to this new wave of conducting learning have valid concerns. A major fear centers on isolation of the learner because this mode of delivery does not require a student to be present in a physical classroom with a group of peers and thus the student can feel disconnected from the learning experience. The traditional brick-and-mortar experience is hard to replicate in an online environment. Students tend to seek learning experiences similar to a traditional approach because they are familiar and accustomed to a face-to-face, instructor-centered classroom experience, which can minimize the students' responsibility for their own learning (Jaffee, 1998). Another concern by critics of distance education is the technical problems inherent with online courses. Malfunctioning servers, poor Internet connections, updating of programs, insufficient memory, slow processing speed and outdated equipment are all possible barriers for the online learner. Finally, the majority of online courses are offered in an asynchronous environment. This can produce a communication gap or psychological obstruction to the learning process and can create impending misunderstandings between students and instructors. Each of these factors can increase the potential for online student isolation.

A key element to the potential success of an online learner is effective communication. Effective communication strategies can help ensure that problems are avoided, solutions are presented, trouble-shooting takes place early, and student needs are addressed. Instructor-to-student communication is critical in order to close the feedback loop so the student understands course content and achieves successful completion of learning outcomes and objectives (Northrup & Rasmussen, 2000). As evidenced from the literature review, constructive feedback,

timely responses, and the development of an understanding relationship with the instructor are all valued by students, specifically those who study via the Internet (Mancuso-Murphy, 2007).

Faculty feedback can be a complex concept with many attributes and hard-to-define nuances. Timeliness, quality, relevance, and a focus on content or mechanics are just a few of the elements comprising faculty feedback. Adult learners are the fastest growing population of higher education students. They seek career advancement and opportunities to improve their quality of life through graduate-level education programs (Park & Hee Jun, 2009). Many are married, hold jobs, and may even be raising children. Their academic responsibilities are shouldered along with their many other life roles as spouse, employee, parent, and community member.

Students are attracted to distance education degree programs because they can maintain their careers and family life while pursuing an advanced education degree (Holmberg, 2003). They seek programs that offer flexibility in time and place of content delivery, an institution that understands their learning needs, and provides accessibility and opportunities to control the pace of their education (Stein, Wanstreet, & Calvin, 2009). Independent learning allows them to prioritize their many responsibilities, balancing work and family roles with their educational pursuits. With so many adults seeking opportunities for new learning, delivery of education via distance education expanded quickly to over 1.9 million enrollees in 2002 (Allen & Seaman, 2004). With the introduction of the Internet and software tools that facilitate communication, the use of web-based education has developed rapidly. Due to the rapid growth of online instruction, more research in the area of student satisfaction is needed to determine the impact of online instructor actions.

Problem Statement

Online education is an area that has experienced tremendous growth, and a need exists for empirical research on the impact of effective online instructor actions in online learning environments on student satisfaction. This is the base from which this study was launched. The study contributes to the growing body of knowledge of effective teaching practices in an online learning environment. Interaction between the student and instructor is at the heart of the learning experience and is widely cited as a defining characteristic of successful learning in both traditional and online learning environments (Baker, 2010).

Purpose Statement

The purpose of this causal comparative study is to discuss Moore's Theory of Transactional Distance as it applies to instructor actions on student satisfaction, controlling the learning management system, online curriculum and course structure for online, graduate education students at a private, online institution of higher learning. The independent variable of instructor actions is defined as communication from the online instructor to the online student through a computer mediated interaction (via e-mail or through the learning management system). The dependent variable of student satisfaction is generally defined as students pleased with their experiences in learning online, including interaction with instructors and peers, learning outcomes that match expectations, services and orientation. The control and intervening variables of the learning management system, curriculum and course content was statistically controlled in this study.

Significance of the Study

A key element to the potential success of online learner is effective communication. Instructor-learner interactions form the backbone of an online course and can be adapted more easily than updating course content to improve learning-content interactions or attempting to control student -to-student interactions. Interaction with the instructor is a fundamental expectation in the learning process and plays a key role in a student's retention, perception of the course, instructor effectiveness, and student satisfaction – in both traditional and distance learning classrooms (Flottemesch, 2000). Student perception of interaction or lack of interaction in a distance education course can significantly impact the desired learning outcomes and objectives, depending upon each student's capability to learn on his or her own. Elements of instructor-learner interactions are frequently examined and discussed within the literature of online learning (Anderson, 2003), yet there is a gap in the literature to identify which instructor actions students believe are most important and how they impact student satisfaction at the graduate level.

The graduate-level learner is typically an adult learner and the profile of an adult learner is different from the K-12 online student or even an online undergraduate student. Adult learners are the fastest growing population of higher education students (Kim, Collins Hagedron, Williamson, & Chapter, 2004). Many are married, hold jobs, and seek career advancement and opportunities to improve their quality of life through graduate-level education programs (Bean & Metzner, 1985; Zemke & Zemke, 1981). These students are attracted to distance education degree programs because they can maintain their careers and family life, yet still pursue an advanced education degree (Everett & Grubb, 1997; Heinze, 1983; Holmberg, 2003; Miller & King, 2003). They seek programs that offer flexibility in time and place of content delivery, an institution that understands their learning needs, and provides accessibility and opportunities to

control the pace of their education (Wallace, 1996). This independent learning allows them to prioritize their many responsibilities, balancing work and family roles with their educational pursuits. Yet, despite an increasingly larger percentage of adults entering graduate level higher education, the causes of student attrition have only been partially defined (Bean & Metzner, 1985; Rovai, 2003; Tinto, 1993).

Examining online courses from the perspective of the student is a shift from the traditional instructor-centered model to a student-centered system. This study, conducted within the framework of Moore's Theory of Transactional Distance, was an effort to bring further clarity to the desired instructor actions, which can greatly impact student satisfaction and attempt to minimize the potential isolation of the online learner, as well as to add to the knowledge base on distance learning and teaching by analyzing the impact of instructor actions. The effects of this study also can be extended to improve student retention rates in online, graduate students.

Research Questions

The researcher in this study focused on four research questions:

RQ1. Does a relationship exist between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners*?

RQ2. How does the level of importance placed on the timeliness of online instructor actions impact the level of online, graduate students' satisfaction?

RQ3. How does the level of importance placed on the frequency of online instructor actions impact the level of online, graduate students' satisfaction?

RQ4. How does the level of importance placed on the responsiveness of online instructor actions to student needs impact the level of online, graduate students' satisfaction?

Hypotheses

H_1. There is a statistically significant relationship between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 4, 13, 25, 27, 28 and 29.

H_2. The level of importance placed on the timeliness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 4 and 27.

H_3. The level of importance placed on the frequency of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 13 and 28.

H_4. The level of importance placed on the responsiveness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 25 and 29.

Identification of Variables

This study identified independent and dependent variables. "The independent variable is the presumed causal variable in a relationship, and the dependent variable is the presumed effect variable" (Hoy, 2010, p. 32). The independent variable in this study was instructor actions that influenced the dependent variable of perceived student satisfaction.

Definitions

Course structure. The elements of course design, organization of the course and flexibility.

Dialog. The extent to which the student and instructor can respond to each other (Moore, 1993). Refers to the instructor-student interaction or the communication transaction between the instructor and student when one provides instruction and the other reacts.

Distance education. Moore and Kearsley (1996) maintained that special instructional design and communication procedures can overcome barriers of distance in education and promote individualized instruction and improved satisfaction with distance education. They proposed a definition of distance education that places increased emphasis on the organization and design of distance education:

> Distance education is planned learning that normally occurs in a different place from teaching and as a result it requires special techniques of course design, special instructional techniques, and special methods of communication by electronic and other technology as well as special techniques of course design, and other technology as well as special organizational and administrative arrangements. (p. 2)

Frequency The quantitative value for the volume or number of occurrences an instructor interacts with a student or participates in the online course.

Faculty feedback. Information provided from instructors to students about course activities in which students were engaged, including written assignments, conference postings, and course interactions. Feedback include both objectivist, product-oriented information and constructivist, process-oriented information (Hummel, 2006).

Instructor presence. The instructor's interaction, communication style and frequency of input in the class discussions and communications. This includes posting regularly to the discussion board, responding to emails in a timely manner, and modeling professional online communication and interactions (Kassinger, 2004; Pallof & Pratt, 2003).

Learner interaction. Considered to be a reciprocal event between the learner and a part of the learning environment that brings the learner closed to achieving an educational goal (Wagner, 1994). These can include instructor-learner, learner-learner (or peer), and learner-content interactions.

Learning Management System. The Learning Management System (LMS) in this study is Canvas.

Mean difference. The mean difference shows the difference between the researcher's institution's satisfaction means and the National Online Learners. A positive mean difference indicates that the researcher's institution's students are more satisfied than the students in the comparison group. A negative mean difference indicates that the researcher's institution's students are less satisfied than the students in the comparison group.

Online instructor actions. The duties assigned to an online instructor as a course facilitator pertaining to timeliness, responsiveness and frequency of the instructor's actions. These can include, but are not limited to, setting up the online classroom, discussion board posts, emails, phone calls, instant messages, other synchronous and asynchronous communication, quantitative and qualitative comments, and grading.

Performance gap: The performance gap is the importance score minus the satisfaction score. The larger the performance gap, the greater the discrepancy between what students expect

and their level of satisfaction with the current situation. The smaller the performance gap, the better the institution is doing at meeting student expectations.

Responsiveness. The availability of the instructor to address student questions, needs, and concerns (Fusch, 2012).

Standard deviation. The standard deviation appears in the satisfaction score column. It represents the variability in the satisfaction scores. The larger the standard deviation, the greater the variability in the responses (with some students being very satisfied and some students being very dissatisfied). The smaller the standard deviation, the less variability in the responses.

Student satisfaction. Student satisfaction was established by the Sloan Consortium as one of the five pillars of quality online education, and is defined as "students are pleased with their experiences in learning online, including interaction with instructors and peers, learning outcomes that match expectations, services, and orientation" (Sloan Consortium, n.d., p. 1).

Timeliness. The general turnaround time it takes an instructor to respond or provide feedback to a student. Generally a 24-48 hour turnaround time for online communication (i.e. email, discussion board posts) and a response time of three to six days for grading and returning online assignments is considered timely.

Transactional distance. Moore and Kearsley (2005), discuss transactional distance as follows:

> The transaction that we call distance education is the interplay between teachers and learners in environments that have the special characteristic of being separate from one another. It is the physical distance that leads to a communication gap, a psychological

> space of potential misunderstandings between the instructors and the learners which has to be bridged by special teaching techniques; this is the 'Transactional Distance' (p. 224).

Web-based or online instruction. Online courses are those in which at least 80% of the course content is delivered online. These courses are offered by higher education institutions to be available anytime and anywhere to students capable of connecting through a computer network.

Research Summary

This causal-comparative, quantitative research study employed survey strategy of inquiry. Causal-comparative was employed because it seeks to establish the cause-effect relationship, comparing the relationship without manipulating the cause. The quantitative methodology selected by the researcher used (with permission) a satisfaction student survey administered via email to online, graduate students who were nearing the end of their online course.

Assumptions and Limitations

Assumptions

The following are assumptions of this study: One assumption of this study was that the students in an online, graduate program had already completed a bachelor's degree and had met the minimum admissions requirements; that the instructor would interact with the students on some level; and that all raters would answer the survey questions honestly.

Another assumption was that the results would add to the literature about online learning, and indicate instructor actions that college administrators, faculty, trainers and curriculum

designers could note during the design and delivery of online courses.

Limitations

The results of this study do not account for students who chose not to participate. Only those responses from students whom responded to the survey questions were considered in the survey data. This subjected the study to unit non-response and the issue of non-ignorable non-response. Within the realm of non-ignorable non-response issues, item non-response was not a problem in this study; however, the problem of unit non-response needs to be noted as a limitation when applying and making inferences based on part one of this study (King, Honaker, Joseph, & Shaver, 2001). The data analysis did not use statistical controls to address the issue of non-ignorable non-responses, thus findings cannot be applied to the students who did not respond. Therefore, care should be taken not to make invalid inferences based on the results (Hausman & Wise, 1977).

In addition, the institution where this study was conducted changed LMS in the summer of 2013, approximately three months prior to the survey distribution. It is possible students negative and/or positive impressions impacted their responses on the survey questions.

CHAPTER TWO: LITERATURE REVIEW

Introduction

Distance education, in one form or another, has been around since the nineteenth century when institutions of higher learning began to offer instruction through correspondence courses. Over the years, various media and modes of communication have been employed to facilitate distance education, including radio, television, and more recently computers and the Internet. Although design flaws have frequently been identified in the research, a substantial accumulation of evidence indicates that distance education produces results equivalent to face-to-face classroom instruction in many areas, yet the retention and attrition rates of face-to-face programs compared to distance education programs are vastly different. Whereas there are advantages and disadvantages of online instruction, student satisfaction is generally good. While barriers and problems with online teaching have been investigated (Bedore, 2006; Brunsden, Davies, & Shevlin, 2000; Gaskell, 2006; Herbert, 2006; Merena, 2006), widespread availability of computers and the Internet provide considerable enrichment in terms of a variety of material and formats for presentation over what was possible with the old correspondence courses. As a result, a large number of universities have begun to offer an extensive list of online courses in various programs. It is possible at many institutions to obtain training through the doctoral level entirely online, but is this convenience at the expense of a quality program? A question of concern to such faculty is, "How are we doing?" One way to answer the inquiry of the effectiveness of online programs is to evaluate student achievement using various assessment procedures to determine the amount learned in such courses; and when possible, to compare achievement with that of students in on campus face-to-face classes; however, this method of comparison is not always available or plausible. Another way to answer the inquiry of

effectiveness of online programs is to ask the students directly for their feedback through surveys and questionnaires related to student satisfaction. What factors in online courses do students consider important in enhancing their learning? What characteristics of online instruction do students specifically single out as the most important benefits of such instruction? Are there certain elements of online instructor actions that impact the overall quality of a student's online experience?

The literature review focuses on seven areas: (a) the theoretical framework, (b) the state of distance education research and general factors of quality found in online instruction, (c) the profile of an adult learner, (d) student satisfaction in online instruction, (e) factors of an online learning experience students value, (f) professional development and training offered to online faculty and (g) the nuances of faculty feedback (timeliness, frequency, responsiveness, etc.).

Theoretical Framework

Founded on Moore's (1973) theory of transactional distance, this study is based on the belief that the distance in distance education is more than a physical or geographic separation of instructors and students. This distance is defined as a psychological and communication gap that is a function of interplay among structure, dialogue, and autonomy. Instead, it goes deeper and creates a chasm of distance in perceptions and understandings that exists in every educational transaction - whether the instruction is delivered at a distance or not. When an instructor passes knowledge to the student, a transaction takes place. The setting, a brick-and-mortar classroom or an Internet chat, creates a gap or "transactional" distance that must be recognized in each of these transactions by students, instructors, and educational organizations if effective learning is to occur (Moore). In this theory, the transactions with the greatest distance are those with low dialogue and low structure, while the transactions with the least distance are those with high

dialogue and high structure. The greater the transactional distance, the greater responsibility is placed on the learner. Moore believed that if effective, deliberate, planned learning is to occur the transactional distance needs to be overcome.

According to Moore (1973, 2007; Moore & Karsley, 1996), transactional distance is composed of three factors (teacher, learner, and method of communication) and three variables (dialogue, structure, and learner autonomy). If one of the factors is absent, the transactional distance does not exist because the transaction could not occur without all three factors present. The variables impact the degree of transactional distance.

Kang and Gyorke (2008) described how each variable is incorporated:

> Dialogue describes the exchange of words, actions, and ideas between teacher and learner, the nature, and extent of which are determined by the educational philosophy of institutions, by the characteristics of individuals involved in the interaction, by the content or subject matter, and by environmental factors. A very important factor that affects dialogue is the means of communication. Structure is a measure of the extent to which a course's elements, such as learning objectives, content themes, presentation strategies, and evaluation activities, change to meet the specific needs of individual learners. Note that a high measure of structure indicates that a course is rigid and cannot easily adapt to each learner. On the continuum of dialogue (D) and structure (S), Moore (1973) classified four categories of programs (-D-S, -D+S, +D+S, +D-S) that indicate the presence of absence of dialogue and structure in educational systems. Learner autonomy is the theory's third variable. Liberally, learner autonomy means a learner's control over learning activities and processes. Great transactional distance requires high learner autonomy. (pp. 204-205)

Moore and Kearsley (1996) stated that success in distance teaching is determined by the extent to which the instructor and the institution can provide appropriate structure and the appropriate quantity and quality of dialogue between instructor and learner, taking into account the extent of the learner's autonomy. Falloon (2011) stated that Moore's theory entails a workable balance to be struck between "learner autonomy and course structure, so that learners maintain a sense of empowerment and ownership of the learning, while at the same time working within a structure that provides adequate direction and communicates clear standards and expectations of performance" (p. 206). Striking this balance between structure, learner autonomy, and dialogue are key factors and can be a challenge in any learning environment, but the burden is on the instructor to carefully measure these elements until a balance is achieved. A flexible course design will allow the instructor enough autonomy to lessen transactional distance by developing dialogue and structure to match his or her learners' needs and abilities. Moore's theory asserts that an inverse relationship exists between these three factors, in that increases in one can lead to corresponding decreases in others (McIsaac & Gunawardena, 1996), yet Moore (1993) also suggested that when course structure drops below a certain threshold, the sense of transactional distance can actually increase because of the potential for learner confusion or dissatisfaction. Additionally, Moore's (1993) reference to internal structural factors, such as course content, design, and assessment, does not fully account for external factors prevalent in current online learning. Factors such as access to and quality of broadband computer equipment, and level of student technical expertise could each affect a participant's level of engagement, dialogue, and learner autonomy.

Previous studies on transactional distance (Bischoff, Bisconer, Kooker, & Woods, 1996; Kanuka, Collett, and Caswell, 2002; Saba and Shearer, 1994) yielded mixed results. Structure,

dialogue, and transitional distance were all present in a study of public health and nursing graduate students in traditional and distance-format courses delivered via interactive television where Bischoff et al. (1996) found there were higher amounts of dialogue between learners and instructors in the distance-format classes. This study showed that dialogue was inversely related to transactional distance, "dialogue scores were significantly higher for distance-format courses than those for traditional-format ones and that dialogue scores were significantly higher in courses offering electronic mail support than those in courses without e-mail interaction" (Chen, 2001, p. 328). Saba and Shearer (1994) found that structure decreased to keep the system stable when dialogue increased in a videoconferencing environment. The more participants are involved, the more bandwidth is required, which can slow down a system and necessitate a greater need for protocols to be in place. The nature of a particular communications medium determines if the media can be manipulated to increase dialogue between learners and instructors, thereby reducing transactional distance (Moore, 1993).

In another study, Chen (2001) found the extent of "instructor-learner and learner-learner interaction that occurred online and learner's skill level with the Internet had a significantly negative effective on transactional distance. The greater the reported skill level or the frequency of online discussion, the less the perceived transactional distance" (p. 108).

These studies support the presence of correlations between dialogue and transactional distance and Moore's (1981) claim that transactional distance is a function of dialogue. Chen (2001) pointed out that "they all emphasized dialogue as synchronous, in-class interaction, (either via videoconferencing or desktop computer conferencing) rather than considering in detail the effects of asynchronous communication as a means of interaction" (p. 329).

In summary, few empirical studies have used Moore's (1981) Transactional Distance Theory as their conceptual framework. Although the literature supports the presence of elements of transactional distance, there is an incomplete understanding of how they work with one another in the context of instructor actions and student satisfaction.

State of Distance Education Research

Five syntheses specifically related to distance education and its correlates have been published (Allen, Bourhis, Burrell, & Mabry, 2002; Bernard, Abramia, Yiping, Borokhovskia, and Wozney, 2004; Cavanaugh, 2001; Shachar & Neumann, 2003; Youngmin, Driscoll, & Nelson, 2004) and are discussed in this section.

Focusing on student satisfaction, Allen et al. (2002) summarized 25 empirical studies in which distance education and classroom conditions were compared. When selecting studies to include, studies that did not contain a comparison group or did not report sufficient statistical information from which effect size could be calculated were excluded from consideration. A slight correlation (r = .031, k = 25, N = 4,702; significantly heterogeneous sample) favoring classroom instruction was found, but once three outliers were removed from the analysis, the correlation coefficient increased to .090, and the homogeneity assumption was satisfied (Allen et al., 2002). Unfortunately, this meta-analysis was limited because it investigated only one outcome measure, student satisfaction, and its sample size and range of coded moderator variables yielded little more than basic information related to the question of distance education effectiveness.

Bernard et al. (2004) also conducted a meta-analysis of the comparative distance education literature between 1985 and 2002, reviewing 232 studies. They concluded that research about retention in distance education is sparse and inconclusive, and "problems include

limitations in the research design itself, differences in student demographics, and inconsistent methods of calculating and reporting completion" (p. 17). Although when dividing achievement outcomes into two categories, synchronous and asynchronous, effect sizes for asynchronous applications favored distance education, compared to classroom instruction.

Cavanaugh's (2001) meta-analysis examined interactive (i.e., videoconferencing and telecommunications) distance education technologies in K-12 learning in 19 experimental and quasi-experimental studies on the basis of student achievement. Studies were selected on the following bases: (a) they included a focus on interactive distance education technology; (b) they were published between 1980 and 1998; (c) they included quantitative outcomes from which effect sizes could be extracted; and (d) they were free from obvious methodological flaws (Cavanaugh, 2001).

In 19 studies (N =929) that met these criteria, results indicated an overall effect size (i.e., weighted mean difference) of 0.015 in favor of distance education conditions for a significantly heterogeneous sample. This effect size was considered not to be significant. Further investigation of moderator variables revealed no additional findings of consequence. This study was limited in its purview to K-12 courses.

Bernard et al. (2004) mentioned that the Shachar and Neumann meta-analysis reviewed 86 studies dated between 1990 and 2002, and found an effect size for student achievement of 0.37, "which, if it holds up, belies the general impression offered by other studies that distance education and classroom instruction are relatively equal" (p. 1).

Youngmin et al. (2004) conducted a meta-analysis regarding the state of distance education research. They examined the articles published between 1997 and 2002 in four main distance education academic journals: *The American Journal of Distance Education, Journal of*

Distance Education, *Distance Education*, and *Open Learning*. The purpose of their study was to examine research topics, methods, and citation trends to discover the general research topics being focused on in distance education research, specific topics being discussed, which research methods have been applied and are prevalent, whose inquiry conveys a major impact, and the implications these findings may have on future distance education research. The meta-analysis focused on six main topics: design-related, development-related, management related, evaluation-related, institutional and operational-related, and theory and research-related topics (Youngmin, et. al.). An analysis of the research topics showed that 27% were classified as design topics, 9% as development topics, 11% as management topics, 12% as evaluation topics, 10% as institutional and operation topics and 31% as theory and research topics. The largest percentage of the studies were found to be case studies, which they found had little value beyond the program being reviewed. By contrast, they reported that 12% of the articles covered evaluation, with only a portion of those examining retention.

Youngmin, et. al. (2004) questioned "why there have not been more theory-based studies" and posited that "part of the problem may be a lack of theory-driven research methodology for distance education" (pp. 237-238). Additionally, they stated "since many research methods have been applied to analyze the research topics . . . the validity and reliability issues seem to be of minor concern among the researchers" (p. 239). Youngmin et al. were also concerned with the rising frequency of reported experimental studies.

> Most authors of experimental research did not explain how they obtained adequate sample size of the predictive power of their findings, nor did many report effect size, confidence internals, or even alpha level. Moreover, many experimental researchers did

> not indicate whether or not they assigned participants randomly in their study, which makes the results of studies questionable. (p. 239)

There is a consensus among commentators (Anglin & Morrison, 2000; Diaz, 2000; Merisotis & Phipps, 1999; Perraton, 2000; Saba, 1999; Ungerleider & Burns, 2003) that the quality of quantitative literature of distance education is poor.

> Among the issues that have been raised are: (a) lack of experimental control; (b) lack of procedures for randomly selecting research participants; (c) lack of random assignment of participants to treatment conditions; (d) poorly designed dependent measures that lack reliability and validity; and (e) failure to account for a variety of variables related to the attitudes of students and instructors, or a failure to at least properly report essential information about these aspects of study design. (Bernard, Abrami, Lou, & Borokhovski, 2004, pp. 175-176)

A solution is to use only randomized controlled experiments or rigorously controlled quasi-experimental studies (What Works Clearinghouse, 2002), yet one of the greatest problems in conducting online research in distance education is the distance itself. The researcher can encounter challenges in trying to obtain a large sample size, in obtaining consent forms, getting students to complete questionnaires, inventories, or tests, and participate in interviews or focus groups. Once a population of students is approved, an additional barrier is communication and the integrity of the delivery and subsequent completion of the data-collection instrument. Another hurdle is attempting to implement experimental controls necessary to establish causal relationships. “Selection bias can be a problem because it is often impossible to randomly assign students to groups, especially when students are given a choice either to join a distance education

section or to stick to a more traditional pattern" (Bernard et al, 2004, p. 176); therefore, true experimental designs are rare in the literature.

Another key element when conducting research in distance education is to follow Keegan's (1996) recommendation and differentiate between "distance teaching" and "distance learning." Keegan does not provide a specific definition of these terms, but "it can be assumed that teaching designates activities in which teachers engage (e.g., lecturing, questioning, providing feedback), while learning designates activities in which students engage (e.g., taking notes, studying, reviewing, revising)" (Bernard et al., 2004, p. 1).

Finally, Bernard et al. (2004) provide some suggestions to improve the state of research in distance education:

- Institute better control for selection bias, through random assignment or pretesting
- Create better measures, preferably designed for research rather than teaching purposed alone and refining through pilot testing
- Equilibrate groups on controllable factors, such as material used, media used, length of instruction, choice of course, instructor/tutor, and class size equivalence
- Select courses for research that are similar in length (e.g. full semesters) to courses to which the results are to be generalized. (p. 187)

In November 2011 the Babson Survey Research Group in collaboration with the Sloan Consortium, published a research study entitled "Going the distance: Online education in the United States, 2011" (formally titled the Sloan Online Survey). This report, based on responses from more than 2,500 colleges and universities, provides a synopsis on the state of online learning in U.S. higher education and is "aimed at answering fundamental questions about the

nature and extent of online education" (Allen & Seaman, 2011, p. 4). Although all of the findings were intriguing, the findings pertinent to this study are as follows:

- Over 6.1 million students were taking at least one online course during the fall 2010 term; an increase of 560,000 students from the previous year.
- The 10% growth rate for online enrollments is the second lowest since 2002.
- The 10% growth rate for online enrollments far exceeds the less than one percent growth of the overall higher education student population.
- 31% of all higher education students take at least one course online.
- Private for-profit institutions have the largest proportion of online programs showing declining or steady enrollment. (Allen et al., 2011)

Figure 2.1 provides an eight-year history of total and online enrollments in degree-grading postsecondary institutions from Fall 2002 through Fall 2010.

TOTAL AND ONLINE ENROLLMENT IN DEGREE-GRANTING POSTSECONDARY INSTITUTIONS – FALL 2002 THROUGH FALL 2010

	Total Enrollment	Annual Growth Rate Total Enrollment	Students Taking at Least One Online Course	Online Enrollment Increase over Previous Year	Annual Growth Rate Online Enrollment	Online Enrollment as a Percent of Total Enrollment
Fall 2002	16,611,710	NA	1,602,970	NA	NA	9.6%
Fall 2003	16,911,481	1.8%	1,971,397	368,427	23.0%	11.7%
Fall 2004	17,272,043	2.1%	2,329,783	358,386	18.2%	13.5%
Fall 2005	17,487,481	1.2%	3,180,050	850,267	36.5%	18.2%
Fall 2006	17,758,872	1.6%	3,488,381	308,331	9.7%	19.6%
Fall 2007	18,248,133	2.8%	3,938,111	449,730	12.9%	21.6%
Fall 2008	19,102,811	4.7%	4,606,353	668,242	16.9%	24.1%
Fall 2009	19,524,750	2.2%	5,579,022	972,669	21.1%	28.6%
Fall 2010	19,641,140	0.6%	6,142,280	563,258	10.1%	31.3%

Figure 2.1. Going the Distance: Online Education in the United States, 2011
Source: Sloan-C, (2011)

These additional data support the claim that online education is growing at a rapid rate and merits targeted research that reflects current technological communication tools that need to be considered. Discovering how these tools affect the transactional distance and learner engagement are areas still lacking in clarity.

Profile of an Adult Learner

Adult learners share many traits found in non-adult learners when embarking on their academic journey – anxiety, fear, nervousness, and anticipation. They are the fastest growing population of higher education students (Kim et al., 2004) and use graduate-level education programs to seek career advancement, improve their quality of life, and their self-esteem. They may enroll to learn new subjects and skills or to update old ones. In addition to being a student, many are parents, spouses, employees, and active community members. The flexibility in time and place of content delivery provides an opportunity to embark on their educational pursuits while balancing career and family responsibilities.

Although adult learners are entering these programs in large numbers, many are struggling to complete courses and achieve their educational goals. Nitsch and Adkins (2005) stated "as online students, they need to acquire the skills important to learning in a new environment" (p. 17), and cope with the many stressors and demands of their personal lives and academic responsibilities (Morris, Brooks, & May, 2003; Trestman, 2002), and adapt to the expectations of the institution and various faculty (Moore & Kearsley, 1996; Simpson, 2005; Workman & Stenard, 1996). These students must be able to navigate through an institution's organizational structure to apply, obtain financial aid, register for courses, obtain books, and access student services. Without adequate support, students may feel the stress of not being able to acquire the necessary information, leading to withdrawal (Fjortoft, 1995).

Distance education presents another layer of potential challenges that can be magnified if the student is a novice in virtual environments. According to Stein et al. (2009), an inexperienced online adult learner may:

> Bring issues to the virtual learning space that can hinder learning and increase feelings of separation and distance from the instructor and other learners. They may lack online literacy skills, which include creating an online identity; communicating a cognitive presence on text-based screens; posting comments that reflect favorably on their image as competent and intelligent adult learners; and constructing their own learning from comments received from other learners, the materials, and the content. (pp. 306-307)

The three basic tenets of Moore's Transactional Distance theory – dialogue, structure, and autonomy – can all be affected by the challenges an online course presents. Conrad (2002) suggested that a "good beginning" constitutes working out the concerns about instructional roles, course organization, social acceptance, and support from other learners (p. 215). This means instructors need to be available at the beginning of the course to ensure learners that they can work in a dialogic situation and their contribution(s) are valued. As the adult learner's confidence and comfort level increases, direct interaction and support from the instructor can decrease. Tait (2003) reported that novice online adult learners need to learn how to support each other's learning.

Many adult learners enter programs with previous experiences and desire an educational curriculum that acknowledges, rewards, and values these experiences. Learning for adults frequently involves a process of reorganizing and integrating one's previous experiences (Polson, 1993). This reorganization can be challenging, frustrating, and uncomfortable. Adding to the frustration can be situational barriers preventing the student from continuing to pursue his or her

academic goals. Bartels (1982) reported that students without a support system of family, friends, and colleagues have more difficulty completing distance education programs.

Nitsch and Adkins (2005) examined the profile of an adult learner, specifically those enrolled in a distance education program, and reported:

> Graduates of a distance education programs could cope better than the drop outs because they 1) had supportive friends and family, 2) reported fewer problems with their children, 3) were healthier, and 4) better managed financial issues. Being a student is a secondary role to that of being a parent, spouse, employee, and community leader. (p. 53)

Successful adult, distance learning students reorder their day-to-day life activities to accommodate the demands being a student requires.

Dedicating enough time to school also can be a challenge. Adult, distance education students can experience work overloads, underestimate the amount of time to complete an assignment, and experience changes in circumstances (Moore et al., 2002). Sometimes adding academic tasks to an already full schedule of family and work responsibilities can increase symptoms of stress (Mallinckrodt & Leong, 1992).

Student Satisfaction

Student satisfaction is an important component of online education. Institutions of higher education need to have a viable system in place to measure the satisfaction levels of their students, and be willing to make the necessary changes to improve the results. Many universities employ student surveys at the end of each course to gauge the students' levels of satisfaction. The results from these surveys show that there are factors that relate to student satisfaction with online courses. Student satisfaction is an important measure of the quality of online courses. The Sloan-C Quality Framework (Sloan-C, 2006b) described online student satisfaction as follows:

"Students are pleased with their experiences in learning online, including interaction with instructors and peers, learning outcomes that match expectations, services, and orientation" (para. 3).

PERCEIVED STUDENT SATISFACTION IN ONLINE AND FACE-TO-FACE COURSES - FALL 2011

Face-to-Face Superior	6.1%
Face-to-Face Somewhat Superior	16.5%
About the same	62.5%
Online Somewhat Superior	12.9%
Online Superior	2.0%

Figure 2.2. Going the Distance: Online Education in the United States, 2011
Source: Sloan-C, (2011)

Due to the recent popularity of online education, there has been a rise of academic research on factors that improve student satisfaction within online courses. Of schools offering online courses, 41% agreed that students were at least as satisfied with their online courses as compared to face-to-face courses, 56% were neutral, and only 3% were less satisfied (Sloan-C 2004, para. 9). Figure 2.2 shows that seven years later in 2011, nearly two-thirds of all academic leaders believe that the level of student satisfaction is "about the same" for face-to-face and online courses.

ONLINE AND FACE-TO-FACE COMPARISONS - FALL 2011

	Support for students with different learning styles	Student-to-faculty communications	Presentation of course material
Face-to-Face Superior	9.2%	12.1%	8.3%
Face-to-Face Somewhat Superior	24.7%	27.9%	21.9%
About the same	34.9%	28.1%	45.3%
Online Somewhat Superior	25.7%	26.4%	20.4%
Online Superior	5.6%	5.5%	4.1%

Figure 2.3. Going the Distance: Online Education in the United States, 2011
Source: Sloan-C, (2011)

Additionally, a key element of transactional distance is the communication between the students. Figure 2.3 visually demonstrates that face-to-face instruction is preferred for this type of communication, but nearly 80% of the respondents prefer online instruction when asked about the ability to allow students to work at their own pace.

Based on the results from the research, it was apparent there are several common factors relating to student satisfaction in online courses. Ortiz-Rodriquez, Telg, Irani, and Rhoades (2005) found that good course design, timely student-to-student and student-to-instructor interaction responses, feedback from the faculty member, good software interface, rich media, and accessibility were all factors in a quality experience for the learners.

The review of literature suggested factors directly related to online learning that influenced student satisfaction consisted of (a) student interaction, (b) prompt faculty

feedback, (c) instructor presence, (d) good course design, and (e) use of suitable course materials. These factors directly associated to the learning experience and in turn, related to student satisfaction were used to develop the conceptual framework for this study.

Online Learning Experiences Student's Value

As mentioned previously, students value the following factors associated with online learning experiences: (a) student interaction, (b) prompt faculty feedback, (c) instructor presence, (d) good course design, and (e) use of suitable course materials.

According to Berge (1999), interpersonal interaction is important to learning and can help facilitate student motivation, satisfaction, and retention. This student-student interaction allows students the opportunity to interact with one another in dialogue centered on the course content and can help form relationships, provide for social interaction, close the transactional distance, reduce feelings of isolation, and help solidify an understanding of new information. Northrup (2002) found in a study of 52 graduate students in a fully online program that they enjoyed collaborative interactions to discuss and share concepts and ideas with peers, and participants found it essential to their online learning environment. Moore (1989) noted that learner-learner interaction becomes valuable at the point of knowledge application or evaluation.

Burgess, Holt and Agius (2006) stated that "instructor response and feedback are more critical in distance education environments because students cannot receive visual signals confirming that their assignment has been received or signifying that they are moving in the right direction" (p. 30).

Sheridan and Kelly (2010) define "*instructor presence*" as an instructor's efforts to enhance the students' learning experiences by "developing learning materials and activities that promote high levels of cognitive engagement, providing students with in-depth feedback for

growth and development, exchanging ideas in student discussions, and continually challenging students to deepen their thinking" (p. 1). Additionally, the instructor can increase his or her presence during the delivery of an online course by increasing his or her communication with students both within and outside content discussions.

Burgess et al. (2006) used the term **"***structure"* to refer to the instructional elements of a course's design. He details eight elements of course design: (a) learning objectives, (b) thematic content, (c) presentations, (d) case studies, (e) animations, (f) exercises, (g) projects, and (h) examinations (p. 32). The course design can be highly rigid, allowing little or no flexibility by the instructor or students; other times, the course design can support a low structure and allow the instructor or student multiple paths through the content.

Course materials can vary greatly by institution, department, instructor, and even learning management systems. Instructional materials form the core of a course, should support the course objectives and competencies, and be accessible for all students. Course materials can include textbooks, manuals, computer software, research articles, videos, audio clips, presentations, instructor-authored or student-authored material, case studies, websites, and interactive exercises and games. The instructional materials should represent current thinking and themes in the discipline, present a variety of perspectives on the course content, and align clearly to the course and institution's learning objectives (Quality Matters, 2011).

Professional Development and Training Offered to Online Faculty

As the number of students participating in distance education courses has increased, the number of faculty needed to teach these courses has also grown. This growth is changing the role of teachers and the nature of teaching. The notion that teaching online requires the development of new skills and sets of pedagogies has led researchers to study the roles that online instructors

take in online education environments (Anderson, Rourke, Garrison, & Archer, 2001; Berge & Collins, 2000; Goodyear, Salmon, Spector, Steeples, & Tickner, 2001; Graham, Cagiltay, Lim, Craner, & Duffy, 2001; Guasch, Alvarez, & Espasa, 2010).

> Given the expanding interest and demand for online learning, coupled with the results of students showing that higher levels of learning are not easily achieved in online courses, there is an imperative to advance our understanding of how to facilitate effective online learning activities. (Kreber & Kanuka, 2006, p. 121)

Online instructors are a mix of previous classroom teachers and subject matter experts. Not all institutions require a potential online instructor to have previous classroom teaching experience or formal training in pedagogy. As a result, some online instructors reflect on their own personal academic experiences and mimic the teaching style of their former instructors. "Having little (if any) prior experience in teaching online, teachers tend to transfer traditional approaches to the online classroom, and perpetuate approaches that have been proven to be ineffective in the face-to-face classroom" (Baran, Correia, & Thompson, 2011, p. 422). While the traditional roles of teachers can be transferred to an online environment, the pedagogical strategies necessary for a new learning setting require teachers to adapt to new roles for creating effective and meaningful learning experiences (McShane, 2004).

In November, 2011 the Babson Survey Research Group published a research study titled "Going the distance: Online education in the United States, 2011" (formally titled the Sloan Online Survey). Figure 2.4 illustrates the type of faculty training provided by type of course from Fall, 2011.

TYPE OF FACULTY TRAINING PROVIDED - FALL 2011

	Face-to-face	Blended	Online
No specific training is provided	18.8%	9.5%	5.8%
Other	8.0%	8.6%	7.8%
Externally run training course	10.1%	12.4%	21.0%
Certification program	4.0%	11.3%	21.4%
Formal mentoring	37.8%	33.3%	39.6%
Informal mentoring	54.7%	58.3%	57.9%
Internally run training course	34.1%	59.9%	72.0%

Figure 2.4. Going the Distance: Online Education in the United States, 2011
Source: Sloan-C, (2011)

This report, based on responses from more than 2,500 colleges and universities, provides a synopsis on the state of online learning in U.S. higher education and is "aimed at answering fundamental questions about the nature and extent of online education" (Allen & Seaman, 2012, p. 4). Figure 2.5 demonstrates the changes in various training programs for online instructors from 2009 – 2011.

TYPE OF TRAINING PROVIDED FOR FACULTY TEACHING ONLINE - FALL 2009 AND FALL 2011

	2009	2011
Informal mentoring	54.3%	57.9%
Formal mentoring	33.6%	39.6%
Internally run training course	59.3%	72.0%
Externally run training course	14.2%	21.0%

Figure 2.5. Going the Distance: Online Education in the United States, 2011
Source: Sloan-C, (2011)

All of the findings were intriguing, but the findings pertinent to the current study were as follows:

- In 2009, nearly one-fifth (19%) of all institutions reported that they do not provide any training for faculty teaching online courses.
- There is an increase in the proportion of institutions reporting that they provide various types of training for online teaching faculty.
- The most common training approaches for online faculty are internally run training courses (72%) and informal mentoring (58%).
- Smaller institutions are more likely to look outside the institution for their training than are larger institutions.
- The greatest growth was for internally run training courses, with 72% of all institutions with online offering training their faculty, up from 59% in 2009.

Anderson et al. (2001) classified an online teacher's role into three categories to ensure teaching presence, particularly on discussion boards: instructional design and organization, facilitating discourse, and direct instruction. Teaching presence is defined as "the design, facilitation, and direct instruction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson et al., 2001, p. 5) to which all participants in the online learning environment can contribute.

Coppola, Hiltz, and Rotter (2002) provided additional insight into an online teacher's role in an asynchronous learning environment in three categories: cognitive, affective, and managerial.

In the cognitive role, teachers engage in deeper-level cognitive activities related to information storage, thinking, and mental processes. In the affective role, they need to

find different tools to express emotions and develop intimate relationships with students. Finally, as part of their managerial role, they structure and plan the course in detail with increasing attention on monitoring their students (p. 426).

Bawane & Spector (2009) conducted a study of online teachers' roles and reported the following categories emerging from the literature, with the pedagogical role as the highest ranked: professional, pedagogical, social, evaluator, administrator, technologies, advisor/counselor and researcher. Although the instructor may have many roles, he or she is not alone in developing and delivering a course. An online course has a support system of instructional designers, curriculum managers, subject matter experts, program coordinators, and others. Each of these roles has specific job descriptions and training needs.

When entering a training program for online instructors, it is important to remember that the online instructor is also an adult learner, many times completing his or her training in a distance learning environment, and can exhibit many of the same traits as the instructors they are training.

Nuances of Faculty Feedback

Feedback is somewhat of an ambiguous term and is a complicated, complex concept. "In training, supervision, and educational settings, feedback is regarded as something with vaguely positive effects that helps along communication about expected outcomes and possibilities" (Wosley, 2008, p. 311). For the current study, feedback is defined as the information provided from instructors to students about course activities in which students are engaged, including written assignments, conference posting, and course interactions (Hummel, 2006). Although there is some research supporting that instructor feedback is important to online graduate students, there is little written about how to provide effective instructor feedback in the online

environment. There is also a lack of research on students' perceptions of the effectiveness of feedback as an online teaching strategy. The current study, looking at graduate students' perceptions of effective online instructor feedback, sought to fill those gaps of an understanding of exemplary online education.

There are several studies that examine the importance of timely faculty feedback in distance education courses (Cashion & Palmieri, 2002; Greenberg, Raphael, Keller, & Tobias, 1998; Shuey, 2002; Siew, Hu, Tan, & Wettasinghe, 2003); however, these studies do not extend to frequency and responsiveness of the instructor. Students in a face-to-face class typically expect their work to be graded within a week, or by the next class session. Since the time parameters in a distance education course are structured differently, feedback can range from instant (i.e. an online, auto-graded multiple choice quiz) to an open-ended period of time (i.e. a written essay as a final project), but usually not to exceed two weeks. "Feedback to students serves as both an extrinsic motivator – when grades are involved – and an intrinsic motivator – when self-correcting is the primary motivating force" (Klecker, 2007, p. 162). Wosley's (2008) study showed that "students may prefer feedback that is embedded at the point in the students' written work that provoked the comment or question from the professor" (p. 323). Students value how the feedback supports learning (Dennen, Darabi, & Smith, 2007), in addition to the quantity of the feedback.

Marzano, Pickering, and Pollock (2001) reported some very large effect sizes for many types of feedback, not limited to feedback on written work, concluding that feedback is one of the most "generalizable strategies" (p. 96) a teacher can use in his or her meta-analysis of instructional practices. Marzano, Pickering, and Pollock (2001) reported some very large effect sizes for many types of feedback, not limited to feedback on written work, concluding that

feedback is one of the most "generalizable strategies" (p. 96) a teacher can use in his or her meta-analysis of instructional practices. Wosley (2008) conducted a meta-analysis that detailed the characteristics of effective feedback on written work, including identifying the positive aspects of the work, adding full explanations, instead of generic comments, corrective and personalized feedback, looping back to specific rubric criteria, and an indication to close the gap between expected and current performance. Kuriloff (2004) proposed that the role of the instructor in an online writing course is to expand, elaborate, or clarify student writing (p. 40), and we may generalize those roles to any course where writing results in artifacts that demonstrate student growth or outcomes. (p. 313)

It is evident that feedback can influence student motivation, student retention, and student support (Dzakiria, 2008; Simpson, 2005; Stevenson, MacKeogh & Sander, 2006). According to Black and William (1998), feedback "involves the perception by learners, firstly of the existence of a gap between their present and their desired levels of knowledge, understanding or skill, and secondly, of the action they take to close this gap" (p. 20). An under-researched area is students' perceptions of how assignment feedback can be used to identify and bridge gaps. Weaver (2006) studied students' reactions to assignment feedback and found that "a sizeable minority of those surveyed claimed to have received little or no guidance on how to interpret and use feedback, and therefore had no clear understanding of what was required to improve their cognitive skills" (p. 390). Berkey (2009) echoed Weaver's findings and "pointed to a mismatch between staff expectations and student awareness" (p. 49), and McDowell and Havnes (2007) encouraged the use of tutors to be cognizant of students' approaches to using feedback.

Feedback can take many forms and the purpose of the feedback can vary based on the course outcomes, tasks, and learning activities. Additionally, the delivery, formality, specificity,

and reception of the feedback can be affected by the learning environment – online or face-to-face. In distance education, the concept of feedback is coupled with the nuances of the learning management system and communication protocols in place. Wosley (2008) noted:

> Some forms of face-to-face interaction that could result in feedback are difficult in the online environment; informal discussion after class meeting, questions asked, and answered during the explanation of an assignment, body language, and facial expressions that provide context for verbal interactions, and so forth. This is not to say that these forms of interaction are impossible online, only that they require more conscious effect or take on a different form. (p. 311)

This "different form" of feedback typically does not happen synchronously, but the Internet, high-functioning learning management systems, and Web 2.0 tools do accommodate a level of immediacy for some types of communication. Distance education feedback can be provided through email, instant messenger, telephone calls, typed comments on student papers, remarks in the online gradebook and voice annotations. This new technology has the potential to make feedback relevant, timely, and practical.

A commonly held belief is that the more specific the feedback, the better the quality of the feedback. Melis and Andres (2005) found in an adaptive learning environment in which the computer-generated feedback is most specific is only given if the student has many obstacles to overcome. Goodman, Hendricks, and Wood (2004) reported that "very specific corrective feedback may be useful when a task is new, but often a high level of specificity discourages learners from exploring their thinking in depth" (p. 254). Instead, it can have the opposite intended effective (Yorke, 2003).

Formative feedback emphasizes the learning process rather than the product and "can play a critical role in the formative learning that occurs in students' written work" (Wosley, 2008, p. 312). It is more than simply identifying errors or expecting students to make corrections either on a superficial level or through substantial revision. Kohn (1993) discussed the importance of "linking praise to a specific performance; it does not help to simply indicate that a complex piece of work represents a 'good job' or is 'nice work'" (p. 123). Students expect, deserve, and appreciate interaction through feedback.

One style of faculty feedback is constructive criticism. Cole (2008) defined constructive criticism as an "effective pedagogical strategy used by faculty to provide feedback to students regarding the quality of their work and level of academic performance" (p. 587) and "in its most simplistic form involves a balance of positive and negative critical feedback" (p. 588). According to Bjorklund, Parente, and Sathianathan (2004) faculty constructive criticism should be immediate, specific to the level of performance and skill or task, offer useful and varied strategies for skill improvement, and end with the goal of mastery learning. Unfortunately, this quality of feedback is not always delivered to the student, but instead "most faculty feedback, however, is likely to concern grammatical and content-specific corrections, which are also likely to be delayed and end with the goal of performance evaluation" (Cole, 2008, p. 587), which can negatively impact student satisfaction. Constructive criticism is "distinct from faculty critique in that the latter is likely interpreted by students as negative, whereas the formed, in addition to critical feedback, provide students with faculty support, encouragement, and respect as a member of the academic community" (Cole, 2008, p. 589).

In the context of higher education, specifically graduate education students, providing constructive criticism is "of professional interest to faculty and other educators, as it is

challenging to provide feedback to students' about the quality of their work and level of academic performance in ways that do not discourage them from the academic task at hand or dissuade them from fruitful learning objectives" (Cole, 2008, p. 589). Instead of providing canned messages to students that are generic and shallow, faculty need to provide students with specific, targeted, and relevant feedback to help students improve their proficiency of course learning objectives. Graduate education students' performance extends beyond a letter grade or college grade point average. These students are learning skills that will transfer to their classrooms and impact young people. Faculty feedback needs to help prepare these students to apply the new skills and strategies on-the-job and in the community correctly. The student must be able and willing to receive the feedback, and the instructor must be very familiar with the content area, experienced in the ways in which students do or do not understand the concepts to be learned, and understand the means by which effective feedback may be employed (Hunt & Pelligrino, 2002).

Feedback also can be subjective. To create greater inter-rater reliability and reduce subjectivity, the use of rubrics is encouraged as they can be useful tools in highlighting the link between content and criteria clearly made through feedback. Rubrics can assist students to focus on exploration and improvement without providing the type of overly specific feedback that places a focus on scores and grades rather than on depth of knowledge.

The review of literature reveals several gaps. There is a lack of research on students' perceptions of the effectiveness of feedback as an online teaching strategy. Several studies also examine the importance of faculty feedback, but do not extend to frequency and responsiveness of the instructor. Finally, there is a need to study factors that influence perceived student satisfaction in online courses. The current study was designed to ascertain the perceived

importance and impact of instructor actions on online graduate education students' satisfaction. The success and future growth of distance education may depend on educational institutions improving their online programs to provide greater student satisfaction (Saba, 1999).

CHAPTER THREE: METHODOLOGY

The overall purpose of this study was to explore students' perceptions of the instructor's actions in the virtual classroom in terms of any impact the instructor made on their level of student satisfaction. The study concentrated on three key areas: timeliness, frequency, and responsiveness of online instructor actions in an online, graduate course. These areas were identified because they are compatible with Moore's (1993) dimensions of quality dialogue.

The purpose of this study was to answer questions about whether or not online instructor actions can influence the level of perceived online, graduate students' satisfaction as indicated in response to *The Priorities Survey for Online Learners*. Research suggested understanding the factors influencing satisfaction may provide insight into improving online programs. The review of literature pertaining to factors affecting perceived student satisfaction showed a lack of research on the impact effective online instructor actions has on online, graduate students' satisfaction. Included in this chapter on methodology is a discussion of the research and analysis methodologies employed in this study.

Research Design

This causal-comparative, quantitative research study employed survey strategy of inquiry. Causal-comparative was employed because it seeks to establish the cause-effect relationship, comparing the relationship without manipulating the cause. The quantitative methodology selected by the researcher used a satisfaction student survey administered via e-mail to actively enrolled university students. This study contains several underlying assumptions. The first assumption was that the students in an online, graduate program had already completed a bachelor's degree, had met the minimum admissions requirements, the instructor interacted

with the students on some level, and all raters answered the survey questions honestly. A second assumption was that the results would add to the literature about online learning and indicate instructor actions that college administrators, faculty, trainers, and curriculum designers could note during the design and delivery of online courses.

Research Questions

The researcher in this study focused on four research questions:

1. Does a relationship exist between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners*?

2. How does the level of importance placed on the timeliness of online instructor actions impact the level of online, graduate students' satisfaction?

3. How does the level of importance placed on the frequency of online instructor actions impact the level of online, graduate students' satisfaction?

4. How does the level of importance placed on the responsiveness of online instructor actions to online, graduate students' needs impact the level of student satisfaction?

Hypotheses

The researcher in this study identified four hypotheses:

H_1. There is a statistically significant relationship between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by questions 4, 13, 25, 27, 28 and 29.

H_2. The level of importance placed on the timeliness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by questions 4 and 27.

H_3. The level of importance placed on the frequency of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by questions 13 and 28.

H_4. The level of importance placed on the responsiveness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by questions 25 and 29.

Variables

This study identified independent and dependent variables. “The independent variable is the presumed causal variable in a relationship, and the dependent variable is the presumed effect variable” (Hoy, 2010, p. 32). The independent variable in this study was online instructor actions that influence the dependent variable, which was the perceived online, graduate students’ student satisfaction. Online instructor actions are defined as the duties assigned to an online instructor as a course facilitator pertaining to frequency, responsiveness, and timeliness of the instructor's actions. These can include, but are not limited to, setting up the online classroom, discussion board posts, emails, phone calls, instant messages, other synchronous and asynchronous communication, quantitative and qualitative comments, and grading.

Participants

The population for this study consisted of students enrolled in online, graduate distance education learning courses offered during the September, 2013 academic term. The institution has more than 3,000 active students, 90 faculty members, 2,060 alumni, and 1,600 mentors located in more than 42 states and several countries.

Sample

All actively enrolled students, except newly matriculated students, during the September, 2013 were solicited via email to participate in the survey, resulting in approximately 3,000 invitations to participate in the research study. It was limited to graduate students taking courses for college credit through the graduate education department and excluded first-term students.

Participants were graduate-level students enrolled in a master's level education course during the September, 2013 academic year. The students were contacted during Week Two of the study. A letter of invitation to the participants and a survey were sent via Noel-Levtiz to all students enrolled in the course. Participants were students who volunteered to participate in the research study.

First-term students were excluded since they would not have had enough experience with the institution or the instructor to accurately respond to the survey questions.

Setting

This study took place at an online, for-profit institution offering graduate degrees, programs, and certificates in the field of education. The mission of this institution is to deliver affordable online degree programs that provide evidence-based content and relevant experiences to improve educators' knowledge, skills, and performance.

The University offers the following online, graduate degrees: M.A. in Teaching (Elementary and Secondary), M.Ed. in Educational Leadership, M.Ed. in Educational Technology, M.Ed. in Elementary Education, M.Ed. in Curriculum and Instruction, M.Ed. in Curriculum and Instruction with ESL Specialization, M.Ed. in Curriculum and Instruction with Bilingual Specialization, M.Ed. in Curriculum and Instruction in Digital Teaching and Learning, M.Ed. in Curriculum and Instruction in Literacy Instruction, M.Ed. in Curriculum and Instruction in K-6 Common Core Math, M.Ed. in Curriculum and Instruction in Teaching

Science, Educational Leadership Dual Degree Program, Curriculum and Instruction Dual Degree Program, Ed.S. in Educational Leadership and Ed.D. in Educational Leadership. Each program is divided into five-week, three-credit semester hour courses. The coursework is delivered to students in an accelerated instructional model.

The decision was made to solicit all degree-seeking, actively enrolled students in the September, 2013 academic term, excluding first term students, resulting in approximately 3,000 invitations to participate in the research study. Noel-Levitz estimates a 20 – 30% response rate, resulting in approximately 660 – 990 participants, which will yield a sufficient number of respondents necessary for a proposed multiple regression analysis of the survey results.

Data Collection

Emails were sent to all of the actively enrolled students (excluding newly matriculated students) enrolled in a graduate education course at the beginning of Week Two of the course for the September, 2013 academic term. The email contained several items, including (a) informed consent, (b) a brief overview of the study and a request that he or she participate, (c) an Internet hyperlink to the *Priorities Survey for Online Learners* (PSOL), and (d) a password to access the PSOL. Participants were also offered the results of the study. Participants were given seven days to respond, then a follow-up email was sent out, and a third and final email reminder was sent out seven days later.

Data were collected from an administered online instrument, using the secure survey collection software tool provided by Noel-Levitz for the *Priorities Survey for Online Learners.*

Instrumentation

A survey is an appropriate type of instrument to use when the study is non-experimental and is a good choice for descriptive studies where the researcher examines relationships between variables occurring in specific real-life contexts (Muijs, 2004). Several types of surveys exist to gather data. The survey type used for this study was a cross-sectional survey. In a cross-sectional survey "a cross section (sample) of a population at a single point in time" (Ary, Jacobs, Razavieh, & Sorensen, 2007, p. 406) is selected. Data from a cross-sectional survey can be analyzed in a variety of ways.

The Priorities Survey for Online Learners

The survey used in this study was *The Priorities Survey for Online Learners* (PSOL) (Noel, Levitz, 2009). This instrument is a 69-question survey that covers five aspects of a student's experiences with online education: institutional perceptions, student services, enrollment services, academic services, and instructional services. This survey has been tested by Noel Levitz and found to be reliable. The survey has been administered to 34,004 students from 78 institutions over a five-year period (2001-2006). The PSOL was derived from the Noel-Levitz Student Satisfaction Inventory and assesses the satisfaction and priorities of students in distance learning and online programs.

Respondents score the survey using a Likert scale from 1-7 with 1being the lowest and 7 being the highest. Responses produce an importance score and a satisfaction score. "Individual items on the inventory were analyzed to determine institutional strengths (high importance and high satisfaction) …Strengths are as those items above the midpoint in importance and in the top quartile of satisfaction" (Noel-Levitz, 2009, p. 5). A performance gap is determined by

subtracting the satisfaction score from the importance score. A large performance gap means the institution is not meeting student expectations. (Noel-Levitz, 2009).

Validity. Statisticians use three criteria to collect quality data for evaluating the validity: reliability, unbiased data, and validity (Larson & Faber, 2003). Validity is the degree to which something measures what it claims and reports to measure (Larson & Faber, 2003). The validity of a measure indicates to what degree student-rating items measure some aspect of teaching effectiveness. Validity coefficients are interpreted in the following manner:

.00 – 0.29: even if statistically significant, not practically helpful

0.30 - .49: practically helpful

.50 - .70: very helpful; not common when reviewing complex phenomena (Ary et al., 2006).

The PSOL shows an acceptable validity of $r = .71$; $p < .00001$, which is high enough to indicate the survey is valid.

Reliability. Reliability is the "extent to which a measure yields consistent results, the extent to which scores are free of random error" (Ary et al., 2006, p. 638). A high reliability score means the research can be replicated resulting in a similar result. A critical element of this study is the reliability of the measurement tool. The instruments should have internal consistency and positive test-retest correlations. A type of reliability test is split-half reliability. This is "often measured by computing the correlation between scores on the odd-numbered items with scores on the even-numbered items. By dividing the questions in two and correlating individuals' scores on the two halves, the result is an assessment of the consistency of the questions, an indication of whether the questions are measuring the same thing" (Vogt, 2007, p. 114).

Cronbach's coefficient alpha (a form of split-half reliability) is .97 for the set of importance scores and is .98 for satisfaction scores (Student Satisfaction Survey, 2011). Cronbach's alpha is an internal-consistency reliability coefficient and is useful for attitude scales. Another type of reliability test is test-retest reliability, or "the degree to which two administrations (or versions) of a test give the same results" (Vogt, 2007, p. 114). The PSOL shows an acceptable reliability, with a Cronbach alpha coefficient of 0.77.

Sampling Procedures

The purpose of the study was to investigate the impact of online instructor actions on perceived online students' satisfaction in online, graduate level courses. All degree-seeking, actively enrolled students, excluding first term students, during the September, 2013 academic term were solicited via email to participate in the survey, resulting in approximately 3,000 invitations to participate in the research study. It was limited to graduate students taking courses for college credit through the graduate education department enrolled beyond the first-term.

Participants were graduate-level students enrolled in master's level education courses during the September, 2013 academic term, excluding first term students. The students were informed during Week Two of the study. A letter of invitation to the participants and a survey were sent via Noel-Levitz to all students enrolled in a master's level course, excluding first-term students. Participants were the students who volunteered to participate in the research study.

Data Analysis Procedures

This study employed one dependent variable and one independent variable. The dependent variable is what the researcher is trying to predict or explain (Vogt, 2007, p. 41), or "the presumed effect variable" (Hoy, 2010, p. 32). In this study, the dependent variable was

perceived online, graduate students' satisfaction. "An independent variable can sometimes be thought of as a cause and a dependent variable as an effect" (Vogt, 2007, p. 41), or "the presumed causable variable in a relationship" (Hoy, 2010, p. 32). The independent variable in the study was the online instructors' actions in an online course.

Once the survey window closed, Noel-Levitz provided the researcher with the raw data to import into Microsoft Excel. Once in Excel, the researcher conducted a two-tailed test and then calculated the mean (*M*), correlation (*r*), standard deviation (*SD*), standard of error (*SE*), *z*-score, and frequency for all research questions.

A two-tailed test was employed for testing Research Question One to test for possible relationships between online instructor actions and online, graduate students' satisfaction. A two-tailed test of significance was used to test Research Questions Two, Three, and Four to determine the degree to which the independent variable of student satisfaction was related to each characteristic (timeliness, frequency, and responsiveness to online, graduate students' needs) of online instructor actions.

Summary

The following research questions were directed toward student satisfaction as it related to effective online instructor actions:

1. Does a relationship exist between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners*?

2. How does the level of importance placed on the timeliness of online instructor actions impact the level of online, graduate students' satisfaction?

3. How does the level of importance placed on the frequency of online instructor actions impact the level of online, graduate students' satisfaction?

4. How does the level of importance placed on the responsiveness of online instructor actions to student needs impact the level of online, graduate students' satisfaction?

In Chapter Four, the findings from the study are presented. For each research question, the statistical test is explained with the results from the statistical test. The researcher explains whether each null hypothesis was accepted or rejected. Figures and tables are presented to display the statistical data obtained from the study.

CHAPTER FOUR: FINDINGS

The purpose of this causal-comparative study was to discuss Moore's Theory of Transactional Distance as it applies to instructor actions to student satisfaction, controlling for the learning management system, online curriculum and course structure for online, graduate education students at a private, online institution of higher learning. This chapter presents the results of the study and is divided into three sections, concluding with a summary of the results. The first section includes an overview of the data analysis procedures and final sample population statistics, the second section includes descriptive findings related to the five scales as measured by the *Priorities Survey for Online Learners* (PSOL), and the third section includes descriptive findings as related to the hypotheses for Research Questions One, Two, Three and Four identified in Chapter One and summarized in the overview that follows.

Data Analysis Overview

This causal-comparative, quantitative research study employed survey strategy of inquiry. Cause-comparative was employed because it seeks to establish the cause-effect relationship, comparing the relationship without manipulating the cause. The quantitative methodology selected by the researcher was the *Priorities Survey for Online Learners* (PSOL) administered via email to actively enrolled university students during Week Two of the September, 2013 academic term.

The researcher utilized data collected from an online survey emailed (See Appendix D) to students three times over a three-week period during the September, 2013 term. All actively enrolled students during the selected term were solicited via email to participate in the survey,

resulting in approximately 3,000 invitations. It was limited to graduate students taking courses for college credit enrolled beyond the first term through the graduate education department.

Participants were graduate-level students enrolled in master's level education courses during the September, 2013 academic term. A letter of invitation to the participants and a survey were sent via Noel-Levitz to all students enrolled in the course at the beginning of Week Two.

The PSOL Survey (see Appendix D) is a 69-question survey that covers five aspects of a student's experiences with online education: institutional perceptions, student services, enrollment services, academic services, and instructional services. This survey has been tested by Noel Levitz and found to be reliable. The survey has been administered to 34,004 students from 78 institutions over a five-year period (2001-2006). The PSOL was derived from the Noel-Levitz Student Satisfaction Inventory and assesses the satisfaction and priorities of students in distance learning and online programs.

Respondents score the survey using a Likert scale from 1-7 with 1being the lowest and 7 being the highest. For importance scores, the values are as follows: 1 - *not important at all,* 2 - *not very important,* 3 - *somewhat unimportant,* 4 – *neutral,* 5 - *somewhat important,* 6 – *important,* 7 - *very important,* 0 - *does not apply.* For satisfaction scores, the values are as follows: 1 - *not satisfied at all,* 2 - *not very satisfied,* 3 - *somewhat dissatisfied,* 4 – *neutral,* 5 - *somewhat satisfied,* 6 – *satisfied,* 7 - *very satisfied,* 0 - *not available / not used.*

Responses produce an importance score and a satisfaction score. "Individual items on the inventory were analyzed to determine institutional strengths (high importance and high satisfaction) …Strengths are as those items above the midpoint in importance and in the top quartile of satisfaction (Noel-Levitz, 2009, p. 5). A performance gap is determined by

subtracting the satisfaction score from the importance score. A large performance gap means the institution is not meeting student expectations (Noel-Levitz, 2009).

Cronbach's coefficient alpha (a form of split-half reliability) is .97 for the set of importance scores and is .98 for satisfaction scores (Student Satisfaction Survey, 2011). Cronbach's alpha is an internal-consistency reliability coefficient and is useful for attitude scales. Another type of reliability test is test-retest reliability, or "the degree to which two administrations (or versions) of a test give the same results" (Vogt, 2007, p. 114). The PSOL shows an acceptable reliability, with a Cronbach alpha coefficient of 0.77.

Descriptive Statistics for Participant Demographics

A total of 2,657 students were invited to participate in the survey and 2,597 successful emails were delivered. Of the 2,597 successful contacts, 256 students responded and completed the survey, for a 9.85% response rate (see Table 1).

Table 1

Survey Response Rate

# of Invitations	# of Responses	Response Rate
2,597	256	9.85%

Each participant qualified based on the criteria that had been established for the study, which identified them as an actively enrolled student seeking a master's degree who was in their second course or beyond. Newly matriculated students were excluded from the sample. The demographic statistics are shown in Tables 2 through 8.

The first question on the PSOL asked the participants to identify their gender. One hundred and ninety-one participants, representing 74.61% of the total respondents, were female. Sixty-five participants, representing 25.39% of the total respondents, were male (see Table 2).

Table 2

Participant Demographics (Gender)

Gender	*N*	Percentage
Female	191	74.61
Male	65	25.39
No Response	0	N/A
Total	256	100

The second question on the PSOL asked the participants to identify their age. None of the participants were 18 years of age or under; 10 of the participants, representing 3.91% of the population, were 19 to 24 years of age; 103 participants, representing 40.23% of the population, were 25 to 34 years of age; 63 participants, representing 24.61% of the population, were 35 to 44 years of age; 65 participants, representing 25.39% of the population, were 45 to 54 years of age; 15 participants, representing 5.86% of the population, were 55 to 64 years of age; and none of the participants were over the age of 65 (see Table 3).

Table 3

Participant Demographics (Age)

Age	N	Percentage

18 and under	0	0
19 to 24	10	3.91
25 to 34	103	40.23
35 to 44	63	24.61
45 to 54	65	25.39
55 to 64	15	5.86
65 and over	0	0.00
No response	0	N/A
Total	256	100.00

The third question on the PSOL asked the participants to identify their ethnicity or race. Sixteen participants, representing 6.32% of the population, selected their ethnicity or race as African-American; none of the participants selected their ethnicity or race as American Indian or Alaskan Native; three participants, representing 1.19% of the population, selected their ethnicity or race as Asian or Pacific Islander; 208 participants, representing 82.21% of the population, identified their ethnicity or race as Caucasian / White; 14 participants, representing 5.53% of the population, selected their ethnicity or race as Hispanic; three participants, representing 1.19% of the population, selected their ethnicity or race as Other; nine participants, representing 3.56% of the population, selected their ethnicity or race as Prefer not to respond; and three participants did not respond to the question (see Table 4).

Table 4

Participant Demographics (Ethnicity/Race)

Ethnicity / Race	N	Percentage
African-American	16	6.32
American Indian or Alaskan Native	0	0.00
Asian or Pacific Islander	3	1.19
Caucasian / White	208	82.21
Hispanic	14	5.53
Other race	3	1.19
Race – Prefer not to respond	9	3.56
No response	3	N/A
Total	253	3.56

The fourth question on the PSOL asked the participants to classify their marital status. 63 participants, representing 24.80% of the population, selected Single; 14 participants, representing 5.51% of the population, selected Single with children; 54 participants, representing 21.26% of the population , selected Married; 117 participants, representing 46.06% of the population, selected Married with children; six participants, representing 2.36% of the population, selected Marital – prefer not to respond; and two participants did not respond to the question (see Table 5).

Table 5

Marital Status

Marital Status	N	Percentage
Single	63	24.80

Single with children	14	5.51
Married	54	21.26
Married with children	117	46.06
Marital – prefer not to respond	6	2.36
No response	2	N/A
Total	254	100.00

The fifth question on the PSOL asked participants to select their current residence. 176 participants, representing 68.75% of the population, selected Own home; 60 participants, representing 23.44% of the population, selected Rent room/apartment / house; 12 participants, representing 4.69% of the population, selected Relative's home; none of the participants selected Residence hall; and eight participants, representing 3.13% of the population, selected Other residence (see Table 6).

Table 6

Current Residence

Current Residence	N	Percentage
Own home	176	68.75
Rent room / apartment/ house	60	23.44
Relative's home	12	4.69
Residence hall	0	0.00
Other residence	8	3.13
No response	0	

Total	256	100.00

The sixth question on the PSOL asked participants to classify how many credits they had completed. 127 participants, representing 50.80% of the population, selected 1 – 3 credits; 50 participants, representing 20.00% of the population, selected 4 – 6credits; three participants, representing 1.20% of the population, selected 7-9 credits; nine participants, representing 3.60% of the population, selected 10 -12 credits; seven participants, representing 2.80% of the population, selected 13 – 15 credits; 54 participants, representing 21.60% of the population, selected More than 15 credits; and six participants did not respond to the question (see Table 7).

Table 7

Current Online Enrollment

Number of Credits Completed	N	Percentage
1 – 3 credits	127	50.80
4 – 6 credits	50	20.00
7 – 9 credits	3	1.20
10 – 12 credits	9	3.60
13 – 15 credits	7	2.80
More than 15 credits	54	21.60
No response	6	N/A
Total	250	100.00

The seventh question on the PSOL asked participants to identify their degree program. Two participants, representing 0.79% of the population, selected M.A. in Teaching Elementary; 89 participants, representing 35.52% of the population, selected M.Ed. in Educational Leadership; 28 participants, representing 11.11% of the population, selected M.Ed. in Educational Technology; one participant, representing 0.40% of the population, selected M.Ed. in Elementary Education; 64 participants, representing 25.40% of the population, selected M.Ed. in Curriculum and Instruction; three participants, representing 1.19% of the population, selected M.Ed. in Curriculum and Instruction Dual Degree; 20 participants, representing 7.94% of the population, selected M.Ed. in Curriculum and Instruction with ESL Specialization; two participants, representing .0.79% of the population, selected M.Ed. in Curriculum and Instruction with Bilingual Specialization; 25 participants, representing 9.92% of the population, selected M.Ed. in Curriculum and Instruction in Digital Teaching and Learning ; three participants, representing 1.19% of the population, selected M.Ed. in Curriculum and Instruction in Effective Classroom Management; six participants, representing 2.38% of the population, selected M.Ed. in Curriculum and Instruction in K-6 Common Core Math; nine participants, representing 3.57% of the population, selected M.Ed. in Curriculum and Instruction in Louisa Moats Literacy Instruction; and four participants did not respond to the question (see Table 8). A total of 136 participants, representing 53.97% of the population, were enrolled in a M.Ed. in Curriculum and Instruction degree program, including specializations and concentrations.

Table 8

Group Code

Degree Program	N	Percentage
0001: M.A. in Teaching Elementary	2	0.79
0003: M.Ed. in Educational Leadership	89	35.32
0004: M.Ed. in Educational Technology	28	11.11
0005: M.Ed. in Elementary Education	1	0.40
0006: M.Ed. in Curriculum and Instruction	64	25.40
0007: M.Ed. in Curriculum and Instruction Dual Degree	3	1.19
0008: M.Ed. in Curriculum and Instruction with ESL Specialization	20	7.94
0009: M.Ed. in Curriculum and Instruction with Bilingual Specialization	2	0.79
0010: M.Ed. in Curriculum and Instruction in Digital Teaching and Learning	25	9.92
0011: M.Ed. in Curriculum and Instruction in Effective Classroom Management	3	1.19
0012: M.Ed. in Curriculum and Instruction in K-6 Common Core Math	6	2.38
0013: M.Ed. in Curriculum and Instruction n Louisa Moats Literacy Instruction	9	3.57
No response	4	N/A

Total	252	100.00

The last question in the demographic section of the PSOL asked participants to classify their employment status. 246 participants, representing 97.23% of the population, were employed full-time, while three participants, representing 1.19% of the population, were employed part-time, and four participants, representing 1.58% of the population, were not employed. Three participants did not respond to the question (see Table 9).

Table 9

Employment

Employment	N	Percentage
Full-time	246	97.23
Part-time	3	1.19
Not employed	4	1.58
No response	3	N/A
Total	253	100.00

The students' demographic data may be summarized as follows: 256 students responded to the PSOL instrument, the highest numbers of respondents were female (74.61%) and between 25 – 34 years of age (40.23%), selected Caucasian / White as their ethnicity or race (82.21%) , were married with children (46.06%), owned their home (68.75%), completed 1- 3 credits (50.80%), were enrolled in a Curriculum and Instruction program (53.97%), and the highest percentage of respondents were employed full-time (97.23%).

Descriptive Statistics for PSOL Scales

The survey used in this study was *The Priorities Survey for Online Learners* (PSOL) (Noel, Levitz, 2009). This instrument is a 69-question survey that covers five aspects of a student's experiences with online education: institutional perceptions, student services, enrollment services, academic services, and instructional services. This section includes descriptive statistics from this study and provides similar statistics from Noel-Levitz's data on National Online Learners' results, based on 114,138 records gathered by Noel-Levitz (Noel-Levitz, 2012). The mean difference between the researcher's PSOL data and the National PSOL data was calculated and determined if it was statistically significant at the 0.05, 0.01 level and 0.001 level, in addition to the *SD* and Performance Gap. The performance gap is the importance score minus the satisfaction score. The larger the performance gap, the greater the discrepancy between what students expect and their level of satisfaction with the current situation. The smaller the performance gap, the better the institution is doing at meeting student expectations. Table 10 details the summary results of each scale in order of importance.

Table 10

Institutional Summary Scales: In Order of Importance

	American College of Education			National Online Learners			Mean Difference
Scale	Importance	Satisfaction / SD	Perf. Gap	Importance	Satisfaction / SD	Perf. Gap	
Institutional Perceptions	6.34	6.04 / 0.98	0.30	6.56	5.87 / 1.20	0.69	0.17
Instructional Services	6.23	5.85 / 0.90	0.38	6.45	5.85 / 1.06	0.6	0.00
Academic Services	6.05	5.74 / 0.89	0.31	6.46	5.90 / 1.01	0.56	-0.16
Enrollment Services	6.00	5.65 / 1/17	0.35	6.54	6.04 / 1.09	0.5	-0.39
Student Services	5.86	5.51 / 1.19	0.35	6.41	5.85 / 1.14	0.56	-0.34

The first scale, Institutional Perceptions, resulted in a mean importance score of 6.34, mean satisfaction score of 6.04, a standard deviation of 0.98 and a performance gap of 0.30. When compared to National Online Learners, with a mean importance score of 6.56, mean satisfaction score of 5.87, a standard deviation of 1.20 and a performance gap of 0.69, the mean difference between the researcher's PSOL data and the National Online Learner's data is 0.17, which is statistically significant at the 0.05 level (See Table 11).

Table 11

Institutional Perception: Institutional Summary

	Institutional Perceptions		
	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.34	6.56	0.17
Satisfaction	6.04	5.87	
SD	0.98	1.2	
Perf. Gap	0.3	0.69	

The Institutional Perceptions scale was comprised of two questions: Question 1 and Question 6. Both questions asked the respondent to identify an importance score and satisfaction score. Question 1's mean importance score was 6.01, the mean satisfaction score was 5.81, the

standard deviation was 1.16, and showed a performance gap of 0.20. The mean difference between the researcher's PSOL data and the National Online Learner's data is -.017, which is statistically significant at the 0.01 level. Question 6's mean importance score was 6.67, the mean satisfaction score was 6.27, standard deviation was 1.05, and the performance gap was 0.40. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.51, which is statistically significant at the 0.001 level (See Table 12).

Table 12

Institutional Perceptions Scale: By Question

Institutional Perceptions: Question 1			
1. This institution has a good reputation.			
	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.01	6.47	-0.17
Satisfaction	5.81	5.98	
SD	1.16	1.21	
Perf. Gap	0.20	0.49	

Institutional Perceptions: Question 6			
6. Tuition page is a worthwhile investment.			
	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.67	6.65	0.51
Satisfaction	6.27	5.76	
SD	1.05	1.45	
Perf. Gap	0.40	0.89	

The second scale, Student Services, resulted in a mean importance score of 5.86, a mean satisfaction score of 5.51, a standard deviation of 1.19 and a performance gap of 0.35. When compared to National Online Learners, with a mean importance score of 6.41, mean satisfaction score of 5.85, a standard deviation of 1.14 and a performance gap of 0.56, the mean difference between the researcher's PSOL data and the National Online Learner's data is -0.34, which is statistically significant at the 0.001 level (See Table 13).

Table 13

Student Services: Institutional Summary

Student Services			
	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.86	6.41	0.17
Satisfaction	5.51	5.85	
SD	1.19	1.14	
Perf. Gap	0.35	0.56	

The Institutional Perceptions scale was comprised of five questions: Questions 10, 15, 19, 22 and 26. All questions asked the respondent to identify an importance score and satisfaction score. Question 10's mean importance score was 6.51, the mean satisfaction score was 6.02, the standard deviation was 1.19, and the performance gap was 0.35. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.34, which is statistically significant at the 0.001 level. Question 15's mean importance score was 5.82, the mean satisfaction score was5.21, the standard deviation was 1.58, and the performance gap was 0.61. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.08, which is not statistically significant. Question 19's mean importance score was 4.96, showed a mean satisfaction score of 5.07, a standard deviation of 1.50, and a performance gap of -0.11. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.62, which is statistically significant at the 0.001 level. Question 22's mean importance score was 6.21, showed a mean satisfaction score of 5.57, a standard deviation of 1.45, and a performance gap of 0.64. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.40, which is statistically significant at the 0.001 level. Question 26's mean importance score was 5.21, showed a mean satisfaction score of 5.24, a standard deviation of 1.43, and a performance gap of -0.03. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.84, which is statistically significant at the 0.001 level (see Table 14).

Table 14

Student Services Scale: By Question

Student Services: Question 10

10. This institution reponds quickly when I request information.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.51	6.60	0.08
Satisfaction	6.02	5.94	
SD	1.19	1.40	
Perf. Gap	0.49	0.66	

Student Services: Question 15

15. Channels are available for providing timely responses to student complaints.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.82	6.33	-0.30
Satisfaction	5.21	5.51	
SD	1.58	1.62	
Perf. Gap	0.61	0.82	

Student Services: Question 19

19. Online career services are available.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	4.96	6.16	-0.62
Satisfaction	5.07	5.69	
SD	1.50	1.47	
Perf. Gap	-0.11	0.47	

Student Services: Question 22

22. I am aware of whom to contact for questions.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.21	6.53	-0.40
Satisfaction	5.57	5.97	
SD	1.45	1.38	
Perf. Gap	0.64	0.56	

Student Services: Question 26

26. The bookstore provides timely service to students.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.21	6.38	-0.84
Satisfaction	5.24	6.08	
SD	1.43	1.27	
Perf. Gap	-0.03	0.30	

The third scale, Enrollment Services, resulted in a mean importance score of 6.00, a mean satisfaction score of 5.65, a standard deviation of 1.17 and a performance gap of 0.35. When compared to National Online Learners, with a mean importance score of 6.54, a mean satisfaction score of 6.04, a standard deviation of 1.09 and a performance gap of 0.50, the mean difference between the researcher's PSOL data and the National Online Learner's data is -0.39, which is statistically significant at the 0.001 level (See Table 15).

Table 15

Enrollment Services: Institutional Summary

Enrollment Services			
	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.00	6.54	-0.39
Satisfaction	5.65	6.04	
SD	1.17	1.09	
Perf. Gap	0.35	0.50	

The Enrollment Services scale was comprised of four questions: Questions 9, 14, 18 and 23. All questions asked the respondent to identify an importance score and satisfaction score. Question 9's mean importance score was 5.37, showed a mean satisfaction score of 4.13, a standard deviation of 1.85, and a performance gap of 1.24. The mean difference between the researcher's PSOL data and the National Online Learner's data is -01.70, which is statistically significant at the 0.001 level. Question 14's mean importance score was 5.39, showed a mean satisfaction score of 4.41, a standard deviation of 1.91, and a performance gap of 0.98. The mean difference between the researcher's PSOL data and the National Online Learner's data is -1.35, which is statistically significant at the 0.001 level. Question 18's mean importance score was 6.44, showed a mean satisfaction score of 6.54, a standard deviation of 0.92, and a performance gap of -0.10. The mean difference between the researcher's PSOL data and the National Online

Learner's data is 0.17, which is statistically significant at the 0.05 level. Question 23's mean importance score was 6.42, showed a mean satisfaction score of 6.44, a standard deviation of 0.94, and a performance gap of -0.02. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.28, which is statistically significant at the 0.001 level (see Table 16).

Table 16

Enrollment Services Scale: By Question

Enrollment Services: Question 9

9. Adequate financial aid is available.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.37	6.50	-1.70
Satisfaction	4.13	5.85	
SD	1.85	1.53	
Perf. Gap	1.24	0.67	

Enrollment Services: Question 14

14. I receive timely information on the availability of financial aid.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.39	6.45	-1.35
Satisfaction	4.41	5.76	
SD	1.91	1.55	
Perf. Gap	0.98	0.69	

Enrollment Services: Question 18

18. Registration for online courses is convenient.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.44	6.64	0.17
Satisfaction	6.54	6.37	
SD	0.92	1.10	
Perf. Gap	-0.10	0.27	

Enrollment Services: Question 23

23. Billing and payment procedures are convenient for me.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.42	6.56	0.28
Satisfaction	6.44	6.16	
SD	0.94	1.27	
Perf. Gap	-0.02	0.40	

The fourth scale, Academic Services, resulted in a mean importance score of 6.05, a mean satisfaction score of 5.74, a standard deviation of 0.89 and a performance gap of 0.31. When compared to National Online Learners, with a mean importance score of 6.46, a mean satisfaction score of 5.90, a standard deviation of 1.01 and a performance gap of 0.56, the mean

difference between the researcher's PSOL data and the National Online Learner's data is -0.16, which is statistically significant at the 0.05 level (See Table 17).

Table 17

Academic Services: Institutional Summary

Academic Services

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.05	6.46	-0.39
Satisfaction	5.40	5.90	
SD	0.89	1.01	
Perf. Gap	0.31	0.56	

The Academic Services scale was comprised of seven questions: Questions 2, 5, 7, 12, 16, 21 and 24. All questions asked the respondent to identify an importance score and satisfaction score. Question 2's mean importance score was 6.15, showed a mean satisfaction score of 5.66, a standard deviation of 1.41, and a performance gap of 0.49. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.37, which is statistically significant at the 0.001 level. Question 5's mean importance score was 5.61, showed a mean satisfaction score of 4.98, a standard deviation of 1.60, and a performance gap of 0.63. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.61, which is statistically significant at the 0.001 level. Question 7's mean importance score was 6.58, showed a mean satisfaction score of 5.93, a standard deviation of 1.23, and a performance gap of 0.65. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.01, which is not statistically significant. Question 12's mean importance score was 6.30, showed a mean satisfaction score of 6.01, a standard deviation of 1.10, and a performance gap of 0.29. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.07, which is not statistically significant. Question

16's mean importance score was 6.62, showed a mean satisfaction score of 6.11, a standard deviation of 1.02, and a performance gap of 0.11. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.05, which is not statistically significant. Question 21's mean importance score was 6.40, showed a mean satisfaction score of 6.22, a standard deviation of 0.99, and a performance gap of 0.18. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.13, which is not statistically significant. Question 24's mean importance score was 4.65, showed a mean satisfaction score of 4.80, a standard deviation of 1.64, and a performance gap of -0.15. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.82, which is statistically significant at the 0.001 level (see Table 18).

Table 18

Academic Services Scale: By Question

Academic Services: Question 2

2. My program advisor is accessible by telephone and email

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.05	6.49	-0.37
Satisfaction	5.66	6.03	
SD	1.41	1.36	
Perf. Gap	0.49	0.46	

Academic Services: Question 5

5. My program advisor helps me work toward career goals.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.61	6.32	-0.61
Satisfaction	4.98	5.59	
SD	1.60	1.61	
Perf. Gap	0.63	0.73	

Academic Services: Question 7

7. Program requirements are clear and reasonable.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.58	6.63	-0.01
Satisfaction	5.93	5.94	
SD	1.23	1.29	
Perf. Gap	0.65	0.69	

Academic Services: Question 12

12. There are sufficient offerings within my program of study.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.30	6.58	0.07
Satisfaction	6.01	5.94	
SD	1.10	1.28	
Perf. Gap	0.29	0.64	

Academic Services: Question 16

16. Appropriate technical assistance is readily available.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.62	6.51	0.05
Satisfaction	6.11	6.06	
SD	1.02	1.27	
Perf. Gap	0.11	0.45	

Academic Services: Question 21

21. Adequate online library resources are provided.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.40	6.53	0.13
Satisfaction	6.22	6.09	
SD	0.99	1.27	
Perf. Gap	0.18	0.44	

Academic Services: Question 24

24. Tutoring services are readily available for online courses.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	4.65	6.09	-0.82
Satisfaction	4.8	5.62	
SD	1.64	1.56	
Perf. Gap	-0.15	0.47	

The fifth scale, Institutional Services, resulted in a mean importance score of 6.23, a mean satisfaction score of 5.85, a standard deviation of 0.90 and a performance gap of 0.38. When compared to National Online Learners, with a mean importance score of 6.45, a mean satisfaction score of 5.85, a standard deviation of 1.06 and a performance gap of 0.60, the mean difference between the researcher's PSOL data and the National Online Learner's data is 0.00, which is not statistically significant (See Table 19).

Table 19

Instructional Services: Institutional Summary

Instructional Services

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.23	6.45	0.00
Satisfaction	5.85	5.85	
SD	0.90	1.06	
Perf. Gap	0.38	0.60	

The Instructional Services scale was comprised of eight questions: Questions 3, 4, 8, 11, 13, 17, 20, and 25. All questions asked the respondent to identify an importance score and satisfaction score. Question 3's mean importance score was 6.52, showed a mean satisfaction score of 6.09, a standard deviation of 0.99, and a performance gap of 0.43. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.09, which is not statistically significant. Question 4's mean importance score was 6.44, showed a mean satisfaction score of 5.86, a standard deviation of 1.15, and a performance gap of 0.58. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.07, which is not statistically significant. Question 8's mean importance score was 4.88, showed a mean satisfaction score of 5.34, a standard deviation of 1.38, and a performance gap of -0.46. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.20, which is statistically significant at the 0.05 level. Question 11's mean importance score was 6.52, showed a mean satisfaction score of 5.94, a standard deviation of 1.21, and a performance gap of 0.58. The mean difference between the researcher's PSOL data and the National Online Learner's data is- 0.03, which is not statistically significant. Question 13's mean importance score was 5.92, showed a mean satisfaction score of 5.64, a standard deviation of 1.28, and a performance gap of 0.28. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.16, which is not statistically significant. Question 17's mean importance score was 6.57, showed a mean satisfaction score of 6.12, a standard deviation of 1.09, and a performance gap of 0.45. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.15, which is not statistically significant. Question 20's mean importance score was 6.49, showed a mean satisfaction score of 5.91, a standard deviation of 1.20, and a performance gap of 0.58. The mean difference between the

researcher's PSOL data and the National Online Learner's data is 0.05, which is not statistically significant. Question 25's mean importance score was 6.51, showed a mean satisfaction score of 5.92, a standard deviation of 1.25, and a performance gap of 0.59. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.02, which is not statistically significant (see Table 20).

Table 20

Instructional Services Scale: By Question

Instructional Services: Question 3

3. Instructional materials are appropriate for program content.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.52	6.62	0.09
Satisfaction	6.09	6.00	
SD	0.99	1.21	
Perf. Gap	0.43	0.62	

Instructional Services: Question 4

4. Faculty provide timely feedback about student progress.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.44	6.62	0.07
Satisfaction	5.86	5.79	
SD	1.15	1.41	
Perf. Gap	0.58	0.83	

Instructional Services: Question 8

8. Student-to-student collaborations are valuable to me.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	4.88	5.4	-0.2
Satisfaction	5.34	5.54	
SD	1.38	1.42	
Perf. Gap	-0.46	-0.14	

Instructional Services: Question 11

11. Student assignments are clearly defined in the syllabus.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.52	6.68	-0.03
Satisfaction	5.94	5.97	
SD	1.21	1.30	
Perf. Gap	0.58	0.71	

Instructional Services: Question 13

13. The frequency of student and instructor interactions are adequate.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.92	6.40	-0.16
Satisfaction	5.64	5.8	
SD	1.28	1.36	
Perf. Gap	0.28	0.60	

Instructional Services: Question 17

17. Assessment and evaluation procedures are clear and reasonable.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.57	6.53	0.15
Satisfaction	6.12	5.97	
SD	1.09	1.25	
Perf. Gap	0.45	0.56	

Instructional Services: Question 20

20. The quality of online instruction is excellent.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.49	6.69	0.05
Satisfaction	5.91	5.86	
SD	1.20	1.38	
Perf. Gap	0.58	0.83	

Instructional Services: Question 25

25. Faculty are responsive to student needs.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.51	6.66	0.02
Satisfaction	5.92	5.9	
SD	1.24	1.36	
Perf. Gap	0.59	0.76	

Descriptive Statistics for Instructor Actions Scale

The researcher created a scale for this study entitled “Instructor Actions.” This scale focused on three categories of instructor actions: frequency, responsiveness, and timeliness. The researcher added three campus-defined questions to the PSOL to create a larger pool of questions for each sub-category, resulting in two questions each for frequency, responsiveness, and timeliness (see Table 21).

Table 21

Instructor Actions Scale

Instructor Actions Scale

	Sub-category	PSOL	Addition
4. Faculty provide timely feedback about student progress.	Timeliness	X	
13. The frequency of student and instructor interactions in adequate.	Frequency	X	
25. Faculty are responsive to student needs.	Responsiveness	X	
27. My online instructors have timely responses when I have questions.	Timeliness		X
28. My professors actively contributed to weekly discussion board threads.	Frequency		X
29. My professor was accessible and encouraged me to communicate with him or her.	Responsiveness		X

The sixth scale, Instructor Actions, resulted in a mean importance score of 6.21, a mean satisfaction score of 5.80, a standard deviation of 1.31 and a performance gap of 0.41 (see Table 22).

Table 22

Instructor Actions Summary

Instructor Actions

	Researcher PSOL	National Online Learners	Mean Difference
Importance	6.21	N/A	N/A
Satisfaction	5.8	N/A	
SD	1.31	N/A	
Perf. Gap	0.41	N/A	

The Instructor Actions scale is comprised of six questions: Questions 4, 13, 25, 27, 28, and 29. All questions ask the respondent to identify an importance score and satisfaction score. Question 3's mean importance score was 6.52, showed a mean satisfaction score of 6.09, a standard deviation of 0.99, and a performance gap of 0.43. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.09, which is not statistically significant. Question 4's mean importance score was 6.44, showed a mean satisfaction score of 5.86, a standard deviation of 1.15, and a performance gap of 0.58. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.07, which is not statistically significant. Question 8's mean importance score was 4.88, showed a mean satisfaction score of 5.34, a standard deviation of 1.38, and a performance gap of -0.46. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.20, which is statistically significant at the 0.05 level. Question 11's mean importance score was 6.52, showed a mean satisfaction score of 5.94, a standard deviation of 1.21, and a performance gap of 0.58. The mean difference between the researcher's PSOL data and the National Online Learner's data is- 0.03, which is not statistically significant. Question 13's mean importance score was 5.92, showed a mean satisfaction score of 5.64, a standard deviation of 1.28, and a performance gap of 0.28. The mean difference between the researcher's PSOL data and the National Online Learner's data is -0.16, which is not statistically significant. Question 17's mean importance score was 6.57, showed a mean satisfaction score of 6.12, a standard deviation of 1.09, and a performance gap of 0.45. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.15, which is not statistically significant. Question 20's mean importance score was 6.49, showed a mean satisfaction score of 5.91, a standard deviation of 1.20, and a performance gap of 0.58. The mean difference between the

researcher's PSOL data and the National Online Learner's data is 0.05, which is not statistically significant. Question 25's mean importance score was 6.51, showed a mean satisfaction score of 5.92, a standard deviation of 1.25, and a performance gap of 0.59. The mean difference between the researcher's PSOL data and the National Online Learner's data is 0.02, which is not statistically significant (see Table 23).

Table 23

Instructor Actions Scale: By Question

Instructor Actions Scale: By Question

Question	Scale	Importance	Satisfaction	SD	Perf. Gap
4. Faculty provide timely feedback about student progress.	Timeliness	6.44	5.86	0.83	0.58
13. The frequency of student and instructor interactions in adequate.	Frequency	5.92	5.64	1.58	0.28
25. Faculty are responsive to student needs.	Responsiveness	6.51	5.92	0.98	0.59
27. My online instructors have timely responses when I have questions.	Timeliness	6.59	5.97	1.30	0.62
28. My professor actively contributes to weekly discussion board threads.	Frequency	5.70	5.54	1.49	0.16
29. My professor was accessible and encouraged me to communicate with him or her	Responsiveness	6.35	5.85	1.33	0.50

Research Questions and Hypotheses

Research Question #1 (RQ 1): Does a relationship exist between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners*?

H_1: There is a statistically significant relationship between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 4, 13, 25, 27, 28 and 29.

Descriptive Findings and Data Analysis for Research Question One

Research Question One addressed if a relationship existed between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners.* The correlation was r=0.3196 and the coefficient of determination between online instructor actions and online, graduate students' satisfaction was 0.5653 (56.53%). A paired *t*-test was used to calculate *p=3.76E-34*. The average of all Instructor Actions *importance scores* was m=6.21 with a variance of 1.27, standard error of 0.07 and a standard deviation of 1.13, and the average of all Instructor Actions *satisfaction scores* was m=5.80 with a variance of 1.72, standard error of 0.08, and a standard deviation of 1.31 (see Table 24).

Table 24

Instructor Actions Scale: Descriptive Statistics

Question	Importance	Satisfaction
M	6.21	5.80
Variance	1.23	1.72
SD	1.13	1.31
SE	0.07	0.08
f	7.00	7.00

r	0.32
Coef. Of Deter.	0.57
p	3.76E-34

The interpretation of these data shows that there is a statistically significant relationship between online instructor actions and online, graduate students' satisfaction.

Research Question #2 (RQ 2): How does the level of importance placed on the timeliness of online instructor actions impact the level of online, graduate students' satisfaction?

H_2: The level of importance placed on the timeliness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 4 and 27.

Descriptive Findings and Results for Research Question Two

The correlation was r=0.2618 and the coefficient of determination between online instructor actions and online, graduate students' satisfaction was 0.5117 (51.17%) of the variance of the students' satisfaction is predictable from the online students' satisfaction. A paired *t*-test was used to calculate *p=5.15111E-23*. This means *p* has a high significance. The average of all T*imeliness* Instructor Actions *importance scores* was m=6.52 with a variance of 0.69, standard error of 0.05, and a standard deviation of 0.83, and the average of all *Timeliness* Instructor

Actions *satisfaction scores* was *m*=5.9149 with a variance of 1.51, standard of error of 0.08, and a standard deviation of 1.23. The *z*-score of all T*imeliness* Instructor Actions *importance scores* was 0.27 and *satisfaction scores* was 0.09 (see Table 25).

Table 25

Timeliness Scale: Descriptive Statistics Summary

Category	**Importance**	**Satisfaction**
M	6.52	5.91
Variance	0.69	1.51
SD	0.83	1.23
SE	0.05	0.08
f	7.00	7.00
Z-Score	0.27	0.09

r	0.26
Coef. Of Deter.	0.51
p	5.15E-23

The interpretation of these data shows that level of importance placed on the timeliness of online instructor actions did have a statistically significant impact on the level of student satisfaction.

Research Question #3 (RQ 3): How does the level of importance placed on the frequency of online instructor actions impact the level of online, graduate students' satisfaction?

H_3: The level of importance placed on the frequency of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 13 and 28.

Descriptive Findings and Results for Research Question Three

The correlation was *r*=0.29 and the coefficient of determination between online instructor actions and online, graduate students' satisfaction was 0.54 (54%) of the variance of the students' satisfaction is predictable from the online students' satisfaction. A paired *t*-test was used to calculate *p=0.0022*. This means *p* has a high significance. The average of all *Frequency* Instructor Actions *importance scores* was *m*=5.81 with a variance of 1.78, standard error of 0.08 and a standard deviation of 1.33, and the average of all *Frequency* Instructor Actions *satisfaction scores* was *m*=5.59 with a variance of 1.93, standard error of 0.09 and a standard deviation of 1.39. The *z*-score of all *Frequency* Instructor Actions *importance scores* was -0.36 and satisfaction *scores* was -0.16 (see Table 26).

Table 26

Frequency Scale: Descriptive Statistics Summary

Category	Importance	Satisfaction
M	5.81	5.59
Variance	1.78	1.93
SD	1.33	1.39
SE	0.08	0.09
f	7.00	6.00
Z-Score	-0.36	-0.16
r	0.29	
Coef. Of Deter.	0.54	
p	2.50E-01	

The interpretation of these data shows that level of importance placed on the frequency of online instructor actions did have a statistically significant impact on the level of student satisfaction.

Research Question #4 (RQ 4): How does the level of importance placed on the responsiveness of online instructor actions to student needs impact the level of online, graduate students' satisfaction?

H_4: The level of importance placed on the responsiveness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners* as evidenced by Questions 25 and 29.

Descriptive Findings and Results for Research Question Four

The correlation was r=0.37 and the coefficient of determination between online instructor actions and online, graduate students' satisfaction is 0.61 (61%) of the variance of the students' satisfaction is predictable from the online students' satisfaction. A paired *t*-test was used to calculate *p=2.78657E-20*. This means *p* has a high significance. The average of all *Responsiveness* Instructor Actions *importance scores* was m=6.43 with a variance of 0.77, standard error of 0.05 and a standard deviation of 0.88, and the average of all *Responsiveness* Instructor Actions *satisfaction scores* was m=5.88 with a variance of 1.67 , standard error of 0.08 and a standard deviation of 1.29. The *z*-score of all *Responsiveness* Instructor Actions *importance scores* was 0.19 and *satisfaction scores* was 0.07 (see Table 27).

Table 27

Responsiveness Scale: Descriptive Statistics Summary

Category	Importance	Satisfaction
M	6.43	5.88
Variance	0.77	1.67
SD	0.88	1.29
SE	0.05	0.08
f	7.00	7.00
z-score	0.19	0.07
r	0.37	
Coef. Of Deter.	0.61	
p	2.79E-20	

The interpretation of these data shows that level of importance placed on the responsiveness of online instructor actions did have a statistically significant impact on the level of student satisfaction.

Summary of Results

This chapter began with an overview of the data analysis procedures, a description of the demographic characteristics of the 256 participants, and a description of the PSOL survey instrument. The responses to each question contained within the three main categories of instructor actions (frequency, responsiveness and timeliness) were examined using descriptive statistics, including means, standard deviations, correlations, *t*-tests, *z*-scores, and coefficient of determination.

The purpose of this causal-comparative study was to discuss Moore's Theory of Transactional Distance as it applies to instructor actions to student satisfaction, controlling for the learning management system, online curriculum and course structure for online, graduate education students at a private, online institution of higher learning.

The data suggested there is a statistical significance between online instructor actions and online, graduate students' satisfaction.

Chapter Five provides a more detailed discussion of the results and implications in relation to the literature and theoretical frameworks. It also includes an outline of the research study limitations, methodological and practical implications, and recommendations for further research.

CHAPTER FIVE: DISCUSSION

This research was conducted to determine the perceived importance and impact of instructor actions in online graduate, education students' satisfaction.

Examining online courses from the perspective of the student is a shift from the traditional instructor-centered model to a student-centered system. This study, conducted within the framework of Moore's theory of transactional distance was an effort to bring further clarity to the desired instructor actions, which can greatly impact student satisfaction and attempt to minimize the potential isolation of the online learner, and add to the knowledge base on distance learning and teaching by analyzing the impact of instructor actions. The effects of this study also can be extended to improve student retention rates of online, graduate students.

The purpose of this chapter is to review and discuss the results of this study. The chapter consists of five sections: (a) a summary of the findings, (b) a discussion of the findings and the implications in light of the relevant literature and theory, (c) an outline of the study limitations, (d) an implications section (methodological and practical), and (e) recommendations for future research.

Statement of the Problem

Online education is an area that has experienced tremendous growth and a need exists for empirical research on the impact of effective online instructor actions in online learning environments on student satisfaction. This is the base from which this study was launched. The study seeks to contribute to the growing body of knowledge of effective teaching practices in an online learning environment. Interaction between the student and instructor is at the heart of the

learning experience and is widely cited as a defining characteristic of successful learning in both traditional and online learning environments (Baker, 2010).

Summary of Procedures

The survey used in this study was *The Priorities Survey for Online Learners* (PSOL) (Noel, Levitz, 2009). This instrument is a 69-question survey that covers five aspects of a student's experiences with online education: institutional perceptions, student services, enrollment services, academic services, and instructional services. This survey has been tested by Noel Levitz and found to be reliable. The survey has been administered to 34,004 students from 78 institutions over a five-year period (2001-2006). The PSOL was derived from the Noel-Levitz Student Satisfaction Inventory and assesses the satisfaction and priorities of students in distance learning and online programs. Respondents score the survey using a Likert scale from 1-7 with 1being the lowest and 7 being the highest.

Quantitative data from 256 online, graduate students were gathered and analyzed using the PSOL over a three-week time period during the September, 2013 term. This instrument was chosen as it was already field tested and had acceptable levels of validity and reliability.

The population of this study consisted of students enrolled in Internet-based, graduate distance education learning courses offered during the September, 2013 academic term. Although 2,567 actively enrolled students were invited via email to participate in the study, only 256 students completed the survey. Participation in this study was voluntary; all students who participated in the PSOL had their anonymity protected as all responses were anonymous.

The survey was housed online as www.NoelLevitz.org, and individuals had to receive a unique password to gain access to the survey, ensuring that only those invited could answer questions, guaranteeing the validity of the information. The collected data were then analyzed by

Noel-Levitz and the researcher further analyzed the raw data using Microsoft Excel. The demographic characteristics of the participants and the subsequent research questions were examined using descriptive statistics, including means, standard deviations, standard of error, correlation, coefficient of determination, t-test, z-scores, and frequency.

Summary of the Findings

Based on the results, the following items, listed in order of importance, were identified as strengths or weaknesses (see Table 28). The items listed as strengths are items with high importance and high satisfaction. The items listed as challenges are items with high importance and low satisfaction, or with a large performance gap. A performance gap is defined as the importance score minus the satisfaction score. The larger the performance gap, the greater the discrepancy between what students expect and their level of satisfaction.

Table 28

Strengths and Challenges Overview

Strengths
6. Tuition paid is a worthwhile investment.
17. Assessment and evaluation procedures are clear and reasonable.
3. Instructional materials are appropriate for program content.
18. Registration for online courses is convenient.
23. Billing and payment procedures are convenient for me.
21. Adequate online library resources are provided.
Challenges
27. My online instructors have timely responses when I have questions.
7. Program requirements are clear and reasonable.

Research Question One

The purpose of Research Question One was to examine if a relationship exists between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners*.

H_1: There is a statistically significant relationship between online instructor actions and online, graduate students' satisfaction as measured by *The Priorities Survey for Online Learners.*

A total of 256 participants were included in this study. A Pearson product-moment *r* test for correlation was conducted. A statistically significant positive correlation (*p = 3.76E-34*) was found between the two variables, perceived importance and student satisfaction scores (*r* = 0.320). Based on these results the hypothesis is accepted.

Research Question Two

The purpose of Research Question Two was to determine if the level of importance placed on the timeliness of online instructor actions impacts the level of online, graduate students' satisfaction.

H_2: The level of importance placed on the timeliness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners.*

All 256 responses were included in the analysis of Research Question Two. A Pearson product-moment *r* test for correlation was conducted. A statistically significant positive correlation (*p = 5.151E-23)* was found between the two variables, timeliness of online instructor actions and student satisfaction (*r = 0.*262). Based on these results, the hypothesis is accepted.

Research Question Three

The purpose of Research Question Three was to determine if the level of importance placed on the frequency of online instructor actions impacts the level of online, graduate students' satisfaction.

H_3: The level of importance placed on the frequency of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners.*

All 256 responses were included in the analysis of Research Question Three. A Pearson product-moment *r* test for correlation was conducted. A statistically significant positive correlation ($p = 0.002$) was found between the two variables, frequency of online instructor actions and student satisfaction ($r = 0.289$). Based on these results, the hypothesis is accepted.

Research Question Four

The purpose of Research Question Four was to determine if the level of importance placed on the responsiveness of online instructor actions to student needs impacts the level of online, graduate students' satisfaction.

H_4: The level of importance placed on the responsiveness of online instructor actions will have statistically significant impact on the level of student satisfaction as measured by *The Priorities Survey for Online Learners.*

All 256 responses were included in the analysis of Research Question Three. A Pearson product-moment *r* test for correlation was conducted. A statistically significant positive correlation ($p = 2.789E\text{-}20$) was found between the two variables, responsiveness of online instructor actions and student satisfaction ($r = 0.374$). Based on these results, the hypothesis is accepted.

Discussion of the Findings

According to Howell (2011), correlations are reported in relation to their statistical significance. The level of significance is reported in the form of a probability or *p* value. For a correlation to be significant, the *p* value must be less than or equal to 0.05. While associations can still be observed at greater or less than 0.05, the level of significance is present only in this range. This level of significance is a measure of whether the results are likely to be true. Negative numbers in the same range indicate a negative correlation between two of the variables. According to this statistical measure, there was a significant correlation between online instructor actions and online, graduate students' satisfaction. Of the four hypotheses that were studied, four were accepted based on the data from this study.

The collected data were examined to determine the degree of the significant relationships observed in this study. According to Howell (2011), as well as Gay and Airasian (2000), correlation coefficients below 0.35 suggest weak or low correlations, regardless of their significance. The findings from the current study indicated strong correlation in the area of online instructor's responsiveness ($r = 0.374$). This means that of the three online instructor actions in this study, responsiveness showed the strongest correlation to student satisfaction.

A performance gap is the importance score minus the satisfaction score. The larger the performance gap, the greater the discrepancy between what students expect and their level of satisfaction with the current situation. The smaller the performance gap, the better the institution is doing at meeting student expectations. From the three online, instructor actions, timeliness had the largest performance gap of 0.60, with the responsiveness performance gap of 0.55, and the frequency performance gap of 0.22. All three performance gaps are relatively small. This means the institution is meeting student expectations.

Respondents scored the survey using a Likert scale from 1-7 with 1being the lowest and 7 being the highest. For importance scores, the values are as follows: 1 - *not important at all,* 2 - *not very important,* 3 - *somewhat unimportant,* 4 - *neutral,* 5 - *somewhat important,* 6 - *important,* 7 - *very important,* 0 - *does not apply.* The average importance score of timeliness of online, instructor actions was 6.52, placing it as important/very important. The average importance score of responsiveness of online, instructor actions was 6.42, placing it as important/very important. The average importance score of frequency was 5.81, placing it as somewhat important/important. This means students rated timeliness as the most important online, instructor action, and frequency as the least important online, instructor action. Respondents scored the survey using a Likert scale from 1-7 with 1 being the lowest and 7 being the highest. For satisfaction scores, the values were as follows: 1 - *not satisfied at all,* 2 - *not very satisfied,* 3 - *somewhat dissatisfied,* 4 – *neutral,* 5 - *somewhat satisfied,* 6 – *satisfied,* 7 - *very satisfied,* 0 - *not available / not used.* The average satisfaction score of timeliness was 5.91, placing it as somewhat satisfied/satisfied. The average satisfaction score of responsiveness was 5.88, placing it as somewhat satisfied/satisfied. The average satisfaction score of frequency was 5.59, placing it as somewhat satisfied/satisfied. This means students rated timeliness as the online, instructor action with which they were most satisfied and frequency of online, instructor actions as the area with which they were least satisfied. Students rated timeliness of online, instructor action as the most important and the area with which they were most satisfied; frequency was rated as the least important online, instructor action and was the area with which they were least satisfied.

Unanticipated Findings

An unexpected finding was the difference in ratings and correlation scores based on gender (see Table 29).

Table 29

Gender Statistics

Importance Scores

	All Instructor Actions		Frequency		Timeliness		Responsiveness	
	Female (F)	Male (M)	F	M	F	M	F	M
Mean	6.33	5.88	5.92	5.56	6.61	6.23	6.55	6.05
Perf. Gap	0.54	0.27	0.36	-0.11	0.70	0.33	0.68	0.15
Variance	1.04	1.79	1.58	2.18	0.53	0.20	0.51	1.66
S.D.	1.02	1.34	1.26	1.48	0.73	1.02	0.88	1.29
S.E.	0.06	0.08	0.08	0.09	0.05	0.06	0.05	0.08
T-Test	0.00	0.20	0.00002	0.09	0.00	0.002	2.95E-22	0.18
Correlation	0.27	0.49	0.25	0.47	0.16	0.509	0.35	0.53
C.D	0.52	0.70	0.50	0.68	0.40	0.71	0.60	0.72

Satisfaction Scores

	All Instructor Actions		Frequency		Timeliness		Responsiveness	
	Female (F)	Male (M)	F	M	F	M	F	M
Mean	5.79	5.62	5.56	5.67	5.92	5.91	5.87	5.91
Variance	1.87	2.38	2.13	2.18	1.52	1.46	0.051	1.21
S.D.	1.37	1.54	1.46	1.48	1.123	1.21	0.71	1.1
S.E.	0.09	0.10	0.09	0.09	0.08	0.08	0.04	0.07

Once the scores were divided by gender, the researcher conducted the same data analysis to determine the mean, performance gap, variance, standard deviation (*SD*), standard of error (*SE*), *t*-test, correlation and coefficient of determination (*CD*). Female respondents rated responsiveness as the most important online, instructor action with an average importance score of 6.55, placing it as important/very important, whereas male respondents rated timeliness as the most important online, instructor actions with an average importance score of 6.23, placing it as important/very important. Female respondents rated timeliness as most satisfied with a mean

satisfaction score of 5.92, placing it as somewhat satisfied/satisfied, whereas male respondents rated responsiveness and timeliness as most satisfied with a mean satisfaction score of 5.91, placing it as somewhat satisfied/satisfied.

The collected gender data were further examined to determine the degree of the significant relationships observed in this study. According to Howell (2011), as well as Gay and Airasian (2000), correlation coefficients below 0.35 suggest weak or low correlations, regardless of their significance. Based on this definition, female responses did not show a strong correlation ($r = 0.27$) between the importance of all online, instructor actions (frequency, responsiveness and timeliness) and student satisfaction, whereas male responses did show a strong correlation ($r = 0.49$) between the importance of all online, instructor actions (frequency, responsiveness, and timeliness) and student satisfaction. The findings from the gender data analysis suggested that females indicated a strong correlation in the area of online instructor's responsiveness ($r = 0.374$), whereas male responses indicated a strong correlation in all three online, instructor's actions: frequency, responsiveness and timeliness.

Theoretical Implications

The findings of this study have practical implications for anyone involved in higher education graduate online course facilitation, delivery, training or design. By understanding the impact of online, instructor actions on online, graduate students' satisfaction, modifications can be made to course delivery models, training programs, and instructor expectations. Everyone benefits when students' satisfaction is high and attrition is low, so it is in the best interest of everyone involved to recognize which online, instructor actions will impact student satisfaction.

Tinto (2006) reported that attrition could be costly to students and institutions, and potentially damaging to institutional reputations.

Practical Implications

This researcher found a statistically significant relationship between online instructor actions and student satisfaction. This study's findings on the relationship between online instructor's actions and graduate, students' satisfaction add to existing literature on distance education. The study contributes to the base of research by identifying the characteristics of instructor actions of frequency, responsiveness and timeliness and the corresponding impact on student satisfaction. Further, these findings underscore the impact of these factors on student retention among online, graduate education programs.

Assumptions and Limitations

One assumption of this study is that the students in an online, graduate program had already completed a bachelor's degree, had met the minimum admissions requirements, the instructor interacted with the students on some level, and all raters answered the survey questions honestly.

Another assumption is that the results added to the literature about online learning, and indicated instructor actions that college administrators, faculty, trainers and curriculum designers could note during the design and delivery of online courses.

A major limitation of this study was the size of the sample. The sample was relatively small. Of the 2,567 students invited to participate in the survey, 256 students completed the survey, resulting in a 10% response rate.

A second limitation of this study is that is does not account for students who chose not to participate. Only those responses from students whom responded to the survey questions were considered in the survey data. This subjected the study to unit nonresponse and the issue of non-ignorable nonresponse. Within the realm of non-ignorable non-response issues, item nonresponse was not a problem in this study; however, the problem of unit nonresponse needs to be noted as a limitation when applying and making inferences based on part one of this study (King, Honaker, Joseph, & Shaver, 2001). Since the data analysis did not use statistical controls to address the issue of non-ignorable non-responses, findings cannot be applied to the students who did not respond. Thus, care should be taken not to make invalid inferences based on the results (Hausman & Wise, 1977).

A third limitation is relative to the characteristics of the institution and the curriculum/ course model where the study was conducted. This institution does not accept financial aid, offer career or tutoring services, have an online bookstore, or incorporate student-to-student collaborations. There are a few questions in the standard PSOL that focus specifically on these areas or services and were marked low on importance and satisfaction. Table 30 shows the questions and corresponding importance and satisfaction scores, along with a comparison to National Online Learners.

Table 30

Institutional Summary: Lowest Rated Questions

Enrollment Services: Question 14

14. I receive timely information on the availability of financial aid.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.39	6.45	-1.35
Satisfaction	4.41	5.76	
Stand. Dev.	1.91	1.55	
Perf. Gap	0.98	0.69	

Enrollment Services: Question 9

9. Adequate financial aid is available.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.37	6.5	-1.35
Satisfaction	4.13	5.83	
Stand. Dev.	1.85	1.53	
Perf. Gap	1.24	0.67	

Student Services: Question 26

26. The bookstore provides timely service to students.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	5.21	6.38	-0.84
Satisfaction	5.24	6.08	
Stand. Dev.	1.43	1.27	
Perf. Gap	-0.03	0.30	

Student Services: Question 19

19. Online career services are available.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	4.96	6.16	-0.62
Satisfaction	5.07	5.69	
Stand. Dev.	1.50	1.47	
Perf. Gap	-0.11	0.47	

Instructional Services: Question 8

8. Student-to-student collaborations are valuable to me.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	4.88	5.4	-0.20
Satisfaction	5.34	5.54	
Stand. Dev.	1.38	1.42	
Perf. Gap	-0.46	-0.14	

Academic Services: Question 24

24. Tutoring services are readily available for online courses.

	Researcher PSOL	National Online Learners	Mean Difference
Importance	4.65	6.09	-0.82
Satisfaction	4.8	5.62	
Stand. Dev.	1.64	1.56	
Perf. Gap	-0.15	0.47	

A final limitation is that the institution where this study was conducted changed Learning Management Systems (LMS) during June, 2013, approximately three months prior to the survey distribution. It is possible students' negative and/or positive impressions impacted their responses on the survey questions.

Recommendations for Further Research

Further studies are needed in order to expand the body of knowledge of other instructor actions beyond frequency, responsiveness, and timeliness that can influence online, graduate students' satisfaction. As described previously, there is a lack of empirical research that use Moore's transactional distance theory as their conceptual framework. Although the literature supports the presence of elements of transactional distance, there is an incomplete understanding of how they work with one another in the context of instructor actions and student satisfaction.

As it relates to the current study, a replication of this study at another online institution could confirm or reject the specific findings concerning the impact of online, instructor actions on graduate students' satisfaction.

Conclusion

The primary aim of this research study was to contribute to the body of online education literature by extending the research on selected online instructor actions and the influence on online students' satisfaction. Specifically, the study sought to examine specific online, instructor actions in the areas of frequency, responsiveness, and timeliness. The findings suggest that online, instructor actions in the areas of frequency, responsiveness and timeliness have a statistically significant impact on graduate students' satisfaction.

The demand for online learning is growing exponentially. Continuing to grow at an alarming rate, online course enrollments have exceeded the total higher education student population (Baker, 2010; Sloan-C, 2011). Strong models for a causal relationship between student satisfaction and online, instructor actions can be constructed; however, further research is needed to better understand all of the related issues that influence student satisfaction.

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Appendix A

Liberty University IRB Approval

From: IRB, IRB [IRB@liberty.edu]
Sent: Friday, June 14, 2013 1:57 PM
To: Franklin, Rochelle
Cc: IRB, IRB; Ackerman, Margaret Elizabeth (School of Education); Garzon, Fernando (Center for Counseling and Family Studies)
Subject: IRB Exemption 1610.061413: The Perceived Importance and Impact of Instructor Actions in Online, Graduate Education Students' Satisfaction

Dear Rochelle,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and that no further IRB oversight is required.

Your study falls under exemption category 46.101 (b)(2), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:

> (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
> (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that this exemption only applies to your current research application, and that any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption, or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu.

Please retain this letter for your records. Also, if you are conducting research as part of the requirements for a master's thesis or doctoral dissertation, this approval letter should be included as an appendix to your completed thesis or dissertation.

Sincerely,

Fernando Garzon, Psy.D.
Professor, IRB Chair
Counseling

(434) 592-4054

Liberty University | Training Champions for Christ since 1971

Appendix B
Institution IRB Approval

June 10, 2013

Dear Rochelle,

The Institutional Review Board of [redacted] has reviewed your research proposal:

> The Perceived Importance and Impact of Instructor Actions in Online Graduate, Education Students' Satisfaction

This proposal has been approved with the changes you have made, effective June 10, 2013. These changes were:

1. The Informed Consent document reflects that participants will not be compensated for participating in the study. (pg. 2)
2. The word "anonymous" was changed to "confidential" in the *Confidentiality* paragraph of the Informed Consent document (pg. 2) and the recruitment emails).
3. Items #27 - 36 on the survey are now populated.

You will work through Dr. Kathryn Talley, Institutional Research at [redacted] to obtain the names and addresses of the students, as well as to determine the appropriate timing of the survey.

We look forward to seeing the results of your research and hope that all goes smoothly.

Regards,

Lillian Chenoweth [redacted]

Lillian Chenoweth, Ph.D.

Chair of Institutional Review Board
[redacted]

[redacted]

Appendix C

Informed Consent

The perceived importance and impact of instructor actions in online, graduate education students' satisfaction.

By Rochelle Franklin
Liberty University
Graduate Education

Dear Participant,

You are invited to be part of a research study that is examining the impact of online instructor actions in online, graduate education courses on student satisfaction. You were selected as a possible participant because you may fit the criteria for this study since you are currently enrolled in the M.Ed. program of your university. Your participation in the research study being conducted will be helpful to increase awareness and understanding the impact of online instructor actions in online, graduate education courses on student satisfaction. This informed consent outlines the facts, implications, and consequences of the research study. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Researcher: Rochelle Franklin

Dissertation Committee: Beth Ackerman, Ed.D., Liberty University JoAnna Oster, Ed.D., Liberty University Gina Thomason, Ed.D, Liberty University

Inquiries: The researcher will gladly answer any inquiries regarding the purpose and procedures of the present study. Please send all inquiries via email to Rochelle Franklin at RFranklin2@liberty.edu.

Background: This study examined the impact of online instructor actions in online, graduate education courses on student satisfaction. Students at an online institution that offers graduate degrees in Educational Leadership, Curriculum and Instruction, and Educational Technology completed the Priority Survey of Online Learners, which included questions about various aspects of their online learning experience, specifically focusing on timeliness, responsiveness and frequency of online instructor actions.

Procedures: If you agree to be in this study, I would ask you to do the following: You are being asked to complete an online survey. The length of time needed to complete the online assessments is estimated at 15-20 minutes. Participation is voluntary. The researcher will take precautions to protect participant identity by not using the names of participants and the survey will be located on the Noel-Levitz's password-protected server. The researcher will use the assessment results for publications and presentation purposes.

Participant Risks: There are no anticipated risks beyond those encountered in everyday life.

Participant Benefits: There are no direct benefits to the participant. By sharing the level of importance and satisfaction of their online learning experience, this may help online instructors

improve their pedagogy, online institutions improve their professional development practices and potentially increase student retention. The potential publication of the findings of this study may prove beneficial to students, faculty, and secondary/higher education administrators involved in online distance education programs as they seek to improve online teaching practices and student retention.

Compensation: Participants will not be compensated for participating in the study.

Confidentiality: The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. The researcher will take precautions to protect participant identity by not linking survey information to participant identity. The researcher will not have access to student names or any student information, only to the collected data in raw form. The survey is strictly confidential. The survey will be located on the Noel-Levitz website. Data is stored on the server and kept in a password-protected database and is not shared with anyone. The information will be stored on this site for the duration of three years and will then be deleted by the researcher, Rochelle Franklin.

Voluntary Participation: Participation in this study is voluntary and you may withdraw at any time without penalty. Please be aware that your decision to participate and your participation will not in any manner influence your relationship with the university or with the researcher.

Disclosure: By selecting below "I agree to participate in the study", I acknowledge the following: I have read and understand the description of the study and contents of this document. I have had an opportunity to ask questions and have all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this study. I am a graduate student in education. I understand that should I have any questions about this research and its conduct, I should contact one of the researchers listed above. If I have any questions about rights or this form, I should call the researcher Rochelle Franklins at RFranklin2@liberty.edu or my dissertation chair Dr. Beth Ackerman at MAckerman@liberty.edu. If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24502 or email at irb@liberty.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

IRB Code Numbers: 16103061413

IRB Expiration Date: 6/14/2014

Appendix D

Noel Levitz Priorities Survey for Online Learners

NOEL-LEVITZ

PRIORITIES SURVEY FOR ONLINE LEARNERS™

Dear Online Student,

Your thoughtful and candid responses to this survey are very important to your institution. Your responses will give your campus leadership insights about the aspects of this program that are important to you as well as how satisfied you are with them.

Thank you for your participation.

Instructions:

- Indicate your responses to each item as requested
- At the end of each section, click on "next page" to continue
- Be sure to complete the survey in one sitting (if you exit and return to the survey, your original responses will be lost)

Please note: you will need approximately 10-15 minutes to complete the survey. To see as much of the survey as possible, you may want to maximize your browser window.

Each item below describes an expectation about your experiences with this program. On the *left*, tell us how important it is for your institution to meet this expectation. On the *right*, tell us how satisfied you are that your institution has met this expectation.

Importance to me...	...My level of satisfaction
1 - not important at all	not available/not used
2 - not very important	very satisfied - 7
3 - somewhat unimportant	satisfied - 6
4 - neutral	somewhat satisfied - 5
5 - somewhat important	neutral - 4
6 - important	somewhat dissatisfied - 3
7 - very important	not very satisfied - 2
does not apply	not satisfied at all - 1

1. This institution has a good reputation.
2. My program advisor is accessible by telephone and e-mail.
3. Instructional materials are appropriate for program content.
4. Faculty provide timely feedback about student progress.

5. My program advisor helps me work toward career goals.
6. Tuition paid is a worthwhile investment.
7. Program requirements are clear and reasonable.
8. Student-to-student collaborations are valuable to me.

9. Adequate financial aid is available.
10. This institution responds quickly when I request information.
11. Student assignments are clearly defined in the syllabus.
12. There are sufficient offerings within my program of study.

13. The frequency of student and instructor interactions is adequate.
14. I receive timely information on the availability of financial aid.
15. Channels are available for providing timely responses to student complaints.
16. Appropriate technical assistance is readily available.

17. Assessment and evaluation procedures are clear and reasonable.
18. Registration for online courses is convenient.
19. Online career services are available.
20. The quality of online instruction is excellent.

Importance to me...	...My level of satisfaction
1 - not important at all	not available/not used
2 - not very important	very satisfied - 7
3 - somewhat unimportant	satisfied - 6
4 - neutral	somewhat satisfied - 5
5 - somewhat important	neutral - 4
6 - important	somewhat dissatisfied - 3
7 - very important	not very satisfied - 2
does not apply	not satisfied at all - 1

21. Adequate online library resources are provided.
22. I am aware of whom to contact for questions about programs and services.
23. Billing and payment procedures are convenient for me.
24. Tutoring services are readily available for online courses.

25. Faculty are responsive to student needs.
26. The bookstore provides timely service to students.
27. CAMPUS DEFINED ITEM
28. CAMPUS DEFINED ITEM

29. CAMPUS DEFINED ITEM
30. CAMPUS DEFINED ITEM
31. CAMPUS DEFINED ITEM
32. CAMPUS DEFINED ITEM

33. CAMPUS DEFINED ITEM
34. CAMPUS DEFINED ITEM
35. CAMPUS DEFINED ITEM
36. CAMPUS DEFINED ITEM

On the left, tell us how important each of the following **sources of information** were in your decision to enroll in this program.

37. Catalog and brochures (printed)
38. Catalog (online)
39. College representatives
40. Web site

41. Advertisements
42. Recommendations from instructor or program advisors
43. Contact with current students and / or recent graduates of the program

On the left, tell us how important each of the following **factors** were in your decision to enroll in this program.

44. Ability to transfer credits
45. Cost
46. Financial assistance available
47. Future employment opportunities

48. Reputation of institution
49. Work schedule
50. Flexible pacing for completing a program
51. Convenience

52. Distance from campus
53. Program requirements
54. Recommendations from employer

Choose the <u>one</u> response that best applies for each of the questions below.

55. So far, how has the online experience met your expectations?

- Much worse than I expected
- Quite a bit worse than I expected
- Worse than I expected
- About what I expected
- Better than I expected
- Quite a bit better than I expected
- Much better than I expected

56. Rate your overall satisfaction with your online experience thus far.

- Not satisfied at all
- Not very satisfied
- Somewhat dissatisfied
- Neutral
- Somewhat satisfied
- Satisfied
- Very satisfied

57. If you had it to do over, would you enroll in this program again?

- Definitely not
- Probably not
- Maybe not
- I don't know
- Maybe yes
- Probably yes
- Definitely yes

58. Gender:
Female
Male

59. Age:
18 and under
19 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65 and older

60. Ethnicity/race:
African-American
American Indian or Alaskan Native
Asian or Pacific Islander
Caucasian/White
Hispanic
Other
Prefer not to respond

61. Current enrollment status:
Primarily online
Primarily on-campus

62. Current class load:
Full-time
Part-time

63. Class level:
First year
Second year
Third year
Fourth year
Special student
Graduate/professional
Other class level

64. Educational goal:
Associate degree
Bachelor's degree
Master's degree
Doctorate or professional degree
Certification (initial or renewal)
Self-improvement/pleasure
Job-related training
Other educational goal

65. Employment:
Full-time
Part-time
Not employed

66. Current residence:
Own house
Rent room / apartment / house
Relative's home
Residence hall
Other residence

67. Marital status:
Single
Single with children
Married
Married with children
Prefer not to respond

68. Current plans:
Complete online degree program
Complete degree on campus
Transfer credits
Complete this course

69. Current online enrollment:
1 – 3 credits
4 – 6 credits
7 – 9 credits
10 – 12 credits
13 – 15 credits
More than 15 credits

70. Previous online enrollment:
No classes
1 –3 classes
4 – 6 classes
7 – 9 classes
10 – 12 classes
13 – 15 classes
More than 15 classes

71. Item requested by your institution:

72. Select major code from list provided by your institution:

Permission to Replicate a Copy of PSOL in this Appendix

From: [redacted]
Sent: Friday, January 10, 2014 9:16 PM
To: Rochelle Franklin

Rochelle – you have my permission to include the PSOL information, including your campus defined items, in the appendix of your dissertation.

Let me know how else I can be helpful.

Julie Bryant

Associate Vice President, Retention Solutions

Noel-Levitz

Toll-free: 800-876-1117

Direct line: 319-626-8786

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Appendix E

Student Email Communications

INITIAL EMAIL INVITATION - sent Day 2 of Week 1

Subject: Priorities Survey for Online Learners

Hi <<Student's first name>>

My name is Rochelle Franklin and I am doctoral student focusing on the following topic: *The Perceived Importance and Impact of Instructor Actions in Online, Graduate Students' Satisfaction.* You have been selected to participate in this research project by completing a survey, which is confidential, and completely optional. I would be very grateful if you would consider contributing to this project by completing the survey.

The confidential survey contains 64 questions and must be completed in one sitting. It should take you no longer than 20 minutes to complete. Before completing the survey please read the informed consent document. The informed consent document will be the first page of the survey. Once you click on the login link, the informed consent will be displayed on the screen before you go forward with the survey. You will need to use your passcode of <<passcode>> to participate in the Priorities Survey for Online Learners. Please note that this web survey is only available through <<End of Survey Date>>.

Please ask any questions that you may have about the research before participating.

<<Survey Link>>

If you have any questions or comments, please feel free to contact me at RFranklin2@liberty.edu.

Thank you for your time and consideration,

Rochelle Franklin
RFranklin2@liberty.edu
Doctoral Candidate
Liberty University

SECOND EMAIL - sent 7 days after initial email

Subject: 2nd Attempt: Priorities Survey for Online Learners

Hi <<Student's first name>>

Last week a questionnaire was emailed to you seeking insights about the aspects of your online student experience which are most important to you as well as how satisfied you are with them. If you have already completed the survey in its entirety, thank you. If you have not, please do so promptly.

The confidential survey contains 64 questions and must be completed in one sitting. It should take you no longer than 20 minutes to complete. Before completing the survey please read the informed consent document. The informed consent document will be the first page of the survey. Once you click on the login link, the informed consent will be displaced on the screen before you go forward with the survey. You will need to use your passcode of <<passcode>> to participate in the Priorities Survey for Online Learners. Please note that this web survey is only available through <<End of Survey Date>>.

Please ask any questions that you may have about the research before participating.

To participate, please click on the below link or copy and paste it into your browser.

<<Survey Link>>

If you have any questions or comments, please feel free to contact me at RFranklin2@liberty.edu.

Your participation is critical to the success of this survey project. Thank you for being a part of this important activity.

Rochelle Franklin
RFranklin2@liberty.edu
Doctoral Candidate
Liberty University

FINAL EMAIL NOTICE - sent 14 days after initial email

Subject: FINAL ATTEMPT: Priorities Survey for Online Learners

Hi <<Student's first name>>

Last week a questionnaire was emailed to you seeking insights about the aspects of your online student experience which are most important to you as well as how satisfied you are with them. If you have already completed the survey in its entirety, thank you. If you have not, please do so promptly.

The confidential survey contains 64 questions and must be completed in one sitting. It should take you no longer than 20 minutes to complete. Before completing the survey please read the informed consent document. The informed consent document will be the first page of the survey. Once you click on the login link, the informed consent will be displaced on the screen before you go forward with the survey. You will need to use your passcode of <<passcode>> to participate in the Priorities Survey for Online Learners. Please note that this web survey is only available through <<End of Survey Date>>.

Please ask any questions that you may have about the research before participating.

To participate, please click on the below link or copy and paste it into your browser.

<<Survey Link>>

If you have any questions or comments, please feel free to contact me at RFranklin2@liberty.edu.

Your participation is critical to the success of this survey project. Thank you for being a part of this important activity.

Rochelle Franklin
RFranklin2@liberty.edu
Doctoral Candidate
Liberty University