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Graduate Student Attitudes toward Different Instructional Approaches within Face-to-Face, Online, and Blended Learning Environments in a Public Four-Year Institution of Higher Learning

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Graduate Student Attitudes toward Different Instructional Approaches within Face-to-Face, Online, and Blended Learning Environments in a Public Four-Year Institution of Higher Learning

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by

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ABSTRACT

Graduate Student Attitudes toward Different Instructional Approaches within Face-to-Face, Online, and Blended Learning Environments in a Public Four-Year Institution of Higher Learning

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This study compared graduate student attitudes toward different instructional approaches within online, blended, and face-to-face courses in a public institution of higher learning. The participants completed an online survey questionnaire that was designed by the researcher using 4 learning theories in education: behavioral, cognitive, constructivism, and humanistic (Merriam, Caffarella, & Baumgartner, 2007) approaches toward teaching and learning. There were 210 total responses from graduate students enrolled during 2013 spring semester. There were more female (71.4%) than male (28.6%) students who responded.

Previous studies have compared face-to-face (F2F) and online methods of instructions and have shown mixed results. Whereas some studies have shown F2F instructional methods as favorable to students, others found no differences between F2F and online methods. This study was guided by 4 research questions. Analysis of variance (ANOVA) and *t* test statistical procedures were used to analyze the data.

The findings of this study showed significant differences in students' preference in instructional methods and in instructional approaches (behavioral, humanistic, cognitive, and constructivist).

The study found that full-time graduate students tended to prefer F2F instructional methods, while part-time students preferred online methods. Additionally younger students ($\leq$ 35 years) reported stronger preference for F2F methods of instruction than older students ($\geq$ 36 years) in cognitive and constructivist instructional approaches with no significant differences by age for behavioral and humanistic instructional approaches.

DEDICATION

This study is dedicated to my family especially my wife Petroline who has been a constant source of support and encouragement throughout my doctoral program. I thank her dearly for perseverance and determination to stand for our family while I was thousands of miles away from home for several years. I also dedicate this work to my children Faith, Dorcas, and Victoria who have endured my constant absence in their lives for several years. Their unconditional love has been my strength during challenging times.

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CHAPTER 1

INTRODUCTION

Online learning has become one of the main instructional methods in institutions of higher learning in the U.S. and around the world. Most o colleges and universities today offer some courses either partially (hybrid) or completely online. Though online education is still evolving, the current trend indicates that traditional face-to-face (F2F) classrooms are gradually fading while online instructional methods are on the rise (NCES, 2012). Though online learning is gradually being accepted as the primary pedagogical method in higher education, it has presented several opportunities and challenges to the stakeholders of institutions of higher learning (Palloff & Pratt, 2007).

> Professors, just like students, need the ability to deal with virtual world in which, for the most part, they cannot see, hear, or touch the people with whom they are communicating. Participants are likely to adapt a new persona, shifting into areas of their personalities they may not have previously explored. (p. 7)

With technological advancement, online education delivery methods have improved over the years and more institutions of higher learning are adopting these methods more readily than ever before (Allen & Seaman, 2011). The recent increase in demand for more college education by adult learners has also resulted in the increase in demand for more educational opportunities in higher education. Online education offers a solution to this recent high enrollment rate of adult learners (NCES, 2012). The robust implementation of online learning at colleges and universities has been in response to growing numbers of online students, whereby universities have increasingly included online-learning in their strategic planning.

According to a recently report by Allen and Seaman (2011), 65 % of higher education institutions are investing in the long-term strategies of their online learning (Allen & Seaman, 2011). The report also reveals that in fall 2010, there were more than 6.1 million higher education students taking at least one online course. On average, students taking online courses tend to perform better than those taking F2F classes (Means, Toyama, Murphy, Bakia, & Jones, 2009).

Statement of the Problem

Student success is tightly aligned to retention and student satisfaction (Levy, 2007). A common method of determining student satisfaction is to assess student feedback and perceptions of their academic experience while enrolled in a program (Gaytan & McEwen, 2007; Williams & Kane, 2009). Given the increase in online educational options and the diverse sets of student characteristics in the higher education landscape, it is important to understand how students perceive different pedagogical approaches and course delivery methods. Some students prefer one method over another. However, some students may benefit from a combination of both online and traditional F2F instructional methods.

The purpose of this quasi-experimental study is to compare graduate student attitudes toward different instructional approaches within online, blended, and face-to-face courses in a public institution of higher learning. Though there are several theories of learning that are fundamental to teaching and learning, this study adopted the four basic approaches as defined by Merriam, Caffarella, and Baumgartner (2007). They are behavioral, humanistic, cognitive, and

constructivism. Behaviorists approach learning is a change of behavior in response to stimuli in the environment. The humanistic approach focuses on the human nature, human potential, human emotions, and effects. Unlike in the behavioral approach where the focus is external change in behavior, cognitivists focus on the internal mental processes. Constructivism involves learning through personal experiences. Students direct their own learning and the instructor plays a role of moderating (Merriam et al., 2007). These four constructs (behavioral, humanistic, cognitive, and constructivism) were used as the conceptual framework to define the four instructional approaches whereby to gather student attitudes toward three different learning environments: online, F2F, and blended.

Research Questions

This quasi-experimental comparative study explored graduate student attitudes toward instructional methods in a public institution. The study addressed the following research questions:

1. Are there significant differences in student satisfaction with the different instructional approaches for online, F2F, and blended students?
    a. Are there significant differences in levels of student satisfaction with behavioral instructional approaches to instruction between the three groups?
    b. Are there significant differences in levels of student satisfaction with humanistic instructional approaches to instruction between the three groups?

c. Are there significant differences in levels of student satisfaction with cognitive instructional approaches to instruction between the three groups?

d. Are there significant differences in levels of student satisfaction with constructivist instructional approaches between the three groups?

2. Are there significant differences in student satisfaction with instructional approaches by student demographics?

    a. Is there a significant difference in student satisfaction with instructional approaches as categorized by part-time and full-time classification?

    b. Is there a significant difference in student satisfaction with instructional approaches as compared by age?

    c. Is there a significant difference in student satisfaction with instructional approaches as compared by gender?

    d. Is there a significant difference in student satisfaction with instructional approaches by as categorized by nationality (domestic or international)?

    e. Is there a significant difference in student satisfaction with instructional approaches by compared by graduate program level?

3. To what degree do students perceive that online instructional methods are suitable for all courses?

4. To what degree do students perceive that some courses are more suitable for face-to-face than online instructional methods?

Significance of the Study

While numerous researchers have compared online, F2F, and hybrid methods of instructions in higher education, relatively few studies have focused specifically on attitudes and perceptions of graduate students regarding these three methods of instruction. As higher education institutions continue to improve the quality of education and services provided to students, they must meet the expectations and demands of students. Instructional methods are an important component of differentiating various instructional practices to meet student expectations and needs.

Colleges and universities will continue to compete for students who are seeking higher education locally, nationally, and internationally. Effective course delivery and instructional methods are a primary marketing aspect for higher learning institutions (Talbert, 2012). Student satisfaction levels on instructional and course delivery methods are one of the many factors that determine the quality of education offered by higher learning institution (Beqiri, Chase, & Bishka, 2009). Student satisfaction is also one of the significant factors that determine the overall success of the student and that of the learning institution (Oja, 2011).

Limitations of the Study

The primary limitation of this study was its narrow scope. The researcher explored and compared graduate student attitude towards online learning and traditional F2F education at a

single public university. Therefore, the findings may not be generalizable to other universities in different parts of the U.S.

Second, data were collected over a short period of time during a 1-semester period. Some programs and courses were not offered during the spring semester when data for this study were collected. This could have influenced the data and the result of the study.

Third, the participants were limited to graduate students in only majors offered by the university; thus, the results would not apply to all graduate students in all graduate majors across the U.S. These factors may or may not have impacted the results of this study.

Fourth, the survey instrument used in the study was self-created and the survey questions may not have been exhaustive enough to cover all the components of courses and programs offered at the institution. This could or could not have influenced the results of the study.

Finally, some of the demographics of the sample may not be a true representation of the study population. This may or may not have influenced the results of this study.

Definitions of Terms

To create a better understanding for the reader, working definitions of study terms may require clarification. Therefore, the list below offers definitions of terms employed in the current study.

Asynchronous: communication that does not all happen in the same time or place, but over time (Bach, Haynes, & Smith, 2007).

Course Management System (CMS): a software system specifically designed and marketed for students and faculty to use in teaching and learning, for example Desire to Learn (D2L) and Blackboard also referred to as Learning Management System (LMS) or Virtual Learning Environment (VLE) (Morgan, 2003).

Instructional Approach: the different approaches to teaching and learning based on widely accepted learning theories in education. This study uses the following four approaches as variables: behavioral, humanistic, cognitive, and constructive (Merriam et al., 2007).

Instructional Method: three methods used commonly in education: face-to-face (F2F), online, and hybrid (blended) (Black, 2002)

Online Education or Learning: all forms of electronically supported learning and teaching. This term is also referred to as Virtual Learning, Distance Learning, or E-learning (Moore & Kearsley, 2011)

Online Learning Community: forums, chat rooms, and virtual worlds, such as second life, where students can interact without being hosted by an educational institution or learning platform (Palloff & Pratt, 2007).

Online Learning Environment: a web-based platform such as Desire to Learn (D2L) where a student can learn and interact with the instructor or other students in a formal education setting (Anderson, 2008).

Synchronous: communication that occurs at the same time (Bach et al., 2007).

Overview of the Study

This study includes five chapters. Chapter 1 includes an introduction of the study with the statement of problem and significance of the research. Chapter 2 includes a literature review with trends in online and F2F learning in higher education, reasons and challenges of online learning, role of technology in higher education, accessibility of online learning, students and faculty perceptions on online and F2F learning, and interaction in online and F2F learning. Chapter 3 includes the methodology with a discussion of the survey, participants, data collection, and data analysis. Chapter 4 includes the results of the study with each research question stated with findings from the analysis. Chapter 5 includes the conclusion and discussion of results with limitations of the study and implications for future policy, practice, and research.

CHAPTER 2

LITERATURE REVIEW

Introduction

Advancement in technology has continued to shape people's ways of life including learning and educational training (Tambouris et al., 2012). Technology is now a vital part of every education system in the U.S. and other parts of the world (Renes & Strange, 2011). Institutions of learning use different technologies in different aspects of training and teaching to maximize the educational opportunities offered by these institutions (Bach et al., 2007). Due to the diversity of student population in learning institutions, there is need for diverse methods of teaching and training to accommodate all the student learning needs (Mercer, Lane, & Jordan, 1996).

This chapter provides an overview of literature of previous studies related to online and F2F learning. The chapter offers an in-depth review of theoretical perspective of learning, instructional methods in higher education, trends in online and F2F learning in higher education, reasons and challenges of online learning, role of technology in higher education, accessibility of online learning, students and faculty perceptions on online and F2F learning, and interaction in online and F2F learning.

Four Theoretical Perspectives of Learning

Theories of learning and teaching are guided by the following five assumptions: (1) Theories provide a general explanation for observations made over time; (2) Theories explain

and predict behavior; (3) Theories can never be established beyond all doubt; (4) Theories may be modified; and, (5) Theories seldom have to be thrown out completely if thoroughly tested but sometimes a theory may be widely accepted for a long time and later disapproved. (Dorin, Demmin, & Gabel, 1990). Some theories have been adopted in higher education for teaching and learning.

Though several theories of learning have been identified over the years as fundamental to teaching and learning, four basic orientations that suit adult graduate students have been identified as behavioral, humanistic, cognitive, and construct (Merriam et al., 2007). Behaviorists observe change of behavior to stimuli in the environment to measure learning. The humanistic approach focuses on the human nature, human potential, human emotions, and effects. Whereas the focus in behavioral learning orientation is external change in behavior, cognitivists are interested in knowing how the mind responds to certain stimuli in the environment. Constructivists approach learning as a way students construct their own knowledge using personal experiences. Table 1 provides an overview of these four basic approaches to teaching and learning.

Table 1

Four Approaches to Learning

	Behaviorist	*Humanist*	*Cognitivist*	*Constructivist*
View of learning process	Change in behavior	A personal act to fulfill development	Information processing (including insight, memory, perception, metacognition)	Construction of meaning from experience
Lotus of learning	Stimuli in external environment	Affective and development needs	Internal cognitive structure	Individual and social construction of knowledge
Purpose of learning	To produce behavioral change in desired direction	To become self-actualized, mature, autonomous	To develop capacity and skills to learn better	To construct knowledge
Instructor's role	Arrange environment to elicit desired response	Facilitate development of whole person	Structure content of learning activity	Facilitate and negotiate meaning-making with learner
Manifestation in adult learning	Behavioral objective Accountability Performance improvement Skill development HRD and training	Andragogy Self-directed learning Cognitive development Transformational learning	Learning how to learn Social role acquit ion Intelligence, learning, and memory as related to age	Experiential learning Transformational learning Reflective practice Communities of practice Situated learning

Source: Adapted from Five Orientation to Learning (Merriam et al., 2007, p. 295).

Instructional Environments in Higher Education

The three current primary instructional environments in higher education are: F2F, online and blended. These three primary course delivery environments have been changing over time as the nature of higher education changes. Technology development and increasing demand for higher education have remained to be the driving forces transforming instructional environments and methods in higher learning institutions (Renes & Strange, 2011). Technology has opened more opportunities for students to access college education through instructional methods that suit their needs (Mellander, 2012). Table 2 provides the general definitions and descriptions of the main instructional environments used in higher education.

Table 2

Definitions and Descriptions of Instructional Environments

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

Source: Adapted from Going the Distance: Online Education in the United States, 2011. (Allen & Seaman, 2011, p. 7).

Trends in Online and F2F Learning in Higher Education

While the traditional F2F method of teaching is still dominant in most institutions of learning, recent statistics indicate a rise in online learning. According to the *National Center for Education Statistics* (NCES, 2012), higher education student enrollment rose by 38 % to 20.4 million during 1999 to 2009. Allen and Seaman (2011) indicated that 65 % of higher education institutions are investing in the long-term strategies of online learning. More than 6.1 million higher education students were enrolled in at least one online course in fall 2010. This number comprised 31 % of all students enrolled in postsecondary learning institutions. Students enrolled in at least one online course increased by more than 18 % during 2002 to 2010, an indication that more institutions of higher learning have continued to offer more online courses (Allen & Seaman, 2011).

In an earlier study Allen and Seaman (2010) posited the recent economic downturn as the impetus for the rise in the demand for more higher education opportunities for students. During the downturn the increase in enrollment in online courses exceeded those of F2F. The report indicated that 75% of the institutions experienced higher demand for online courses and programs compared to 50% of the institutions witnessing an increase in F2F enrollment. Despite the rise in demand and enrollment of students during economic downturn, several institutions faced financial challenges and budget cuts. More than 61% of public higher learning institutions were affected. Just as there are several reasons for choosing online pedagogical method, there are likewise several challenges associated with this method.

Reasons and Challenges of Online Learning

Two compelling factors that drives the growth of online learning are to improve student access, including serving nontraditional students, and to increase the rates of degree completion (Allen & Seaman, 2007). In trying to achieve their online learning goals and objectives colleges and universities are often faced with different challenges.

One of the main challenges to online learning is the workload for the instructors. Unlike teaching F2F courses, online teaching involves more work and effort to achieve similar goals. Faculty acceptance of online delivery methods and the type of discipline required for students to be successful online are additional concerns (Allen & Seaman, 2007). Technology is constantly changing and, as a result, educational institutions are faced with an ongoing challenge of training faculty so they can be effective in developing and teaching online courses (Akram, Ather, Tousif, & Rasul, 2012; Kukulska-Hulme, 2012). The ongoing technology training requirement adds to the high cost of educational technology acquisition that learning institutions must meet (Morgan, 2003). In addition to understanding the issues facing faculty in relation to online learning, educational institutions seek to understand why students take online courses.

Though students have varied reasons for taking online courses, most of them do so for convenience. Most students who enroll in online courses cite flexibility in class scheduling as their main reason for choosing the online option (Perreault, Walman, Alexander, & Zhao, 2008). Additionally online courses eliminate the inconvenience of commuting to campus to take classes. Technology plays a key role in the successful delivery of online courses.

Technological Considerations in Higher Education

Technology has been and will remain to be the driving force that shapes learning and methods and environments of course delivery in learning institutions (Bach et al., 2007). While technology in F2F methods of instruction is significant in supplementing content delivery, it remains the main vehicle that learning institutions use for online content delivery and for fulfilling the learning objective and outcomes of students. Three general considerations regarding technology are presented in the literature related to online learning.

The first consideration when using technology is hardware and software issues. Higher education institutions that offer online courses use course management system (CMS), Learning Management System (LMS), or Virtual Learning Environment (VLE) such as Desire to Learn (D2L), LearningSpace, eCollege, WebCT, and Blackboard to accomplish these goals and objectives (Morgan, 2003). Several institutions of higher learning have implemented VLE systems that suit their needs. Though there are currently many open source VLE software, most colleges that engage in online learning invest on the commercial software packages such as D2L for reliability and robustness (Bach et al., 2007). Many VLE systems are built around assumptions that lead to student success in the online environment - another important area of discussion in the literature related to online education

The second consideration of implementing technology-based instruction in online and blended course environments is student technological literacy. Success in online classes is not only attributed to reliable technology but also to student ability to access and proficiently use the technology (Palloff & Pratt, 2007). Research has shown that student success in online learning is significantly influenced by student perceptions of technology used in teaching and learning

(Nora & Snyder, 2009). It is, therefore, imperative for colleges to plan adequately before adopting online learning as the primary pedagogical method. One of the crucial elements in prior planning is investment in technology.

> Online learning offers different and complementary learning and teaching strategies that can only be realized by prior investment rather than rapid changes of direction that are poorly resourced. (Bach et al., 2007, p. 45)

The third technological consideration is to elicit perceptions of students in the virtual learning environment. Students have a positive perception of a virtual learning environment and better learning experience when they are comfortable with the platform (Yu & Yu, 2010). There is also evidence that a good fit between the online learning platform and student needs influences the learning outcomes. It is, therefore, important for institutions offering online education to consider the needs and the learning outcomes of the students before developing and using an online learning system.

Influence of Technology on Accessibility of Online Education

One of the challenges in online learning is that of accessibility. Unlike F2F instructional methods where the instructor and student can easily interact in a physical classroom, accessibility in online classrooms can be challenging. Accessing digital learning resources goes beyond accessing the web. Accessibility includes all the factors that affect learning experiences and outcomes, such as user friendliness of the online learning platform, pedagogical concerns, student learning styles, and technical support (Kelly, Phipps, & Swift, 2004).

> Because the software available for online classes is new to users and is constantly changing, the possibility for encountering technical difficulties is very real. Many instructors have complained about lack of participation among students, only to find that students could not access a course site…. Some types of difficulties that are beyond the control of faculty member who has engaged in the best possible planning for a course are things such as university's server going down, problems with an internet service provider, and problems or "bugs" in the software that cause it to act in unanticipated ways (Palloff & Pratt, 2007, p. 101)

Digital inclusion is of paramount importance to the stakeholders of colleges and universities especially as more institutions adopt this method of learning. Digital inclusion involves addressing inequalities where those unable to access the affordance of technology are disadvantaged and marginalized in society and, therefore, digitally excluded (Seale, 2010).

Unlike the traditional F2F learning method, true online education must be accessible through the internet from any geographic location. Because online learning depends primarily on the availability and reliability of internet connection, students who live in remote locations with no internet access will not benefit from online education. According to Internet World Stats (2010), more than 20% of the U.S. population had no internet access by June 2010. In addition to lack of internet connection, students with slow internet connection, regardless of where they live, may not enjoy a favorable online learning experience due to slow media download and media quality. Bandwidth limitation also affects online learning content design and presentation (Holden, Westfall, & Gamor, 2010).

Use of media, software, and web-based applications as part of online learning to enhance the online learning experience continues to rise as content developers and instructors seek to improve user engagement in learning (Casey & Evans, 2011). Improperly transcoded media, such as videos, can limit some users from accessing content (Schroeder & Williamsen, 2011).

These limitations may include long download time or even inability to download media, poor image and sound quality, and inability to access content through wider variety of devices or browsers. In addition to accessibility through most internet browsers, enhanced videos are more accessible through most mobile devices such as tablets, iPads, and iPhones (Purcell, 2013).

Technology designers have created platforms to mimic physical exchanges between and among students and faculty. One such platform that uses avatars in a virtual world where students and faculty can interact is called Second Life.

Some of the online learning applications such as Second Life must be downloaded to the user's computer or access device and some are not easily compatible with some versions of computers or access devices. Second Life has been adopted successfully as the primary application for building online learning communities in some institutions of higher learning. Second Life provides students and faculty a place to meet, work, and live together (Linden Lab, 2009).

Virtual worlds provide users with opportunities to solve real world problems by experimenting with 3D objects and make decisions based on their virtual experiments without the risk associated with performing similar experiment with real world objects (Wasko, Teigland, Leidner, & Jarvenpaa, 2011). Students in the virtual world can experiment, reflect, and think critically before making any decisions, a virtue that is desired in teamwork training.

Virtual world applications like other instructional media have challenges. Most students taking online courses are faced with the challenge of meeting the minimum requirements of robust hardware and broadband internet connection that support virtual world applications. Because virtual worlds were not originally designed for formal educational purposes but for

gaming, these applications are not easily incorporated to other online learning systems (Holden et al., 2010). It has also been noted as being time consuming to setup accounts and learning materials. Due to their time consuming nature of engagement, virtual world applications can be distractive for students who are not focused (Kluge & Riley, 2008). These concerns about student engagement have been widely studied by educational researchers.

Student Engagement in Online Learning

Modern CMS such as D2L and Blackboard are now more robust and are equipped with several features and tools that can enhance the overall user experience (Gikandi, Morrow, & Davis, 2011). These online learning systems offer both asynchronous and synchronous delivery methods. Due to technology limitations, synchronous delivery methods have not been fully developed by most institutions of higher learning. Both asynchronous and synchronous methods have benefits and drawbacks but they could be used together to complement each other (Holden et al., 2010). Among other reasons, an asynchronous course delivery system allows students to learn at their own pace and at their own convenient times. Students have enough time to reflect on the learning material before making contributions to the class. Synchronous methods, on the other hand, require all participants to be online at the same time. It is comparable to F2F in that students interact in real time, but there may be less reflection on the learning material. Conversely, prompt feedback from both instructor and the students are more common in F2F and synchronous learning than asynchronously (Hrastinski, 2008).

Dealing with Challenges of Technology Change

Technology is the driving force of online learning, but with it comes challenges that are less common with F2F learning. There is a growing technology generational gap between the young college students who have grown up using different technological tools as a lifestyle and older faculty members who are new to technology (Palloff & Pratt, 2007). This technological gap adds to the already challenging online learning issues.

Due to rapid advancements in technology, higher education is faced with the challenge of updating and upgrading hardware and software to accommodate new tools and features that enhance the online learning experience. These upgrades and updates - though crucial to the online learning experience - present software and hardware compatibility problems to students (Seale, 2010). Seale (2010) suggests that the main dilemma that most learning institutions offering online programs will face is to make the online system accessible by all users at an affordable cost and to meet students' needs while staying current with modern technology. In order to accomplish this, one must keep the cost affordable which would mean limited system upgraded by the learning institution. This in turn can lead to technology gap between what the learning institutions offers and what the current job market demands. With limited system upgrades and updates, users who are digitally included initially may be digitally excluded later.

Perceptions of F2F and Online Learning

Unlike F2F, online learning is still new to some students and instructors; however, online student enrollment is growing at a faster rate than F2F enrollments. The perceptions students and faculty have toward online learning have also been improving over the years. Although some

faculty members still view online learning as inferior to F2F, more than 67% of faculty perceive online instructional environments and methods to be at least as good as F2F (Allen & Seaman, 2011). This is more than 9.7% increase from 2003. Allen and Seaman (2011) also found that the perceptions of students and instructors are largely influenced by the degree of engagement of their institutions in online learning.

In a study that examined instructor teaching experience and technology skills, both students and instructors showed positive perception in regard to online course effectiveness (Seok, Kinsell, DaCosta, & Tung, 2010). The study also revealed that the instructor's teaching experience and technology skills significantly influence students' course satisfaction. Instructors with higher computer and technology skills create better content and an online learning environment that is perceived as comfortable by students. Instructors who are challenged by technology tend to have a negative perception on the use of CMS in course delivery (Morgan, 2003).

Faculty Perceptions of F2F and Online Learning

Faculty perceptions of online learning appear to be related to the levels of use and familiarity with this method of delivery. According to Allen and Seaman (2007) 44% of instructors from institutions that are not currently engaged in online learning have negative perceptions of online learning. Only 3.7% of instructors from these institutions agree that online and F2F instructional methods are comparable. Instructors generally have diverse reasons for their perceptions of online courses.

Some instructors of online courses favor teaching online over F2F due to flexibility to work from anywhere. However, the additional administrative and teaching workload that is required for faculty working in online environments overshadows the convenience benefit (Hurt, 2008). Though faculty members are committed to helping students achieve their learning goals and outcomes, they have their own needs. Colleges and university administrators wishing to leverage additional online teaching options can use extrinsic motivators such as better pay and terms of service to improve faculty satisfaction (Cook, Ley, Crawford, & Warner, 2009).

Student Perceptions of F2F and Online Learning

Studies have shown that students who are taking online courses for the first time are more uncomfortable with the online learning system and tend to have more negative perceptions about their learning experience than students who have used the system before (Astani, Ready, & Duplaga, 2010). Use of tutorials by these new students can create more comfortable learning environment. Tutorials also save them time and improve the learning experience (Bollinger & Supanakorn, 2011). Therefore, as students become more comfortable with online learning, their learning experience tends to improve.

Similar to faculty perceptions of online learning, student perceptions have been improving (Astani et al., 2010; Robertson, Grant, & Jackson, 2005). Students who take online courses cite convenience and cost as their main reasons, but F2F interaction with the instructor and other students is lost (Beard & Harper, n.d.; Fortune, Spielman, & Pangelinan, 2011). Students who learn better through social interaction indicated lower satisfaction with online learning, but the situation could be improved by addressing social interaction features in online

environments to improve learning outcomes (Richardson & Swan, 2003). Other concerns for online students are: geographic location and physical distance from other students, instructors, and the academic community. Thus, some students have reported losing the sense of connection to the institution when taking online courses (Macintyre & Macdonald, 2011). Students in online learning communities have shown better connection to other students and their faculty compared to the connections that students have to their learning institutions in other situations (Glazer & Wanstreet, 2011). Other studies have reported workload and poor time management as additional challenges facing students in online learning.

Online learning involves self-directed learning (Macintyre & Macdonald, 2011). Despite the convenience associated with online learning, some students perceive it as more challenging than F2F method of learning in terms of workload (Kim, Liu, & Bonk, 2005). This increase in workload is exacerbated by poor time management, a variable identified in studies as a primary challenge in online learning. Students enroll in online courses with the assumption that they are easy and, therefore, do not allocate enough time for adequate learning. Students must be able to manage their time well in order to achieve their learning outcomes (Macintyre & Macdonald, 2011). Time management skills tend to improve with a student's level of experience with online learning.

Student perceptions of instructional methods are generally influenced by the level of student experience with the method of instruction in question. Students who have completed more online courses tend to favor online learning more than students with little or no experience. Additionally older students who have some online learning experience tend to have positive attitudes towards online courses (Del Carmen, 2009). Students' experiences and research in

online learning will continue to guide learning institutions as they embrace this new course delivery environment.

Numerous empirical studies have indicated that there are no significant differences between online and F2F courses (Dillon, Dworkin, Gengler, & Olson, 2008; Driscoll, Jicha, Hunt, Tichavsky, & Thompson, 2012; Dziuban & Moskal, 2011; Lorenzetti, 2009). However, due to potential resistance toward full online adoption (Allen & Seaman, 2011), institutions transitioning from F2F to online may offer hybrid courses in the transition process. Well designed and structured blended courses offer inexperienced students better alternative to purely online courses (Wu & Hwang, 2010).

Blended Learning in Higher Education

Blended learning is preferred as an effective and convenient way for instructors and institutions to transition from F2F to online learning (Kenney & Newcombe, 2011). The effectiveness of this learning approach is determined by adequate planning and good course design. Pombo, Loureiro, and Moreira (2010) found that well designed blended learning environment produced better results in student collaborative work and innovative assessment. However, prior to implementing blended learning, some instructors and course developers tend to overlook course design, course preparation, communication, and motivation in the blended learning environments and consequently achieve poor outcomes (King & Arnold, 2012). Despite preference by students and faculty as supplementary way to improve the quality of learning, blended learning provides faculty with additional challenges of extra workload and lack of enthusiasm (Oh & Park, 2009).

Part-Time/Full-Time and Different Learning Environments

According to Allen and Seaman (2011), 31% of all students enrolled in higher education were taking online courses. This was a more than 20% growth in 8 years since 2002. Additionally, NCES (2012) reported a steady growth in college student enrollment between 2000 and 2010 from 15.3 million to 21.0 million respectively. The report indicated that full-time student enrollment rose by 45%, while that of part-time students rose by 26%. Student enrollment status in higher education can influence academic performance. Colorado and Eberle (2010) found that the performance of students who were enrolled full time was slightly higher than those enrolled part time. In addition to enrollment status other variable that can influence student's academic performance include age and gender.

Age and Different Learning Environments

Online learning has led to an increase in enrollment of older students, also called adult learners, to higher education. Most graduate students attending college today are adult learners (NCES, 2012). The research related to online adult education is still developing and there are conflicting findings in the literature in this area. Most research in adult learning has focused on the principles of adult learning. Adult learners are autonomous, independent, self-reliant, and self-directed towards goals. Adults bring life experiences to the learning environment and are mature and ready to learn (Knowles, 1989). Adult students are usually motivated to learn by internal factors rather than external ones and, therefore, seek immediate practical solutions to problems (Merriam & Caffarella, 1999). In addition to studying the principles surrounding adult

learning experiences, researchers have also investigated the time management practices and technology skills of adult learners.

Institutions offering online programs and courses to adult learners can improve their success by conducting an assessment such as the *Self Directed Learning* (SDL) of these students prior to their enrollment in online programs (Song & Hill, 2007). Most adult learners possess better time management skills than younger students; a characteristic that gives them better success in online learning environments. However, some adult learners have indicated that limited computer skills and diverse learning styles remain the major drawbacks to the new learning environment (Rakap, 2010). Another factor that scholars have researched related to the age of a student and different learning environments is accommodating the social and communal needs of adult students.

When designing an online course for adult learners it is also important for facilitators to understand how adults learn and what motivates them in order to succeed. Adult learners are different from traditional college students (Cercone, 2008). Most adult learners have additional responsibilities beyond college. Online learning environments can be intimidating and uncomfortable for most adult learners and without adequate support the whole learning experience becomes unfulfilling (DuCharme-Hansen & Dupin-Bryant, 2005). Building an online community support and offering immediate feedback by the instructor can help to minimize fear and discomfort often faced by most adult students. Online learning communities provide adult learners with meaningful experiences that accommodate the varied needs of adult learners (Russell, 1999). Because one instructional approach to online learning may not be effective to all the learning situations, combining them can be helpful to adult learners.

Gender and Different Learning Environments

Research has shown that gender plays a role in influencing the perception of students in different learning environments. Male students have been shown as more confident in using technology for learning than female students (Yau & Cheng, 2012). However, in another study female students were found to be more comfortable using social media tools for learning than using web 2.0 (Huang, Hood, & Yoo, 2013). Gender also plays a role in technology self-efficacy (Huffman, Whetten, & Huffman, 2013). Despite these differences, male and female students have shown a similarity in self-motivation in online learning environment (Yukselturk & Bulut, 2009). In addition to student's gender and age, some studies have reported mixed results in student's nationality in relation to learning environments.

Nationality and Different Learning Environments

Different studies have shown mixed findings on perceptions and satisfaction levels of the diverse aspects of online learning by international students. Cultural diversity is an important aspect of learning in higher education (Guo & Jamal, 2007). Though cultural diversity of students taking online courses is equally as important in F2F environments, some international students have expressed low satisfaction in online courses due to lack of cultural appreciation (Tan, Nabb, Aagard, & Kim, 2010). Online courses may not be culturally inclusive, a factor that negatively affects student performance and learning outcomes (Liu, Liu, Lee, & Magjuka, 2010). International students whose native language is not English require reading and writing as well as speaking and listening skills to improve their overall learning experiences, but the latter is lost

in online learning environment where course material does not incorporate videos or audio (Tan et al., 2010).

In spite of these findings some international, as well as domestic, students prefer online learning to F2F due to convenience. Asynchronous delivery offers students adequate time for research, reflection, and meaningful discussion (Donovan, Mader, & Shinsky, 2007). Some international students who struggle with F2F due to shyness face similar challenges in synchronous learning environment (Park & Bonk, 2007). Additionally, students who struggle with speaking English in traditional classes prefer online learning environments where they are not required to speak. These students tend to perform better online because they can read, write, and reflect on the learning material at their own pace. Online environments also promote self-expression and confidence (Ku & Lohr, 2003). The nonnative English speaking students who are taking online courses may require additional assistance to improve their success in an online environment (Seok et al., 2010). In addition to nationality, student's level of study has also attracted the interest of some researchers.

Graduate Program Level and Different Learning Environments

Graduate students have been shown by different studies to experience varying satisfaction levels under different learning environments. Some graduate students value the social aspect of online learning environment, while some perceive it as an unnecessary distraction (LaPointe & Reisetter, 2008). According to Vonderwell and Zachariah (2005) other factors that may influence learning experience for graduate students taking online courses include technology and interface characteristics, content area experience, student roles and

instructional tasks, and information overload. Additionally, graduate students have shown high satisfaction levels in collaborative learning under a blended learning environment (So & Brush, 2008) as well as course content and instruction in an online learning environment (Braun, 2008).

Instructional Approaches in Adult Online Learning

According to Ruey (2010) lack of immediate feedback and well planned assessment from the instructor leads to decreased motivation. Effective adult online education requires careful planning and facilitation of instruction. This means transforming some of the effective F2F adult teaching methods to online environment (Conceição, 2007). Furthermore, online learning environment provides adults with a rare opportunity to share ideas and experiences with other adults in different parts of the world and learn from them as well (Sandmann et al., 2007). Students engaging in adult online education are interested in learning other people's cultures.

Additionally, adult learners must feel safe and comfortable enough to share ideas, feelings, and actions in their environment (Vella, 1994). This will promote meaningful engagement between the instructor and the students. Adult learning is more self-directed, and the facilitator must be willing to empower students to establish their own learning goals and activities within the course objectives (Hanna et al., 2000). Adult learners may need more guidance from online faculty to clarify goals and objectives as well as relevant activities that will help them meet the defined goals and objectives (Blondy, 2007). Additionally, effective communication between the instructor and the students on an online learning environment is especially important for a meaningful learning experience to take place. According to Blondy (2007) adult learners need encouragement to communicate with each other frequently with

substantive, thoughtful conversation. In some cases adult learners have shown strong preference to online learning compared to F2F learning in terms of convenience and flexibility in scheduling (Donovant, 2009). However, numerous scholars have identified no differences between online and F2F delivery methods of teaching (Caywood & Duckett, 2003; Gagne & Shepherd, 2001; Silver & Nickel, 2005). Though adult students share some similar characteristics with younger students, they often differ in other ways.

Unlike younger traditional students, adult learners pursuing online education experience higher dropout rates. This higher dropout rate in adult learners is attributed primarily to lack of family and organizational support. Adult students drop out of an online course if they perceived the course to be irrelevant to their predetermined goals and objectives (Park & Choi, 2009). According to Vella (1994) the principles of immediacy and relevance are effective in adult learning.

Interaction in F2F and Online Learning

Interaction between students and instructor, as well as between students themselves, is a vital part of any learning process. While interaction is easily achievable in a F2F learning environment, it is a challenge that continues to face online learners. Students taking online courses have indicated feeling isolated and lonely (Macintyre & Macdonald, 2011; Tan et al., 2010). Those students who learn best by interacting with other students and instructor are usually disadvantaged in an online learning environment where interaction is limited (Beard & Harper, n.d.).

The most common drawback in online learning resulting in lower perceptions and student satisfaction levels is lack of timely feedback from instructors and technological support (Gaytan, & McEwen, 2007; Kim et al., 2005). Real-time feedback is an important part of social interaction between the instructor and the student.

Social presence in online learning environment has been shown to improve students and instructor perceptions and satisfaction levels of online programs (Richardson & Swan, 2003). According to Dow (2008) the main factors that impact online social context and online communication and interactivity include: effective dialog, well-structured interactions, user friendliness, and transparency in technology driven interactions. Though person-to-person interaction is considered a crucial component of effective learning, it is somewhat lacking in online education (Dow, 2008).

In order to maintain the human element in an online environment, most colleges encourage their students to include a visual image of themselves in their virtual classroom profile so that those who are interacting with the students can identify them (Palloff & Pratt, 2007). Though visual images are not comparable to F2F interaction, they help to put a face with the virtual interaction and psychologically bring participants closer.

The need for improved social interactive tools has become a vital part of online learning. Moran, Seaman, and Tinti-Kane (2011) found that more than 90% of the faculty were aware of and were using social media as part of their teaching and more than 80% use video in teaching. Faculty generally report that the use of other social media such as podcasts and wikis are also valuable in teaching when they are incorporated properly.

With changing technology there are indications that more learning institutions are incorporating social interactive tools and software in their online learning systems to improve social interactions (Linden Lab, 2009; Wasko et al., 2011). Group projects is a common strategy used by most instructors in F2F teaching method; however, this same strategy is still underdeveloped in online pedagogical method. Three main themes are considered when using group projects in F2F pedagogical method: whole group assessment, communication, and group member assessment (Smith et al., 2011). According Smith et al. (2011) these themes are negatively manifested in online learning environment. Students are, therefore, more resistant to teamwork in an online environment than they are in a traditional F2F classroom.

Frustration is common among students taking online courses when it comes to collaboration on projects due to poor group organization, lack of common goals between team members, and lack of commitment. Additional factors also include unequal contribution among individual members, lack of effective communication between group members, and poor time management among other factors (Capdeferro & Romeron, 2012).

In some cases students are willing to accept teamwork in an online program if they can identify a tangible benefit in relation to their future career (Kim et al., 2005). Cognitive style has been determined to be independent of academic achievement. Students with external thinking styles perceive teamwork as valuable compared to students with internal or flexible thinking styles. The students in the latter categories attach less importance to teamwork. When incorporating teamwork activities in an online course, students' learning styles need careful consideration (Liu, Magjuka, & Lee, 2008).

Summary

The purpose of this comparative quantitative study was to explore student experiences with instructional approaches in a public university. This chapter reviewed literature of previous studies in different areas related to online and F2F learning. The chapter especially offered an in-depth review on theoretical perspective of learning, instructional methods in higher education, trends in online and F2F learning in higher education, reasons and challenges of online learning, role of technology in higher education, accessibility of online learning, students and faculty perceptions on online and F2F learning, demographics and different learning environments, and student and faculty interactions in online and F2F learning. The next chapter provides methodology and procedures used in the study.

CHAPTER 3

METHODOLOGY AND PROCEDURES

The purpose of this comparative quantitative study was to explore student experiences with instructional approaches in a public university. The study used the four basic theories of learning as the framework for the study. Merriam et al. (2007) identify the four basic theories and approaches to learning as behaviorist, humanist, cognitivist, and constructivist. The survey questions were designed using these theories to determine, among other factors, differences in perceptions toward online, blended, and F2F instructional environments and methods among graduate students.

The use of a survey questionnaire is one of the most successful data collection methods in social science research (Nachmias & Nachmias, 2008). Online survey tools offer several advantages over the traditional hard copy surveys that include low cost, flexibility, and quick response time (Lefever, Dal, & Matthíasdóttir, 2007; Wright, 2005). When designing an effective research instruments for online learning, there are three main discipline areas that must been considered: 1) learning theories, philosophies, and instructional design; 2) research into student learning in higher education; and 3) online learning technologies (Siragusa & Dixon, 2006). Choosing and understanding a relevant quantitative research method is essential in educational research (Henson, Hull, & Williams, 2010). Survey questionnaires are commonly accepted as effective in nonexperimental quantitative research in higher education (Cook & Cook, 2008).

Research Questions and Null Hypotheses

The following research questions and hull hypotheses were used to guide the study.

1. Are there significant differences in student satisfaction with the different instructional approaches for online, F2F, and blended students?

   $Ho1_1$: There are no significant differences in levels of student satisfaction with behavioral instructional approaches to instruction between online, F2F, and blended courses.

   $Ho1_2$: There are no significant differences in levels of student satisfaction with humanistic instructional approaches to instruction between online, F2F, and blended courses.

   $Ho1_3$: There are no significant differences in levels of student satisfaction with cognitive instructional approaches to instruction between online, F2F, and blended courses.

   $Ho1_4$: There are no significant differences in levels of student satisfaction with constructivist instructional approaches between online, F2F, and blended courses.

2. Are there significant differences in student satisfaction with instructional approaches by student demographics?

   $Ho2_{a1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by part-time and full-time classification?

   $Ho2_{a2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by part-time and full-time classification?

$Ho2_{a3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by part-time and full-time classification?

$Ho2_{a4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by part-time and full-time classification?

$Ho2_{b1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by age?

$Ho2_{b2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by age?

$Ho2_{b3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by age?

$Ho2_{b4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by age?

$Ho2_{c1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by gender?

$Ho2_{c2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by gender?

$Ho2_{c3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by gender?

$Ho2_{c4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by gender?

$Ho2_{d1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by nationality (domestic or international)?

$Ho2_{d2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by nationality (domestic or international)?

$Ho2_{d3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by nationality (domestic or international)?

$Ho2_{d4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by nationality (domestic or international)

$Ho2_{e1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by graduate program level?

$Ho2_{e2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by graduate program level?

$Ho2_{e3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by graduate program level?

$Ho2_{e4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by graduate program level?

3. To what degree do students perceive that online instructional methods are suitable for all courses?
4. To what degree do students perceive that some courses are more suitable for face-to-face than online instructional methods?

Instrumentation

A survey was used as the primary instrument to collect data for this study. The survey had different categories with different item formats. The survey included basic instructions on

how to complete the survey and submit it online. Based on the nature of some of the questions in this study, a 5-point Likert scale was chosen. Generally a 5-point to 7-point Likert scale produces more reliable data than a lower or higher point scale (Dawes, 2008). The 5-point scale ranged from 1 representing *Strongly Disagree* to 5 representing *Strongly Agree.* There was also a "*Not Applicable*" option for appropriate items. A Semantic Differential (SD) scale was also used to capture participants' preference of some elements of instructional methods. SD scale captures direction and the intensity of participant's preference of the given options (Heise, 1970). The SD scale used in the study ranged from 1 representing *"strong preference to online instructional method"* to 7 representing *"strong preference to F2F instructional method"* and 4 was neutral.

The framework for designing the survey was based on the four theories of learning: behavioral, humanistic, cognitive, and constructivist learning orientation (Merriam et al., 2007). The items were also based on seven main focus areas of higher education instructional design: structure, content, motivation, feedback or help, interaction, learning strategies, and instructor's role (Siragusa & Dixon, 2006). The four theories of learning were used to guide creation of instructional approaches categories:

- Behavioral instructional approach
- Humanistic instructional approach
- Cognitive instructional approach
- Constructivist instructional approach

A pilot study in a research helps to ensure feasibility, cost, time, and the reliability of the survey instrument (Graham, Hundley, Rennie, & Teijlingen, 2001). Several graduate students

volunteered to participate in the pilot study before the actual study was administered. Based on their results and feedback, adjustments were made.

Sample

East Tennessee State University (ETSU) is a higher education institution located in Johnson City, Tennessee. Being part of state's university and college system, ETSU is under the governance of Tennessee Board of Regents. During spring 2013 semester, ETSU enrolled 2,140 graduate students that included 1,086 part-time and 1,054 full-time students (ETSU, 2012). ETSU offers its online courses and programs through Desire 2 Learn platform, while the F2F classes are offered at the different ETSU campuses located throughout the region.

This study used a quantitative nonprobability sampling method. The population of this study was all the graduate students pursuing graduate level programs at ETSU enrolled during 2013 spring semester. The enrollment comprised of 2,031 domestic and 109 international students. This population also comprised of 710 male and 1,430 female students. There were four age categories representing the population distributed as follow: 25 years old or less were 640 students, 26 years old to 35 years old were 706 students, 36 years old to 45 years old were 433 students, and 46 years old or older were 361 students. Of the 2,140 enrolled graduate students during the study, there were 1,602 master's and 538 doctoral students. The sample for this study was self-selected from the population. The participants were contacted through email with a link to the survey questionnaires. To ensure that only current graduate level students participated, the graduate students' mailing list provided by graduate school was used. All the

graduate students who were enrolled during 2013 spring semester were emailed the survey questionnaires link.

Data Collection

The data were collected via the survey that was administered through Survey Monkey. The survey was uploaded to a database where participants accessed through a link sent to them through an email. The email also included detailed instructions on how to access the survey questionnaires. Once all respondents completed the survey data were downloaded from Survey Monkey and data analysis software. In addition to user-friendliness and reliability, Survey Monkey is relatively inexpensive. In order for a participant to complete the survey one was required to be a current graduate student. This was done by emailing the survey link to only the graduate students enrolled during spring 2013 semester.

Data Analysis

Once the data collection stage was completed, data were analyzed using SPSS data analysis software. Data analysis procedures were guided by research questions for the study. The independent variables in the study were the method of instruction and instructional approach while dependent variables included classification, age, nationality, graduate level, and gender. Data were analyzed by the use of single sample and independent t tests and Analysis of Variance (ANOVA) procedures. Table 3 shows the summary of the research questions and their corresponding statistical procedures. The detail results of each statistical procedure are discussed in Chapter 4.

Table 3

Research Questions and Corresponding Statistical Procedures

Research Question	Survey Question(s)	Statistical Test or Procedure
1. Are there significant differences in student satisfaction with the different instructional approaches for online, F2F, and blended students?	Q 1 - 12	
a. Are there significant differences in degree levels of student satisfaction with behavioral instructional approaches to instruction between the three groups?	Q3, 4, 5, 6	ANOVA
b. Are there significant differences in levels of student satisfaction with humanistic instructional approaches to instruction between the three groups?	Q7, 8, 9, 12	ANOVA
c. Are there significant differences in levels of student satisfaction with cognitive instructional approaches to instruction between the three groups?	Q1, 2	ANOVA
d. Are there significant differences in levels of student satisfaction with constructivist instructional approaches between the three groups?	Q10, 11	ANOVA
2. Are there significant differences in student satisfaction with instructional approaches by student demographics?		
a. Is there a significant difference in student satisfaction with instructional approaches as categorized by part time and full time classification?	Demographic section	t-test - (independent)
b. Is there a significant difference in student satisfaction with instructional approaches as categorized by age?	Demographic section	ANOVA
c. Is there a significant difference in student satisfaction with instructional approaches as categorized by gender?	Demographic section	t-test - (independent)
d. Is there a significant difference in student satisfaction with instructional approaches as categorized by nationality (domestic/international)?	Demographic section	t-test (independent)
e. Is there a significant difference in student satisfaction with instructional approaches as categorized by graduate program level?	Demographic section	t-test - (independent)
3. To what degree do students perceive that online instructional methods are suitable for all courses?	Q13	t-test - (single sample)
4. To what degree do students perceive that some courses are more suitable for face-to-face than online instructional methods?	Q14	t-test - (single sample)

CHAPTER 4

RESULTS AND ANALYSIS OF THE DATA

The purpose of this comparative quantitative study was to explore student experiences with instructional approaches in a public university. Data analysis procedures were guided by research questions for the study. The independent variables in the study were the method of instruction and instructional approach while dependent variables included student enrollment classification, age, nationality, graduate level, and gender. The population for the study was graduate students enrolled during 2013 spring semester.

Chapter 4 presents a demographic overview of the research participants and statistical data analyses of the research questions and the related hypotheses of the sample. To determine the significance of the data an alpha of .05 was used in all the tests. Analysis of variance (ANOVA) and *t* tests statistical procedures were used. This chapter presents the findings of the study. The SD scale was used to rate participants' preference to instructional approaches. 1 to 3 indicated student's preference to online instructional method, 5 to 7 indicated student's preference to F2F method of instruction, and 4 indicated neutral preference.

Demographics

The data for the study were collected through an online survey. The participants were graduate students enrolled in masters and doctoral programs during 2013 spring semester. The participants represented all the academic programs and disciplines that were offered during the semester. There were 210 responses, which was about 10% response rate. Those who responded

were comprised of 60 (28.6%) male and 150 (71.4%) female students. Sixty-five (30.9%) of the participants were enrolled as part-time students while the remaining 145 (69.1%) were full-time students. The responses were comprised of 137 students pursuing masters and 73 doctoral students.

Analyses of Research Questions

Four research questions used to guide the study, and 24 corresponding null hypotheses were tested. The details of the statistical tests and the associated null hypotheses are presented in the following section.

Research Question #1

Are there significant differences in student satisfaction with the different instructional approaches for online, F2F, and blended students?

$Ho1_1$: There are no significant differences in levels of student satisfaction with behavioral instructional approaches to instruction between the three groups?

A one-way analysis of variance was conducted to evaluate the relationships between levels of student satisfaction with behavioral instructional approaches to instruction between the three groups. The independent variable, instructional method, included online only, F2F only, and blended methods of instruction. The dependent variable was behavioral instructional approach. The ANOVA was significant, $F(2, 207) = 51.04$, $p < .001$. Therefore, the null hypothesis was rejected. The η^2 index was .33 indicating a large effect size.

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the three groups. A Tukey procedure was

selected for the multiple comparisons because equal variances were assumed. There was a significant difference in the means between the three groups ($p < .001$). The F2F instructional method ($M = 5.20$, $SD = 1.29$) was significantly higher than those of both online ($M = 2.41$, $SD = 1.16$) and blended methods of instruction ($M = 4.03$, $SD = 1.65$). Therefore, results indicate that students in F2F, online, and blended methods of instruction experienced varying levels of satisfaction when behavioral instructional approach is used. The means and standard deviations for the three instructional methods groups are reported in Table 4.

Table 4

Means and Standard Deviations of Three Instructional Methods by Behavioral Instructional Approach

Method of Instruction	*N*	*M*	*SD*
Online only	55	2.41	1.16
F2F only	54	5.20	1.29
Blended	101	4.03	1.65

Ho1$_2$: There are no significant differences in levels of student satisfaction with humanistic instructional approaches to instruction between the three groups?

A one-way analysis of variance was conducted to evaluate the relationships between levels of student satisfaction with humanistic instructional approaches to instruction between the three groups. The independent variable, instructional method, included online only, F2F only,

and blended methods of instruction. The dependent variable was humanistic instructional approach. The ANOVA was significant, $F(2, 207) = 24.37$, $p < .001$. Therefore the null hypothesis was rejected. The η^2 index was .19 indicating a large effect size.

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the three groups. A Tukey procedure was selected for the multiple comparisons because equal variances were assumed. There was a significant difference in the means between F2F and online ($p < .001$) methods of instruction and between online and blended method of instruction ($p < .001$). However, there was no significant difference in the means between F2F and blended methods of instructions ($p = .73$). Both F2F ($M = 5.40$, $SD = 1.23$) and blended ($M = 5.20$, $SD = 1.44$) methods of instructions showed significantly higher means in humanistic approach than that of online ($M = 3.61$, $SD = 1.89$) method of instruction. This result showed that the satisfaction levels from humanistic instructional approach were similar in F2F and blended methods of instruction. The means and standard deviations for the three instructional methods groups are reported in Table 5.

Table 5

Means and Standard Deviations of Three Instructional Methods by Humanistic Instructional Approach

Method of Instruction	*N*	*M*	*SD*
Online only	55	3.61	1.89
F2F only	54	5.40	1.23
Blended	101	5.20	1.44

Ho1_3: There are no significant differences in levels of student satisfaction with cognitive instructional approaches to instruction between the three groups?

A one-way analysis of variance was conducted to evaluate the relationships between levels of student satisfaction with cognitive instructional approaches to instruction between the three groups. The independent variable, instructional method, included online only, F2F only, and blended methods of instruction. The dependent variable was cognitive instructional approach. The ANOVA was significant, $F(2, 207) = 45.58$, $p < .001$. Therefore, the null hypothesis was rejected. The η^2 index was .31 indicating a large effect size.

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the three groups. A Tukey procedure was selected for the multiple comparisons because equal variances were assumed. There was a significant difference in the means between all the three groups ($p < .001$). The F2F instructional method was significantly higher ($M = 6.21$, $SD = 1.33$) than online instructional method ($M =$

3.09, *SD* = 1.186) and the blended group (*M* = 5.14, *SD* = 1.87). The results showed that students using F2F instructional method were significantly more satisfied with cognitive instructional approach than those of both online and blended methods of instructions. The means and standard deviations for the three instructional methods groups are reported in Table 6.

Table 6

Means and Standard Deviations of Three Instructional Methods by Cognitive Instructional Approach

Method of Instruction	*N*	*M*	*SD*
Online only	55	3.09	1.86
F2F only	54	6.21	1.33
Blended	101	5.14	1.87

Ho1$_4$: There are no significant differences in levels of student satisfaction with constructivist instructional approaches between the three groups?

A one-way analysis of variance was conducted to evaluate the relationships between levels of student satisfaction with constructivist instructional approaches to instruction between the three groups. The independent variable, instructional method, included online only, F2F only, and blended methods of instruction. The dependent variable was constructivist instructional approach. The ANOVA was significant, $F(2, 207) = 48.88$, $p < .001$. Therefore, the null hypothesis was rejected. The η^2 index was .32 indicating a large effect size.

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the three groups. A Tukey procedure was selected for the multiple comparisons because equal variances were assumed. There was a significant difference in the means between the three groups. The result showed that students in F2F instructional method (M = 5.67, SD = 1.39) were significantly more satisfied with constructivist instructional approach than students in online (M = 2.60, SD = 1.64) and blended (M = 4.72, SD = 1.84) instructional methods. The means and standard deviations for the three instructional methods groups are reported in Table 7.

Table 7

Means and Standard Deviations of Three Instructional Methods by Constructivist Instructional Approach

Method of Instruction	*N*	*M*	*SD*
Online only	55	2.60	1.64
F2F only	54	5.67	1.39
Blended	101	4.72	1.84

Research Question #2

Are there significant differences in student satisfaction with instructional approaches by student demographics?

$Ho2_{a1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by part-time and full-time classification?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with behavioral instructional approach as categorized by student classification. The test variable was behavioral instructional approach and the grouping variable was student classification. The test was significant, $t(208) = 5.06$, $p < .001$. Therefore, the null hypothesis was rejected. The result indicated that full-time students ($M = 4.30$, $SD = 1.65$) showed a significantly higher satisfaction level in behavioral instructional approach than part time students ($M = 3.04$, $SD = 1.70$). The 95% confidence interval for the difference in mean was -.77 to 1.74. The η^2 index was .11, which indicated a medium effect size. Table 8 shows the detail result of the comparison between full-time and part-time students. Figure 1 shows a graphical representation of the result.

Table 8

A Comparison of Student Satisfaction Level in Behavioral Instructional Approach Based on Student Classification

Student Classification	*N*	*M*	*SD*	*t*	*df*	*p*
Full time	145	4.30	1.65	5.06	208	<.001
Part time	65	3.04	1.70			

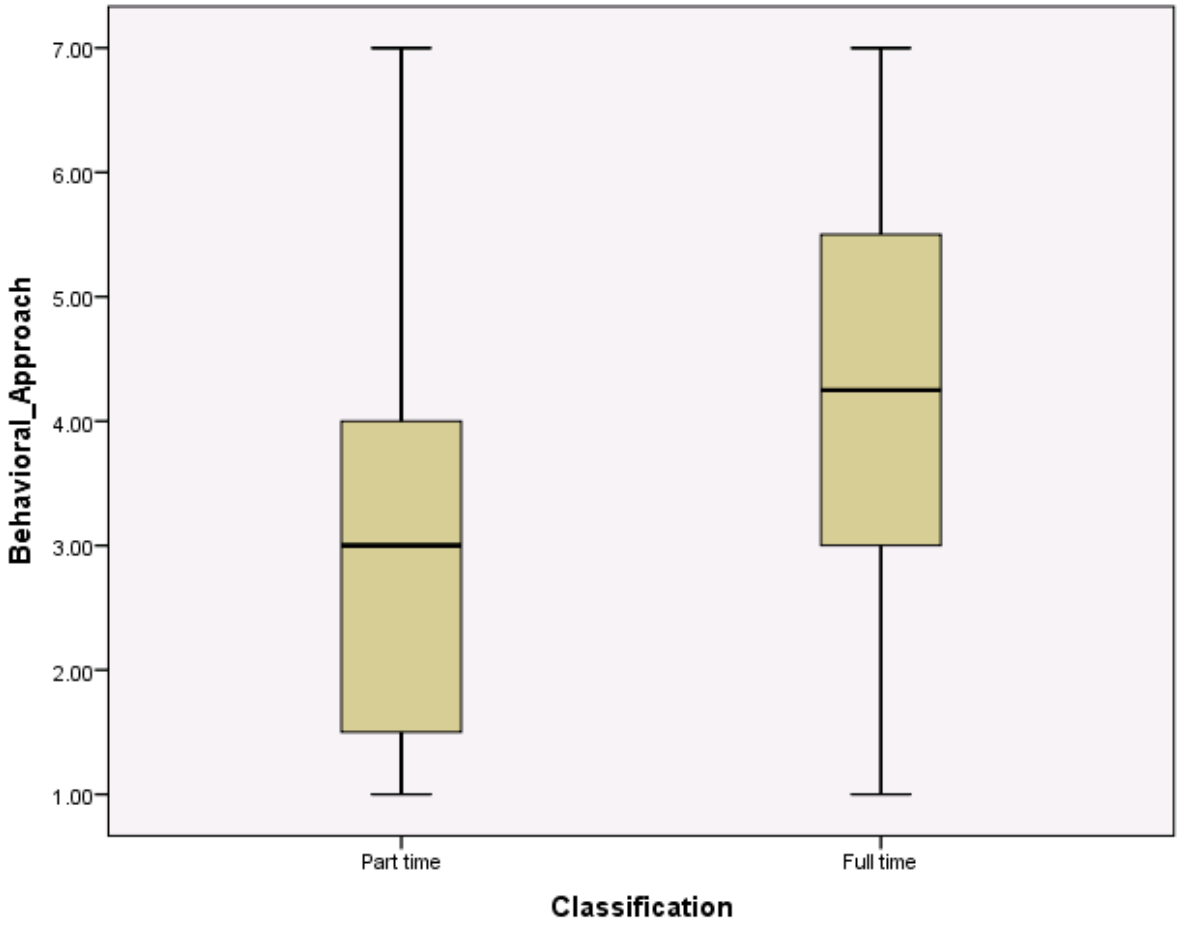

Figure 1. Boxplot of Student Satisfaction Level with Behavioral Instructional Approach Based on Classification.

$Ho2_{a2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by part-time and full-time classification?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with humanistic instructional approach as categorized by student classification. The test variable was humanistic instructional approach and the grouping variable was student classification. The test was significant, $t(208) = 5.04$, $p < .001$. Therefore, the null hypothesis was rejected. The result indicated that full-time students ($M = 5.23$, $SD = 1.46$) showed a significantly higher satisfaction level in humanistic instructional approach than part-time students ($M = 3.95$, $SD = 1.84$). The 95% confidence interval for the difference in mean was -.81 to 1.74. The η^2 index was .12, which indicated a medium effect size. Table 9 shows the detail result of the comparison between full-time and part-time students. A graphical representation of the result is shown in Figure 2

Table 9

A Comparison of Student Satisfaction Level in Humanistic Instructional Approach Based on Student Classification

Student Classification	*N*	*M*	*SD*	*t*	*df*	*p*
Full time	145	5.23	1.46	5.40	208	<.001
Part time	65	3.95	1.84			

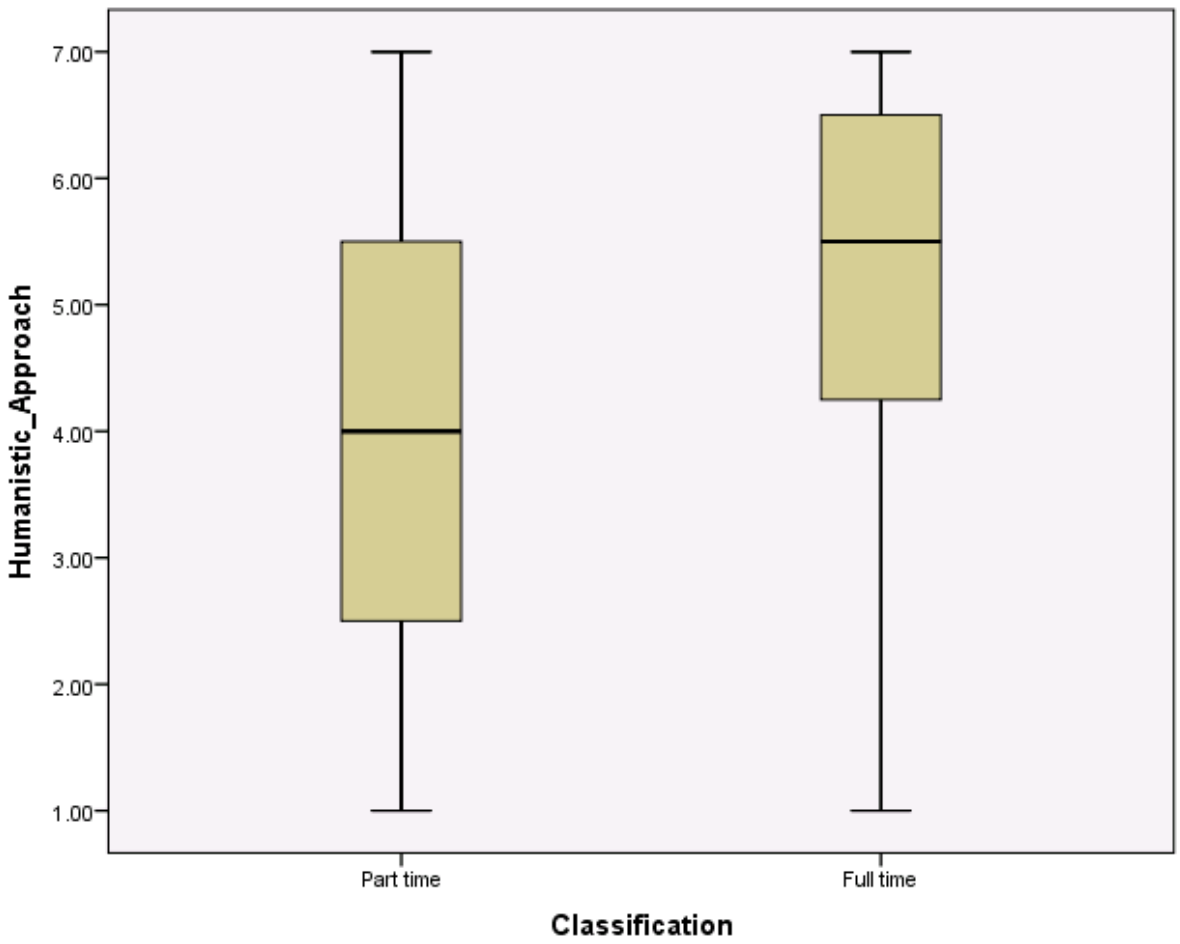

Figure 2. Boxplot of Student Satisfaction Level with Humanistic Instructional Approach Based on Classification.

$Ho2_{a3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by part-time and full-time classification?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with cognitive instructional approach as categorized by student classification. The test variable was cognitive instructional approach and the grouping variable was student classification. The test was significant, $t(208) = 4.86$, $p < .001$. Therefore, the null

hypothesis was rejected. The result indicated that full-time students (M = 5.32, SD = 1.93) showed a significantly higher satisfaction level in cognitive instructional approach than part-time students (M = 3.88, SD = 2.10). The 95% confidence interval for the difference in mean was .85 to 2.02. The η^2 index was .10, which indicated a small effect size. Table 10 shows the detail result of the comparison between full-time and part-time students. Figure 3 shows the graphical representation of the result.

Table 10

A Comparison of Student Satisfaction Level in Cognitive Instructional Approach Based on Student Classification

Student Classification	*N*	*M*	*SD*	*t*	*df*	*p*
Full time	145	5.32	1.93	4.86	208	<.001
Part time	65	3.88	2.10			

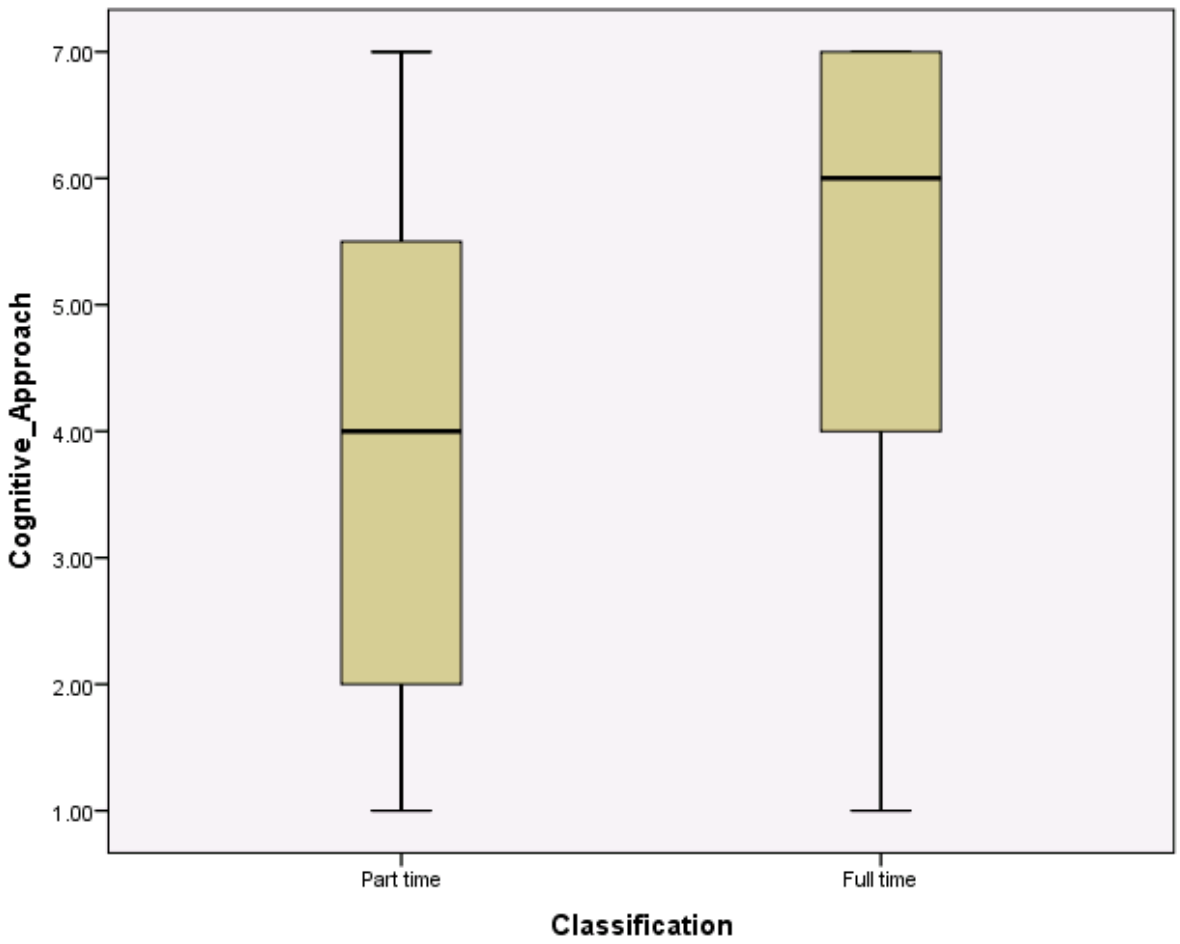

Figure 3. Boxplot of Student Satisfaction Level with Cognitive Instructional Approach Based on Classification.

$Ho2_{a4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by part-time and full-time classification?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with constructivist instructional approach as categorized by student classification. The test variable was constructivist instructional approach and the grouping variable was student classification. The test was significant, $t(208) = 5.51$, $p < .001$.

Therefore, the null hypothesis was rejected. The result indicated that full-time students (M = 4.89, SD = 1.85) showed a significantly higher satisfaction level in constructivist instructional approach than part-time students (M = 3.33, SD = 2.01). The 95% confidence interval for the difference in mean was 1.00 to 2.12. The η^2 index was 13, which indicated a small effect size. Table 11 shows the detail result of the comparison between full-time and part-time students. A graphical representation of the result is shown in Figure 4.

Table 11

A Comparison of Student Satisfaction Level in Constructivist Instructional Approach Based on Student Classification

Student Classification	*N*	*M*	*SD*	*t*	*df*	*p*
Full time	145	4.89	1.85	5.51	208	<.001
Part time	65	3.33	2.01			

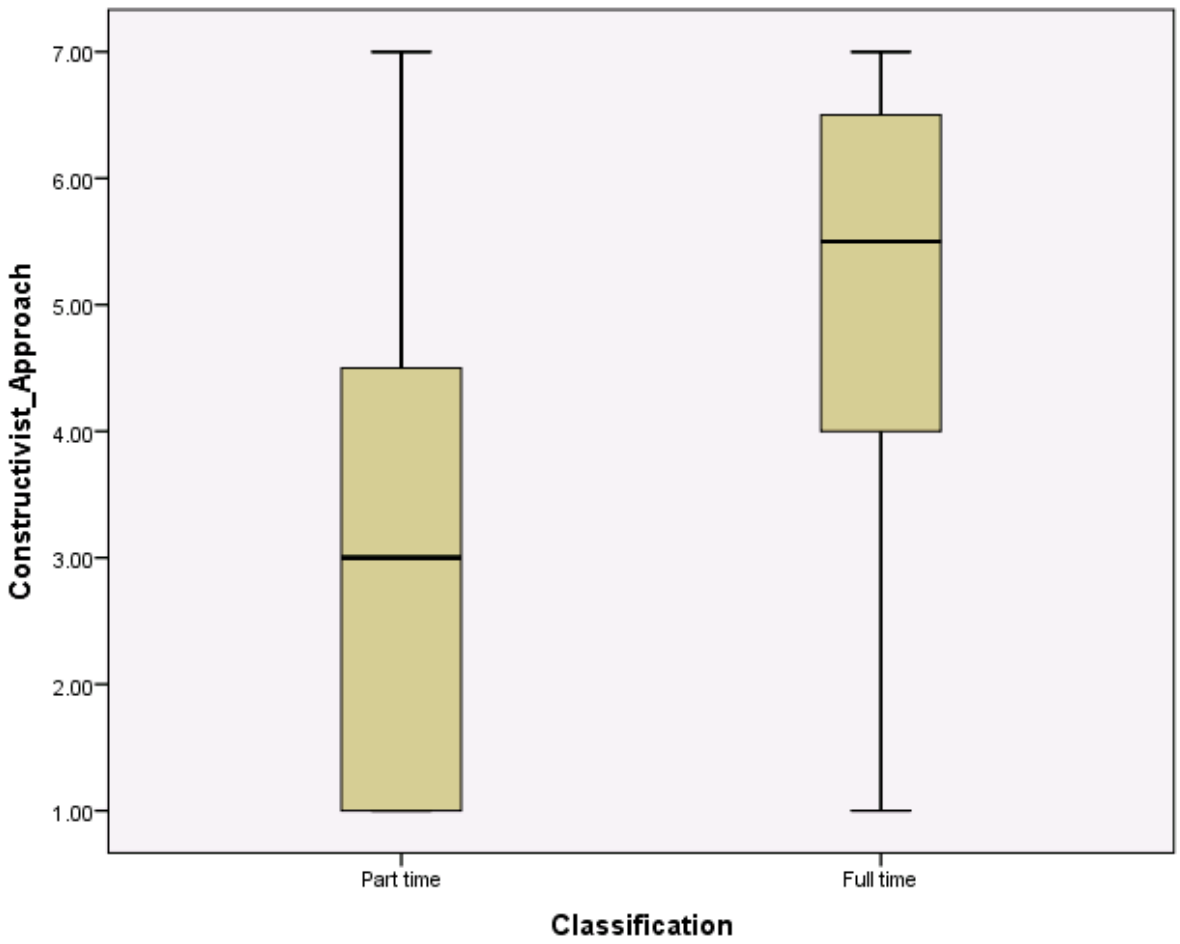

Figure 4. Boxplot of Student Satisfaction Level with Constructivist Instructional Approach Based on Classification.

$Ho2_{b1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by age?

A one-way analysis of variance was conducted to evaluate the relationships between student satisfaction level with behavioral instructional approaches and student's age. The factor variable, age, included four groups: less than 26 years old, 26 to 35 years old, 36 to 45 years old, and 46 years old or older. The factor dependent variable was behavioral instructional approach.

The ANOVA was not significant, *F(3, 206) = 2.63, p = .051*. Therefore, the null hypothesis was retained. The strength of relationship between student's age and behavioral instructional approach, assessed by η^2, .04 was small. There was no significant difference in student satisfaction with behavioral instructional approaches by age. The 95% confidence intervals for the pairwise differences and the means and standard deviations for the age groups are reported in Table 12. Figure 5 shows a graphical representation of the results.

Table 12

Means and Standard Deviation of Four Age Groups by Behavioral Instructional Approach

Age	*N*	*M*	*SD*
Less than 26yrs	42	4.23	1.64
26 – 35yrs	75	4.20	1.84
36 – 45yrs	49	3.58	1.78
46yrs or more	44	3.48	1.61

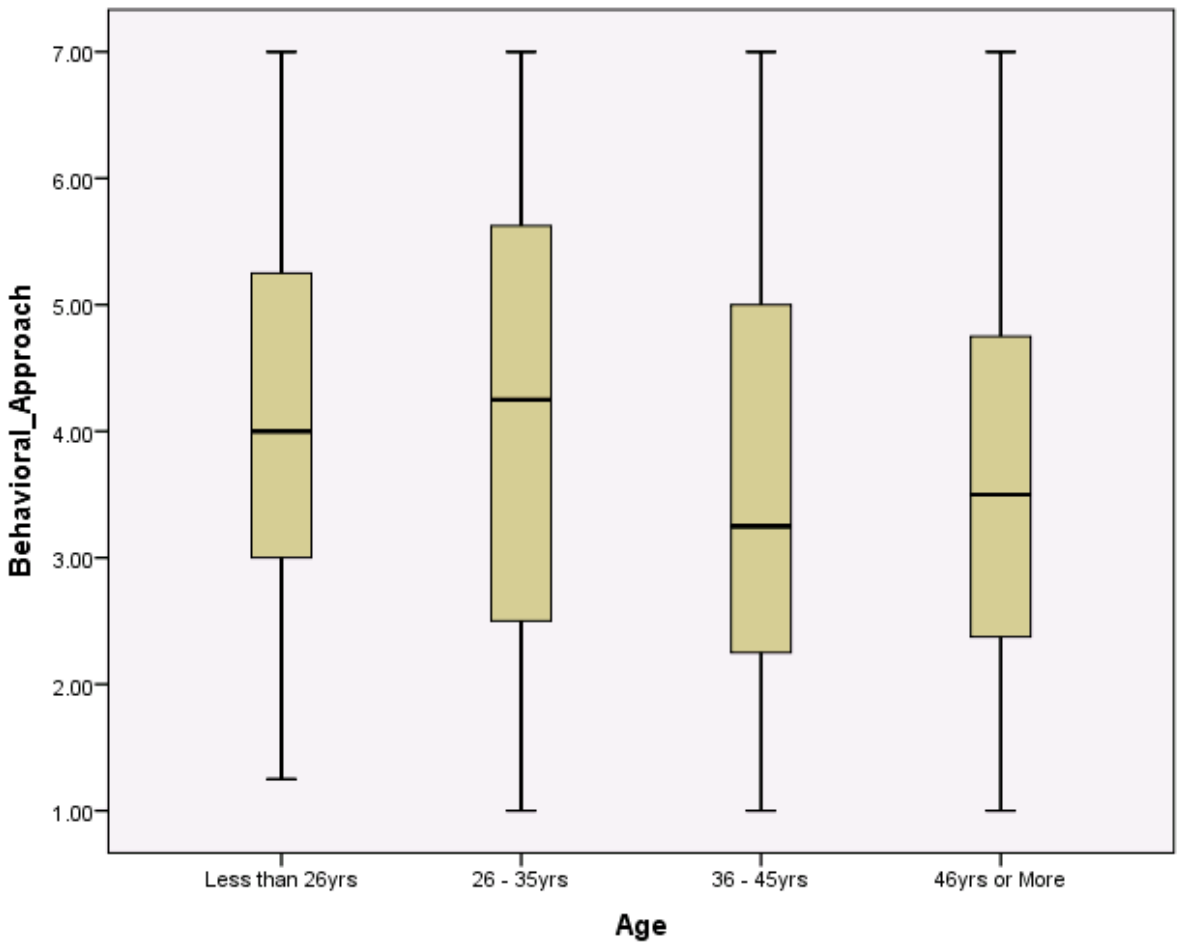

Figure 5. Boxplot of Student Satisfaction Level with Behavioral Instructional Approach Based on Age.

$Ho2_{b2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by age?

A one-way analysis of variance was conducted to evaluate the relationships between student satisfaction level with humanistic instructional approaches and student's age. The factor variable, age, included four groups: less than 26 years old, 26 to 35 years old, 36 to 45 years old, and 46 years old or older. The factor dependent variable was humanistic instructional approach.

The ANOVA was not significant, *F(3, 206) = 1.63, p = .184*. Therefore, the null hypothesis was retained. The strength of relationship between student's age and humanistic instructional approach, assessed by η^2, .02, was small. There was no significant difference in student satisfaction with humanistic instructional approaches by age. The 95% confidence intervals for the pairwise differences and the means and standard deviations for the age groups are reported in Table 13. The graphical representation of the results is shown in Figure 6.

Table 13

Means and Standard Deviation of Four Age Groups by Humanistic Instructional Approach

Age	*N*	*M*	*SD*
Less than 26yrs	42	5.21	1.57
26 – 35yrs	75	4.96	1.65
36 – 45yrs	49	4.59	1.79
46yrs or more	44	4.54	1.71

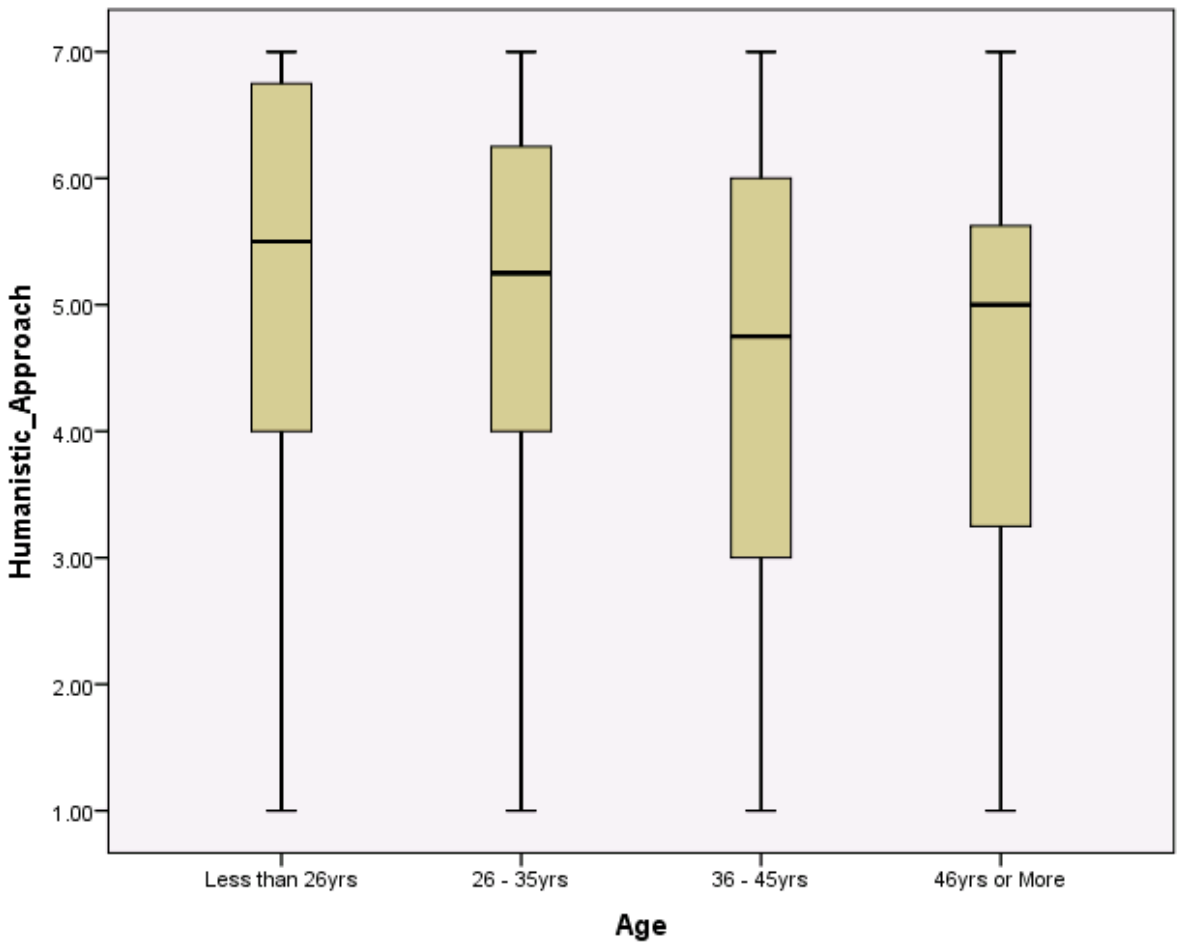

Figure 6. Boxplot of Student Satisfaction Level with Humanistic Instructional Approach Based on Age.

$Ho2_{b3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by age?

A one-way analysis of variance was conducted to evaluate the relationships between student satisfaction level with cognitive instructional approaches and student's age. The factor variable, age, included four groups: less than 26 years old, 26 to 35 years old, 36 to 45 years old, and 46 years old or older. The factor dependent variable was cognitive instructional approach.

The ANOVA was significant, $F(3, 206) = 3.89$, $p = .010$. Therefore, the null hypothesis was rejected. The strength of relationship between student's age and cognitive instructional approach assessed by η^2, .05, was small.

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the four groups. A Tukey procedure was selected for the multiple comparisons because equal variances were assumed. There was a significant difference in the means between the four groups. The result showed that students in less than 26 years age group ($M = 5.64$, $SD = 1.60$) were significantly more satisfied with cognitive instructional approach than those in 36 to 45 years old group ($M = 4.43$, $SD = 2.29$) and 46 years old or older group ($M = 4.35$, $SD = 2.19$). The 95% confidence intervals for the pairwise differences and the means and standard deviations for the age groups are reported in Table 14. Figure 7 shows the graphical representation of the results.

Table 14

Means and Standard Deviation of Four Age Groups by Cognitive Instructional Approach

Age	*N*	*M*	*SD*
Less than 26yrs	42	5.64	1.60
26 – 35yrs	75	5.05	2.00
36 – 45yrs	49	4.42	2.29
46yrs or more	44	4.35	2.09

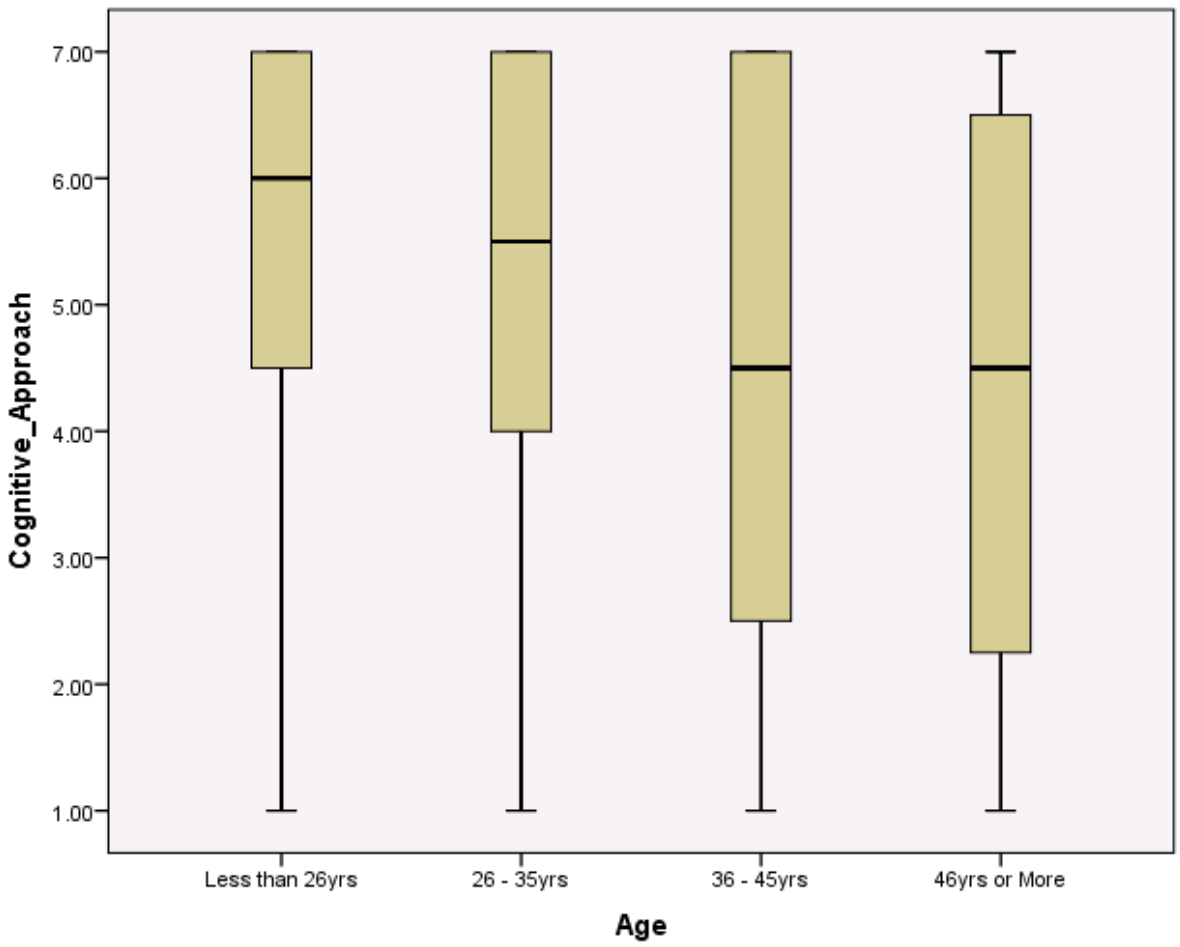

Figure 7. Boxplot of Student Satisfaction Level with Cognitive Instructional Approach Based on Age.

$Ho2_{b4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by age?

A one-way analysis of variance was conducted to evaluate the relationships between student satisfaction level with constructivist instructional approaches and student's age. The factor variable, age, included four groups: less than 26 years old, 26 to 35 years old, 36 to 45 years old, and 46 years old or older. The factor dependent variable was constructivist

instructional approach. The ANOVA was significant, $F(3, 206) = 3.99$, $p = .009$. Therefore, the null hypothesis was rejected. The strength of relationship between student's age and constructivist instructional approach assessed by η^2, .05, was small.

Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the four groups. A Tukey procedure was selected for the multiple comparisons because equal variances were assumed. There was a significant difference in the means between the four groups. The result showed that students in less than 26 years age group ($M = 4.92$, $SD = 1.89$) and 26 to 35 years old group ($M = 4.78$, $SD = 1.96$) were significantly more satisfied with constructivist instructional approach than those in 46 years old or older group ($M = 3.82$, $SD = 2.11$). The 95% confidence intervals for the pairwise differences and the means and standard deviations for the age groups are reported in Table 15. A graphical representation of the result is shown in Figure 8.

Table 15

Means and Standard Deviation of Four Age Groups by Constructivist Instructional Approach

Age	*N*	*M*	*SD*
Less than 26yrs	42	4.92	1.89
26 – 35yrs	75	4.78	1.96
36 – 45yrs	49	3.94	2.00
46yrs or more	44	3.82	2.11

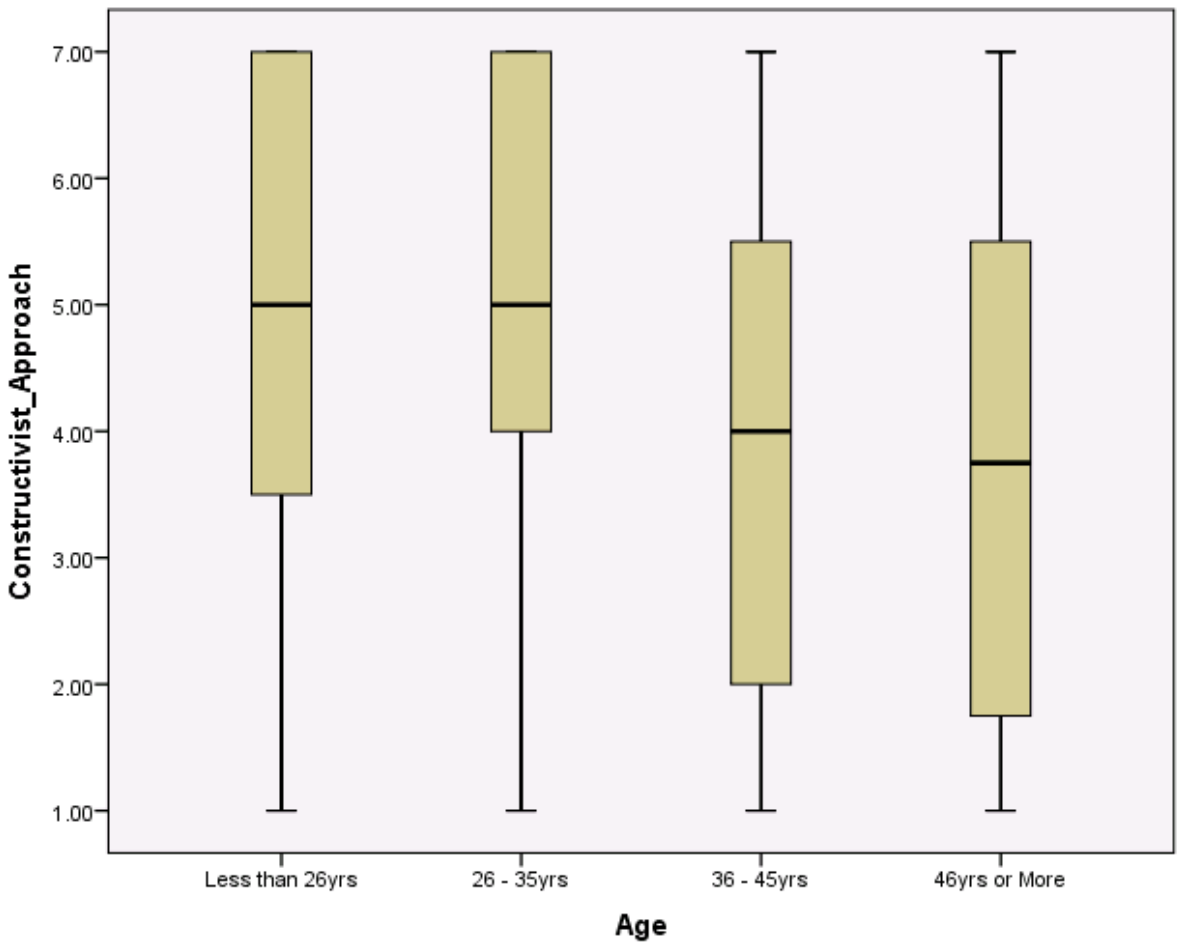

Figure 8. Boxplot of Student Satisfaction Level with Constructivist Instructional Approach Based on Age.

Ho2_{c1}: There is no significant difference in student satisfaction with behavioral instructional approaches by gender?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with behavioral instructional approach as categorized by student gender. The test variable was behavioral instructional approach and the grouping variable was student gender. The test was not significant, $t(208) = 1.66$, $p = .099$. Therefore, the null hypothesis was

retained. The result indicated that male students (M = 4.23, SD = 1.84) showed similar satisfaction level in behavioral instructional approach as female students (M = 3.78, SD = 1.72). There was no significant difference in student satisfaction with behavioral instructional approaches by gender. The 95% confidence interval for the difference in mean was .08 to .97. The η^2 index was .01, which indicated a small effect size. Table 16 shows the detail results of the comparison between male and female students.

Table 16

A Comparison of Student Satisfaction Level in Behavioral Instructional Approach Based on Student Gender

Student Gender	*N*	*M*	*SD*
Male	60	4.23	1.84
Female	150	3.78	1.72

$Ho2_{c2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by gender?

An independent sample t test was conducted to evaluate whether there was any difference in student satisfaction with humanistic instructional approach as categorized by student gender. The test variable was humanistic instructional approach and the grouping variable was student gender. The test was not significant, $t(208) = 1.55$, $p = .124$. Therefore, the null hypothesis was retained. The result indicated that male students (M = 5.12, SD = 1.52) showed similar satisfaction level in humanistic instructional approach as female students (M = 4.72, SD = 1.74).

There was no significant difference in student satisfaction with humanistic instructional approaches by gender. The 95% confidence interval for the difference in mean was .11 to .90. The η^2 index was .01, which indicated a small effect size. Table 17 shows the detail results of the comparison between male and female students.

Table 17

A Comparison of Student Satisfaction Level in Humanistic Instructional Approach Based on Student Gender

Student Gender	*N*	*M*	*SD*
Male	60	5.12	1.52
Female	150	4.72	1.74

$Ho2_{c3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by gender?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with cognitive instructional approach as categorized by student gender. The test variable was cognitive instructional approach and the grouping variable was student gender. The test was not significant, $t(208) = .68$, $p = .498$. Therefore, the null hypothesis was retained. The result indicated that male students ($M = 5.03$, $SD = 2.02$) showed similar satisfaction level in cognitive instructional approach as female students ($M = 4.82$, $SD = 2.12$). There was no significant difference in student satisfaction with cognitive instructional approaches by gender. The 95% confidence interval for the difference in mean was .41 to .85.

The η^2 index was < .01, which indicated a small effect size. Table 18 shows the detail results of the comparison between male and female students.

Table 18

A Comparison of Student Satisfaction Level in Cognitive Instructional Approach Based on Student Gender

Student Gender	*N*	*M*	*SD*
Male	60	5.03	2.02
Female	150	4.82	2.12

$Ho2_{c4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by gender?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with constructivist instructional approach as categorized by student gender. The test variable was constructivist instructional approach and the grouping variable was student gender. The test was significant, $t(208) = 2.23$, $p = .026$. Therefore, the null hypothesis was rejected. The result indicated that male students ($M = 4.90$, $SD = 1.89$) tended to be significantly more satisfied in constructivist instructional approach than female students ($M = 4.21$, $SD = 2.06$). The 95% confidence interval for the difference in mean was .08 to 1.29. The η^2 index was .02, which indicated a small effect size. Table 19 shows the detail results of the comparison between male and female students.

Table 19

A Comparison of Student Satisfaction Level in Constructivist Instructional Approach Based on Student Gender

Student Gender	*N*	*M*	*SD*
Male	60	4.90	1.89
Female	150	4.21	2.06

$Ho2_{d1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by nationality (domestic or international)?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with behavioral instructional approach as categorized by student nationality. The test variable was behavioral instructional approach and the grouping variable was student nationality. The test was not significant, $t(208) = 1.96$, $p = .051$. Therefore, the null hypothesis was retained. The result indicated that domestic students ($M = 3.85$, $SD = 1.74$) showed similar satisfaction levels in behavioral instructional approach as international students ($M = 4.87$, $SD = 1.86$). The 95% confidence interval for the difference in mean was -.004 to 2.05. The η^2 index was .02, which indicated a small effect size. Table 20 shows the detail results of the comparison between domestic and international students.

Table 20

A Comparison of Student Satisfaction Level in Behavioral Instructional Approach Based on Student Nationality

Student Nationality	*N*	*M*	*SD*
Domestic	198	3.85	1.74
International	12	4.87	1.86

$Ho2_{d2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by nationality (domestic or international)?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with humanistic instructional approach as categorized by student nationality. The test variable was humanistic instructional approach and the grouping variable was student nationality. The test was not significant, $t(208) = 1.62$, $p = .105$. Therefore, the null hypothesis was retained. The result indicated that domestic students ($M = 4.79$, $SD = 1.69$) showed similar satisfaction levels in humanistic instructional approach as international students ($M = 5.60$, $SD = 1.55$). The 95% confidence interval for the difference in mean was -.17 to 1.80. The η^2 index was .01, which indicated a small effect size. Table 21 shows the detail results of the comparison between domestic and international students.

Table 21

A Comparison of Student Satisfaction Level in Humanistic Instructional Approach Based on Student Nationality

Student Nationality	*N*	*M*	*SD*
Domestic	198	4.83	2.08
International	12	5.62	2.14

$Ho2_{d3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by nationality (domestic or international)?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with cognitive instructional approach as categorized by student nationality. The test variable was cognitive instructional approach and the grouping variable was student nationality. The test was not significant, $t(208) = 1.28$, $p = .203$. Therefore, the null hypothesis was retained. The result indicated that domestic students ($M = 4.83$, $SD = 2.08$) showed similar satisfaction levels in cognitive instructional approach as international students ($M = 5.62$, $SD = 2.14$). The 95% confidence interval for the difference in mean was .43 to 2.01. The η^2 index was .01, which indicated a small effect size. Table 22 shows the detail results of the comparison between domestic and international students.

Table 22

A Comparison of Student Satisfaction Level in Cognitive Instructional Approach Based on Student Nationality

Student Nationality	*N*	*M*	*SD*
Domestic	198	4.83	1.74
International	12	4.87	1.86

$Ho2_{d4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by nationality (domestic or international)

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with constructivist instructional approach as categorized by student nationality. The test variable was constructivist instructional approach and the grouping variable was student nationality. The test was not significant, $t(208) = 1.93$, $p = .055$. Therefore, the null hypothesis was retained. The result indicated that domestic students ($M = 4.34$, $SD = 2.03$) showed similar satisfaction levels in constructivist instructional approach as international students ($M = 5.50$, $SD = 1.83$). The 95% confidence interval for the difference in mean was -.03 to 2.34. The η^2 index was .01, which indicated a small effect size. Table 23 shows the detail results of the comparison between domestic and international students.

Table 23

A Comparison of Student Satisfaction Level in Constructivist Instructional Approach Based on Student Nationality

Student Nationality	*N*	*M*	*SD*
Domestic	198	4.34	2.03
International	12	5.50	1.83

$Ho2_{e1}$: There is no significant difference in student satisfaction with behavioral instructional approaches by graduate program level?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with behavioral instructional approach as categorized by student graduate level. The test variable was behavioral instructional approach and the grouping variable was graduate level. The test was not significant, $t(208) = .79$, $p = .433$. Therefore, the null hypothesis was retained. The result indicated that master's level students ($M = 3.98$, $SD = 1.82$) showed similar satisfaction levels in behavioral instructional approach as doctoral level students ($M = 3.78$, $SD = 1.64$). The 95% confidence interval for the difference in mean was .30 to .70. The η^2 index was .002, which indicated a small effect size. Table 24 shows the detail results of the comparison between master's and doctoral students.

Table 24

A Comparison of Student Satisfaction Level in Behavioral Instructional Approach Based on Student Graduate Level

Student Graduate Level	*N*	*M*	*SD*
Master's	137	3.98	1.82
Doctoral	73	3.78	1.64

$Ho2_{e2}$: There is no significant difference in student satisfaction with humanistic instructional approaches by graduate program level?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with humanistic instructional approach as categorized by student graduate level. The test variable was humanistic instructional approach and the grouping variable was graduate level. The test was not significant, $t(208) = .18$, $p = .858$. Therefore, the null hypothesis was retained. The result indicated that master's level students ($M = 4.85$, $SD = 1.71$) showed similar satisfaction levels in humanistic instructional approach as doctoral level students ($M = 4.81$, $SD = 1.65$). The 95% confidence interval for the difference in mean was .44 to .53. The η^2 index was .001, which indicated a small effect size. Table 25 shows the detail results of the comparison between master's and doctoral students.

Table 25

A Comparison of Student Satisfaction Level in Humanistic Instructional Approach Based on Student Graduate Level

Student Graduate Level	*N*	*M*	*SD*
Master's	137	4.85	1.71
Doctoral	73	4.81	1.65

$Ho2_{e3}$: There is no significant difference in student satisfaction with cognitive instructional approaches by graduate program level?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with cognitive instructional approach as categorized by student graduate level. The test variable was cognitive instructional approach and the grouping variable was graduate level. The test was not significant, $t(208) = 1.36$, $p = .174$. Therefore, the null hypothesis was retained. The result indicated that master's level students ($M = 5.02$, $SD = 2.07$) showed similar satisfaction levels in cognitive instructional approach as doctoral level students ($M = 4.61$, $SD = 2.11$). The 95% confidence interval for the difference in mean was .18 to 1.01. The η^2 index was .01, which indicated a small effect size. Table 26 shows the detail results of the comparison between master's and doctoral students.

Table 26

A Comparison of Student Satisfaction Level in Cognitive Instructional Approach Based on Student Graduate Level

Student Graduate Level	*N*	*M*	*SD*
Master's	137	5.02	2.07
Doctoral	73	4.61	2.11

$Ho2_{e4}$: There is no significant difference in student satisfaction with constructivist instructional approaches by graduate program level?

An independent sample *t* test was conducted to evaluate whether there was any difference in student satisfaction with constructivist instructional approach as categorized by student graduate level. The test variable was constructivist instructional approach and the grouping variable was graduate level. The test was not significant, $t(208) = 1.28$, $p = .202$. Therefore, the null hypothesis was retained. The result indicated that master's level students ($M = 4.54$, $SD = 2.07$) showed similar satisfaction levels in constructivist instructional approach as doctoral level students ($M = 4.16$, $SD = 1.93$). The 95% confidence interval for the difference in mean was .20 to .37. The η^2 index was .01, which indicated a small effect size. Table 27 shows the detail results of the comparison between master's and doctoral students.

Table 27

A Comparison of Student Satisfaction Level in Constructivist Instructional Approach Based on Student Graduate Level

Student Graduate Level	*N*	*M*	*SD*
Master's	137	5.02	2.07
Doctoral	73	4.61	2.11

Research Question # 3

To what degree do students perceive that online instructional methods are suitable for all courses?

A one-sample *t* test was conducted to evaluate to what degree students perceived online instructional method to be suitable for courses. A 5-point Likert scale which ranged from 1 (strongly agree) to 5 (strongly disagree) was used to rate the perception. The sample mean of 2.39 (SD = 1.31) was significantly different from the test value of 3 (neither agree or disagree), $t(209) = 6.75$, $p < .001$. The 95% confidence interval for difference in mean was .43 to .79. The η^2 index was .09, which indicated a medium effect size. This result indicated that students perceived online as suitable instructional method for offering courses.

Research Question # 4

To what degree do students perceive that some courses are more suitable for face-to-face than online instructional methods?

A one-sample *t* test was conducted to evaluate to what degree students perceived F2F instructional method to be more suitable for some courses than online instructional method. A 5-point Likert scale which ranged from 1 (strongly agree) to 5 (strongly disagree) was used to rate the perception. The sample mean of 1.66 (*SD* = 1.00) was significantly different from test value of 3 (neither agree or disagree), $t(209) = 19.30$, $p < .001$. The 95% confidence interval for difference in mean was 1.20 to 1.47. The η^2 index was .07, which indicated a medium effect size. This result indicated that students strongly perceived F2F instructional method to be more suitable for some courses than online instructional method.

Summary

This chapter reviewed the data obtained from an online survey of graduate students' attitudes towards online and F2F courses regarding satisfaction levels. There were four research questions and 24 null hypotheses. All data were collected through an online survey questionnaire administered to all graduate students who were enrolled during 2013 spring semester. There were 210 responses from the survey. The data were analyzed using *t* test and ANOVA statistical procedures and the results presented using tables and graphs. A summary of findings, conclusions, implication for practice, and recommendations for future research are presented in Chapter 5.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

Chapter 5 presents a summary of findings, conclusions, and recommendations for future research on graduate students' attitudes towards online and F2F courses regarding satisfaction levels. The summary of the findings presented are based on the research questions for this study. The purpose of this comparative quantitative study was to explore student experiences with instructional approaches in a public university.

Summary of Findings

The data analyzed were collected from 60 (28.6%) male and 150 (71.4%) female students. The current national enrollment trend for female students in higher institutions of learning is generally higher than that of male students at both undergraduate and graduate levels (Horn & Nevill, 2006). The participants included 65 (30.9%) part-time and 145 (69.1%) full-time students. Of the 210 total responses 137 students were pursuing masters and 73 were doctoral students. Data collection was guided by four research questions with 24 corresponding hypotheses that were analyzed. To determine the significance of the data an alpha of .05 was used in all the tests. Analysis of variance (ANOVA) and *t* tests statistical procedures were used and their results were presented in Chapter 4.

Research question #1

Are there significant differences in student satisfaction with the different instructional approaches for online, F2F, and blended students?

One-way analysis of variance showed significant differences in some of the methods of instruction based on the different instructional approaches. The SD scale was used to rate student perceptions for this research question. The scale ranged from 1 to 7 with 1 to 3 showing "*preference to online instructional method"*, 4 showing "*neutral preference"*, and 5 to 7 showing *"preference to F2F instructional method"*. As shown in Table 28, students in online method of instruction tended to show stronger preference for behavioral (M = 2.41, SD = 1.16) and constructivist (M = 2.60, SD = 1.64) instructional approaches while those in F2F method of instruction showed stronger preference for cognitive (M = 6.21, SD = 1.33) and constructivist (M = 5.67, SD = 1.39) instructional approaches.

However, on the individual items students showed stronger preference for online method of instruction on doing homework (M = 3.16) and doing assignments (3.37). In the F2F method of instruction there was stronger preference in working on group projects (M = 5.49) and interacting with other students (M = 5.54). Other studies have reported similar observations in students' perceptions to group projects (Capdeferro & Romeron, 2012; Smith et al., 2011) and interactions (Macintyre & Macdonald, 2011; Tan et al., 2010).

Table 28

Summary of Means and Standard Deviations

Instructional approach		Behavioral approach		Humanistic approach		Cognitive approach		Constructivist approach	
Method of Instruction	*N*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Online only	55	2.41	1.16	3.61	1.89	3.09	1.86	2.60	1.64
F2F only	54	5.20	1.29	5.40	1.23	6.21	1.33	5.67	1.39
Blended	101	4.03	1.65	5.20	1.44	5.14	1.87	4.72	1.84
Overall mean	210	3.88	1.37	4.74	1.52	4.81	1.69	4.33	1.62

Research question #2

Are there significant differences in student satisfaction with instructional approaches by student demographics?

Statistical procedures showed significant differences in satisfaction levels based on some of the demographic variables. The SD scale was used to rate student perceptions for this research question. The scale ranged from 1 to 7 with 1 to 3 showing "*preference to online instructional method",* 4 showing "*neutral preference"*, and 5 to 7 showing *"preference to F2F instructional method"*. While student classification, age, and gender showed significant difference in some of the instructional approaches, student nationality and graduate level variables did not show any significant difference in any of the instructional approaches. In terms of classification, as shown in Tables 8, 9, 10, and 11, part-time students tended to prefer online method of instruction in

behavioral (*M* = 3.04), humanistic (*M* = 3.95), cognitive (*M* = 3.88), and constructivist (*M* = 3.33) instructional approaches. Full-time students on the contrary showed preference for the F2F method of instruction in all the four instructional approaches; behavioral (*M* = 4.30), humanistic (*M* = 5.23), cognitive (*M* = 5.32), and constructivist (*M* = 4.89). The difference in preference based on classification may be attributed to the fact that part-time students tend to be nontraditional working adults who find online courses more convenient (Allen & Seaman, 2007; Perreault et al., 2008), while most full-time students tend to be on campus and enrolled in F2F courses.

There were significant differences in student satisfaction levels with instructional approaches based on age in only two of the four instructional approaches. In cognitive instructional approach younger students (≤35 years) showed a stronger preference for the F2F method of instruction when compared to older students (≥36 years). Similarly, in constructivist instructional approach younger students (≤35 years) showed preference for the F2F method of instruction, while older students (≥36 years) tended to prefer online method of instruction (see Table 15). These findings agree with other studies that have revealed older students to have positive perceptions of online learning (Allen & Seaman, 2007; Del Carmen, 2009).

There were no significant differences in student satisfaction levels by gender with behavioral, humanistic, and cognitive instructional approaches. However, in constructivist approach though both male and female students showed a preference for the F2F method of instruction, male students (*M* = 4.90) showed slightly stronger preference than female students (*M* = 4.21).

Research question #3

To what degree do students perceive that online instructional methods are suitable for all courses?

A one-sample t test showed significant difference between the means. The sample mean (M = 2.39, SD = 1.31) was significantly lower than the population mean of 3 which was derived from the 5-point Likert scale used in this research question. Of all the responses, 60.9% of the students perceived online methods of instruction as suitable method for offering courses. This was significantly higher than those who disagreed (20%) and those who neither agreed nor disagreed (9.1%). Several studies have shown that there are no significant differences between online and F2F methods of instructions as effective methods of learning in institutions of higher learning (Caywood & Duckett, 2003; Dillon et al., 2008; Driscoll et al., 2012; Dziuban & Moskal, 2011; Lorenzetti, 2009).

Research question #4

To what degree do students perceive that some courses are more suitable for face-to-face than online instructional methods?

The result showed a significantly different sample mean (M = 1.66) from 3, $t(209)$ = 19.30, p <.001. This indicated that students strongly perceived F2F methods of instruction (87.14%) as more suitable for offering some courses than online method (8.07%).

Conclusions

The following conclusions may be drawn based on the data analyses and findings of this study:

1. Students tend to prefer different methods of instruction based on the instructional approaches used.
2. Full-time students tend to favor F2F instructional methods while part-time (nontraditional) students are more satisfied with online instructional methods.
3. The graduate level, gender, and nationality of a graduate student are not significant in determining the level of satisfaction in the instructional method used to offer courses.
4. F2F and online methods of instruction are suitable for offering courses at institutions of higher learning. There are no significant differences between the two instructional methods.
5. F2F methods of instruction are more suitable for offering some courses than online instructional methods.

Recommendations for Practice

The researcher of this comparative quantitative study explored graduate students experiences with instructional approaches in a public university. The following recommendations may be drawn from the results of this study.

1. Graduate students tend to prefer different instructional methods and environments based on the different instructional approaches. Understanding this variation in satisfaction levels may help learning institutions in planning and implementation of

the different methods of teaching and learning. Customization and blending of teaching and learning methods may be helpful in meeting the needs of all students.

2. Part-time students tend to prefer online instructional methods compared to F2F method. Learning institutions using F2F as the primary instructional methods and learning environments could consider blended instructional methods and learning environments as alternative to online learning environments in order to improve the satisfaction levels of students.
3. The findings of this study show that not all courses are suitable for online instructional methods and learning environments. Therefore, as higher learning institutions move towards implementing online learning, it may be helpful to consider the programs and courses independently in order to determine their suitability and effectiveness on different learning environments and instructional methods.

Recommendations for Future Research

The following recommendations may be considered for future study in the same area or topic.

1. This study did not compare the satisfaction levels of students based on program of study and major taken by participants. Additionally future study could also include credit hours that a participant has completed in the graduate program the student is pursuing.
2. Because this study was conducted in a single institution, it would be beneficial to replicate the same study using different higher learning institutions both locally and

even internationally. This may also include learning institutions of different categories and levels. Because the population was only graduate level students, a replicated study could compare undergraduate and graduate students on the same research topic.

3. Due to the limited time for this study, it was not possible to identify the courses that students perceived to be unsuitable for online instructional methods. Future research could investigate this aspect as well.

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APPENDICES

APPENDIX A: ETSU IRB Approval Letter

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IRB APPROVAL – Initial Exempt

March 25, 2013

Philip Rotich

RE: Graduate Students' Attitudes Towards Online and Face-to-Face Courses in a Public Four-Year Institution of Higher Learning Regarding Satisfaction Levels
IRB#: c0313.20e
ORSPA#: ,

On **March 25, 2013**, an exempt approval was granted in accordance with 45 CFR 46. 101(b)(2). It is understood this project will be conducted in full accordance with all applicable sections of the IRB Policies. No continuing review is required. The exempt approval will be reported to the convened board on the next agenda.

> Form 103; Narrative (dated 3/8/13); Survey & Consent Statement (stamped approved 3/25/13); Email Invitation; Potential Conflict of Interest; Assurance Statement; CV

Projects involving Mountain States Health Alliance must also be approved by MSHA following IRB approval prior to initiating the study.

Unanticipated Problems Involving Risks to Subjects or Others must be reported to the IRB (and VA R&D if applicable) within 10 working days.

Proposed changes in approved research cannot be initiated without IRB review and approval. The only exception to this rule is that a change can be made prior to IRB

approval when necessary to eliminate apparent immediate hazards to the research subjects [21 CFR 56.108 (a)(4)]. In such a case, the IRB must be promptly informed of the change following its implementation (within 10 working days) on Form 109 (www.etsu.edu/irb). The IRB will review the change to determine that it is consistent with ensuring the subject's continued welfare.

Sincerely,

Chris Ayres, Chair
ETSU Campus IRB

Cc:

Accredited Since December 2005

APPENDIX B: Survey Questionnaire

Demographic Information:

Classification:	☐ Part time	☐ Full time		
Age:	☐ Less than 25yrs	☐ 26 – 35yrs	☐ 36 – 45yrs	☐ 46yrs or more
Gender:	☐ Male	☐ Female		
Nationality:	☐ Domestic student	☐ International student		
Current graduate level:	☐ Masters	☐ Doctoral		

Number of credit hours taken at the current graduate level:

Online courses	☐ 0hrs	☐ 1 – 12hrs	☐ 13hrs or more
Face-to-face courses	☐ 0hrs	☐ 1 – 12hrs	☐ 13hrs or more

Considering the online and face-to-face courses you have taken at the current graduate level, choose an instructional method you prefer based on the following items.

1.	Discussion of course material	Prefer Online	☐	☐	☐	☐	☐	☐	☐ Prefer F2F
2.	Course material content and presentation:	Prefer Online	☐	☐	☐	☐	☐	☐	☐ Prefer F2F
3.	Doing assignments:	Prefer Online	☐	☐	☐	☐	☐	☐	☐ Prefer F2F
4.	Doing homework:	Prefer Online	☐	☐	☐	☐	☐	☐	☐ Prefer F2F
5.	Taking tests:	Prefer Online	☐	☐	☐	☐	☐	☐	☐ Prefer F2F
6.	Working on	Prefer Online	☐	☐	☐	☐	☐	☐	☐ Prefer F2F

group projects:									
7. Interacting with other students:	Prefer Online	☐	☐	☐	☐	☐	☐	☐	Prefer F2F
8. Interacting with the instructor:	Prefer Online	☐	☐	☐	☐	☐	☐	☐	Prefer F2F
9. Timely feedback from instructor:	Prefer Online	☐	☐	☐	☐	☐	☐	☐	Prefer F2F
10. Overall quality of the course:	Prefer Online	☐	☐	☐	☐	☐	☐	☐	Prefer F2F
11. Workload manageability:	Prefer Online	☐	☐	☐	☐	☐	☐	☐	Prefer F2F
12. Getting help and support:	Prefer Online	☐	☐	☐	☐	☐	☐	☐	Prefer F2F

Please rate the following based on your experience on the graduate courses that you have taken at your current graduate program

	Strongly agree	*Agree*	*Neither agree or disagree*	*Disagree*	*Strongly disagree*	*NA*
13. **Online** instructional method is suitable for courses	☐	☐	☐	☐	☐	☐
14. Some courses are more suitable for **face-to-face** than online instructional method	☐	☐	☐	☐	☐	☐

Answer the following questions based on your experience on the graduate courses that you have taken at your current graduate program

	Strongly agree	*Agree*	*Neither agree or disagree*	*Disagree*	*Strongly disagree*	*NA*
15. Considering the graduate courses you have taken **online**, would you have taken them **face-to-face** if you had the option?	☐	☐	☐	☐	☐	☐
16. Considering the graduate courses you have taken **face-**	☐	☐	☐	☐	☐	◉

to-face, would you have taken them **online** if you had that option?

VITA

PHILIP ROTICH

Personal Data:	Date of Birth: December 20, 1978 Place of Birth: Bomet, Rift Valley - Kenya
Education:	Ed.D. Educational Leadership, East Tennessee State University, Johnson City, Tennessee 2013 Master of Arts in Sport Management and Administration, East Tennessee State University, Johnson City, Tennessee 2007 Bachelor of Science in Computer Information Technology, Milligan College, Johnson City, Tennessee 2003 Bachelor of Arts in Tourism and Recreational Management, Moi University, Eldoret – Kenya 1997
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