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Student Perceptions of Online Course Quality: A Comparison By Academic Discipline

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STUDENT PERCEPTIONS OF ONLINE COURSE QUALITY:

A COMPARISON BY ACADEMIC DISCIPLINE

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Abstract

STUDENT PERCEPTIONS OF ONLINE COURSE QUALITY:
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Brian Riley Wilcox
Old Dominion University, 2013
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The recent rapid proliferation of distance education necessitates the need for strong levels of academic accountability. An important factor found to influence and predict student success is students' perceptions of their online courses. Understanding how learners perceive their online learning environment is paramount to effective course design and implementation. Therefore, the purpose of this study was to investigate community college students' perceptions of online education.

IHEP benchmarks for quality in distance education were used develop a web-based survey designed to measure if students' perceptions of online course quality differed across academic disciplines, what factors impacted students' perceptions of online course quality in regards to benchmarks for Teaching/Learning, Course Structure, and Student Support, and the level of impact of student demographics on perceptions of quality in online courses. No significant differences between groups were found to exist. Results showed that none of the factors investigated in this study, such as academic discipline, age, enrollment status, or previous exposure to college level online coursework, were found to have any effect on students' perceptions of quality in online courses when compared between groups. These findings will provide valuable information to both online instructors and administrators in providing quality online education.

This dissertation is dedicated to my father, who had provided me with the largest source

of motivation to persevere and complete this dissertation.

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CHAPTER I

INTRODUCTION TO THE STUDY

There is little doubt that student success is linked to student satisfaction. If a student does not feel the class is beneficial, he or she is more likely to lose motivation, thereby opening them up to lower grades and a higher chance of attrition. If however, a student perceives his or her class as providing a quality education, they will be more satisfied and more inclined for success.

Students take courses for a wide variety of different reasons. This is especially true in the community college system, which commonly serves the needs of the entire community, not just "traditional students". It is quite common to find continuing education students simply taking a class or two without any desire to complete a degree or certificate program. For this reason, it is incorrect to measure student success from a simply scholastic view. Even if students earn A's in their classes, they may not feel the course was rewarding, or they may feel the class was of inferior quality. Course dissatisfaction can cause a student to not recommend the class, or for that matter the entire institution, to other members of the community. Therefore, a strong argument can be made for the importance of student satisfaction to the livelihood of the community college system (Kress, 2006).

For better or for worse, institutions of higher education are businesses selling the product of education. As with any business, customer satisfaction is of the upmost importance to the prosperity of that company. If a student feels an institution offers courses of inferior quality, they will most likely seek this product from a different distributer. As technology reaches more households and online education gains

acceptance as a legitimate form of pedagogy, access to higher education becomes more readily available and schools must therefore offer higher levels of quality courses to retain their students. In order to deliver courses of the highest quality, a deeper understanding of the factors affecting student perceptions of course quality in online education is needed.

Although no one should argue against the need for quality in online courses, trying to measure perceptions of quality can certainly be subjective and there are many means to do so. Due to this ambiguity, course quality should be measured in accordance with a well-respected standard, such as the quality benchmarks published by the Institute for Higher Education Policy (IHEP) and not personal opinions. The National Education Association (NEA) and Blackboard Inc. have constructed an important, research-driven list of quality benchmarks for distance learning in higher education (IHEP, 2000).

The means by which teaching and learning takes place is the driving force behind the quality of the education we provide for students. These IHEP benchmarks encapsulate the most essential components to the success of an Internet-based distance education program at any institution. The benchmarks identified in the NEA-Blackboard study will be invaluable to colleges and universities around the world for years to come as they keep their focus on quality while working to create and improve their internet-based teaching and learning environments. These benchmarks may be useful to government policymakers, institutional decision makers, faculty, and students, as well as others with an interest in ensuring that the highest quality of higher education possible is being provided via Internet-based programs (IHEP, 2000).

The NEA and Blackboard Inc.'s partnership in Quality on the Line has led to the development of 24 internet-based learning benchmarks to systematically determine quality in courses delivered at a distance, which are divided into seven categories: Institutional support, course development, teaching/learning, course structure, student support, faculty support, and evaluation and assessment. A very strong content validation process was employed by IHEP to derive their benchmarks (Scanlan, 2003). These IHEP standards provide objective criteria which can be used by members of the distance learning community to elucidate online student perceptions of instruction, support, and overall course quality. Examining the perceptions of a target population is a widely used strategy based on the premise that perceptions matter and often influence behaviors (Jurczyk, Kushner Benson, & Savery, 2004). In order to be recognized as a quality course, it should meet these specific IHEP benchmark criteria (Hensrud, 2001).

Although several studies have been conducted which use IHEP benchmarks to assess students' perceptions of online course quality, such as Yang (2006), the proposed study will be unique in several important ways. Yang (2006) used a survey instrument to measure undergraduate and graduate students' perceptions of online course quality. This study will measure the perceptions of community college students. Also, the main focus of this study will be to compare perceptions between a broad variety of academic discipline groupings to determine if differences exist. A review of the relevant literature reveled that this was not thoroughly investigated in any study to date. Other studies had the primary goal of simply exploring students' perceptions to see if they coincided with the IHEP quality benchmarks (Yang, 2006), use the IHEP benchmarks to evaluate a

university distance education program (Scanlan, 2003), or report instructor, student, and administrator ratings for each IHEP benchmark (Jurczyk, Benson, & Savery, 2002).

There is still a lack of research examining students' perceptions toward the quality of online education (Hill, Lomas, & MacGregor, 2003). Although many studies have been done to compare the effectiveness of traditional education and online education, those studies tend to evaluate whether the technology works, rather than focusing on the nature of quality of online education itself (Meyer, 2002).

Background

The following information is intended to provide context for the current study. Results from relevant research are presented to highlight the social and professional framework to which this investigation will contribute. Concepts integral to distance education and the factors influencing perceived quality are presented.

Importance of student perception of quality.

Students' perceptions of a learning environment are positively related to their subsequent learning behavior and the quality of their learning outcomes (Kuong, 2009). Alternatively, students' perception of online course quality failing to meet their expectations is certainly a factor influencing attrition. This is especially true in e-learning environments, where the larger the gap between students' expectations and experiences is, the less the student participation (Kilic-Cakmak, Karatas, & Ocak, 2009). Identifying the problems e-learners encounter, the reasons for the problems, and the learning expectations of e-learners requires further exploration. Possible reasons for any perceived lack of quality are barrenness of the e-learning environment, low level of usability, weak

interaction between students and the content, insufficient support by the instructor, and ineffective cooperation among students (Kilic-Cakmak, Karatas, & Ocak, 2009).

Importance of social interaction.

The amount of social interaction between fellow students, faculty members, and community college staff is a variable that is positively correlated with student performance and persistence (IHEP, 2000; Swan, 2001). Vincent Tinto, one of the most respected and prolific writers in student persistence and attrition literature, developed an interactional system model of individual student departure that centers on the importance of student membership in and integration within the college community. More specifically, Tinto (1993) argued that the extent to which students become integrated within the formal and informal domains of the social and intellectual communities of a campus is directly linked to persistence at an institution. Logic would dictate that the same level of social interaction between students and faculty members becomes harder and harder to establish as students are shifted from a face-to-face format to a distance educational setting.

Independent of physical distance between students and faculty in a class is what Moore (1989) described as the "transactional distance". Transactional distance differs from spatial dimensions because it is the perceived distance between communicators. A number of studies have shown that the greater the transactional distance the less interactive communication occurs and the more the learning experience suffers (Fearing & Riley, 2005; Sargeant, Curran, Allen, Jarvis-Selinger, & Ho, 2006). Absence of a physical classroom triggers this problem and leads to developing different senses such as belonging, fulfillment, and confidence in communication (Ni & Aust, 2008). Fearing and

Riley (2005) found student satisfaction in both online and face-to-face courses revolved mainly around quality and timeliness of instructor feedback and accessibility of resources. Kilic-Cakmak, Karatas, and Ocak (2009) found that students' expectations about communication in e-learning to be ranked very high in importance. In addition to text communication over the internet, e-learners want instructors to directly communicate with them over the phone and even face-to-face via video chat or on campus meetings where applicable.

Students' perceptions of online courses can be negative if they experience large transactional distance with the instructor and with other students and can influence whether a student will stay in or drop out of a class (Steinman, 2007). This variable affecting student success is very important, as it is an integral characteristic of the class itself rather than an intrinsic characteristic of the student. It is incumbent upon the distance course to make up for this disconnect and is therefore important to consider when comparing perceptions regarding the effectiveness of each educational format and discipline.

Course structure.

Course structure and format can make all the difference between a boring class and one perceived to be very beneficial. Student engagement and the fostering of communication with peers and instructors are essential to the learning process and quality education, and therefore online courses must be designed to foster this sort of environment. A review of the literature shows that a relationship between students' preferred learning styles and students' perceptions of course faculty in an online format has not been shown conclusively (Fearing & Riley, 2005; Lee, 2010). However, there is

much evidence linking perceptions of quality with well-designed courses. Students should be able to learn from the collaborative learning environment of their peers, not only from their instructor. Fearing and Riley (2005) found positive student perceptions for formats using online discussions and presentations. Cameron, Morgan, and Williams (2009) found that social tasks that foster sense of community, such as group projects, were important aspects of an online course.

Swan (2001) identified three major characteristics related to course structure that contributed to online course satisfaction. Student satisfaction was correlated with clear and consistent frequent interaction with an instructor, and constructive and dynamic discussion among students and their peers. Song, Singleton, Hill, and Koh (2004) found difficulty in understanding the objectives of an online course was a perceived challenge in online learning. (Kilic-Cakmak, Karatas, & Ocak, 2009) found that students' expectations regarding the instructional process, in terms of study conditions and content and delivery, were the most commonly coded response category. While students expected to self-regulate their learning, their expectations regarding availability to get help during self-study were not being met. Complaints about the inability to ask spontaneous questions show that students expect and require immediate solutions when they get stuck during instruction.

Student support services.

Student support services for distance learners include pre-enrollment services, admissions and registration, academic advising, financial planning and management, library and bookstore services, counseling and career counseling, social support services, and technical assistance. Student services are important for many reasons. They can

enhance enrollment, decrease attrition, provide for a well-rounded program, ease students' adjustments to college, assist in their intellectual and personal growth, and contribute to their academic success (Yang, 2006). Lee (2010) found perception of online support service quality was a significant predictor of online learning acceptance and satisfaction.

In Visser and Visser's (2000) study, both students and instructors perceived academic support provided by faculty to be the most important type of student support in distance learning, although other students and librarian/administrator support were also important. Student areas of need identified from the study were orientation to the technology, course orientation, learning resources, and student support (Fearing & Riley, 2005). In terms of technical support, (Kilic-Cakmak, Karatas, & Ocak, 2009) found that student responses show e-learners do not mind seeing instructors as technical support staff.

Different academic disciplines present different challenges.

The results of an assessment of the value of distance education as a whole may be considered a gross overgeneralization. Each educational format has certain strengths and weaknesses, and may therefore lend itself more or less to different course formats. Online learning may pose particular challenges for specific subject matters, such as science courses which, at the university level have traditionally incorporated a laboratory element. Regardless of the fact that there is no general agreement from faculty if laboratory classes could or should be taught online (Carr, 2000), such classes are being taught online. Ultimately students must perceive value in these courses if they are to be successfully implemented in institutions of higher education.

Before the mode of delivery for these courses can be evaluated, however, the theory and purpose of science courses in general must be examined. Questions concerning what students are supposed to learn in a laboratory science course need to be raised before it can be adequately determined whether those objectives can be met in a distance learning format. While some concepts important to science, such as experimentation and the scientific method can be taught from a distance, many argue that a simulation can never truly add up to the hands-on "real thing" when it comes to higher-level laboratory work (MacQueen & Thomas, 2009). For this reason, issues regarding the perception of quality in online science courses are called into question and needs to be investigated further.

In addition to the hands-on aspects of laboratory science, many people feel subjects such as communications and public speaking to be unequal to courses in a "traditional" classroom, if taught from a distance. Nicosia (2005) pointed out that communications courses are more problematic to teach online due to the inherent nature of the face-to-face interaction and emphasis on oral rather than written skills. After all, recording a speech in the comfort of your home is quite different from delivering that speech in front of an entire classroom.

Purpose and Research Questions

The purpose of this quantitative study was to compare student perceptions regarding the quality of online courses between academic disciplines at a midsized community college. An online student survey adapted from Yang (2006) and Scanlan (2003) was used to collect data on students' perceptions of quality in web-based online classes by comparing how their courses meet best practices established by well

researched benchmarks. Basic demographic data was also collected in this survey to help

explore these patterns in student perception. To further understand these perceptions,

several research questions guided this study:

1. What factors impact students' perceptions of online course quality with regard

to benchmarks for Teaching/Learning, Course Structure, and Student Support?

2. Do students' perceptions of quality of online courses differ among academic

disciplines?

3. What is the impact of student demographics on perceptions of quality of online

courses?

Research question one investigated specific components of each of the three IHEP

benchmark categories: Teaching/Learning, Course Structure, and Student Support.

Research question two investigated the impact of students' perceptions of both student-

to-student interaction in an online course and student-to-faculty interaction in an online

course. Both student-to-student and student-to-faculty interaction fall under the

Teaching/Learning benchmark category, however students' perceptions of other

benchmarks were investigated. Research question two quantified the extent to which

differences in students' online course perceptions exist between online courses

disciplines. Specifically, this question showed if differences exist between online course

disciplines by comparing examples such as: online Natural and Physical Sciences

(biology, chemistry, etc.) courses versus online English courses, and online Social

Sciences (history, philosophy, etc.) versus online Arts and Humanities (art, music, etc.)

courses. Research question three elucidated the impact of three different student

demographics on student perceptions of online course quality. Specifically, this research

question measured the impact of student enrollment status, student age, and prior previous experience with online courses on student perceptions of quality in online courses.

Significance of This Study

This study helped to fill a gap in the literature concerning student perceptions of online courses in the community college system. More specifically, this investigation helped to identify the factors that affect students' perceptions of quality and level of satisfaction in general and within specific academic disciplines. Although much research has been conducted addressing the effectiveness of online education, much less has been done to measure student perceptions of online education. Of the studies that do measure perception of online classes, most have been done from the faculty and administrators' perspective (Bennett & Bennett, 2002). While faculty and administration's perceptions are certainly important, the ultimate success of the academic institution relies on students feeling like they are receiving a quality education. Among the studies that have attempted to reveal students' perspectives of quality in online classes, almost all are done so through qualitative measures and few are measured by established standards. This study of online perceptions is centered on the well-established IHEP standards and thus more closely aligned with the issues and concerns of distance learning (Jurczyk, Kushner Benson, & Savery, 2004). While qualitative measures are useful to understanding student perceptions, the labor intensive nature of such studies greatly limits the student sample size. Through the use of an online survey containing Likert scale questions, a large and diverse number of students and online classes can be analyzed.

Much like Yang's study (2006), the results of this study will help administrators, educators, and instructional designers understand quality issues that online learners encounter and improve the quality of future online course offerings. In this study, students' perceptions of quality relate to institutional performance and the well-established IHEP benchmarks for quality relate to best practices. The ability to compare actual performance to best practices sets the stage for quantitative evaluation of each online course offering or online education as a whole at that institution. The approach taken in this study allows teachers and administrators to conduct formative evaluations to gain an understanding of their learners in a situation where formal and informal feedback may not exist and in an environment where it is imperative to have two-way communication with the students to avoid students from dropping out of college (Jurczyk et al., 2004).

Due to the remote nature of distance learning and its relative unfamiliarity, many faculty members may have difficulty assessing student comprehension and satisfaction. Any information which helps to prepare faculty for what to expect from their online students, such as expectations and perceptions of course topics, would therefore be very useful. Conclusions from this study will help facilitate educators and administrators to provide more effective and engaging online course delivery, thereby boosting enrollment and lowering attrition.

Most importantly, results from this study will benefit students. Although highly content-validated quality benchmarks have been established to determine and measure quality in a distance education class, this does not reduce the need for studies measuring student perception of quality. Many studies have concluded that perception greatly

influences attitude and performance. Examining the perceptions of a target population is a widely used strategy based on the premise that perceptions matter and often influence behaviors (Jurczyk et al., 2004). Motivation of e-learning students will increase when they feel the effort made to meet their expectations and the value attached to them as individuals (Dennen, Darabi, & Smith, 2007). If students do not perceive value in a certain task or concept, to some extent it does not matter if the literature does or not. Ultimately, students will benefit from this study by receiving coursework tailored to be perceived as high-quality pedagogy.

Overview of the Methodology

The research design for this study was prospective, quantitative, and descriptive. Student survey data was collected and analyzed to explore students' perceptions of online course quality in regards to aspects well-established by IHEP quality benchmarks. A brief online survey, taking approximately 5-10 minutes to complete, was given to students currently enrolled in online courses at the end of the spring 2012 semester. This online survey was available for students to complete for the last three weeks of the semester and reminder emails were sent out weekly to help boost participation numbers. This survey contained Likert scale items set up in a four-point scale to measure responses to survey statements regarding online course quality. The survey also collected basic demographic data such as age group, enrollment status, and online course subject category. To simplify data analysis, students' age was recorded as either traditional (18-24 years) or non-traditional (25+ years). Students under the age of 18 were not included in this investigation. Enrollment status at the time of survey administration was self-reported by students as either full time (12 or more credit hours) or part time (less than 12 credit

hours). The influence of previous exposure to online classes was recorded as either yes or no, rather than attempting to measure how much each online class affected perception.

Student data was collected from a medium-sized community college, serving the needs of more than 7,600 unduplicated credit students and more than 10,450 individuals in professional development and business and industry courses annually. This institution sampled in this study is composed of three campuses, whose students reside in mostly rural counties in the Mid-Atlantic United States. The community college serves the needs of a diverse population, offering more than 75 associate degree and certificate programs in a wide varies of disciplines.

The survey, an adaptation of Yang (2006) and Scanlan (2003) was based on 11 of the 24 IHEP quality benchmarks that are applicable for measuring students' perceptions of online course quality. Of the 24 benchmarks established by this organization, only certain categories directly relate to student perceptions of educational quality and are therefore important to this investigation. Although there is overlap between each established benchmark, distinct categories established by IHEP help to organize the different measures of educational quality pertaining to Teaching/Learning, Course Structure, and Student Support. Changes were made to the survey instrument as needed, based on recommendations from content experts and student input under the supervision of experienced research faculty. Before the new survey was administered, it was piloted to a smaller test group of students and adjustments and revisions were made as necessary based on their feedback. Statements pertaining to established quality benchmarks were listed and survey participants were asked for their opinions regarding the statement, ranging from strongly agree to strongly disagree. Some of the Likert-style questions were

slightly rephrased to ensure accuracy, clarity, and thorough coverage of each IHEP benchmark topic.

In order to answer the research questions, the relationships between the independent variables: peer interactions, feedback from instructors, course structure, and student support were examined with the dependent variables of students' perceptions of online course quality. Data was examined by means of statistical analysis using SPSS software. Tests, such as independent samples t-tests and chi square analyses, were conducted to determine if statistically significant differences in perceptions of course quality due to academic disciplines and demographic variables existed.

Limitations and Delimitations

Several limitations and delimitations must be taken into consideration. In an attempt to simplify two of the independent variables, student age and previous exposure to online coursework were divided into only two categories. Students' age was divided into either traditional (~18-25) or nontraditional (26+) groups. The influence of exposure to previous online coursework on perceptions of course quality was recorded as either yes or no. In order to keep the sample sizes large enough for statistical analysis, enrollment status was also measured using only two choices, full time or part time, rather than through means of more detailed but less powerful means. Instead of measuring the number of online classes taken prior to participating in the survey, students were asked if this was their first online course they have taken or not. These three dichotomies in age, enrollment status, and previous exposure to online coursework will limit the findings of the study, but will still provide valuable information and results.

To study differences in perception between courses, academic discipline grouping were used instead of attempting to compare differences between each individual course. The vast list of individual courses offered at the institution in this study were aggregated into several academic discipline groupings according to the taxonomy suggested by Stout (2008): English, Natural and Physical Sciences (biology, chemistry, physics, engineering, etc.), Arts and Humanities (art, communications, music, speech, theatre, performing arts /dance, etc.), Social Sciences (history, philosophy, political sciences, psychology, sociology, etc.), Agriculture and Natural Resources, Business, Computer Technologies, Education, Engineering and Industrial Technologies, Health Technology (other than nursing), Nursing, and Public Service Technologies. Although grouping individual courses into broader categories limited the specificity of the results, it will make the results easier to interpret and understand, as well as provide groups for comparison with more statistically valid sample sizes.

Besides characteristics of the study relating to data grouping, there are other important limitations which must be taken into account. This study only contained data from surveys distributed to students at one community college, and findings may therefore only apply to the population in this study. Another important delimitation of the study is that students' perceptions of quality were measured by IHEP quality benchmarks. These benchmarks for quality established by IHEP cover a variety of topics, but only aspects related to students were used due to the scope of this study. The data set for this study consisted solely of student-generated data; faculty and administrators' perceptions were not surveyed. Although this study was aimed at investigating student perceptions in online courses, hybrid and blended course information were not collected.

There is a great deal of variation in the amount of online coursework in these part online, part face-to-face courses, and trying to determine the weighted influence of the online and face-to-face components on student perceptions would prove too problematic.

Due to the nature of surveys and the assessment of personal attitudes and perceptions, all data collected was self-reported as well as dependent on the particular disposition of the students completing the survey at that particular moment in time. Although this survey was administered late in the semester and perceptions of course quality were hopefully be somewhat solidified by that point, such self-reported data concerning perception may have been influenced by students' day-to-day mood. If students happen to be in a negative mood at the time they take the survey, they may choose to answer the questions in a more negative light than they usually would, and vice versa for students who may happen to exhibit a more positive disposition. Additionally, students' perceptions of course quality may be influenced by factors unique to each individual instructor in ways that were impossible to account for or measure in this survey.

Definition of Key Terms

Due to the fact that much of the verbiage used in distance education is highly colloquial, several terms will need to be defined. The principal investigator of this study developed the definitions, unless otherwise noted.

Asynchronous distance learning course. This is a course also offered on a specified schedule with all students beginning the course at the same time and completing the course simultaneously. Unlike synchronous distance learning courses thought,

communication among students and faculty in asynchronous courses does not take place simultaneously at required and specified times (Lord Fairfax Community College, 2010).

Benchmarking. This is a quality improvement process that compares actual program or institutional performance to exemplary or best practices (McGregor & Attinasi, 1998).

Content validity. This is defined as the degree to which items match the content domain from which they are being sampled (American Educational Research Association, 1999).

Course Structure benchmarks. These address the policies and procedures that support and relate to the teaching/learning process. They include guidelines on course objectives, availability of library resources, instructional materials provided to students, response to students, and student expectations (IHEP, 2000). Specifically, they are:

1. Before starting an online program, students are advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.

2. Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.

3. Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.

4. Faculty and students agree upon expectations regarding times for student assignments completion and faculty response.

Course quality. For this study, course quality is defined as a course which possesses or is perceived to possess all or most of the quality benchmarks established by IHEP.

Distance education. This is a method of formal education where learners and educators are separated. It includes learning, teaching, communication, design, and management. The forms of distance education include: correspondence study; conducted through the internet either synchronously or asynchronously or both; telecourse / broadcast delivered via radio or television; CD-ROM; and mobile learning (Moore & Kearsley, 2005).

Face-to-face course. This is a method of formal education, where learners and educators meet on a regular basis in a shared physical space.

Non-traditionally aged students. These are students enrolled in higher education over the age of 24 (Harvey, 2009).

Online course or e-learning course. This is a course that uses the Internet or World Wide Web (Web) exclusively to deliver content and does not have any activities that occur at a single designated time and specified physical location. Online courses are often referred to as Web-based courses. In these courses, 100 percent of the course content is online either through synchronous or asynchronous delivery.

Quality benchmarks. These are used in this study refer to the recognized standards for educational quality in distance education established by the Institute of Higher Education Policy in 2000 (IHEP, 2000).

Reliability. This is defined as consistency across the individual questions or subsets of questions of a measuring instrument (Huck, 2004).

Student Support benchmarks. These include guidelines for student services such as admissions, advising, financial aid, library resources, technical support, and others (IHEP, 2000). Specifically, they are:

5. Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.

6. Students are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.

7. Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

8. Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

Synchronous distance learning course. This is a course offered on a specified schedule with all students beginning the course at the same time, interacting together simultaneously at specified times, and completing the course simultaneously (Simonson, Smaldino, Albright, & Zvacek, 2006).

Teaching/Learning benchmarks. These include process activities related to pedagogy. Included are standards for interactivity, collaboration, and research methods (IHEP, 2000). Specifically, they are:

9. Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.

10. Feedback to student assignments and questions is constructive and provided in a timely manner.

11. Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

Traditionally aged students. These students are enrolled in higher education, ranging from 18 years of age to 24 years of age (Harvey, 2009).

Validity. This refers to the appropriateness, correctness, meaningfulness, and usefulness of specific inferences researchers make based on data they collect (Fraenkel & Wallen, 2003).

Summary

The demand for online courses continues to grow and as a result of this, many colleges are actively engaged in the development of online courses. Institutions wish to deliver quality education to their students, but little research has been done to measure how well these online courses are perceived by students. Many studies focus on student outcomes by comparing the effectiveness of online to face-to-face courses, but many factors, such as grade inflation and differences in testing formats, may account for differences or similarities in test scores. However, whether students do well or not in a particular course is independent from their perceptions of educational value. If a course is very easy, students may earn a good grade without feeling the class was beneficial to anything but their GPA. Also, students who do not receive proper "customer service" or participate in non-interactive classes may feel negative attitudes, experience

dissatisfaction or frustration (Howland & Moore, 2002). If educational institutions are to

be successful, they must understand the factors associated with positive student

perception. After all, higher education is a business that must deliver an educational

product perceived to be of high quality if it is to keep its customers, the students, coming

back for more.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This chapter summarizes relevant literature regarding students' perception of

online education in higher education. A review of the methodology used to collect and

analyze research articles is first presented, followed by a discussion of the purpose,

rational, and methods used to examine student's perception. Challenges to measuring

student perceptions are presented, along with research on differences between academic

disciplines are presented.

Examining the perceptions of a target population is a widely used strategy based

on the premise that perceptions matter and often influence behaviors (Jurczyk et al.,

2004). Although the need to measure perception is clear, means by which to actually

measure it can be subjective and colloquial. It is for this reason that methodically

researched, well-validated benchmarks for quality in online education, such as the ones

established by IHEP, serve as effective templates for the systematic investigation of

student perceptions in distance learning. Several studies have been published that use

these IHEP benchmarks to measure student perception (Jurczyk et al., 2002; Hutti, 2007;

Scanlan, 2003; Yang, 2006), yet none of the studies found aimed to compare these

perceptions between a broad variety of academic disciplines. Conducting such research

will allow teachers and administrators to conduct formative evaluations to gain an

understanding of their learners in a situation where formal and informal feedback may

not exist and in an environment where it is imperative to have two-way communication

with the students or risk student attrition (Jurczyk et al., 2004).

Several studies have been published thus far using the IHEP benchmarks of quality in internet-based learning (Scanlan, 2003; Yang, 2006; Yeung, 2001). Most of these studies use these benchmarks to evaluate the quality of the online course or program and do not use these benchmarks to measure student perceptions of quality. Among the studies that do measure student perceptions of online course quality, most also measure faculty perceptions and attempt to compare and contrast the two. These studies use survey items that are broad enough to be answered by students and faculty or use two different surveys, thereby diluting the applicability of student-generated data. Also, most of the studies using these benchmarks are conducted at 4-year colleges and universities, surveying traditional undergraduate students and graduate students, and therefore do not address the unique community college student body. No studies found in this review of literature thoroughly investigated differences in student perceptions of online course quality between academic disciplines.

Literature Review Methods

In preparation for this chapter, several large electronic databases were searched to collect relevant articles. The majority of the journals found in this literature review were found using EBSCO Host Academic Search Complete and Info Track One File, journal databases offering access to tens of thousands of periodicals and millions of articles in full text. Another commonly used data source was ProQuest Dissertations and Theses Full Text. In addition to subscription-based databases, Google Scholar provided a surprising amount of useful information and primary literature undiscovered using the other methods previously mentioned. Often while reading journal articles and dissertations, potentially interesting citations were noticed. Through the use of Google, it

was possible to retrieve many of these interesting citations, as well as other literature on the topic where the citation appeared. Even entire books were able to be viewed and downloaded, although sometimes not in their entirety, through the use of Google Books.

Student Perception in Distance Education

Research shows that the effectiveness of learning is fundamentally impacted by the learners' perceptions of online education (Grant & Thorton, 2007; Kuong, 2009). Successful learning behaviors and the quality of student learning outcomes are linked to a positive student perception (Jurczyk et al., 2004; Kuong, 2009; Cereijo & Victoria, 2006). Adversely, students' perception of online course quality failing to meet their expectations is certainly a contributing factor to low academic success rates. This relationship between perception and outcome is especially true in e-learning environments, where the larger the gap between students' expectations and experiences is, the less the student participation becomes (Kilic-Cakmak, Karatas, & Ocak, 2009). In fact, student satisfaction with online education has been shown to predict course drop-out rates, as well as intentions to enroll in future online courses (Moore & Kearsley, 2005). Due to this relationship between perception and performance, instructors and administrators must obtain the most thorough understanding of the circumstances that influence student perception and satisfaction as possible.

In terms of perceptions of educational quality, most people would agree that distance education is at a disadvantage when compared to traditional, face-to-face forms of education. Palloff and Pratt (1999) pointed out that the very nature of online learning presents disorientating dilemmas and psychic distortions which cause the participants to examine their pre-existing beliefs and behaviors. The assumption that direct contact with

the instructor is necessary originates with our beliefs about how a classroom is supposed to look. This mental model of how an educational environment must look and operate includes the belief that effective instruction requires physical proximity, which leads us to conclude that if students are at a distance the educational experiences must be impersonal and lacking in quality, socialization, and engagement (Steinman, 2007). This impersonal environment is not linked to educational format, but rather to individual characteristics of the course; nothing can make a student feel more like a number than sitting passively in an enormous lecture hall with hundreds of other students.

As the demand for distance education continues to increase, being aware of students' perceptions of online education becomes more and more paramount. There is a clear link between student perceptions of educational quality and not only student performance but also an institution's enrollment numbers. The first step in ensuring students perceive their online educational experience as valuable is to discover which particular areas of online courses are perceived to be of greatest importance to quality.

Measures of Online Course Quality

Using benchmarks to measure course quality. The formal practice of using learning objectives to describe and measure student outcomes and perceptions has been supported in the literature for over half a century (Bloom, 1956; Mager, 1962). These general review standards set out to measure learning objectives to better help teachers describe what students are to learn in a class, assess student achievement, and provide data for formative and summative educational program reviews. While learning objectives are an important component of course quality, they have been criticized as excessively focused on behavioral outcomes and inadequate for specifying affective or

cognitive outcomes (MarylandOnline, 2006). For this reason, it is important to not rely exclusively on such benchmarks and objectives, but rather use them in combination with other approaches to improve an educational environment.

Over the past 20 years, the extraordinary growth of distance education in higher education has generated a need for stronger accountability. This need led several different organizations to develop principles, guidelines, or benchmarks to ensure quality distance education. Of the major organizations to create quality in distance education benchmarks, such as the American council on Education and the National Education Association, virtually all of their strategies include the topics of course development, faculty training, student services, learning resources, infrastructure, and outcomes assessment (IHEP, 2000). These benchmarks are not intended to be used as a simple student, faculty, and administrative behavioral checklists, but used instead as a foundation for constructivist peer discussion leading to course improvement for specific online courses and entire distance education programs.

Quality Matters (QM) is a nationally recognized, faculty-centered, peer review process designed to certify the quality of online courses and online components (MarylandOnline, 2010). QM was started by MarylandOnline, Inc., a consortium of colleges and universities, who saw early the quality challenge and continues its innovative work today. Institutions of higher education can subscribe to this service and their online classes can be evaluated and certified in terms of quality based on a rubric of online course quality standards supported by best practices and most recent research literature. While the QM rubric focuses primarily on the quality of course design, much

of the current research used to formulate the quality of online courses rubric focuses on course delivery.

Similarities and differences between benchmark standards. In higher education, the tremendous growth of technology-mediated distance learning has prompted several different organizations to call for the development of guidelines or benchmarks to ensure quality in online distance education (Harkins, 2005). In 1995, the Western Cooperative for Educational Telecommunications (WCET) developed *Principles of Good Practice for Electronically Offered Academic Degree and Certificate Programs*. The WCET benchmarks included areas pertaining to curriculum and instruction, institutional context and commitment, faculty support, resources for learning, student services, commitment to support, and evaluation and assessment. Based on these benchmarks, the Council of Regional Accrediting Commissions developed new guidelines to address the rapid emergence of new electronic educational technologies. The guidelines are divided into five separate components relevant to distance education and include: institutional context and commitment, curriculum and instruction, faculty support, student support, and evaluation and assessment (Council of Regional Accrediting Commissions, 2000).

While there are many similarities, there is a distinct difference between the Quality Matters standards for quality in online courses and that of other organization's quality benchmarks. It is important to note that the QM standards are designed almost exclusively for faculty use. The rubric and process are founded on the belief that peer course reviews should keep faculty at the center of the process (MarylandOnline, 2010). Like many other benchmarks, the QM process is an interactive approach of current teaching-learning practices, best practices standards, and research/conceptual literature;

however this rubric is intended solely to guide the review of a specific online course by peer/faculty.

Similarities with face-to-face course quality benchmarks. Chickering and Gamson (1987) drew upon decades of research in higher education to publish *Seven Principles for Good Practice in Undergraduate Education.* Although many new information technologies have been developed since then and teaching and delivery resources have since changed, the original authors continue to demonstrate how these seven principles are still applicable to today's methods of distance education (Chickering & Ehrmann, 1996). In fact, the principles first developed by these authors continue to form the basis of benchmarks developed to assure quality in all forms of higher education (Harkins, 2005).

Quality benchmarks, used mostly in industry, are aligned to research in order to arrive at the "best results" and improve performance of the manufactured products. Used as a tool with the curriculum, and its unique brand of implementation, benchmarks, provided better and more reliable information on the nature and performance of the higher educational sector (Pugh, Coates, & Adnett, 2005). They also provide avenues for the application of constructivist activities, generated from lived experiences and multiple meanings (Creswell, 2003).

In Rose's (2007) study, quality benchmarks were used to assess teaching best practices through the use of the Joint board of Teacher Education (JBTE) teaching benchmarks. Interview data was gathered concerning how the benchmarks were implemented and the perceptions of multiple stakeholders regarding the adequacy of their implementation. Results from the study showed that much like the benchmarks

commonly used to measure the implementation of best practices in online courses, most stakeholders perceive these face-to-face teaching practice program benchmarks to be important, and implementation of a majority of the benchmarks to be adequate.

The Institute of Higher Education Policy (IHEP) benchmarks. In 2000, the National Education Association (NEA), the nation's largest professional association of higher education faculty, and Blackboard Incorporated, a widely used platform provider for online education, constructed a list of quality benchmarks for distance learning in higher education. Benchmarking is a quality improvement process that compares actual program or institutional performance to exemplary or best practices (McGregor & Attinasi, 1998). These two commissioning organizations chose to work with the Institute of Higher Educational Policy (IHEP) to develop these benchmarks duly in part to the success and recognition from their 1999 report, *What's the Difference? A Review of Contemporary Research on the Effectiveness of Distance Learning in Higher Education* (IHEP, 1999). Their 1999 study has generated considerable dialogue throughout academia about what constitutes quality in distance learning settings (IHEP, 2000).

This work identified a list of standards within the distance education field that addressed issues involved in the process for students, instructors, and administrators. The study involved an extensive literature review and interviews with 147 faculty members, students, and administrators from six leading accredited institutions in distance education. These studies lead to the publication of *Quality on the Line: Benchmarks for Success in Internet-Based Distance Education*, and the identification of 45 benchmarks (IHEP, 2000). After review from experts in the field, some of the 45 benchmarks were found to be overlapping in content and were therefore condensed. This analysis resulted in the

establishment of 24 benchmarks for quality in internet-based learning. These benchmarks are divided into seven categories: Institutional support, course development, teaching/learning, course structure, student support, faculty support, and evaluation and assessment. A very strong content validation process was employed by the Institute of Higher Education Policy (IHEP) to derive their benchmarks (Scanlan, 2003). The seven categories are described in Table 1.

These IHEP standards provide objective criteria which can be used by members of the distance learning community to elucidate online student perceptions of instruction, support, and overall course quality. Examining the perceptions of a target population is a widely used strategy based on the premise that perceptions matter and often influence behaviors (Pittinsky & Chase, 2000). One way to facilitate the quality of online instruction is to base both the development and evaluation of online learning on established standards (Jurczyk et al., 2004).

Table 1. *IHEP Distance Learning Benchmark Categories*

Category	Description
Institutional Support	Activities by the institution that help to ensure an environment conductive to maintaining quality distance education, as well as policies that encourage the development of internet-based teaching and learning including technological infrastructure issues, a technology plan, and professional incentives for faculty.
Course Development	The development of courseware, which is produced largely either by individual faculty (or groups of faculty members) on campus, subject experts in organizations, and/or commercial enterprises.
Teaching/ Learning	Activities related to pedagogy including interactivity, collaboration, and modular training collaboration, and modular learning.
Course Structure	Policies and procedures that support and relate to the teaching/ learning process, including course objectives, availability of library resources, types of materials provided to students, response time to students, and student expectations.
Student Support	Student services normally found on a college campus including student training and assistance while using the internet.
Faculty Support	Activities that assist faculty in teaching online, including policies for faculty transition throughout the teaching period.
Evaluation and Assessment	Policies and procedures that address how, or if, the institution evaluates internet-based distance learning including outcomes assessment and data collection.

Studies that Use IHEP Distance Education Benchmarks

Hutti (2007) published one of the largest studies using the IHEP benchmarks, in which faculty, staff, and students from 17 community colleges rated the importance and presence of all 24 benchmarks considered to be essential to ensuring quality within online teaching and learning. In this study, online surveys, interviews, and focus groups were conducted to collect data aimed at the identification of benchmarks considered important to students. Results showed a remarkable cohesiveness among all respondents, faculty, staff and students. Of the top ten quality benchmarks considered to be most important, six were directly related to technology and only one of the nine least important related items dealt with technology. Interestingly, quality benchmarks commonly associated with quality teaching and learning irrespective of learning modality were ranked of lesser importance and occurring to a lesser degree. These findings seem to indicate that the technological segment of online learning overshadows the non-technical segment.

Scanlan (2003) used the IHEP benchmarks to evaluate the overall distance learning program at a University's college of medicine and dentistry. Of the 24 IHEP benchmarks, he identified 10 that were applicable for student assessment and converted the benchmarks into statements on a Likert scale survey for student rating. These 10 subtopics used in the study related to the IHEP quality benchmark categories of the Teaching/Learning Process, Course Structure, and Student Support. Analysis from the study indicated high reliability (internal consistency), construct and criterion-related validity of the benchmark scale. Results also revealed two different dimensions underlying student conceptions of the quality of their internet-based distance education – one related to teaching-learning processes and the other associated with provision of

administrative support. Both appeared to have a significant influence on students' overall perception of their online learning experiences (Scanlan, 2003). The author also recommended the incorporation of the IHEP benchmarks into college and university distance education program assessment methods.

Jurczyk et al., (2004) reported ratings for 22 of the 45 IHEP benchmarks based on a survey of instructors, administrators, and students at several institutions. Student and instructor attitudes and their ratings of the importance of these measures were presented for comparison along with the norms published in the IHEP (2000) report. The research indicated that the methodology of incorporating the individual IHEP benchmarks into a survey could be used as a feedback tool for online educators and that it was possible to identify the attitudes of online students during a course, as well as compare those ratings to those of the instructor or to the ratings for the IHEP benchmarks.

Yang (2006) used the IHEP benchmarks to examine graduate and undergraduate students' perceptions regarding the quality of online courses in three course subjects at a four-year college. A web-based survey based on teaching/learning, course structure, and student support IHEP quality benchmarks was used in the study. Peer interactions, feedback from instructors, course structure, and student support were used as predictor variables. Results from the study revealed that peer interactions, feedback from instructors, and online course structure were the main factors that impacted students' perceptions on online course quality.

Lenards (2007) also used the IHEP benchmarks to develop an online student survey to evaluate student perceptions. This qualitative and quantitative survey evaluated a new online medical dosimetry program. Results demonstrated an overall satisfaction

with this program, the instructor, and the online courses. Students felt a sense of belonging to the courses and the program and there were no negative issues with technology.

In 2001, Yeung conducted a survey of online education academic staff members at various post-secondary institutions in Hong Kong. In this study, the opinions on various key issues related to quality assurance of web-based learning were collected. The survey topics used in the study were derived from the quality in online education benchmarks established by IHEP. Results from the survey study supported the importance of the IHEP from the faculty perspective and indicated that the participating institutions strove to incorporate IHEP quality benchmarks in their policies, procedures, and practices. While this study measured faculty member perceptions of quality in online courses, it did not attempt to measure these perceptions from the student viewpoint.

Hensrud (2001) also measured faculty and staff perceptions of quality in distance education using the quality in online education benchmarks established by IHEP. This study however, aimed at a summative evaluation of the entire university's distance education program. Results from the study reported that the program did meet four of the seven categories of quality established by IHEP: Institutional Support, Teaching/Learning, Course Structure, and Student Support. The three categories not met were Faculty Support, Evaluation and Assessment, and Course Development. In the discussion, the author noted the study was incomplete because it did not take into account the attitudes and perceptions of students, an important group of stakeholders in the higher educational system. This lack of student involvement may have been due to the fact that many researchers believe certain IHEP quality benchmark categories are unable to be

evaluated from the student perspective, due to lack of involvement and understanding of those categories (Bennett & Bennett 2002; Scanlan, 20003; & Yang, 2006).

Bennett and Bennett (2002) used four of the seven categories of IHEP quality in distance education benchmarks to evaluate faculty perceptions at a variety of postsecondary institutions. Like the majority of the studies incorporating the IHEP benchmarks, data was collected through the use of an online survey emailed to the participants' school email address. The four benchmark categories used in this study were Course Development, Teaching/Learning Process, Course Structure, and Faculty Support. These four benchmarks were chosen because they could best be evaluated by faculty. The authors reasoned that the other benchmarks were best evaluated by either students or administrators. Results from the study showed that three out of four of the benchmark categories significantly contributed to faculty's perceptions of quality in the online courses which they taught. Teaching/Learning was the only category not found to positively contribute to faculty satisfaction and Faculty Support benchmarks were discovered to have a significant impact on the amount of interaction between students.

Dirk's (2010) study also used a survey adapted from the IHEP benchmarks for institutional support, course development, the teaching and learning process, course structure, student support, faculty support, and evaluation and assessment. Both students and faculty were surveyed and a descriptive analysis of the data was examined to determine what extent the quality benchmarks for distance learning were met. The data showed that nine of the 24 benchmarks were met. Only the Teaching and Learning Benchmarks were met with in every instance with no areas of concern.

Harkins (2005) developed a survey instrument modeled after the IHEP recommended benchmarks for quality in online education to measure graduate student and faculty's perceptions of online course quality. Data showed that the survey respondents agreed that 21 out of 24 quality benchmarks were met in the online graduate courses. Institutional Support Benchmarks, the Teaching and Learning Benchmarks, and the Student Support benchmarks were all met. One Course Structure Benchmark that needed to be addressed was that students were assessed prior to a course to determine if they possess the self-motivation and commitment to learn at a distance. According to the faculty respondents, topics within the Faculty Support Benchmarks and Evaluation and Assessment Benchmarks needed to be addressed.

In addition to their usage to assess students' perceptions, IHEP benchmarks have been used to construct matrices for the formative an summative evaluation of completely online nursing education programs (Leners, Wilson, & Sitzman, 2007), determine if best practices are in place in online business courses (Chapman & Henderson, 2010), and compare achievement and perceptions between online and face to face students (Coose, 2010).

The IHEP benchmarks for success in internet-based distance education have been used by researchers for a wide variety of assessment purposes. Some have used these standards for the summative and/or formative evaluation of distance education programs, while others have used these benchmarks to measure faculty, administrator, and student satisfaction and perceptions of quality. Although there are a few studies which use the IHEP benchmarks to measure student perceptions of quality in distance education classes, none found in the current review of literature were found to adequately investigate if

differences in student perceptions existed between academic disciplines. Just as content between academic topics differ, so do the skills needed for academic success. After all, courses such as communication and public speaking present a uniquely different set of challenges from those of a typical math class. These differences in course content, skills necessary for success, and level of interaction between student and instructor certainly leave room for the possibility of differences in what students feel are important characteristics needed in a quality distance education course.

Teaching and Learning Benchmarks

According to the IHEP (2000) benchmarks, topics in distance education teaching and learning deal with students' interactions with peers and their interactions with the instructor. More specifically, three subtopics are listed:

- Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voicemail and/or e-mail.

- Feedback to student assignments and questions is constructive and provided in a timely manner.

- Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

Interaction is thought to be one of the most important, if not the most important elements in the online learning process and is defined by Dearsley (1995) as the directed communication regarding course content and topics between the instructor and students or among students in the online course program. In a study by Dziuban and Moskal (2001), the correlation and relationship between interaction in courses and student satisfaction was investigated in a variety of delivery formats. Among their findings were

statistically significant correlations between the quantity and quality of the interaction

and student satisfaction in face-to-face courses, hybrid courses, and online courses.

However, in online courses, the relationship of interaction to perceived success appeared

a more critical factor than in the other methods of course delivery. Many experts on

online education insist that interaction between fellow students and instructors is an

integral, essential aspect of online education (Paulsen, 2002; Philpps & Merisotis, 2000;

Tello, 2002). Interaction in online courses also involves not only interpersonal aspects,

but also student interaction with the delivery media and course content.

Gunawardena and Zittle (1997) identified social presence as the degree to which a

person is perceived as a "real person" in mediated communication, and reported a strong

correlation between perceptions of interaction and quality/quantity of learning. In a study

conducted by Williams (2000), thirteen roles and thirty general competencies necessary

for quality distance education in higher education were identified. Instructional

competencies were found central to all roles including student support. Interpersonal and

communication skills dominated the top of the general competencies. Similarly,

Anderson, Rourke, Garrison, and Archer (2001) noted that social presence, the ability of

learners to project themselves socially and affectively into a community, were shown to

strongly predict learner satisfaction in online education and challenges the widely held

assumption that face-to-face, non-verbal behaviors are necessary for establishing student

and teacher rapport. Interactivity in an online program is directly related with the amount

of contact the student has with the instructor, with his peers, and with the course material

(Dabaj & Basak, 2008). This interactivity and the roles of the students and instructors,

changing from the traditional instructor-centered to learner-centered process, encourage

the students to seek for answers and build their own knowledge from their own experiences.

Many studies support Russell's (2001) No Significant Difference Phenomenon which argues for the equality of educational value between distance and face-to-face education, however other studies discuss discrepancy between the two due to what Moore (1989) calls the "transactional distance". Moore regards transactional distance as the gap of understanding and communication between the teachers and learners caused by geographic distance that must be bridged through distinctive procedures in instructional design and the facilitation of interaction. Transactional distance differs from spatial dimensions because it is the perceived distance between communicators. Rovai, Baker, and Cox (2008) showed students at multiple universities students felt a stronger sense of community and greater perceived learning than their online peers, exposing both a community gap and a perceived learning gap in courses delivered at a distance. These online students had significantly different feelings pertaining to spirit, cohesion, trust, safety, interactivity, interdependence, and sense of belonging.

A number of studies have shown that the greater the transactional distance the less interactive communication occurs and the more the learning experience suffers (Fearing & Riley, 2005; Sargeant, Curran, Allen, Jarvis-Selinger, & Ho, 2006). Often when things are out of sight, they are perceived to be out of mind. The absence of a physical classroom can cause this problem and lead to developing negative perceptions of belonging, fulfillment, and confidence in communication (Ni & Aust, 2008). These negative perceptions of distance education need to be addressed and better understood, as students' perceptions of online courses can be negative if they experience large

transactional distance with the instructor or with other students. Such negative perceptions can influence whether a student will stay in or drop out of a class (Steinman, 2007). Youngblood, Trede, and DeCorpo (2001) identified ways to lessen this gap between student instructor, citing welcoming students to the class and clarifying expectations for contributing online earl in the course.

Fearing and Riley (2005) found that quality and timeliness of instructor feedback and accessibility of resources where the two biggest factors affecting student satisfaction in both online and face-to-face courses. Similarly, Thurmond, Wambach, Connors, and Frey (2002) found that when students believe that their learning was being assessed in a variety of ways and that they were receiving timely feedback were among the strongest predictors of student satisfaction. This study supports the view that the online environment influences students' satisfaction rather than being solely a function of student characteristics. (Kilic-Cakmak, Karatas, & Ocak, 2009) also found that students' expectations about communication in e-learning to be ranked very high in importance. When feedback from an instructor is delayed, it often causes negative student attitudes, dissatisfaction, or frustration. Hara and Kling (2000) found the lack of immediacy in getting responses back from the instructor made students feel anxious, distressed, and isolated. Results from this university study concluded students felt a lack of personal assessment in online courses due to the physical absence of the instructor. The inability to read body language and tone of voice were perceived as important indicators of student-faculty communication and greatly impacted perceptions of interaction.

Another important aspect related to student perceptions of overall quality in distance education is the quality of instructor feedback. Not only is it important to receive

timely feedback, but that feedback must also be perceived by students to be constructive and helpful. Quality online courses encompass extensive communication, assessment, and individual feedback (DeBiase, 2004), thus feedback from an instructor will be incorporated as another important variable to analyze its impact on students' perceptions regarding online course quality (Yang, 2006).

Interaction between students in an online course, as well as interaction between students and instructors can be facilitated through many different forms of media. While email correspondence is one of the most commonly used formats, interpersonal communication and interaction is also being achieved at a distance frequently through the use of voicemail, discussion threads, chat rooms, online group meetings, instant messenger systems, and social media networks. As distance education technologies have advanced, the use of more media-rich formats that foster interpersonal interaction are on the rise. These newer, more sophisticated forms of communication include streaming audio and video, pod casting, screen capture and audio/video narrating software, and robust, live, virtual classroom environments such as Wimba Live. Whichever technologies are implemented in distance education, the focus must be on improving the learning environment by enhancing interaction while simultaneously decreasing barriers and complications relating to the use of these technologies.

Issues such as technical difficulties with resources can be prevented by utilizing the IHEP student support benchmarks. Also, both the teaching-learning benchmarks and the course structure benchmarks can take preventive measures to deal with issues of motivation and student engagement. Particularly, if students are given sufficient explanations about an upcoming course and take note that their course will necessitate an

independent learning style, they will be sufficiently prepared for an online learning environment.

Course Structure Benchmarks

Student perceptions of the distance education course structure will pertain to course design, use of technology, goals and objectives. Specifically, they are described by IHEP (2002) as follows:

- Before starting an online program, students are advised about the program to determine (1) if they possess the self-motivation and commitment to learn at a distance and (2) if they have access to the minimal technology required by the course design.

- Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.

- Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.

- Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.

In order to learn most efficiently, students must feel comfortable with the structure of the instruction that they will receive. Swan (2001) cited clear and consistent course structure as one of the three factors which contribute significantly to the success of asynchronous online courses. Shea, Swan, Fredericksen, and Pickett (2002) also found that students in online courses who reported that communicating clear expectations on how to succeed in the course correlated highly with levels of satisfaction and perceived

learning. A literature review by Janicki and Liegle (2001) indicated that course navigation was one of ten effective web-based design concepts that appeared repeatedly in the research literature. Conrad (2002) found that learners judge instructors based on how clearly and completely online course materials present the details of the course. A well-organized course with a clear overview and introduction including a clear statement of expectations, explanation of the course outline, clear timelines, and well-written course notes helped learners feel that they were getting off to a good start in their course.

Under the constructivist learning approach, students must gain self-responsibility and experience self-development. If the main concern is the students and their perceptions, there should be a goal of learner autonomy built into course design to make students as self-directed, motivated, and evaluative as possible (Isman, Dabaj, Altinay, & Altinay, 2004). Learner autonomy requires learner participation on their learning objectives, implementation of their programs study and evaluation (Moore & Kearsky, 1996). In support of this, Wighting, Liu, and Rovai (2008) demonstrated that stronger intrinsic motivation of online students represents the most important predictor in discriminating between successful online and traditional students. Research shows that students' perceptions of a learning environment are positively related to their subsequent learning behavior and the quality of their learning outcomes (Ben-Ari & Eliassy, 2003; Konings, Brand-Gruwel, & van Merrienboer, 2005; Kuong 2009). Clearly, proper course structure is an important factor influencing student success and students' perceptions of quality in distance education courses.

Poor course design, in terms of unclear course expectations and objectives, has been liked to negative student perceptions of online course quality. Song, Singleton, Hill,

and Koh (2004) found that when students have difficulty understanding instructional goals and objectives, they view the online learning experience as challenging. This qualitative study revealed that this aspect of course design impacted the success of an online learning experience and was perceived as a challenge in online learning. Furthermore, Song et al. (2004) indicated the high importance of not only clearly stated goals and objectives on a course website, but also that a mechanism through which students could ask questions to better understand course expectations should be provided.

Some believe that although a high level of course organization and structure in an online course is desirable, but it takes away from the dynamic nature of learning. If a course is too rigid and fixed, it becomes stagnate and unable to change to meet the needs of each unique group of students or incorporate current issues. However, Huang's (2002) used an online survey administered to three online courses to determine that a highly structured course organization did not necessarily negate the flexibility of course delivery. This study suggested that a high level of course organization in terms of objectives, assignments, and grades can still be delivered with the flexibility necessary to customize the course to fit the needs of the class.

Due to the lack of instant feedback and clarification of course expectations in most online course, course structure is a more critical issue in distance education than in traditional, face-to-face courses. While some critics claim that online learning is not as effective as traditional face-to-face instruction, but many researchers argue for its equality if the proper content, methodology, organization, and presentation are offered (Legutko, 2007; Cereijo & Victoria, 2006). Curtis and Lawson (2001) compared online

collaboration with face-to-face collaboration and concluded that it is similar in many ways; however more planning is required for online collaboration.

Although there have been a variety of studies which show linkage between course design/structure and student perceptions in distance education courses, none have used benchmarks to see how well the online courses in these studies followed best practices established by quality standards. These studies do not measure students' perceptions of the importance of specific aspects of course structure, which help shape their overall perception of online course quality. Important subtopics, such as the importance of clearly stated expectations for self-motivation and time required to complete assignments and straightforward presentation of library resources, are often ignored in these studies.

Student Support Benchmarks

As categorized by IHEP (2000), student perception of distance education in regards for student support will center on topics dealing with library, administrative, and technical support. Student support services also include pre-enrollment services, admissions and registration, academic advising, financial planning and management, library and bookstore services, counseling and career counseling, social support services, and technical assistance (Dirr, 1999). IHEP lists the following quality benchmarks for student support:

- Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.

- Students are provided with hands-on training and information to aid them in securing material through electronic database, interlibrary loans, government archives, news services, and other sources.

- Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

- Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

Student services are important for many reasons. They can enhance enrollment, decrease attrition, provide for a well-rounded program, ease students' adjustments to college, assist in their intellectual and personal growth, and contribute to their academic success (Yang, 2006). Lee (2010) found perception of online support service quality was a significant predictor of online learning acceptance and satisfaction. Although factors relating to student support are clearly an important aspect of student success in online education, there is still a lack of empirical research done on students' perceptions of these support services (Visser & Visser, 2000). Dirr's (1999) study investigated student support services in online education at colleges and universities by reporting the status of each area of service by surveying faculty and staff. This study therefore failed to examine students' perceptions of the student support services quality and availability.

Visser and Visser (2000) found that there was an inconsistency in the perceptions of student support needs between instructors and the actual students. Both students and instructors perceived academic support as the most important type of student support in

online education, however their relative importance regarding areas of administrative and motivational support. According to the survey results, students perceived administrative support services as more important than motivational support, in contrast to the perceptions of their instructors. Although this study measured student perceptions of student support services in distance education, it did not connect these perceptions to the perceptions of overall quality in their online courses.

LaPadul's (2003) study used a survey instrument to examine the relationship between university students' satisfaction and online student services. Through the use of a survey instrument, this study found that while most students were satisfied with the existing quality of student support services, approximately 30% of the respondents found them to be dissatisfactory. In addition, many students expressed interest in increased student support services in terms of current event chat rooms, guidance on internet research, and academic guidance in terms of online degree maps. Although this study measured student perceptions of online support services, it did not use established benchmarks or standards.

Student support services are an integral part of a quality online educational experience. They are essential to providing online students with a learning experience comparable to that of traditional, face-to-face environments. Due to their high importance in academic success and satisfaction, students' perceptions of student support services must be more thoroughly investigated. The IHEP quality in internet-based learning benchmarks are especially suited to accomplish this task, as they lend themselves easily to investigate the relative importance of each area of student support and how they relate to overall course quality.

Differences in Perception between Academic Disciplines

When it comes to designing and offering students distance education courses, different disciplines pose different challenges. For instance, a course that traditionally involves a lot of hands-on examples or field work may face more challenges adapting to an online format than an English class, or another course that relies largely on written materials. These differences in subject content delivery not only provide unique challenges specific to each discipline, but also come with their own set of student biases and perceptions pertaining to what should be covered and how it should be delivered at a distance. To provide the best online course catalogue possible, it is important for faculty and administration to assess not only the academic outcomes that students experience in different types of academic, but also the factors which influence students' perceptions of quality in that discipline.

Challenges teaching online science courses. Many science courses traditionally require work in laboratories or other work with hands-on experiments or examples. Research has shown that some online courses have been able to successfully incorporate this element of a science course through mailed or purchased laboratory kits or visual computer simulations (Carr, 2000). Reuter (2009) compared academic outcomes from students taking an online and on-campus soil study course that required field and lab components and found no significant difference between each group's grades. Literature suggests is possible to design online science courses with student success. However, many of the courses that have been successfully adapted to an online format are introductory courses or general education classes required for non-science majors. Advanced science classes

typically require more lab work and more expensive equipment. These concerns should also be kept in mind when adapting a science curriculum for distance education.

Kim and Hannafin (2004) stressed the importance of designing an online science course that maintains a focus on scientific inquiry. Unlike many general academic courses, science classes focus on students constructing their own learning as they work their way through the process. This student-centered approach differs from a traditional classroom environment where a student takes a more passive role by listening and reacting to what a teacher says. To preserve this unique learning environment, students require adequate resources and a course framework that adapts the scientific problem-solving process to an online class (Kim et al., 2004).

While some concepts important to science, such as experimentation and the scientific method can be taught from a distance, many argue that a simulation can never truly add up to the hands-on "real thing" when it comes to higher-level laboratory work (MacQeen & Thomas, 2009). For experiments that relied heavily on high-tech data acquisition systems, the on-line simulations proved to be comparable, if not superior, in quality to the actual physics experiments. The on-line simulations, however, were less successful when they were used to replace more low-tech, hands-on experiments. Such classroom experience indicates that the on-line simulations could not, and should not, replace all the experiments in a regular physics lab (Carr, 2000). For this reason, issues regarding the perception of quality in online science courses are called into question and needs to be investigated further.

Kim and Hannafin (2004) suggest that the best way to retain information in a simulated environment is ensure that students have access to "scaffolding," which is a

form of student support that allows learners to explore or reflect beyond their abilities while engaging in a task. There are a variety of strategies and different types of scaffolding, and this type of support, along with an open-ended learning environment and sufficient tools and resources are key to designing an online framework that focuses on scientific inquiry.

The concerns for a scientific inquiry environment and a framework that allows for scaffolding and support are all issues that can be addressed through the IHEP benchmarks. Specifically, scaffolding refers to collaboration or instructor modeling, strategies that can be laid out in the teaching-learning benchmarks. The practice of scientific inquiry and the specific research or web tools provided by a science course are guidelines and expectations that can be addressed within the course structure benchmarks. While these issues are specific to science as a course subject, most of the concerns can be addressed utilizing the IHEP benchmarks.

Challenges teaching online communications courses. Besides the difficulty of teaching and learning subjects that rely heavily on hands-on mastery of skills, such as learning pottery or handling bacterial cultures, many people feel subjects such as communications and public speaking to be unequal or inferior if taught from a distance. Nicosia (2005) points out that communications courses are more problematic to teach online due to the inherent nature of the face-to-face interaction and emphasis on oral rather than written skills. After all, recording a speech in the comfort and privacy of your home is quite different than delivering that speech in front of an entire classroom. Distance speech courses have attempted to get around this challenge by offering a time for students to deliver a speech on campus, or by videotaping their speeches at various

locations (Carr, 2000). Students may also face challenges in online courses that traditionally involve a high amount of reading. Courses such as English or other subjects that require a student to read journal articles or other lengthy texts may be challenging for students who find it easier to consume these materials in print or hard copy (Huckstadt & Haynes, 2005).

Similarly, students in a distance speech and language therapy course performed just as well as those in the same course in a traditional setting. However, students in the online course reported some problems with engaging in the material and developing an independent learning style (Upton 2006). Not only does distance education inherently involve motivating a student to learn at his or her own pace, this particular study showed that students who accessed the material more frequently performed better. Considering this particular result, it's no surprise that students reported feeling that the distance module required a bigger commitment than simply learning the course in a traditional classroom environment. For a course like speech therapy, students would interact with course material naturally in a lecture-style course. When adapting this type of course to the distance model, special attention should be given to developing an interactive component that will encourage students to engage with the material at a level similar to the engagement that they would naturally get in a classroom session about speech therapy.

Challenges teaching online art courses. Most art courses traditionally require direct, face-to-face interaction. The typical art class environment values on the spot critical evaluation of a student or classmate's work. In one study, a distance element was added to a studio drawing course by adding a televised component. The televised

component was transmitted to two sites at Northern Arizona University, and students in the course were made aware that interaction and participation were mandatory for the course (Vries & Eldin, 1996). This course emphasized interactivity and peer commenting through a number of tactics including a split screen that allowed students to see and hear each other, extra points for contributing on certain topics, and hands on demonstrations. In this situation, the specific nature of the course structure let students be informed that group interaction and contributions on artwork were crucial to their evaluations.

This particular discipline depends on two way interaction, which was provided in this case by the split-screen. This technology allowed the students to engage in "vicarious interaction," in which students are internally mentally engaged along with the external communication (Vries & Eldin, 1996). By structuring the distance element in a way that accommodated an art class's need for two-way critiquing and feedback, this particular course received positive feedback from students. In terms of course structure, students were also made aware in advance that participation was a required element of the class by their instructor. This knowledge going into the course allowed for students to be prepared and adjust their expectations of what the distance element would be like.

Challenges teaching other online courses. Distance healthcare and nursing courses have elicited both positive and negative responses from students, which may indicate that these online courses can be successful on a case by case basis, or perhaps that extra effort must be made in terms of communication and interaction. Huckstadt and Hayes (2005) developed two learning modules for advanced nurse practitioners that allowed students to interact with case studies. While both modules were met with positive results, some students reported technical issues with the provided resources, and one user

who was inexperienced with computers had issues with the functionality of the module. Issues such as these can theoretically be resolved with further training or more clarification when introducing the distance model to the students.

The University of Nebraska Medical Center added a distance element to a required clerkship for the university's Department of Surgery, and while students responded well to the program in terms of organization, efficiency, and the presentation of content, many were still reluctant to endorse the distance program over a traditional lecture (Steele, Palensky, Lynch, Lacy, & Duffy, 2002). Students in this study completed a survey following the course, with some of them also participating in in-depth interviews. Respondents reported positive experiences with program features such as online quizzes, flexibility, and the ability to learn visually in a way that is not available in a traditional lecture environment. However, some students still retained general concerns that such technology may replace direct contact with faculty (Steele et al., 2002). These concerns suggest that students may benefit from specificity in course structure materials. For instance, if an outline of a course were to clarify particular components of a distance element, then students may be more comfortable interacting with the technology. Additionally, a timeline or syllabus specifying a certain schedule or amount of time set aside for faculty-student communication may ease concerns about a distance program eliminating or replacing this type of interaction.

Research suggests that it is possible for each of these academic disciplines to effectively be adapted to an online format, so long as the course considers the teaching-learning, course structure, and student support benchmarks when designing the online platform. However, the obstacles and specifications for each of these disciplines will

vary. Faculty and administrations will benefit from examining the characteristics and challenges that each subject will face when adapting a course for distance education.

Influence of Student Demographics on Perception and Academic Success

Whether it is due to physiological or lifestyle changes, the relative importance of many things begin to vacillate as an individual matures. While importance of having a good 401K plan may increase, the priority of owning an expensive sports car when starting a family may decrease. For these reasons, student perceptions of distance education may vary depending on personal demographic factors such as age, previous online learning experience, and status as a full or part-time student. Online learning provides flexibility in educational opportunities to a variety of students that a traditional classroom environment may not. For instance, individuals who want to continue their education while working full time, raising a family, or engaging in other personal matters that are time or income-sensitive may benefit from the independent and time-flexible nature of distance education that allows a student to work at his or her own pace (Gupta and Lei, 2010). The unique nature of distance education makes it ideal for non-traditionally aged students who may be pursuing careers or part-time students who may have other commitments. Thus, it is worth studying these particular demographics in an effort to cater online courses to the students most likely to utilize them. Keeping this type of information in mind when developing distance classes will increase student success.

Traditional and non-traditionally aged student perceptions. Approximately 36% of college students today are age 25 or older (National Center for Education Statistics, 1997). In fact, the majority of distance education learners in the United States are adults, typically between the ages of 25 and 50 years. (Moore & Kearsley, 2005). This increased

enrollment of adults in college over the past 30 years has stimulated the need for research

comparing traditional-and nontraditional-age students (Justice & Dornan, 2001).

Although many studies suggest academic performance of older students is

comparable to or higher than that of their younger peers (Richardson & King, 1998, add

more), there is evidence that older students experience the college environment

differently from younger students. Two of these factors influencing older students'

experiences and perceptions are Psychosocial and Value Orientation, which include

motivation and self-confidence, and Adult cognition, including metacognitive knowledge

and self-regulation of cognitive processes (Justice & Dornan, 2001). For the learner to be

effective in the online environment, he or she must be self-regulated (Lee, 2004). One of

the key differences between online learning and face-to-face is the removal of the

traditional classroom. There is usually no direct physical interaction between instructors

and learners, thereby often leading to a perception of isolation. This often observed

difference in self-regulation between traditional and non-traditionally aged students has

been found to be particularly useful in analyzing student success in online learning

situations (Militiadou & Savenye, 2003; Kuong, 2009).

Many adults choose to take distance education courses due to the time restrictions

of their existing professional, family, and social obligations. Holder (2007) found online

learning as a flexible and valuable educational option. Distance education allows them to

balance the demands of work, family, and other responsibilities. Northrup (2002) argued

convenience is the major motivation for adults to enroll in online courses. The author

goes on to find that adult learners tend to be more serious and dedicated about their

educational goals, showing a higher level of motivation when compared to traditional-

aged students. However, Dabaj and Basak (2008) found that the older the students are, the stronger their preference towards attending face-to-face classes. Although students registered in online programs by will, they preferred the traditional face-to-face education due to the difficulty of the nonverbal communication, their incompetence of using the technology required, and their belief in traditional fact-to-face learning more than online education.

There are important differences between traditional and non-traditional age students which may affect the learning process. Some researchers argue that as we grow older, more time is needed to absorb and learn new information (Kuong, 2009). However, an asynchronous learning environment where students can control the pace of their learning allows for the effective compensation for this lack of speed in learning new things successfully. Targeted interventions to meet the unique academic needs of nontraditional students are needed (Hermon & Davis, 2004). For example, nontraditional students report more procrastination regarding weekly assignments than do traditional students (Prohaska, Morrill, Atiles, & Perez, 2001).

Besides the intellectual and cognitive differences between adult and traditionally-aged students, there are important physical differences which need to be considered in the design of an online class. Adult students have been found to have slower reaction times, and their vision generally declines from the age of 18 to 40, often with significant declines over the age of 40 (Kuong, 2009). Although some characteristics have been determined to decline with age, a body of research suggests that nontraditionally aged students are more intelligent than their younger counterparts (Whisnant, Sullivan, &

Slayton, 1992). Honzik and McFarland (1973) found intelligence, as measured by scores on IQ tests, increases with age.

When it comes to educational technology, concern has been raised about the "generational digital divide" and its impact on distance education (Cejda, 2007; Soker, 2005). While old forms if distance education relied on long-established technologies, Kinley (2001) found that today's distance education focus has dramatically shifted toward internet-based delivery. The fact is that new techniques and technologies have always been adopted more readily by young people. Computerphobia has been around since the inception of computers, and it afflicts those who came of age using typewriters and slide rules much more than those weaned on PCs (Goldsborough, 2008). While young minds tend to be more malleable, molder individuals tend to find what works for them and sticking to it. In addition, learning new technologies takes spare time, a commodity much more in abundance to younger people rather than those with jobs, families, and other responsibilities. Younger students may be more willing to adopt the use of technologies, but this can become a double edged sword when it comes to perceptions of quality. Younger students may be more comfortable with using computer-based technologies, but the use of older hardware and software may cause these students perceptions of low quality

Enrollment status. Kember's (1995) model for student progress focuses on factors such as employment and enrollment status which affect adult learners in distance education. It is suggested that these adult students may have a harder time integrating into the academic institution, both socially and academically, which may negatively affect their success. In addition, Barfield, (2003) found that part time students had more

negative perceptions of the fairness of group work. He found a relationship between hours worked per week and overall group activity satisfaction. The data indicated that students who work part-time possess a stronger understanding of their role in the group than students who work full-time, or students that do not work at all. The perceptions of students who work in addition to going to school are influenced by the concept that "time is money". Researchers argue that due to this linkage of time and value, part time students may think that their time availability and amount of time given to an educational activity provides a perception of entitlement. Crotty (2000) argued that students who do not have computers in their homes are often irritated by the additional time required to visit a computer lab, a lack of convenience that contributes to many working students' negative perceptions. Students who take an online course for its flexibility may dislike online chats or other synchronous activities that occur at fixed times.

Previous online education experience. Other studies indicate that a student's previous experience with technology, specifically online learning, influences perceptions and performance in distance education. Koohang (1989) found that the more previous experience a student has had with technology, the more accepting he or she will be of new technologies in general. A second study (2004) further supported this finding, showing that students with more prior Internet experience than others showed higher positive perceptions of using a digital library for assignments. Previous experience with this type of online education may increase student's success due to familiarity or increased confidence levels (Koohang, 2004).

The amount of online courses an individual completes also relates to an individual's understanding and use of technology in general. Hayes and Huckstadt's

(2005) results supported the link between prior exposure and familiarity with technology and positive distance education results. In this study, students with strong technological backgrounds had success with an online interactive learning module for advanced practice nurses. However, one participant who cited limited previous experience with computers responded negatively. This student found navigating through the program difficult.

Research from Dobbs, Waid, and del Carmen (2009) supports the idea that more prior experience promotes a more positive perception of distance education. Students in an online criminal justice course responded to a survey about their learning experience and their prior exposure to online courses. Not only did students who had taken an online course disagree that online courses were inferior in quality to traditional courses, but students who had taken five or more online courses disagreed more strongly on this point. Furthermore, students who had taken only two or four online courses felt that students learn more in traditional courses compared to online, while students with experience in five or more courses disagreed (Dobbs et al., 2009). According to this study, not only is previous experience in online learning a factor in determining student perception, but the amount of prior experience indicates the degree to which a student will hold this perception.

The above research seems to indicate that a degree of familiarity with the online environment correlates with how students perceive distance education. Developers of online courses can utilize IHEP's course structure benchmarks to aid students who may lack familiarity with online courses or technology. Providing introductory resources or additional training for clarification in a particular course may give inexperienced learners

more confidence in distance education and thus improve their overall academic

performance and course satisfaction.

Summary

After a review of the literature related to distance education, issues pertaining to

the pedagogical quality of online courses, as compared to face-to-face education, were

recognized as a frequent concern. To address these concerns, a number of quality

benchmarks and best practices for distance education have been developed. Many of

these benchmarks are incorporated into studies which compare the effectiveness of

traditional education and online education, and those studies tend to evaluate whether the

technology works, rather than focusing on the nature and quality of online education

itself (Meyer, 2002).

Factors contributing to perceptions of quality in distance education have been

explored in some studies. Research has found that students' satisfaction and positive

perception of their online learning experience is highly related to the efforts the

instructors put into the classes, immediacy behavior, intervention, and technology

competence (DeBiase, 2004). Research has also shown students' negative perceptions of

online learning relate to inadequate technological mastery, lack of self-motivation,

delayed communication or feedback, student social isolation, and lack of computer

literacy or prior computer knowledge (Hara & Kling, 2000).

Areas of distance education, such as student support services and areas relating to

teaching and learning have been found to be important factors impacting students'

perceptions of online courses. However, there is a general lack of research on studying

students' perceptions towards these factors in their online learning (Visser & Visser,

2000). The goal of this study, therefore, is to contribute to the literature by investigating students' perceptions of online education between academic disciplines. This will be done systematically through the use of well-established benchmarks for online course quality. The methodology that will be used in this study is described in the next chapter.

CHAPTER III

METHODOLOGY

Introduction

This chapter will describe the type of research and design used in this study. The setting and context of the study, subjects participating, instrumentation development, data collection procedures, and data analysis methods will all be discussed. Attention will be given to describing the procedures and rational contributing to the construction of the original survey instrument used, the steps for reviewing its validity and content reliability, and methods used to analyze the data, once collected. Limitations of the study and ethical concerns will also be discussed.

Purpose and Research Design

The purpose of this quantitative, non-experimental study was to compare and evaluate student perceptions regarding the quality of online courses among academic disciplines at a midsized community college. Evaluation is the systematic assessment of the operation and/or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy (Weiss, 1998). This is the most appropriate design as any quantitative study without manipulation of treatments or random assignment is a non-experimental study. Non-experimental research is used when variables of interest cannot be manipulated because they are naturally existing attributes (Belli, 2008).

In order to accomplish the goals of this study, individual factors that impact student perceptions of online course quality, as described by the Institute for Higher Education Policy (IHEP), were evaluated by students. An original online student survey

adapted from Yang (2006) and Scanlan (2003) was used to collect these data about students' perceptions of quality in web-based online classes by comparing how well their courses met best practices established by highly researched benchmarks. The purpose of the design was to capture a "snapshot in time" in which to discover the differences among groups and subgroups (Fitzpatric, Sanders, & Worthen, 2004). E-mail based, electronic surveys have demonstrated superiority over postal surveys in terms of response speed and cost efficiency (Sheehan & McMillan, 1999), as well as boosted response rates. Basic demographic data were also collected in this stand-alone study to help explore patterns in student perception.

Research Questions

To further understand student perceptions of online course quality, several research questions guided this study:

1. What factors impact students' perceptions of online course quality with regard to benchmarks for Teaching/Learning, Course Structure, and Student Support?

2. Do students' perceptions of quality of online courses differ among academic disciplines?

3. What is the impact of student demographics on perceptions of quality of online courses?

Research question one aimed to quantify the extent to which differences in students' online course perceptions existed among online courses disciplines. Specifically, this question examined if differences existed between online course disciplines by comparing examples such as: online Natural and Physical Sciences (biology, chemistry, etc.) courses versus online English courses, and online Social

Sciences (history, philosophy, etc.) versus online Arts and Humanities (art, music, etc.)

courses. Research question two investigated specific components of each of the three

IHEP benchmark topics: Teaching/Learning, Course Structure, and Student Support. For

example, research question two investigated the impact of students' perceptions of both

student-to-student interaction in an online course and student-to-faculty interaction in an

online course. In this example, both student-to-student and student-to-faculty interaction

fall under the Teaching/Learning benchmark category. Research question three clarified

the impact of three different student demographics on student perceptions of online

course quality. Specifically, the purpose of this research question was to investigate the

impact of student enrollment status, student age, and prior previous experience with

online courses on student perceptions of quality in online courses.

Setting and Context of the Study

This study investigated students' perceptions of online course quality among

academic disciplines in the community college setting. To do so, a brief online survey,

containing 17 questions in total and taking approximately 5-10 minutes to complete, was

emailed to students currently enrolled in online courses during the Spring 2012 semester.

This online survey was available for students to complete for three weeks and reminder

emails were sent out weekly to help boost response rates. The data was collected at one

mid-sized community college located in the south east United States. This institution

used in this study comprises three campuses, whose students reside in mostly rural

counties all within the same state. This community college serves the needs of a diverse

population, enrolling more than 7,600 unduplicated credit students and more than 10,450

individuals by offering more than 75 associate degree and certificate programs in a wide variety of academic disciplines.

This study used three independent variables to measure students' perceptions of online course quality: Teaching/Learning (e.g. students' interactions with peers and interactions with their instructor), Course Structure (e.g. course design, technology, goals and objectives), and Student Support (e.g. library, administrative, and technical support). The dependent variable in this study was students' perceptions of online course quality. Several control variables were used, including age, enrollment status, previous experience with online coursework, and online course academic discipline.

Subjects

In order to obtain as large a data set as possible, census sampling was used. The online survey used to collect data was sent out via email to all degree-seeking students at the community college who were currently taking an online course. During the spring 2012 semester, the semester during which the survey was distributed, there were 155 online course sections offered, serving a duplicated headcount of 3,436 students. These online courses were offered in 34 different academic disciplines, ranging from art, to geology, to Spanish. Student data from hybrid or blended courses consisting of both online and face-to-face meetings were not used. Dual enrollment students, those enrolled in both high school and community college classes, were also excluded from this study, as many of these students are commonly under the age of 18. Emails containing an introduction, purpose, and a link to the survey were sent to the student school email accounts of all eligible participants enrolled during the spring 2012 semester.

Instrumentation

The IHEP quality benchmarks cover an extensive array of best practices, established through research, as important to an online course offering. These best practices were developed through a comprehensive literature search and analysis of benchmarks recommended by other organizations, groups, articles, and publications, as well as interviews with faculty, administrators, and students form a variety of academic institutions with substantial experience with distance learning (IHEP, 2000). Although all are believed to be important, many of the benchmarks, such as those relating to faculty support and program evaluation and assessment, are not evaluable by students (Scanlan, 2003). For this reason, this study focused on the 11 IHEP benchmarks listed under the subheadings of Teaching/Learning, Course Structure, and Student Support. There are 3 separate benchmarks for Teaching/Learning, 4 for Course Structure, and 4 for Student Support –accounting for each of the 11 individual benchmarks measured in this study. These three benchmark categories: Teaching/Learning, Course Structure, and Student Support, are best measured by students (Bennett & Bennett, 2002; Scanlan, 2003; Yang, 2006). Of the 24 IHEP quality benchmarks, these 11 have been used successfully in a similar manner in other academic research and were therefore used in the current study.

Similarly to Scanlan (2003), each of the 11 IHEP benchmarks were directly translated into a survey statement applicable for student response, and presented on a four-point Likert scale to determine the level to which students agree with the statement (Figure 1). One of the Course Structure Benchmarks statements addressed two separate measures of academic preparedness and was therefore broken into two separate survey questions. Of the 11 quality benchmarks, a total of 12 survey questions were generated. A

four-point scale was chosen to minimize confusion in the students making distinctions between response choices (Miller, 1956). In this manner, students were forced to indicate if they agreed or disagreed with each particular survey item.

IHEP Benchmark:
Feedback to student is constructive and provided in a timely manner

Student Scale Item:
In my online course(s), I always received constructive and timely feedback on my assignments and questions

Strongly Agree	Agree Somewhat	Disagree Somewhat	Strongly Disagree
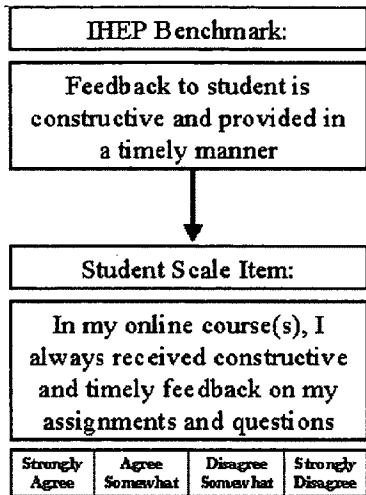
Figure 1. Example translation of IHEP benchmark into student scale item (Scanlan, 2003).

Overall, the survey consisted of 17 questions in total, divided into three sections. Part one of the survey contained basic demographic data. Questions in part two were broken into two parts; measuring if the IHEP quality benchmarks were being met in students' courses as well as if each benchmark was considered important to the overall quality of the online course. Only one question existed in part three of the survey. This question asked students to rate their overall perception of quality for the online course which they were evaluating. In total, survey completion should have taken students approximately 5-10 minutes to complete, which Jurczyk et al., (2004) determined is close to the ideal survey completion time length.

The majority of questions on the survey instrument were 4-point Likert-type items, but some of the data gathered, such as student age group, enrollment status,

previous experience with online coursework, and academic discipline of the course being evaluated, was single-answer multiple choice responses. Overall, this survey instrument design and implementation incorporated suggestions from Sue and Ritter (2007):

- Explain why the survey is important

- The exclusion of uninvited participants with access control

- The introduction of the instrument with a welcome screen

- The selection of colors and survey appearance to aid in navigation and usability

- The inclusion of clear survey instructions

- The need for responses to survey items to be voluntary

Part I contained several questions designed to obtain basic demographic data, such as age group, enrollment status, and online course discipline. To simplify data analysis, "student" was recorded as either traditional (18-24 years) or non-traditional (25+ years). Students under the age of 18 were not included in this investigation. Enrollment status was recorded as either full time (enrollment in 12 or more credit hours of coursework at the time of survey participation) or part time (enrollment in less than 12 credit hours of coursework at the time of survey participation). The influence of previous exposure to online classes was recorded by asking if each student was currently taking a college-level online course for the first time as a yes or no response, rather than attempting to measure the degree to which the number of previously taken online classes affected perception. To simplify data collection and analysis, individual courses offered at the institution in this study were aggregated into several academic discipline groupings according to Stout (2008) and actual course prefixes for all online courses were listed next to each discipline group: English (ENG) consisting of 260 students, Natural and

Physical Sciences (BIO, CHM, GOL, MTH, NAS, PHY) consisting of 707 students, Arts and Humanities (ART, ASL, CST, FRE, GER, HUM, ITA, MUS, PHI, REL, SPA) consisting of 387 students, Social Sciences (ECO, GEO, HIS, PLS, LGL, PLS, PSY, SOC) consisting of 796 students, Business (ACC, AST, SBU, MKT) consisting of 234 students, Computer technologies (ITD, ITE, ITN, ITP) consisting of 135 students, Education (CHD, EDU, SDV) consisting of 147 students, Engineering and Industrial Technologies (CIV, EGR) consisting of 6 students, Health Technology Other than Nursing (PED, HIM, HLT) consisting of 572 students, and Nursing (NUR, PNE) consisting of 20 students.

Since some students were enrolled in more than one online course during the spring 2012 semester, enrollment numbers consisted of duplicated head counts. Altogether, there were a total of 1,876 students eligible to participate in the survey, with a duplicated online course headcount of 3,436. Students taking multiple online courses during the semester of survey administration were encouraged to fill out a separate survey for each course in which they were enrolled. Although grouping individual courses into broader categories limited the specificity of the results, this method was chosen to make the results easier to interpret and understand, as well as provide groups for comparison with more statistically valid sample sizes.

Part II of the survey instrument contained 12 Likert Scale questions which examined students' online learning experiences centered on the 11 IHEP benchmarks regarding Teaching/Learning, Course Structure, and Student Support. Specifically, these questions focused on Teaching/Learning (e.g. students' interactions with peers and interactions with the instructor), Course Structure (e.g. course design, technology, goals

and objectives), and Student Support (e.g. library, administrative, and technical support). For each benchmark statement, students chose the option that best described their level of agreement with how well the benchmark was being met in their class by responding to a four-point Likert scale ranging from Strongly Disagree to Strongly Agree. Students were asked to evaluate the level at which each IHEP course quality statement was met in their class, as well as its importance to providing quality in the specific course they were evaluating. This was done to help determine if students' perceptions of quality in online courses differed across academic disciplines and what factors were most influential to students' perceptions of online course quality.

The survey itself was developed by the researcher. Through a review of the literature guided by the previous use of IHEP online course quality benchmark studies; by adapting components of the survey instruments utilized Yang (2006) and Scanlan (2003); and through interviews with faculty, staff, and students. Both template surveys, Yang (2006) and Scanlan (2003), have been tested for reliability and validity, and the content validity was established by IHEP (2000). This survey was developed under the direct supervision of four highly-qualified research faculty members, all of whom have doctoral degrees, as well as years of experience in survey design and distance education at the university and community college level. Development of the initial survey instrument was achieved through collaboration with the following subject and content experts:

- Judy Batson, PhD. Dr. Batson is the Associate Vice President of Instruction at Lord Fairfax Community College (LFCC). Prior to her administrative experience at LFCC, she served as the dean of liberal arts and sciences at Florida

Community College at Jacksonville, where she also served as an instructional officer. She holds a doctoral degree in human anatomy from Virginia Commonwealth University and professional development studies in higher education at the University of Virginia.

- Jose, Nieves, PhD. Dr. Nieves is a Professor of Information Technology at LFCC. He has extensive public and private sector Information Technology (IT) experience, including senior technical and management positions with the Defense Intelligence Agency, CSC, and many others in the Washington DC metropolitan area. He has been teaching a variety of courses online and face-to-face at LFCC and American Intercontinental University for more than a decade. In addition to many years teaching experience at the undergrad through graduate level, he consults on doctoral-level seminar courses in information systems management and his research interests focus on IT research methods.

- Edith Kennedy, PhD. Dr. Kennedy holds a Doctor of Arts from George Mason University in College Teaching with a focus on rhetoric and composition. Her dissertation, titled "Blogs, Wikis, and E-Portfolios: The Effectiveness of Technology on Actual Learning in College Composition," focused on the uses of technology in the classroom. She translated the knowledge from this study into effective online classes. Currently, Dr. Kennedy is the Associate Dean of Instruction at Lord Fairfax Community College's Fauquier Campus.

- Terrell Perry, PhD. Dr. Perry is the Assistant Director for Communication and Instructional Technology at Old Dominion University and has extensive experience in the fields of distance learning and instructional design. He earned a

doctorate of Education Leadership from Nova Southeastern University, as well as a MS in Education from Old Dominion University. Dr. Perry specializes in practices which make the remote acquisition of knowledge and skill more efficient, effective, and appealing.

Once the survey instrument was initially developed by the researcher, emails were sent to each of the four content experts to thank them for their participation, convey the purpose of the study, and to explain their role and contribution (Appendix A). The proposed survey instrument was also attached to this email (Appendix B). This panel of experts in higher education were asked to rate each individual survey item to determine if the wording, formatting, and language was clear or ambiguous and if they feel each item should be included in the instrument, deleted from the instrument, or reworded. Any item on the survey flagged by two or more of the four content experts was reworded or deleted from the final survey instrument, as needed. In addition, content experts were asked to indicate if there were any items not present in the survey that should be included to better answer the research questions.

In response, all 17 questions were determined by the panel of experts to be of importance to answering the research questions. Although no questions were omitted and none were added, a few minor revisions were made. The most significant of these revisions involved the omission of the term "hands on training" from question 14, one of the quality statements dealing with an IHEP benchmark for Student Support. The panel of experts agreed that the term "hands on training" was misleading in regards to online instruction, which often delivered at a distance and in an environment where student and educator never meet.

After the content validity of the instrument was established through the review by the members of the panel of experts, it was piloted to ten students from a community college similar to but different from the one used in the actual study. This revised survey was sent electronically to the email accounts of these pilot students in the same manner as the final survey. Before students were allowed to take the survey, they needed to electronically sign a student consent form (Appendix C). In addition to the survey items included in the final survey instrument (Appendix D), four additional questions were included in this pilot survey to help develop the final draft. These four questions, only included in the pilot survey, and which helped shape the final draft of the survey instrument were:

1. Was the overall wording of the instrument clear an unambiguous?

2. Were the instructions provided to take the survey instrument clear?

3. Was there anything in the survey found to be offensive?

4. How long did it take to complete the survey?

Most of these questions were answered with a yes or no response, but additional space was provided to allow for elaboration or clarification of any of these items.

Two weeks later, the same pilot survey was emailed to the same group of students and effort was taken to duplicate the same survey conditions. These students received the two surveys through the same mode of delivery, email; on the same day of the week; at the same time of day. This process was used to determine if students have sufficient knowledge and understanding of the topics being presented, as well as help to determine the reliability and validity of the survey instrument. Once both sets of pilot survey data were collected, a coefficient for consistency for each item was established. This test retest

procedure is a common method of establishing the reliability of a newly formed instrument. Reliability is the consistency of the instrument in measuring, whatever it measures (Wiersma, & Jurs, 2008). A Cronbach's Alpha of 0.8 was used to evaluate reliability of the survey instrument. Cronbach's Alpha is a measure of how well each individual item in a scale correlates with the sum of the remaining items. It measures consistency among individual items in a scale (Streiner & Normal, 1989) and is especially useful in questions recorded on a Likert scale or a survey. Alpha values of 0.7 to 0.8 are regarded as satisfactory (Bland & Altman, 1997).

In general, the pilot group had little to no negative remarks about the survey. One student found something in the survey to be offensive, but did not comment on what exactly it was. It is possible that this student clicked this multiple choice response by accident. On average, students took about 6 minutes to complete the survey, which is well within the acceptable time range for survey completion.

Data Collection Procedures

Before the survey was distributed to students, approval from the Institutional Review Board (IRB) for the Protection of Human Subjects in Research, as well as permission from the community college where the study was to take place, was obtained. Since the survey questions regarding online course quality were grouped into three IHEP quality benchmark subtopics, Teaching/Learning, Course Structure, and Student Support, internal consistency was checked separately for each of these subtopics. Thus, three separate Cronbach's alphas were calculated (Price, 2000).

Once fully developed, data was collected through consensus sampling through student responses to the online survey. The well-known, reputable survey provider,

SurveyMonkey.com, was used to administer the survey in such a manner that each

respondent's information was encoded and recorded in the database as a unique 10 digit

identification number. This survey was available for students to take during a three week

time period during the end of the spring 2012 semester. Obtaining a high survey response

rate can be difficult. Sue and Ritter (2007) note that follow-up contacts with non-

respondents and non-material incentives, such as stating how the survey information will

benefit students, can have a significant impact on response rates. Therefore, weekly

emails were sent to remind students to complete the survey, but students were instructed

to complete only one survey per online course in which they were currently enrolled.

Multiple responses were discouraged, but still possible, but no incentive was given to

encourage increased survey participation. In order to maintain strict student anonymity,

no personally identifying information of any kind was collected, thereby preventing the

possibility of a raffle or other type of reward for those who completed the survey.

Although multiple completions of the survey by a student for the same course were

possible, benefits of this method included the ability of a respondent to complete an

incomplete attempt at the survey due to lack of time allotted or an internet disconnection.

Allowing for multiple attempts should help to reduce the number of partially completed

surveys and boost response rates. Data was aggregated and reported in an Excel spread

sheet and analyzed using the statistical package for Social Sciences (SPSS Graduate Pack

16.0 for Windows) free from any individual student identifiers. Before data analysis, the

data set was cleaned of all entries containing missing data entries. To ensure anonymity

and confidentiality of the data, survey results were stored only on the

SurveyMonkey.com server and the researcher's own password-protected desktop

computer, which remained in a locked office under the watch of campus security at all times.

Data Analysis

Research question one. What factors impact students' perceptions of online course quality in regards to benchmarks for Teaching/Learning, Course Structure, and Student Support? To answer this question, descriptive data on students' ratings of overall teaching quality, learning quality, course structure quality, and student support services quality were first reported. The level of perceived quality was interpreted based on students' Likert Scale ratings (Table 2).

Table 2

Interpretations of the online course quality ratings

Means	Likert Scales	Interpretation	Quality Level
1-2	1	Extremely Poor	Poor Quality
2-3	2	Below Average	Ordinary Quality
2-3	3	Above Average	
3-4	4	Excellent	Good Quality

The resulting descriptive data from student survey results were collected and presented in table form according to each IHEP benchmark category. Quality level for each survey item was also presented in tables to summarize findings. In addition to reporting descriptive data, independent samples t-tests, Levene's test of homogeneity of variance, and a Welch Robust test of equality of means were performed.

Research question two. Do student's perceptions of quality in online courses differ across academic disciplines? To help answer this question, students' overall

perception of the quality of their online courses was directly measured by survey question 17: Generally speaking, the course I am evaluating for this survey is of high quality. Mean survey responses to question 17, standard deviations for the responses, and the number of survey respondents per academic discipline was calculated and presented in table format. Similarity between the distribution of responses to survey question 17 across academic disciplines was checked using a nonparametric Kruskal-Wallis test.

Research question three. What is the impact of student demographics on perceptions of quality in online courses? Each category of student age, enrollment status, and previous experience with online coursework were tested for separate relationships with students' perceptions of online course quality by means of chi-square analysis. Student perception means for the overall course quality (survey item 17) were checked for statistically significant differences between actual and predicted values for each student demographic variable.

Limitations and Ethical Concerns

One of the major concerns with any census sampling study is the possibility of a low survey response rate. The possibility of a high non-response error was addressed through weekly reminders and a three week long window to encourage survey completion. Effort was put into contacting each online course instructor to encourage survey participation, however it was explicitly mentioned that survey participation was totally optional and would in no way impact students' course grade. The format of the survey should have helped address this issue as well, as email based, electronic surveys have demonstrated superiority over postal surveys in terms of response speed and cost efficiency (Sheehan & McMillan, 1999), as well as boost response rates.

Another concern when administering self-reported surveys is the possibility of reporting bias (Halsne & Gatta, 2002). Internal validity may be called into question as student responses may be influenced due to their particular mood at the time of the survey. Evidence of a relationship is not convincing evidence of causality. Alternate explanations for results in non-experimental research should be explored and ruled out (Belli, 2008). Along this line of reasoning, students' perceptions of online course quality may be influenced by factors unique to each individual instructor in ways that are impossible to account for or measure in this survey.

This study only contained data from surveys distributed to students at one community college, and therefore findings may not be applicable to a larger student body. In fact, data collected may not even be applicable to the students surveyed in this study, as responses were generated via non-proctored conditions from virtually anywhere internet access is available. Although links to the survey were only distributed to students enrolled in online courses at the community college in this study, there is no way to ensure respondents to the survey were the actual target audience. Once the survey has been activated, there is no mechanism in place to determine who actually generated the responses.

Summary

In this chapter, the methods of qualitative analysis of student survey data to measure the perceptions of distance education course quality are discussed. Factors which influence perceptions of quality in online courses delivered at a distance were examined through the use of the well-established benchmarks developed by the Institute of Higher Education Policy relating to Course Structure, Teaching and Learning, and Student

Support. Through the use of these IHEP benchmarks, students' perceptions of quality in distance education courses were investigated and analyzed to see if these perceptions differed between course subject areas. The effects of several demographic variables were also investigated for impact on perception. In the next two chapters, results from this study are given and a discussion of the conclusions presented.

CHAPTER IV

RESULTS

Introduction

As distance education becomes widespread and online courses become more and more popular, the need to identify factors that provide an assessment of quality in online courses becomes paramount. The purpose of this research was to explore how students perceive online course quality based on the IHEP benchmarks for Teaching/Learning, Course Structure, Student Support, and in general. This research also investigated the effect of certain demographic factors and academic disciplines on students' perceptions in these areas of online course quality. Both descriptive and inferential statistics were used in an effort to explore the relationships among the selected variables and to determine which, if any, variables could be used to predict and determine students' perceptions of quality. All data analyses were performed on the SPSS Version 15.0 Graduate software package.

This chapter is organized into three sections: (a) description of the population and the online courses that were involved in the study; (b) students' perceptions of online course quality and the relationships among variables that serve as predictors of student satisfaction, as well as the amount of variance that they account for in student satisfaction; (c) survey reliability and consistency.

Variables employed in this study

The independent variables used in this study were student age (traditional or nontraditional), student enrollment status (full time or part time), prior online learning experience (having ever taken an online college course or not), and academic discipline

(English, Nursing, etc.). The dependent variable was students' perceptions of online course quality. Since students' perceptions of online course quality was such a broad notion, this variable was divided into different categories with regard to the IHEP benchmarks for Teaching/Learning, Course Structure, Student Support, and overall course quality. A list of the variables included in this study and how they were operationalized are included in Table 3.

Table 3

Variables employed in the study

Independent Variable	Survey Question	Dependent Variable	Survey Question
Age	1	Teaching/Learning	5, 6, 7
Enrollment Status	2	Course Structure	8, 9, 10, 11, 12
Previous Online Coursework	3	Student Support	13, 14, 15, 16
Academic Discipline	4	Overall Quality	17

Data related to student age was gathered by survey question 1, student enrollment status was gathered by question 2, previous exposure to online college coursework was gathered by question 3, and the academic discipline for which the course was evaluated was gathered by question 4. By design, the next 12 survey questions were divided into two parts. These 12 questions were different topics established by IHEP to be benchmarks for online course quality. Within these 12 survey items, students were asked to describe both how well each benchmark was achieved in their online course, as well as

their perceived level of the benchmark's importance to online course quality. For the purpose of analysis in this study, only students' perceived level of benchmark importance was used.

Description of the Survey Population

The data collection instrument was developed and administered online through the use of Surveymonkey.com. All data collected from student responses were stored exclusively on the website's secure server and one of the researcher's password-protected desktop computers kept in a locked office. All survey participants consented to take part in the research project prior to obtaining access to the survey. Data were collected at a southeastern community college during the last three weeks of the spring 2012 semester. A total of 388 survey responses were collected during the three week period the survey was available to the 2,983 eligible students, resulting in a 13% response rate. Unfortunately, some of the responses from the survey could not be used, as they were only partially completed or almost completely incomplete. The survey settings were set up in a manner in which only two questions were mandatory. Students were required to fill in data on what academic discipline they were evaluating for the survey (question 4) and their overall perception of course quality (question 17). Having only two questions with-mandatory answers was done to avoid students giving up half way through the survey due to the possible frustration which may occur if the survey would not let them advance to the next section due to incomplete responses. It was reasoned that the survey response rate would be higher if transition between the three sections of the survey was seamless and easy.

After the data set was cleaned and incomplete responses were removed, a total of 360 eligible student survey responses remained. After the deletion of these 28 incomplete student responses, the final tally of complete surveys resulted in a 12.1% response rate. Until recent years, such low response rates have traditionally been regarded as weak due to the high probability of sampling bias. However, recent studies now provide empirical evidence to challenge this idea. Several studies now show that such low survey response rates as the one in this study result in little to no loss of overall sample accuracy (Curtin, Presser, & Singer, 2000; Holbrook, Allyson, Krosnick, & Pfent, 2007).

Specific demographics of the survey participants

The data presented in Table 4 show the distribution of eligible survey participants according to age group. Students were asked to choose which of the three categories best fit their age: less than 18, 18-24, or 25+.

Table 4

Survey respondents and online student population according to age

	Survey Respondents		Total Population	
Age	Frequency	Percent	Frequency	Percent
<18	0	0	145	4.9
18-24	145	40.3	1674	56.1
25+	215	59.7	1164	39
Total	360	100	2983	100

In terms of the student survey participants' ages, the plurality group (215 out of 360) consisted of the nontraditionally aged students, those 25 years old or older, accounting

for a total of 59.7% of the total respondents. These percentages are somewhat consistent

with the overall age demographics for the entire population of the online student body,

differing by roughly 20 percent. The next biggest group of participants, based on age,

was the traditionally aged students, 18-24 years in age. This group accounted for a total

of 145 out of 340, or 40.3% of the total respondents and differed from the entire online

student population age demographic by roughly 16 percent. The smallest group of

students was students less than 18 years of age. This group accounted for a total of only

three students out of the survey total of 388, accounting for 0.8% and differing from the

actual sample group by roughly 4 percent. These data from this last age group are quite

perplexing, as the survey was only sent out to students at least 18 years of age. No

students eligible to select the age choice of "less than 18" should have received the

survey at all. Due to this survey distribution restriction to underage students, it is possible

that these three students accidentally chose this age group option instead of the 18-24

choice. In any case, these three students' data were not included in the overall "clean"

data set due to privacy concerns. Because of the under 18 years of age restriction imposed

in the survey design, the number of underage students participating in this study consisted

of zero of the total 360 student entries used for analysis.

Data presented in Table 5 show the distribution of survey participants according

to enrollment status. Students were asked to select their enrollment status as part time if

they were currently enrolled in less than 12 credit hours during the spring 2012 semester

or full time if they were taking 12 or more credits that semester. Two groupings for

enrollment status, part time and full time, were chosen to both simplify data analysis and

keep sample sizes as large as possible for statistically significant results. The majority of

the online student population was enrolled part time, accounting for roughly 63% of the total online student population and 51% of the survey respondents. Students enrolled in 12 or more credit hours during the spring 2012 semester accounted for 37% of the total online student body and 49% of the survey respondents.

Table 5

Survey response rate according to enrollment status

	Survey Respondents		Total Population	
Enrollment Status	Frequency	Percent	Frequency	Percent
Part Time	182	50.56	1872	62.76
Full Time	178	49.44	1111	37.24
Total	360	100	2983	100

The impact of previous experience with online college coursework on student perceptions of online course quality was also measured, and the number of survey respondents with previous online course experience is presented in Table 6.

Table 6

Survey response rate according to previous online college course experience

Previous Online Course experience	Frequency	Percent
No	276	76.67
Yes	84	23.33
Total	360	100

In an effort to distill the impact of this effect and keep sample sizes as large as possible, previous experience with online college coursework was measured as either yes or no. This meant survey participants were asked to simply indicate if they were taking online college courses for the first semester ever at the time of the survey or not, rather than attempt to measure the exact number of previous online course credit hours each student had taken. Of the 360 students' data used for analysis, 276 of them indicated they had never taken an online course prior to the semester in which the survey was administered. Therefore, first time online course takers accounted for 76.67% of the respondents, leaving 23.33% of the sample population having at least some prior experience with online college coursework (84, n = 360). Unfortunately, no data was collected by the institution to allow for the comparison between the survey respondents' demographics to the demographics of the entire online student body.

Due to the unequal number of course sections offered for each academic discipline, the number of survey respondents between each discipline varied greatly (Table 7). The largest student enrollment numbers as well as the highest number of survey respondents were in the Social Sciences, accounting for 26.11% of the total survey sample. Natural and Physical Sciences accounted for 24.44% of the total survey sample and Arts and Humanities accounted for 16.67% of the total survey sample. These three academic disciplines accounted for the majority of all student responses, leaving all other academic disciplines averaging approximately 5% of the total survey sample each. Although there were six students enrolled in online Engineering/Industrial courses, none of them responded to the survey and only 6 of the 17 Nursing students contributed, which accounted for only 1.67% of the total survey sample.

Table 7

Academic discipline of student survey responses

Academic Discipline	Course Prefix	Survey Respondents		Total Population		Percent Difference
		Frequency	Percent	Frequency	Percent	
Arts & Humanities	ART, ASL, CST, FRE, GER, HUM, ITA, MUS, PHI, REL, SPA	60	16.67	486	16.27	0.4
Business	ACC, AST, BUS, MKT	23	6.39	204	6.81	0.42
Computer Technologies	ITD, ITE, ITN, ITP	15	4.17	118	3.93	0.24
Education	CHD, EDU, SDV	18	5	128	4.28	0.72
English	ENG	24	6.67	226	7.57	0.9
Heath Technologies other than Nursing	PED, HIM, HLT	32	8.89	497	16.65	7.76
Natural & Physical Sciences	BIO, CHM, GOL, MTH, NAS, PHY	88	24.44	615	20.58	3.86
Nursing	NUR, PNE	6	1.67	17	0.58	1.09
Social Sciences	ECO, GEO, HIS, LGL,PLS, PSY, SOC	94	26.11	692	23.17	2.94
Total		360	100	2983	100	0

For the most part, the percentages of survey response rates within each academic

discipline were similar to the percentages of total students enrolled in the same academic

discipline. For example, Business students made up approximately 6.81% of the total enrollment for all online courses and 6.39% of the total survey responses. On average, survey response rates for each academic discipline differed from the actual academic discipline enrollment rates by only 2%. Surprisingly, students enrolled in online courses described as Health Technologies other than Nursing accounted for approximately 16.65% of the total enrollment, yet accounted for only 8.89% of the survey responses, yielding a response rate of only 6.4%. In other words, the response rate for students taking Health Technologies other than Nursing classes was only half that of most of the other academic disciplines analyzed in this survey. Luckily, such a disparaging ratio of enrollment to contribution was unique to this academic discipline. On the other hand, students enrolled in the Nursing academic discipline accounted for approximately half a percent, yet their responses accounted for over one and a half percent of the total survey responses. The Nursing academic discipline survey response rate was 35%, approximately three times as high as most of the disciplines.

Students' Perceptions of Online Course Quality

Research question one

What factors impact students' perceptions of online course quality with regard to benchmarks for Teaching/Learning, Course Structure, and Student Support?

This research question was answered by measuring the impact of each demographic, age, enrollment status, and previous experience with online college coursework, as well as academic discipline, on students' perceptions of the IHEP benchmarks for Teaching/Learning, Course Structure, and Student Support. Since each of the three demographic variables in this study consisted of only two choices each (i.e.,

students' age was either traditional or nontraditional, enrollment status was either full time or part time, and previous exposure to online college courses was either yes or no), independent samples t-tests were used to compare the impact of each demographic on students' perceptions of online course quality with respect to each of the three IHEP benchmarks. Results from these analyses are listed below.

IHEP Teaching/Learning benchmarks

There was no significant difference in the perceptions of Teaching/Learning benchmarks for traditional aged (M = 1.6, SD = 0.5) and nontraditional aged (M = 1.61, SD = 0.55) students; t(358) = -0.18 , p = 0.86. These results suggest that students' age does not affect their perceptions of how important teaching and learning topics impact online course quality. There was no significant difference in the perceptions of Teaching/Learning benchmarks for part time (M = 1.61, SD = 0.52) and full time (M = 1.61, SD = 0.54) students; t(358) = 0.06, p = 0.96. These results suggest that students' enrollment status does not affect their perceptions of quality with regards to the IHEP teaching and learning benchmarks. As for the effects of previous exposure to online college coursework, no significant difference in the perceptions the Teaching/Learning benchmarks between students that had not previously taken online college courses (M = 1.67, SD = 0.54) and those who had previous experience with online college courses (M = 1.59, SD = 0.52); t(358) = 1.24, p = 0.22. Results from these tests are summarized in Table 8.

Levene's test of homogeneity of variances was significant for these data, thereby violating the assumption of significant difference and preventing the use of ANOVAs (f,351 = 3.92 p<0.05). In light of these results, a Welch Robust test of equality of means

was calculated and found to be not significant, p = 0.67, indicating no significant difference between groups based on the IHEP Student Support benchmarks (f(df 0.72 p>0.05)).

Table 8

T-test results for the effect of demographic variables on IHEP Teaching / Learning benchmark quality perceptions.

IHEP Teaching / Learning Benchmark Variable	N	*M*	*SD*	*t*	*df*	*p*
Age						
18-24	145	1.6	0.5	358	-0.18	0.86
25+	215	1.61	0.56			
Enrollment Status						
Part Time	182	1.61	0.52	358	0.06	0.96
Full Time	178	1.61	0.54			
Previous Online Coursework Experience						
None	276	1.67	0.54	358	1.24	0.22
Some	84	1.59	0.52			

IHEP Course Structure benchmarks

     There was no significant difference in the perceptions of the IHEP Course Structure benchmarks for traditional aged students (M = 1.54, SD = 0.47) and

nontraditional aged students (M = 1.55, SD = 0.51) students; t(358) = -0.11 , p = 0.91. These results suggest that students' age does not affect their perceptions of how important course structure topics impact online course quality. There was no significant difference in the perceptions of course structure benchmarks for part time (M = 1.56, SD = 0.5) and full time (M = 1.54, SD = 0.48) students; t(358) = 0.43, p = 0.67. These results suggest that students' enrollment status does not affect their perceptions of quality with regards to the IHEP Course Structure benchmarks. As for the effects of previous exposure to online college coursework, no significant difference in the perceptions the course structure benchmarks between students that had not previously taken online college courses (M = 1.58, SD = 0.55) and those who had previous experience with online college courses (M = 1.54, SD = 0.47); t(358) = 0.75, p = 0.46. Results from these tests are summarized in Table 9.

Table 9

T-test results for the effect of demographic variables on IHEP Course Structure

benchmark quality perceptions.

IHEP Course Structure Benchmark Variable	N	M	SD	t	df	p
Age						
18-24	145	1.54	0.47	358	-0.11	0.91
25+	215	1.55	0.51			
Enrollment Status						
Part Time	182	1.56	0.5	358	0.43	0.67
Full Time	178	1.54	0.48			
Previous Online Coursework Experience						
None	276	1.58	0.55	358	0.75	0.46
Some	84	1.54	0.47			

Levene's test of homogeneity of variances was significant for these data, thereby violating the assumption of significant difference (f,351 = 3.77 p<0.05). In light of these results, a Welch Robust test of equality of means was calculated and found to be not significant, p = 0.44, indicating no significant difference between groups based on the IHEP Student Support benchmarks (f(df 1.12 p>0.05).

IHEP Student Support benchmarks

There was no significant difference in the perceptions of the IHEP Student Support benchmarks for traditional aged (M = 1.82, SD = 0.54) and nontraditional aged (M = 1.72, SD = 0.57) students; t(358) = 1.66 , p = 0.1. These results suggest that students' age does not affect their perceptions of how important topics concerning student support impact online course quality. There was no significant difference in the perceptions of student support benchmarks for part time (M = 1.75, SD = 0.57) and full time (M = 1.77, SD = 0.55) students; t(358) = -0.26, p = 0.8. These results suggest that students' enrollment status does not affect their perceptions of quality with regards to the IHEP Student Support benchmarks. As for the effects of previous exposure to online college coursework, no significant difference in the perceptions the course structure benchmarks between students that had not previously taken online college courses (M = 1.79, SD = 0.6) and those who had previous experience with online college courses (M = 1.75, SD = 0.55); t(358) = 0.69, p = 0.49. Results from these tests are summarized in Table 10.

Table 10

T-test results for the effect of demographic variables on IHEP Student Support

benchmark quality perceptions.

IHEP Student Support Benchmark Variable	N	*M*	*SD*	*t*	*df*	*p*
Age						
18-24	145	1.82	0.54	358	1.66	0.1
25+	215	1.72	0.57			
Enrollment Status						
Part Time	182	1.75	0.57	358	-0.26	0.8
Full Time	178	1.77	0.55			
Previous Online Coursework Experience						
None	276	1.79	0.6	358	0.69	0.49
Some	84	1.75	0.55			

Levene's test of homogeneity of variances was significant for these data, thereby violating the assumption of significant difference and preventing the use of ANOVAs (f,351 = 2.96 p<0.05). In light of these results, a Welch Robust test of equality of means was calculated and found to be insignificant, p = 0.7, indicating no significant difference between groups based on the IHEP Student Support benchmarks (f(df 0.70 p>0.05).

For each of the three demographic variables, all independent samples t tests were found to be non-significant. These results indicated no significant differences existed between mean responses to survey questions pertaining to the IHEP benchmarks for Teaching/Learning, Course Structure, and/or Student Support with regards to any of the three demographic variables investigated in this study. Originally, the factors impacting students' perceptions of online course quality according to the IHEP benchmark categories were to be analyzed according to academic discipline by means of ANOVA. However, the Levene's test of homogeneity of variances was significant for all these data, thereby violating the assumption of significant difference and preventing the use of ANOVAs to help answer research question 1.

Research question two

Do student's perceptions of quality of online courses differ among academic disciplines?

Students' overall perception of the quality of their online courses was directly measured by survey question 17: Generally speaking, the course I am evaluating for this survey is of high quality.

Differences between academic groups

Results showing students' overall perception of online course quality, as measured by survey question 17, were averaged according to academic discipline (Table 11). Overall, nursing students showed the highest level of overall course quality satisfaction, with a mean quality rating of 3.5. The academic discipline with the second highest overall level of course quality perception was Education, with a mean rating of 3.4. Slightly lower than this were Business, English, and Social Sciences, all averaging

slightly above 3. Academic disciplines with mean values below 3 included Health

Technologies Other Than Nursing, Natural and Physical Sciences, Arts and Humanities,

and Computer Technologies, listed in respective decreasing order. The Computer

Technologies academic discipline had the lowest overall rating of course quality, with a

mean of only 2.8.

Table 11

Student rating of overall course quality according to academic discipline

Academic Discipline	Mean	Std. Deviation	N
Arts and Humanities	2.95	0.902	60
Business	3.26	0.752	23
Computer Technologies	2.75	0.856	15
Education	3.4	0.821	18
English	3.24	0.723	24
Health Technologies other than Nursing	2.97	1.015	32
Natural and Physical Sciences	2.97	0.837	88
Nursing	3.5	0.548	6
Social Sciences	3.11	0.872	94
total	3.06	0.864	360

Almost two thirds of the academic disciplines (55%) had average overall course quality ratings which could be interpreted as of good quality. Heading the top of this list was Nursing, followed closely by Education, Business, English, and Social Sciences. Among the courses interpreted as of ordinary quality were Health Technologies Other than Nursing, followed by Natural and Physical Sciences, Arts and Humanities, and Computer Technologies, listed in respective decreasing order according to mean score.

A nonparametric Kruskal-Wallis test was chosen to evaluate the data set because there were more than two groups of academic disciplines and some data cells had less than 5 survey responses. Results from this test are presented in table 12.

Table 12

Kruskal-Wallis nonparametric test results

Null Hypothesis	Test	Sig.	Decision
The distribution of Q17 is the same across academic disciplines	Independent Samples Kruskal-Wallis Test	0.24	Retain the null hypothesis

Results from the Kruskal-Wallis test show the mean responses to question 17 between academic disciplines are not significantly different, $P = 0.24$, $p > 0.05$.

Research question three.

What is the impact of student demographics on perceptions of quality of online courses?

To answer this question, each category of student age, enrollment status, and previous experience with online coursework was tested for relationships with students' perceptions of online course quality by means of chi-square analysis. Student perception

means for the overall course quality (survey item 17) were checked for statistically significant differences between actual and predicted values for each student demographic variable. This means of analysis was preferred over independent T-tests due to the fact that the data set contained ordinal, e.g. Likert scale ratings, instead of interval or ratio data.

In regards to student age, the association between traditional age students and nontraditional age students was not significant, (3, n = 360) = 0.63, p < 0.05. These results show there is no statistically significant difference in the perceived quality of students' online courses, overall. With regard to student enrollment, no significant difference was found in the perceptions of online course quality between students enrolled part time and full time, (3, n = 360) = 5.24, p < 0.05. These results suggest enrollment status does not significantly influence student perceptions of overall course quality in online courses. Results concerning the possible influence of previous online coursework on students' perceptions of overall online course quality also appeared not to be significant, (3, n = 360) = 6.46, p < 0.05. These results suggest previous experience with online coursework did not significantly influence students' perceptions of online course quality. Of the three demographics investigated in this study, previous exposure to online coursework had the highest chi-square value, 6.46. In relation to these three student variables, age, enrollment status, and previous online course experience, the latter of the three was most likely to have an impact on students' perception of course value or worth. In fact, if alpha was to be raised to p = 0.1, previous exposure to online coursework would in fact have been found to be a statistically significant factor

influencing the perceptions of online course quality for community college students.

Summary results from the chi square analyses are show in Table 13.

Table 13

Chi square analyses of student demographics on perceptions of quality in online courses

Variable	Value	df	Sig.
Age	0.63	3	0.89
Enrollment Status	5.24	3	0.16
Previous Online Coursework Experience	6.46	3	0.09

Survey Reliability and Consistency

Cronbach's Alpha was used to check the level of internal consistency among the set of questionnaire items. For these analyses, all the questions were recorded on a Likert scale. Cronbach's alpha is especially useful in questions recorded on a Likert scale or a survey questionnaire as it efficiently gauges the strength of the survey reliability. Since the survey questions regarding online course quality were grouped into three IHEP quality benchmark subtopics, teaching/learning, course structure, and student support, internal consistency was checked separately for each of these subtopics. Thus, three separate Cronbach's alphas were calculated.

In general, a Cronbach's alpha at or above 0.7 is considered high and indicates strong internal consistency among the answered questions. Essentially this means that

respondents who tended to select high scores for one item also tended to select high scores for other similar items; similarly, respondents who selected low scores for one questions also selected low scores for the other questions within the same IHEP quality benchmark subtopic. Thus, knowing the score for one question in a subtopic would enable one to predict with some degree of accuracy, the possible answer, or score, for another question within the same subtopic. If Cronbach's alpha is low, this ability to predict scores would not be possible.

The Cronbach's alpha for the first IHEP quality benchmark, Teaching/Learning, was equal to 0.675 and can therefore be termed as moderate to high, if not high. This means that there is a good amount of internal consistency in the answers given for the three survey questions, numbers 5, 6, & 7 which correspond to this subtopic. If any of the three survey items were removed, Cronbach's alpha calculations resulted in lower values, therefore providing logical justification to keep all three items in the questionnaire.

The second IHEP quality benchmark, Course Structure, showed the highest level of internal consistency of all three benchmark topics and was measured at 0.837. Such a high value indicates high internal consistency for all five survey questions, numbers 8, 9, 10, 11, & 12, within the Course Structure topic. Removal of any of the five questions again resulted in a lower value, justifying the inclusion of each survey item.

The third and final IHEP quality benchmark, Student Support, also indicated a high level of internal consistency. The four survey items, questions 13, 14, 15, & 16, comprising the Student Support quality topics had a Cronbach's alpha of 0.832. Like the other two quality benchmark topics, all four survey items were justified due to the fact that any question deleted from this set lead to a decreased Cronbach's alpha.

CHAPTER V

CONCLUSION

In recent years, the explosion of new distance education programs has created a myriad of different online courses, each with its own unique design and implementation. Within the sea of online academic institutions, some are perceived by students as providing high levels of quality while those offering online courses perceived as dubious in quality are commonly referred to as "diploma mills". Student perceptions of online course quality play a key role in the reputation of the academic institution, as well as influence the motivation to pursuit and obtain higher education.

The diversity in higher education online courses presents a need for more accountability and better measures of course quality. In response to this necessity, the Institute for Higher Education Policy (IHEP), with help from the National Education Association (NEA) and Blackboard Inc., has constructed a comprehensive list of quality benchmarks for distance learning in higher education. These benchmarks may be useful to government policymakers, institutional decision makers, faculty, and students, as well as others with an interest in ensuring that the highest quality of higher education possible is being provided via Internet-based programs (IHEP, 2000). In order for an online course to be recognized as a quality course, it should meet these specific IHEP benchmark criteria (Hensrud, 2001).

The purpose of this quantitative study was to compare student perceptions regarding the quality of online courses between academic disciplines at a midsized community college. An online student survey adapted from both Yang (2006) and Scanlan (2003) was used to collect data on students' perceptions of quality in web-based

online classes by reporting how important each of the IHEP benchmarks were to the overall quality of their online course (Appendix D). Basic demographic data on student age, enrollment status, and online course academic discipline enrollment were also collected in this survey to help explore the patterns in student perception. Examining perceptions of a target population is a widely used strategy based on the premise that perceptions matter and often influence behaviors (Jurczyk, Benson, & Savery, 2005). To further understand these perceptions, the following research questions guided this study:

1. What factors impact students' perceptions of online course quality in regards to benchmarks for Teaching/Learning, Course Structure, and Student Support?

2. Do students' perceptions of quality in online courses differ across academic disciplines?

3. What is the impact of student demographics on perceptions of quality in online courses?

The research design for this study was prospective, quantitative, and descriptive. In order to answer the research questions, the relationships between the independent variables: Teaching/Learning, Course Structure, Student Support, and Overall Course Quality were examined with the dependent variables of students' perceptions of online course quality. A total of 360 useable student survey responses were collected, accounting for a cleaned data response rate of 12.1 percent. Data were examined by means of statistical analysis using SPSS software. Independent samples t-tests, Levene's tests of homogeneity of variance, and Welch tests were used to compare the impact of each demographic on students' perceptions of online course quality with respect to each of the three IHEP benchmark categories: Teaching/Learning, Course Structure, and

Student Support. Kruskal-Wallis nonparametric tests were used to measure if students'

overall perceptions of the quality of their online courses differed across academic

disciplines. Each category of student age, enrollment status, and previous experience with

online coursework was tested for relationships with students' perceptions of online

course quality by means of chi-square analysis in an effort to measure the impact of

student demographics on perceptions of quality in online courses.

For each of the three demographic variables: age, enrollment status, and previous

exposure to online coursework, all independent samples t tests were found to be non-

significant. These results indicated no significant differences existed between mean

responses to survey questions pertaining to the IHEP benchmarks for Teaching/Learning,

Course Structure, and/or Student Support with regards to any of the three demographic

variables investigated in this study: age, enrollment status, and previous online course

experience. Results from Levene's tests of homogeneity of variance and Welch tests

analyzing the impact of each individual academic discipline on each of the three IHEP

benchmark categories: Teaching/Learning, Course Structure, and Student Support also

showed no significant differences with regards to these academic disciplines. These

results indicated no significant differences existed between mean responses to survey

questions pertaining to students' perceptions of course topics relating to the IHEP

benchmark categories and the different educational fields of study.

Although noticeable differences were reported between the levels of overall

course satisfaction between academic disciplines, results from the Kruskal-Wallis

nonparametric tests test showed the mean responses to overall course quality between

academic disciplines were not significantly different. Chi-square analysis showed no

statistically significant difference between the perceptions of overall quality in online courses in regards to age, enrollment status, and/or previous experience with online coursework. These results suggest there is no significant difference in the perceptions of online course quality between traditional and nontraditionally aged students, full time and part time students, as well as students who had previously taken online coursework and students who were taking an online course for the first time during the semester in which the survey was administered.

Findings Related to the Literature

This study adds to the literature which identifies each of the IHEP benchmark categories that can be measured by students as important factors impacting students' perceptions of online coursework. Other categories besides Student Support, Teaching/Learning, and Course Structure are most likely also important to the overall implementation of online programs; however such variables cannot be assessed by students (Jurczyk, Benson, & Savery, 2005). Although the mean scores from survey items measuring these categories did not differ significantly as in other studies (Yang, 2006), research regarding their high level of perceived importance was supported.

Other studies have used IHEP benchmarks to measure student perceptions of online course quality, but have not compared differences between academic disciplines. In a way similar to this study, Yang (2006) found that topics relating to the IHEP benchmarks for Student Support were not determined to be statistically significantly influencing factors on student's perceptions of online course quality. Unlike the current research however, Yang's (2006) study did find the combined factors of peer interactions and feedback from instructors, which fall under the IHEP category for

Teaching/Learning, in addition to Course Structure benchmark topics did impact students' perceptions on online course quality in a significant manner. Unlike the findings of the present study, Yang (2006) found that student age, as measured in part by student grade level, had a statistically significant impact on the perceived quality of students' online courses. In that study, it was found that older students tended to have a more positive attitude towards online courses quality, and were more satisfied with the quality of the online courses they took. The results implied that older students were generally more mature than traditionally aged students, and they were likely more self-motivated, committed, and self-disciplined. Although one difference between academic disciplines was found in the Yang (2006) study, all other comparisons of students' perceptions of online course quality did not differ statistically. Therefore, the majority of the results from that study were supported by the current investigation.

Jurczyk, Benson, and Savery (2002) also attempted to measure student perceptions of online course quality using the IHEP benchmarks, but due to slow response rates, they were unable to draw any statistically significant conclusions. Although no concrete implications were drawn from that study, the authors did advocate the use of the IHEP benchmarks to assess online course quality. Similarly, Harkins (2005) developed a student survey modeled after the IHEP benchmarks for quality in online education to measure both student's and faculty's perceptions of online course quality. This study differed from the current study in that the survey asked only if the benchmarks were being met, rather than determining if they were being met and if survey respondents felt they were important to online course quality. Regardless of these

differences, Harkins (2005) study showed the successful transformation of IHEP benchmarks into survey items.

In a manner similar to the current study, Scanlan (2003) designed a survey for student use that incorporated individual IHEP benchmarks for course quality along with an overall, global, measure of course quality. Various factor analysis tests showed good correlation, high reliability and internal consistency between student responses to IHEP benchmark topics and global quality ratings. In contrast to the current study, Scanlan (2003) found two different dimensions underlying student conceptions of the quality of their internet-based distance education, one related to the IHEP benchmarks for Teaching/Learning, and the other associated with provision of administrative support, a variable not measured directly in the current study.

Hutti (2007) conducted one of the most ambitious studies measuring online course quality by means of the IHEP benchmarks. In a similar manner to the current study, he designed a survey to measure which benchmarks were perceived by students as most important to providing quality in their online classes. In addition to students, his survey was also administered to faculty and staff. Results from his research indicated a remarkable cohesiveness among all respondents, faculty, staff, and students. Unlike the current study, Hutti (2007) did not examine the IHEP benchmarks for significant differences between groups, but rather ranked student responses from least important to most important. Of the ten quality benchmarks considered to be most important, six were directly related to technology, but only one of the nine least important items dealt with technology.

Interestingly, IHEP quality benchmarks commonly associated with teaching and learning without respect to learning modality were ranked of lesser importance and occurring to a lesser degree. These findings seem to indicate that the technological segment of online learning overshadows the non-technical segment. Results from this experiment do not coincide with the current study, in which the exact opposite appeared to be true. On average, a preliminary analysis of students surveyed in the current study ranked topics dealing with teacher and student interaction, explanation of the course objectives, and assessment of student motivation as the most important to providing quality in their online courses, and topics regarding technical support were ranked as of the lowest importance. Findings from the current study seem to indicate the non-technical aspects of online coursework are more important than the technical features. The student assessments of aspects most important to providing online course quality from the current study agree with Lenards (2007), in which a sense of online community and interaction was more important that issues regarding technology. These findings, however, contradict those of Hutti (2007).

Although Bennett and Bennett (2002) used the IHEP benchmarks to measure faculty perceptions of online course quality, results from this study coincided with the present study. In both studies, survey responses to the IHEP benchmarks for Teaching/Learning topics were not found to significantly contribute to perceptions of quality. Unlike the present study however, IHEP topics regarding online support were found to have a significant impact.

Many of the studies found in a review of the relevant literature deal with using the IHEP benchmarks for summative evaluations of online courses and programs (Dirk,

2010; Hensrud, 2001; Leners, Wilson, & Sitzman, 2007). Such data were collected in the present study, as each IHEP benchmark topic in the survey not only asked students if the topics were important to providing online course quality, but also if each topic was adequately being met in their online courses. Although these data were collected, this information was not useful in answering the research questions proposed in this current study and were therefore not analyzed.

The results of this study supported previous research that indicated the importance of the IHEP benchmarks relating to Student Support, Teaching/Learning, and Course Structure. Online instructors must promote interactions between themselves and students, as well as between students and their peers, as shown by the high student survey responses for these groups of questions. It is also suggested in the literature that adequate instructional design and technology support are needed to provide quality in online courses. These ideas are also supported in this study by higher than average survey responses to the perceived importance of related survey items.

For over a decade, the IHEP benchmarks have been used by researchers for both formative and summative evaluations of distance education. Many studies have adapted the IHEP benchmarks for use in student, faculty, and administrator surveys, with a great deal of success in terms of internal consistency, survey reliability, and cohesiveness among different groups of respondents. Although almost of all the studies implementing the IHEP benchmark topics as survey items have been useful, a great deal of diversity exists in the conclusions from these studies. Among the variety of outcomes, some studies coincide with the findings presented in the current study, while others seem to be contradictory. Clearly, more research is necessary if any attempts to draw definitive

conclusions regarding the factors which influence student perceptions of online course quality are to be made.

Unanticipated findings

Although student survey responses varied dramatically, none of the statistical analyses cross referencing the averages of these responses yielded any statistically significant results. In addition to no significant differences between overall assessments of the quality of students' online courses between academic disciplines, no statistically significant differences were found between the IHEP benchmark categories regarding topics in Teaching/Learning, Course Structure, and/or Student Support. Results investigating the possible differences in student perceptions of online course quality in relation to student age, enrollment status, and previous experience with online college coursework were also surprising. Surprisingly, no statistically significant differences were found when comparing these groups in relation to their averages for overall course quality, as well as the IHEP benchmark topics of Teaching/Learning, Course Structure, and/or Student Support. Since the data set from the student survey responses was analyzed using a wide variety of methods, from many different points of reference, the lack of statistically significant differences found in this investigation was highly unanticipated.

One possible reason for this unanticipated lack of statistically significant differences between student groups may have been due to the use of a Likert scale with only 4 choices. Initially, it was thought that a survey using a Likert scale with an even number of options would force students to ultimately decide if they agreed or disagreed with each topic, even if only slightly, and would therefore avoid the easy choice of the

middle of the road option found on oddly-numbered scales, such as a five-point scale. It was originally thought that if given such an option, students would choose to "neither agree nor disagree", rather than commit to a stronger opinionated response. Although the four point Likert scale used in the present study forced students to choose an opinionated stance for each topic, it ultimately made the response averages less diverse. This lack of choice diversity, ultimately coded to values ranging from one to four instead of one to five, could have possibly led to the statistically similar averages found in the current study.

Interestingly, one group of survey respondents had a much higher than average response rate and also showed higher than average perceptions of quality. Students enrolled in online nursing courses were more than twice as likely to respond to the survey, when compared to other academic disciplines. While nursing students showed a 30% response rate to the survey, students enrolled in courses grouped together as Health Technologies other than Nursing yielded the lowest response rate of only 5.8%. Due to the voluntary nature of survey responses, it is possible that sampling biases existed. Only students with strong opinions about their online coursework, either positive or negative, may have been motivated to take the time to respond to the survey. Also, due to the relatively similar positive survey responses, the age old saying "if you don't have anything nice to say, don't say anything at all" may have been taken into consideration.

Conclusions

Implications and recommendations

According to the results of the present study, students' perceptions of quality in online college coursework tend to be homogenous. Regardless of age, enrollment status,

previous experience with online coursework, or academic discipline, students surveyed in the current study had similar opinions of what was needed in their online courses to provide a valuable learning experience. Although much research has been conducted addressing the special circumstances and demands of various coursework, not to mention the unique situations of different student groups, the conclusions drawn by this research suggest that the standards for online education are constant, regardless of students' background or the specific content delivered in the course. The data suggest that ultimately, the factors which influence student perceptions of online course quality may be similar to Maslow's (1943) theory of human motivation. Implications from the current research suggest that no matter what the course is about, if certain basic pedagogical needs are not met, the actual information presented in the online course is unimportant. After all, it is quite easy to assume the characteristics that make an online English class successful are likely to be observed in a quality online science course.

Although the community college system serves a broad array of different students, students earning an associate's degree have only had up to two years to take courses and have therefore not had a chance to fully specialize in an undergraduate major. Most of the courses offered in community college programs are 100-level, introductory classes. Many of these introductory classes, such as general biology or introductory foreign language courses, are required for almost all majors and do not therefore serve a particular specific demographic of the student body. Clearly, some differences can be found between students enrolled in graduate programs for quantum physics versus Kinesiology, but these differences, and the perceptions that accompany them, may not yet be apparent in the first two years of higher education. Adding further

to the homogeneity of the student body is the possibility that students may have enrolled in their online course solely because there were no other options for them to choose. For example, if a student registers late in the registration period, it is possible that all the face-to-face sections for a course could be unavailable, or that some courses are only offered online. These circumstances could lead to a higher than usual diversity in the online student body, which could obscure the actual perceptions of students who truly wish to enroll in online coursework.

Findings in this study regarding the lack of significant differences between the IHEP benchmark categories of Student Support, Teaching/Learning, and Course Structure suggest that each of these categories are not mutually exclusive from one another. For example, it is possible that online students may rely solely on their online instructors to assist them for their entire list of needs. Regardless if they need help with choosing appropriate electronic journal articles, accessing library resources online, have specific problems concerning the content of the course, or experience technical problems, students may first seek the help of their online instructors rather than a librarian or technical service representative. Due to this multifaceted role of the online course instructor as teacher, librarian, and tech service operator, a delay in the instructor's response rate to a student may be interpreted as a poor indicator of quality with regards to both Student Support and Teaching/Learning. It is reasonable to make the assumption that when an online course is not well designed, there could be a lack of peer interaction. Therefore, a strong similarity between topics addressed by Course Structure and Teaching/Learning may exist.

The relatively high perceived level of importance to quality for each IHEP benchmark implies that all of the benchmarks must be addressed in the deployment of an online course. Each online course should be evaluated holistically, due to the fact that each benchmark for quality was perceived by students as important and their importance does not appear to vary significantly between students or academic disciplines. For these reasons, all online courses should be checked for compliance with the quality standards set forth by IHEP.

The current study suggests administrators can use the same criteria to make both formative and summative evaluations of their institutions' online course offerings and programs. Only when the knowledge of what constitutes students' perceptions of a good quality online course is known, can the school prepare a comfortable online learning environment and educators improve their online teaching. Thus, quality online learning opportunities for students can be ensured (Yang, 2006). The standards by which different online classes and programs are measured can be standardized, as the research supports the idea that even if the content differs broadly, students' expectations of how the course should be delivered remain constant. These results should also be considered by course instructors, who may have preconceived notions that it may be permissible to omit certain criteria covered by the IHEP benchmarks due to the assumed special circumstances and special demands of the individual courses they teach. In the same manner, administrators should be advised to present these findings to instructors who wish to design and implement courses that do not incorporate all of the quality standards established by IHEP.

Recommendations for further research

Several recommendations for future research can be made as a result of this research. After initial survey questions collected students' demographic data, the majority of the survey items explored responses to the IHEP benchmarks for online course quality. Students were asked to respond not only to how well they thought each benchmark item contributed to the quality of their online courses, but also in regards to how well each of the benchmark topics were actually being fulfilled in their online courses. Although these data regarding the degree to which each benchmark was being satisfied were collected, they were not analyzed in the current study. Further research should focus on the incorporation of this data to help answer new additional research questions. Through further statistical analyses, some aspects of students' perceptions of online course quality could be measured by comparing how well each benchmark item was being met to that items reported importance to providing course quality. In addition, this comparison could be analyzed in terms of the reported level of overall course quality.

In addition to analyzing the theoretical importance of each IHEP benchmark to providing quality in online coursework, the data set allows for a correlation between the perceived level of how well each benchmark was being met in each online course and students' overall level of perceived quality for the course they were taking. More specifically, a correlation between how well each benchmark was actually being met in each class compared to each benchmark's perceived importance to providing quality could be established. By comparing the cohesiveness between actual performance and ideal importance of the IHEP benchmarks, a new analysis of student perception of online courses could be conducted. Such an investigation could provide deeper insight into

precisely which benchmarks are of most importance to contributing to the overall quality of an online course.

Additional research is also needed to determine whether all students' expectations of perceived online course quality differ significantly. Just as there may be differences between the perceived quality of an online course between faculty and students, each student may themselves understand and therefore interpret the term "quality online course" in a vastly different manner. Since students view the quality of online courses as a reflection of the instructor teaching the course rather than the course itself, it is conceivable that students and faculty may have different views of what constitutes "quality" (Yang, 2006). In addition, further research needs to be conducted to determine students' awareness of the student support and technical support services available and provided by the academic institution. It is possible when asked about the relative importance of certain support services, students may not fully understand what these services entail and therefore do not appreciate their true importance.

Although no significant differences existed between any of the variables explored in this study, the relative importance of each IHEP benchmark in relation to one another could be measured in more detail. Rather than determine if significant differences existed between groups, new analyses could be conducted to determine which of the IHEP benchmark topics had the strongest effect on determining online course quality and which topics had the least effect. Such analyses have been conducted by other researches with remarkable success.

As mentioned earlier, the use of a four point Likert scale may have led to less accurate data collection. It is possible that a five point Likert scale, providing a middle of

the road opinion, may have helped show significant differences between the groups and demographics analyzed in this study. The effects of using a five point Likert scale is unclear however, as Weisberg (2005) noted that the use of a Likert scale with a neutral category or middle option is still up for debate and that similar surveys using different Likert scales can affect responses. For this reason, the replication of the current study with a five point Likert scale, instead of four, is recommended.

As with all studies that sample students from only one institution, the results from this study may not be broadly applicable to other institutions of higher education. For this reason, reproduction of this study should be piloted in other community colleges of different sizes and geographical locations. Replication of this study in different settings or perhaps during different times during the semester may provide interesting and useful results.

Concluding Remarks

Throughout the course of this investigation, a general pattern was noticed that the majority of the survey respondents responded positively to the survey items, indicating an overall high level of online course satisfaction and perceived quality. A practical conclusion which can be drawn from the encouraging survey item averages is that the IHEP benchmarks measured in this study are in fact comprehensive and integral components to the successful design and implementation of an online course. Therefore, all stakeholders in higher education must recognize and respect of the importance of proper course structure, student and instructor interactions and expectations, and student support.

The results from this survey may be skewed however, due to the voluntary nature of the survey participation. It is possible that sampling bias may be present; suggesting the results display the perceptions of only the students motivated enough to complete the survey. If this were true, students in this study are not necessarily representative of the entire online student population. Therefore, the results and conclusions from this study might differ if all the students enrolled in online courses were required to complete the survey. In addition, the voluntary nature of the survey contributed to the relatively small number of useable survey responses (N=360), limiting both the statistical power of the analyses as well as the overall generalizability of the results.

REFERENCES

American Educational Research Association. (1999). Standards for educational and

psychological testing. Washington, DC.

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching

presence in a computer conferencing context. *Journal of Asynchronous Learning

Networks, 5*(2). Retrieved February 20, 2011 from

http://www.aln.org/alnweb/journal/jalnvol5issue2v2.Htm

Barfield, R. L. (2003). Students' perceptions of and satisfaction with group grades and

the group experience in the college classroom. *Assessment and Evaluation in

Higher Education, 28*(4), 355-369.

Belli, G. (2008). Nonexperimental quantitative research. Retrieved May 31, 2011, from

http://media.wiley.com/product_data/excerpt/95/04701810/0470181095-1.pdf

Ben-Ari, R., & Eliassy, L. (2003). The differential effects of the learning environment on

student achievement motivation: A comparison between frontal and complex

instruction strategies. *Social Behavior and Personality, 31*(2), 143-165.

Bennett, J. F., & Bennett, L. B. (2002). Assessing the quality of distance education

programs: The faculty's perspective. *Journal of Computing in Higher Education,

13*(2), 71-86.

Bland, J. M., & Altman, D. G. (1997). Statistics notes: Cronbach's alpha. *BMJ

314*(7080). Retrieved March 16, 2011, from

http://www.bmj.com/content/314/7080/572.full

Bloom, B. (1956). *Taxonomy of Educational Objectives: The classification of

Educational Goals, handbook 1: Cognitive Domain.* New York: McKay.

Carr, S. (2000-a). Even public speaking can be taught online. Retrieved May 30, 2011, from http://chronicle.com/article/Even-Public-Speaking-Can-Be/21943

Carr, S. (2000-b). Science instructors ask: Can you teach students at a distance how to use microscopes? *The Chronicle of Higher Education, 46*(32), 62.

Cejda, B. D. (2007). Distance education in rural community colleges. *Community College Journal of Research and Practice, 31*, 291-303.

Cereijo, P., & Victoria, M. (2006). Attitude as predictor of success in online training. *International Journal on E-Learning, 5*(4), 623-639.

Chapman, B. F., & Henderson, R. G. (2010). E-learning quality assurance: A perspective of business teacher educators and distance coordinators. *Delta Pi Epsilon Journal, 52*(1), 16-31.

Chickering, A. W., & Ehrmann, S. C. (1996). Implementing the seven principles: Technology as a lever. *American Association of Higher Education Bulletin, October*, 3-6.

Chickering, A., & Gamson, Z. (1987). Seven principles for good practice in undergraduate education. *American Association of Higher Education Bulletin, March*, 3-6.

Conrad, D. (2002). Engagement, excitement, anxiety and fear: Learners' experiences of starting an online course. *American Journal of Distance Education, 16*(4), 205-226.

Coose, C. S. (2010). Distance nursing education in Alaska: A longitudinal study. *Nursing Education Perspectives*. Retrieved February 2, 2011, from http://www.faqs.org/periodicals/201003/2021688811.html

Council of Regional Accrediting Commissions. (2000). *Statement of the regional accrediting commissions on the evaluation of electronically offered degree and certificate programs and guidelines for the evaluation of electronically offered degree and certificate programs*. Retrieved May 25, 2011, from http://www.wiche.edu/telecom/guidelines.htm

Creswell, J. (2003). Research design: *Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: Sage

Crotty, T. (2000). Constructivist theory unites distance learning and teacher education. Retrieved May 28, 2011, from http://edie.cprost.sfu.ca/it/constructivist-learning

Curtin, R., Presser, S., & Singer, E. (2000). The effects of response rate changes on the index of consumer sentiment. *Public Opinion Quarterly, 64*(4), 413-428.

Curtis, D., & Lawson, M. (2001). Exploring online collaborative learning. *Journal of Asynchronous Learning Networks, 5*(1), 18-35.

Dabaj, F., & Basak, H. (2008). The role of gender and age on students' perceptions towards online education. Case study: Sakarya University, Vocational High School. *Proceedings of World Academy of Science, Engineering and Technology. 28*, 441-444.

DeBiase, D. (2004). The impact of increasing enrollment of faculty workload and student satisfaction over time. *Journal of Asynchronous Learning Network, 8*(2), 45-60.

Dennen, V. P., Darabi, A. A., & Smith, L. J. (2007). Instructor-learner interaction in online courses: The relative perceived importance of particular instructor actions on performance and satisfaction. *Distance Education, 28*(1), 65-79.

Dobbs, R. R., Waid, C. A., & del Carmen, A. (2009). Students' perceptions of online

courses: The effect of online course experience. *The Quarterly Review of*

Distance Education, 10(1), 9-26.

Dirk, D. (2010). Online learning: Quality benchmarks. Unpublished doctoral dissertation,

Pepperdine University, Malibu, CA.

Dirr, P. J. (1999). Putting principles into practice: Promoting effective support services

for students in distance learning program. Retrieved February 2, 2011, from

http://www.wcet.info/projects/studentservices/Survey%20Report.pdf

Dziuban, C., & Moskal, P. (2001). *Emerging research issues in distributed learning.*

Paper delivered at the 7th Sloan-C International Conference on Asynchronous

Learning Networks, Orlando, FL.

Fearing, A., & Riley, M. (2005). Graduate students' perceptions of online teaching and

relationship to preferred learning styles. *Medsurg Nursing, 14*(6), 383-389.

Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2004*). Program evaluation:*

Alternative approaches and practical guidelines (3rd ed.). NY: Pearson

Education, Inc.

Glass, J. C., & Harrington, A. R. (2002). Academic performance of community college

transfer students and "native" students at a large state university. *Community*

College Journal of Research and Practice, 26, 415-430.

Goldsborough, R. (2008). Rise of social networking underscores generational digital

divide. *Community College Week, 21*(3), 15.

Gunawardena, C. & Zittle, F. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education, 11*(3), 8-26.

Grant, M. R., & Thorton, H. R. (2007). Best practices in undergraduate adult-centered online learning: Mechanisms for course design and delivery. *MERLOT Journal of Online Learning and Teaching, 3*(4), 346-356.

Halsne, A. M., & Gatta, L. A. (2002). Online versus traditionally-delivered instruction: A descriptive study of learner characteristics in a community college setting. *Online Journal of Distance Learning Administration, 5*(1).

Hara, N., & Kling, R. (2000). Students' distress with a web-based distance education course. *Information, Communication & Society, 3*(4), 557-579.

Harkins, C. G. (2005). *Online education in the college of education and human service professions: Assessment of quality benchmarks.* Unpublished doctoral dissertation, University of Minnesota, Duluth, MN.

Harvey, L. (2009). Analytic quality glossary. Retrieved May 21, 2011, from http://www.qualityresearchinternational.com/glossary/

Hensrud, F. C. (2001). *Quality measures in online distance education at a small comprehensive university.* Unpublished doctoral dissertation, University of Minnesota, Deluth, MN.

Hermon, D. A., & Davis, G. A. (2004). College student wellness: A comparison between traditional- and nontraditional-age students. *Journal of College Counseling, 7,* 32-39.

Holbrook, A., Krosnick, J., & Pfent, A. (2007). The Causes and Consequences of Response Rates in Surveys by the News Media and Government Contractor Survey Research Firms. In Advances in telephone survey methodology, ed. Lepkawski, J. M., Tucker, N. C., Brick, J. M., De Leeuw, E. D., Lavarakas, P. J., Sangster, R. L. New York: Wiley.

Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *The Internet and Higher Education, 10*(4), 245-260.

Honzik, M., & MacFarlane, J. (1973). Personality development and intellectual functioning from 21 months to 40 years. In L. F. Jarvik, C. Eisdorfer, & J. E. Blum (Eds.), *Intellectual functioning in adults.* NY: Springer.

Howland, J.L., & Moore, J.L. (2002). Student perceptions as distance learners in internet-based courses. *Distance Education, 23*(2), 183-196.

Hill, Y., Lomas, L., & MacGregor, J. (2003). Students' perceptions of quality in higher education. *Quality Assurance in Education, 11*(1), 15-20.

Huang, H. M. (2002). Towards constructivism for adult learners in online learning environment. *British Journal of Education Technology, 33*(1), 27-38.

Huckstadt, A., & Haynes, K. (2005). Evaluation of interactive online courses for advanced practice nurses. *Journal of the American Academy of Nurse Practitioners, 17*(3), 85-89.

IHEP. (1999). *What's the difference? A review of contemporary research on the effectiveness of distance learning in higher education.* Retrieved November 5, 2010, from http://www.ihep.org/assets/files/publications/s-z/WhatDifference.pdf

IHEP. (2000). *Quality on the line.* Retrieved November 5, 2010, from

    http://www.ihep.org/press-room/news_release-detail.cfm?id=142

Isman, A., Dabaj, F., Altinay, Z, & Altinay, F., (2004). The evaluation of students'

    perceptions of distance education. *The Turkish Online Journal of Educational*

    Technology, 3(3). Retrieved February 1, 2011 from

    http://www.tojet.net/articles/338.pdf

Janicki, T., & Liegle, J. O. (2001). Development and evaluation of a framework for

    creating web-based learning modules: A pedagogical and systems perspective.

    Journal of Asynchronous Learning Networks, 5(1), 58-84.

Jurczyk, J., Kushner Benson, S. N., & Savery, J. R. (2004). Measuring student

    perceptions in web-based courses: A standards-based approach. *Online Journal of*

    Distance Learning Administration, VII(IV).

Justice, E. M., & Dornan, T. M. (2001). Metacognitive differences between traditional-

    age and nontraditional-age students. *Adult Education Quarterly, 51*(3), 236-249.

Kilic-Cakmak, E., Karatas, S., & Ocak, M. A. (2009). An analysis of factors affecting

    community college students' expectations on e-learning. *The Quarterly Review of*

    Distance Education, 10(4), 351-361.

Kim, M., & Hannafin, M. (2004). Designing online learning environments to support

    scientific inquiry. *The Quarterly Review of Distance Education, 5*(1), 1-10.

Kinley, E. R. (2001). *Implementing distance education, the impact of institutional*

    characteristics: A view from the department chair's chair. Unpublished doctoral

    dissertation, University of Nebraska, Lincoln, NE.

Konings, K. D., Brand-Gruwel, S., & van Merrienboer, J. J. G. (2005). Towards more powerful learning environments through combining the perspectives of designers, teachers, and students. *British Journal of Educational Psychology, 75*(4), 645-660.

Koohang, A. (1989). A study of attitudes toward computers: Anxiety, confidence, liking, and perception of usefulness. *Journal of Research on Computing in Education, 22*(2), 137-150.

Koohang, A. (2004). Students' perceptions toward the use of the digital library in weekly web-based distance learning assignments portion of a hybrid programme. *British Journal of Educational Technology, 35*(5), 617-626.

Kress, A. M. (2006). Identifying what matters to students: Improving satisfaction and defining priorities at Santa Fe Community College. *New Directions for Community Colleges, 134,* 37-46.

Kuong, H.C. (2009). *An exploratory case study of students' perceptions of online graduate education.* Unpublished doctoral dissertation. University of Northern Iowa, Cedar Falls, IA.

Lee, I. (2004). Searching for new meanings of self-regulated learning in e-learning environments. In L. Cantoni & C. McLoughlin (Eds.), *Proceedings of world conference on educations multimedia, hypermedia and telecommunications* 2004 (pp. 3929-3934). Chesapeake, VA: AACE. Retrieved April 8, 2011, from http://dasan.sejong.ac.kr/~inlee/set/articles/searching_040426.pdf

Lee, J.W. (2010). Online support service quality, online learning acceptance, and student satisfaction. *Internet & Higher Education, 13*(4), 277-283.

Legutko, R. S. (2007). Face to face or cyberspace: Analysis of course delivery in a

    graduate educational research course. *MERLOT Journal of Online Learning and*

    Teaching, 5(3), 288-294.

Lei, S. A., & Gupta, R.K. (2010). College distance education courses: Evaluating benefits

    and costs institutional, faculty and students' perspectives. *Education, 1*(4), 616-

    631.

Lenards, N. (2007). *Student perceptions of an online medical dosimetry program.*

    Unpublished doctoral dissertation, University of Wisconsin, Stout, WI.

Leners, D. W., Wilson, V. W., & Sitzman, K. L. (2007). Twenty-first century doctoral

    education: Online with a focus on nursing education. *Nursing Education*

    Perspectives, 28(6), 332-336.

Lord Fairfax Community College. (2010). *What is elearning? Instructional technology*

    and distance learning office. Retrieved September 12, 2010, from

    http://www.lfcc.edu/current-students/academic-information/distance-

    learning/elearning-at-lfcc/what-is-elearning/index.html

MacQueen, H., & Thomas, J. (2009). Teaching biology at a distance: Pleasures, pitfalls,

    and possibilities. *The American Journal of Distance Education, 23*, 139-150.

Mager, R. (1962). *Preparing instructional objectives.* Palo Alto, CA: Fearon Publishers

    Inc.

MarylandOnline. (2006). *Research literature and standards sets support for Quality*

    Matters review standards. Retrieved April 20, 2011, from

    http://www.qmprogram.org/files/matrix.pdf

MarylandOnline. (2010). *Quality Matters Program.* Retrieved April 20, 2011, from

    http://www.qmprogram.org/about

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-

    396.

McGregor, E.N., & Attinasi, L.C. (1998, October). *The craft of benchmarking: Finding*

    and utilizing district-level, campus- level, and program-level standards. Paper

    presented at the Rocky Mountain Association for Institutional Research Annual

    Meeting, Bozeman, MT.

Meyer, K. A. (2002). *Quality in distance education: Focus on online-line learning.* San

    Francisco, CA: Jossey-Bass.

Miller, G. A. (1956). The magic number seven, plus or minus two: Some limits on our

    capacity for processing information. *The Psychological Review, 63*(2), 81-97.

Militiadou, M., & Savenye, W. C. (2003). Applying social cognitive constructs of

    motivation to enhance student success in online distance education. *Association*

    for the Advancement of Computing in Education Journal, 11(1), 78-95.

Moore, M. G. (1989). Three types of interaction. *The American Journal of Distance*

    Education, 3(2), 1-6.

Moore, M., & Kearsley, G. (2005). *Distance education: A systems view* (2nd ed.). CA:

    Thomson Wadsworth.

National Center for Education Statistics. (1997). *Median age of enrolled students and the*

    percent of enrolled students who are under 25 in Title IV eligible degree-granting

    institutions, by student level, attendance status, and sex; 50 states and the District

    of Columbia. Retrieved April 3, 2011, from http://nces.ed.gov

Ni, S., & Aust, R. (2008). Examining teacher verbal immediacy and sense of classroom

    community in online classes. *International Journal on E-learning, 7*(3), 477-498.

Nicosia, G. (2005). Developing an online writing intensive course: Will it work for public

    speaking? *International Journal of Instructional media, 32,* 2.

Northrup, P. T. (2002). Online learners' preferences for interaction. *Quarterly Review of*

    Distance Education, 32, 219-226.

Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace:*

    Effective strategies for the online classroom. San Francisco, CA: Jossey-Bass.

Phipps, R. A., & Merisotis, J. P. (2000). Quality on the line: Benchmarks for success in

    Internet-based distance education. Washington, DC: Institute for Higher

    Education Accreditation. Retrieved March 3, 2011, from

    http://www.ihep.com/pubs/bed/difference.pdf

Pittinsky, M., & Chase, B. (2000). Foreword in Quality on the Line: Benchmarks for

    success in Internet-based distance education. Washington, DC: Institute for

    Higher Education Accreditation. Retrieved February 28, 2011, from

    http://www.ihep.org/pubs/pdf/quality.pdf

Prohaska, V., Morrill, P., Atiles, I., & Perez, A. (2001). Academic procrastination by

    nontraditional students. *Journal of Social Behavior and Personality, 16*(1), 125-

    135.

Price, I. (2000). Testing the significance of Pearson's R. Retrieved March 20, 2011, from

    http://www.une.edu.au/WebStat/unit_materials/c6_common_statistical_tests/test_

    signif_pearson.html

Pugh, G., Coates, G., & Adnett, N. (2005). Performance indicators and widening

　participation in UK higher education. *Higher Education Quarterly, 59*(1), 19-39.

Reuter, R. (2009). Online versus in the classroom: Student success in a hands-on lab

　class. *The American Journal of Distance Education, 23,* 151-162.

Richardson, J. T. E., & King, E. (1998). Adult students in higher education: Burden or

　boon? *Journal of Higher Education, 69,* 65-88.

Rose, H. P. (2007). *Stakeholders' perceptions of the JBTE teaching-practice*

　benchmarks: A descriptive exploration of two teachers' colleges in Jamaica.

　Unpublished doctoral dissertation, Andrews University, Barrien Springs, MI.

Rovai, A. P., Baker, J. D., & Cox, W. F. (2008). How Christianly is Christian distance

　higher education? *Christian Higher Education, 7.* Retrieved March 30, 2011,

　from http://pdfserve.informaworld.com/915675__789015424.pdf

Russell, T. (2001). The "no significant difference" phenomenon. Retrieved December 11,

　2010, from http://teleeducation.nb.ca/nosignificantdifference/

Sargeant, J., Currant, V., Allen, M., Jarvis-Selinger, S., & Ho, K. (2006). Facilitating

　interpersonal interaction and learning online: Linking theory and practice. *Journal*

　of Continuing Education in the Health Professions, 26(2), 128-136.

Scanlan, C. L. (2003). Reliability and validity of a student scale for assessing the quality

　of internet-based distance learning. *Online Journal of Distance Learning*

　Administration, VI(III). Retrieved December 30, 2010, from

　http://www.westga.edu/~distance/ojdla/fall63/scanlan63.html

Shea, P., Swan, K., Fredericksen, E., & Pickett, A. (2002). Student satisfaction and reported learning in the SUNY learning network. In Bourne, J., & Moore, J. (Eds.), *Elements of quality online education.* (pp. 145-56). Needham, MA: Sloan Center for Online Education.

Sheehan, K. B., & Hoy, M. G. (1999). Response variation in e-mail to survey internet users in the United States: Methodology and assessment. *Journal of Computer Mediated Communication, 4*(3). Retrieved March 19, 2011, from http://www.ascusc.org/jcmc/vol4/issue3/sheehan.html

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2006). *Teaching and learning at a distance: Foundations of distance education* (4th ed.). Upper Saddle River, NJ: Prentice Hall.

Song, L., Singleton, E.S., Hill, J.R., & Koh, M.H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. *Internet and Higher Education, 7(*1), 59-70.

Soker, Z. (2005). Age, gender, ethnicity and the digital divide: University students' use of web based instruction. *Electronic Journal of Sociology.* Retrieved May 28, 2011, from http://www.sociology.org/content/2005/tier1/soker.html

Steele, D. J., Palensky, J. E. J., Lynch, T. G., Lacy, N. L., & Duffy, S. W. (2002). Learning preferences, computer attitudes, and student evaluation of computerized instruction. *Medical Education, 36,* 225-232.

Steinman, D. (2007). Educational experiences and the online student. *TechTrends, 52*(5), 46-52.

Stout, S. A. (2008). *A survey of chief academic officers at academic department heads about part-time faculty issues at community colleges in the Appalachian regions of Kentucky, Ohio, and West Virginia.* Unpublished doctoral dissertation, Ohio University, Athens, OH.

Streiner, D. L., & Norman, G. R. (1989). *Health Measurement Scales: A Practical Guide to Their Development and Use.* Oxford: Oxford University Press Inc.

Sue, V. M., & Ritter, L. A. (2007). *Conducting online surveys.* Thousand Oaks, CA: Sage Publications.

Swan, K. (2001). Virtual interaction: Design factors impacting student satisfaction and perceived learning in asynchronous online courses. *Distance Education, 22*(2), 306-331.

Tello, S. F. (2002). *An analysis of the relationship between instructional interaction and student persistence in online education.* Unpublished doctoral dissertation, University of Massachusetts, Lowell, MA.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago.

Thurmond, V., Wambach, K., Connors, H., & Frey, B. (2002). Evaluation of student satisfaction: Determining the impact of a web-based environment by controlling for student characteristics. *The American Journal of Distance Education, 16*(3), 169-89.

Upton, D. (2006). Online learning in speech and language therapy: Student performance and attitudes. *Education for Health: Change in Learning & Practice, 19*(1), 22-31.

Visser, L., & Visser, Y.L. (2000). Perceived and actual student support needs in distance education. *The Quarterly Review of Distance Education, 1*(2), 109-117.

Vries, D., & Eldin, Y. (1996). The interactivity component of distance learning implemented in an art studio course. *Education, 117.* Retrieved May 20, 2011, from http://www.questia.com/googleScholar.qst?docId=5000456126

Weiss, C. H. (1998). Have we learned anything new about the use of evaluation? *American Journal of Evaluation, 19*(1), 21-33.

Whisnant, W. T., Sullivan, J. C., & Slayton, S. L. (1992). The "old" new resource for education – student age. *The Community Services Catalyst, XXII*(3). Retrieved May 18, 2011, from

http://scholar.lib.vt.edu/ejournals/CATALYST/V22N3/whisnant.html#honzik

Weisberg, H. F. (2005). *The Total Survey Error Approach. A Guide to the New Science of Survey Research.* IL: University of Chicago Press.

Wiersma, W., & Jurs, S. G., (2008). *Research methods in education* (9th ed.). NY: Allyn & Bacon Inc.

Wighting, M. J., Liu, J., & Rovai, A. P. (2008). Distinguishing sense of community and motivation characteristics between online and traditional college students. *The Quarterly Review of Distance Education, 9*(3), 285-295.

Williams, P. E. (2000). *Defining distance education roles and competencies for higher education institutions: A computer-mediated Delphi study.* Unpublished doctoral Dissertation, Texas A & M, College Station, TX.

Yang, Y. (2006). *An investigation on students' perceptions of online course quality and contributing factors for those perceptions.* Unpublished doctoral dissertation, Mississippi State University, Mississippi State, MS.

Yeung, D. (2001). Toward an effective quality assurance model of web-based learning: The perspective of academic staff. *Online Journal of Distance Learning Administration, 4*(4). Retrieved March 3, 2011, from

http://www.westga.edu/~distance/ojdla/winter2001/yeung44.pdf

Youngblood, P., Trede, F., & DeCorpo, S. (2001). Facilitating online learning: A descriptive study. *Distance Education, 22*(2), 264-284.

APPENDIX

APPENDIX A

PANEL OF EXPERTS INVITATION

From: Brian Wilcox < bwilcox@lfcc.edu
To: <<Name>>,
Date:
Subject: Survey Instrument Content Validity Assessment: Student Perceptions of Online Course Quality

Dear <<Name>>,

I would like to take this opportunity to thank you for agreeing to serve as a subject-matter expert for my dissertation study, entitled *Student Perceptions of Online Course Quality: A Comparison by Academic Discipline.* Dr. Mitchell R. Williams, Old Dominion University, is chairing my dissertation committee. Your input is extremely important, and I appreciate you taking time out of your busy schedule to participate.

Although the literature focuses on the value of using online course quality benchmarks, studies have yet to sufficiently determine if differences in student perceptions of online course quality differ between academic disciplines. In other words, this study is unique because it attempts to measure what criteria are most important to student perceptions of quality in online courses and if they differ in importance between academic disciplines. This study will fill a significant gap in the literature.

In order to measure these potential differences, this study will survey students at a southeastern community college who are enrolled in online courses. As a subject-matter expert, you play an important role in assessing the content validity of the proposed survey instrument.

To participate in the expert panel, please:
- Review the attached study purpose and research questions;
- Evaluate the attached proposed survey questions

In order to ensure your input can be carefully considered, I would appreciate your completion of the assessment by <<date>>.

Once again, thank you for your participation and your contributions to the success of this study. If you have any questions or concerns, please do not hesitate to contact me at bwilcox@lfcc.edu or 540-351-1525.

Sincerely,

Brian Wilcox
Doctoral Candidate, Old Dominion University
Assistant Professor of Biology, Lord Fairfax Community College
Bwilcox@lfcc.edu

PURPOSE AND RESEARCH QUESTIONS FOR SUBJECT-MATTER EXPERTS

Purpose

The purpose of this quantitative, non-experimental study will be to compare and evaluate student perceptions regarding the quality of online courses between academic disciplines at a midsized community college. In order to accomplish the goals of this study, individual factors that impact student perceptions of online course quality, as described by the Institute for Higher Education Policy (IHEP), will be evaluated by students. An original online student survey will be used to collect these data on students' perceptions of quality in web-based online classes by comparing how well their courses meet best practices established by IHEP benchmarks. In addition to assessing the level at which these benchmarks for quality are being met, students will be asked to rate their perceived importance in relation to the discipline of their online course. Basic demographic data will also be collected in this stand-alone study to help explore these patterns in student perception.

Research Questions

To further understand student perceptions of online course quality, several research questions will guide this study:
1. What factors impact students' perceptions of online course quality in regards to benchmarks for teaching/learning, course structure, and student support?
2. Do students' perceptions of quality in online courses differ across academic disciplines? (*e.g.* are perceptions of quality different for online natural and physical sciences classes, compared to online arts and humanities classes?)
3. What is the impact of student demographics on perceptions of quality in online courses? (*i.e.* Does students' age, enrollment status, or previous experience with online coursework affect perception?)

APPENDIX B

PROPOSED EVALUATION INSTRUMENT

FOR SUBJECT-MATTER EXPERTS

Thank you for serving as a subject-matter expert. As you proceed through the questions, it is not necessary to complete answers to the items, although you are welcome to do so.

Please complete the "Evaluation" which appears after each proposed survey question.

Thank you for your valuable assessment.

STUDENTS' PERCEPTIONS OF ONLINE COURSE QUALITY
PROPOSED QUESTIONS

1. My age is:
    (Less than 18* / 18-24 / 25+)
    *Student will be directed to a Thank You page. Participants must be at least 18 years old.

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	**Revise**	**Retain**
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

2. My enrollment status is:
    (Full Time / Part Time)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	**Revise**	**Retain**
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

3. This is my first semester taking an online course(s):
    (Yes / No)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o

	Yes	No
This item pertains to the research questions.	o	o

	Yes	No
This item is clearly written.	o	o

4. The type of online course I'm evaluating for this survey is:

Choose one of the following	Course Prefix Examples
( ) English	(ENG)
( ) Natural & Physical Sciences	(BIO, CHM, GOL, MTH, NAS, PHY)
( ) Arts & Humanities	(ART, ASL, CST, FRE, GER, HUM, ITA, MUS, PHI, REL, SPA)
( ) Social Sciences	(ECO, GEO, HIS, PLS, PSY, SOC)
( ) Agricultural & Natural Resource Technologies	
( ) Business	(ACC, AST, BUS, MKT)
( ) Computer Technologies	(ITD, ITE, ITN)
( ) Education	(CHD, EDU, SDV)
( ) Engineering/Industrial	(EGR)
( ) Health Technologies (other than nursing)	(PED, HIM, HLT)
( ) Nursing	(NUR, PNE)
( ) Public Service Technologies	

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o

	Yes	No
This item pertains to the research questions.	o	o

	Yes	No
This item is clearly written.	o	o

Part II: Students' Online Learning Experiences

Instructions: For each statement below, choose the option that best describes your level of agreement. Next, rate the statement's importance to quality in the specific course discipline you are evaluating. (for example, it's possible to indicate a benchmark is being performed well in your class, but you do not feel it is necessary to be included to provide quality in a class of that subject area)

Teaching/Learning Benchmarks

5. Student interaction with faculty and other students is an essential characteristic in my class and is facilitated through a variety of ways, including voice-mail and/or e-mail.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

6. Feedback on my assignments and questions is constructive and provided in a timely manner.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

7. I have been instructed in the proper methods of effective research, including assessment of the validity of resources.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	

This item is clearly written.   o   o

Course Structure Benchmarks

8. Before starting my online course, I was advised about the course to determine (1) if I possess the self-motivation and commitment to learn at a distance and (2) if I have access to the minimal technology required by the course design.

　　　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

　　　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

9. I have been provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for the course are summarized in a clearly written, straightforward statement.

　　　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

　　　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

10. I have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.

　　　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

　　　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

11. Faculty and students, such as myself, agree upon expectations regarding times for student assignment completion and faculty response.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

Student Support Benchmarks

12. I received information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

13. I was provided with hands-on training and information to aid in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.

　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

14. Throughout the duration of the course, have had access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	
This item pertains to the research questions.	o	o	
	Yes	**No**	
This item is clearly written.	o	o	

15. Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

This topic is important to quality in distance education with regards to my course's academic discipline.

　　　(Strongly Disagree / Disagree / Agree / Strongly Agree)

Evaluation: Please indicate your level of agreement with each of the following statements.

	Omit	Revise	Retain
This item should be included in the survey.	o	o	o
	Yes	**No**	

This item pertains to the research questions.   o   o

                                                  Yes   **No**

This item is clearly written.   o   o

In the space below, please indicate if there is any information you feel should be included in this survey instrument that is not included.

_____

_____

_____

_____

APPENDIX C

STUDENT CONSENT FORM

CONSENT FORM
Brian Wilcox – Researcher

You are invited to participate in a research study. The purpose of this study is to investigate student perceptions of online course quality to identify factors that influence those perceptions.

INFORMATION

You'll be asked to complete a survey with questions that pertain to your perceptions of the quality in the online courses you are currently taking. The survey will take 10 minutes to complete.

BENEFITS

The results of this study will help administrators, educators, and instructional designers understand quality issues that online learners encounter and to improve the quality of future online course offerings.

CONFIDENTIALITY

Your response will be kept confidential. No reference will be made in oral or written reports which could link you to the study. The survey data will be kept electronically and the database will be destroyed by December 31, 2012.

CONTACT

If you have questions about the study or the procedure, you may contact the researcher, Brian Wilcox at Lord Fairfax Community College, 6480 College St., Warrenton, VA 20187, or via email at bwilcox@lfcc.edu, or via phone at 540.351.1525.

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have not been honored during the course of this project, you may contact Old Dominion University, Darden College of Education, Room 201, Department of Educational Leadership and Counseling, Norfolk, VA 23529.

PARTICIPATION

Your participation in this study is voluntary; you may refuse to participate without penalty. If you decide not to participate, you may withdraw from the study at any time without penalty. If you decide to withdraw from the study once you have completed the survey, the investigators will not be able to return it to you since it is anonymous.

Do you agree to participate in the study?   YES   NO

https://www.surveymonkey.com/s/onlinecoursequality

APPENDIX D

SURVEY INSTRUMENT

Students' Perceptions of Online Course Quality

Introduction:

This survey contains statements about instructional practices in online courses. It is designed to gather students' perceptions related to online courses in which they are enrolled. You will also be asked to answer some basic demographic questions about yourself. All the information you provide on this survey is confidential. It will take approximately 10 minutes to complete this survey. Your participation in this study is greatly appreciated.

There are no "right" or "wrong" answers. Your opinion is what is desired on this survey. Please think about how well each statement describes the online course in which you are enrolled. If you are currently enrolled in more than one online course, please complete this survey for each online course you are taking.

Student Perceptions of Online Course Quality

Part I: Basic Demographic Data

`25%`

Please answer the following questions.

1. My age is:

○ Less than 18

○ 18-24

○ 25+

2. My enrollment status is:

○ Full Time (12 or more credit hours)

○ Part Time (less than 12 credit hours)

3. This is my first semester taking an online college course(s):

○ Yes

○ No

*4. The type of online course I'm evaluating for this survey is:

○ English (ENG)

○ Natural & Physical Sciences (BIO, CHM, GOL, MTH, NAS, PHY)

○ Arts & Humanities (ART, ASL, CST, FRE, GER, HUM, ITA, MUS, PHI, REL, SPA)

○ Social Sciences (ECO, GEO, HIS, PLS, PSY, SOC)

○ Business (ACC, AST, BUS, MKT)

○ Computer Technologies (ITD, ITE, ITN, ITP)

○ Education (CHD, EDU, SDV)

○ Engineering/Industrial (EGR)

○ Health Technologies other than nursing (PED, HIM, HLT)

○ Nursing (NUR, PNE)

Next

Student Perceptions of Online Course Quality

50%

For each statement below, choose the option that best describes your level of agreement in regards to the online class you are evaluating. Next, rate the statement's importance to providing quality in your online class. (For example, it is possible to agree that a statement is occurring in your class without agreeing that the topic is necessary to ensure quality in an online class in that subject area)

5. Student interaction with faculty and other students is an essential characteristic in my class and is facilitated through a variety of ways, including voice-mail, e-mail, chat rooms, discussion boards, and/or video conferencing.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class.	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

6. Feedback on my assignments and questions is constructive and provided in a timely manner.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class.	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

7. I have been instructed in the proper methods of effective research, including assessment of the validity of resources.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

8. Before starting my online course, I was advised about the course to determine if I possess the self-motivation and commitment to learn at a distance.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

9. Before starting my online course, I was advised about the course to determine if I have access to the minimal technology required by the course design.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

10. I have been provided with supplemental course information that outlines course objectives, concepts and ideas, and learning outcomes that are summarized in a clearly written, straightforward statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

11. I have access to sufficient library resources such as a "virtual library" accessible through the World Wide Web.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

12. Faculty and students agree upon expectations regarding the length of time for student assignment completion and faculty response.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

13. I received information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

14. I was provided with training and information to aid in securing material through electronic databases, interlibrary loans, government archives, news services, and other sources.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

15. Throughout the duration of the course, I have had access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

16. Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

	Strongly Disagree	Disagree	Agree	Stongly Agree
This is true for my online class	O	O	O	O
This is necessary to provide quality in online classes in this academic discipline.	O	O	O	O

Prev   Next

Student Perceptions of Online Course Quality

Part III: Overall Perception of Course Quality

| | 75% |

Please indicate your level of agreement with the following statement.

*17. Generally speaking, the course I am evaluating for this survey is of high quality.

	Strongly Disagree	Disagree	Agree	Strongly Agree
This is true for my online class	O	O	O	O

Prev   Next

VITA

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Education
Ph.D., Community College Leadership, Old Dominion University, in progress.
M.S., Microbiology and Molecular Biology, James Madison University, 2002.
B.S., Biology, James Madison University, 1998.

Experience
Lord Fairfax Community College, Warrenton, VA:
- Program Lead of Natural Sciences, 2007-present
- Assistant Professor of Biology, 2008-present
- Instructor of Biology, 2004-2008
- Adjunct Professor of Biology, 2003-2004

American Type Culture Collection, Manassas, VA:
- Research and Development Scientist, 2002-2003

James Madison University, Harrisonburg, VA:
- Adjunct Professor of Biology, 2001-2002

Publications and Presentations
Herrick, J.B., L. Trower, B. R. Wilcox, and R. J. Haynes. 2003. Exogenous capture of transmissible resistance plasmids and Class 1 integrons from uncultivated stream bacteria. Abstracts of the 103rd General Meeting of the American Society for Microbiology.

Wilcox, B.R., and Herrick, J.B., 2001. Exogenous isolation and green fluorescent protein labeling of native antibiotic resistance plasmids. Virginia Academy of Science annual meeting, Harrisonburg, VA. (poster)

Service
VCCS Professional Development Grants Committee, 2009-present
Founder of Empower*ed* Inc., educational nonprofit company, 2011-present
Virginia Academy of Science, 2001-2002