Effects of Students' Characteristics and Locus of Control on Their Satisfaction with Online Distance Education Experience

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ABSTRACT

Online learners bring varied learning experiences depending on their different personal characteristics and traits. This descriptive and correlational study explored students' online satisfaction in relation to their locus of control orientation and their personal characteristics including gender, age, ethnicity, and online learning experiences. Responses were collected from students in an online course at Virginia Tech. Descriptive statistics, Pearson correlations and Multiple Linear Regression methods were used to detect the correlations and analyze the relationships among different variables. Results of the study did not find correlations between students' online satisfaction and their locus of control, as well as their personal characteristics. The results also showed that students' locus of control and personal characteristics did not contribute to students' online satisfaction.

Dedications

This dissertation is dedicated to my daughter and my wife. The dissertation writing process depicted a tale of three cities: Montclair (NJ, U.S.), Yantai (Shandong, China), and Shizuishan (Ningxia, China). The completion of this dissertation hopes to help relieve the geographic separation of all three us during this process.

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Chapter 1: Introduction and Need for the Study

Distance education originated in the form of correspondence education in the early 1800s (Holmberg, 1989). Printed teaching materials were mailed to students from educational institutes. The past two centuries have witnessed the enormous evolvement of distance education, while the development of technology has opened up new possibilities for educators and students.

Today, online learning has become a popular approach to teaching and learning and an important supplement to traditional face-to-face learning. A great number of online programs and courses are springing up, and the number of online learners has skyrocketed during the past several decades. According to an annual report of online education (Allen & Seaman, 2011), online enrollment growth rate is almost ten times that of the regular higher education. During the fall semester of 2011, there were appropriately 6.7 million online students, an increase of 570,000 students compared with the previous year. University students are also taking great advantage of online education opportunities, as almost one-third of all college students are taking more than one online course (Allen & Seaman, 2011).

In general, researchers have claimed that in order to have a successful distance education experience, students are expected to have more self-motivation, autonomy, discipline, independence, orderliness, and spirit of collaboration (Brophy, 2010; Hung, Chou, Chen, & Own, 2010; Lee, 2011; Muirhead, 2000; Rowntree, 1995). However, due to the diverse population of distance education students, online learners demonstrate a great variety of different personal

features and characteristics. Individual differences in students' personal attributes can vary from one person to another. Different learners bring varied learning experiences depending on their different educational backgrounds, prior experiences, learning expectations, motivations, and so on (Bing & Kosworn, 1992).

In the development of distance education, the degree of student satisfaction has played an important role in evaluating the effectiveness of distance education and it is crucial to the success of distance education programs (Allen & Seaman, 2003). A high level of course satisfaction leads to increased course completion rate, as well as motivates students to take more online courses (Reinhart & Schneider, 2001). A higher level of satisfaction also leads to greater perceived learning (Swan, Shea, Fredericksen, Pickett, & Pelz, 2000). However, according to Wu, Tennyson, and Hsia (2010), there is currently a scarcity of research on student satisfaction compared with the massive growth in distance education programs.

Students' satisfaction in distance education experiences can vary depending on their different personal characteristics (Bollinger, 2004; Petraglia, 1998; Reinhart & Schneider, 2001; Watkins, Leigh, & Triner, 2004; Yukselturk & Yildirim, 2008). Thus, there is a need for an ongoing effort to identify key characteristics that contribute to student satisfaction with distance education. Looking into these questions can help instructional designers and instructors design and implement online courses to increase students' satisfaction and obtain a higher persistence rate.

Statement of the Problem

In literature noting heightened satisfaction in online courses, a host of personal characteristics factors have been indicated as predictors for students' online satisfaction. The elements that possibly predict student satisfaction include self-efficacy (Bono & Judge, 2003; Ellen, Bearden, & Sharma, 1991; Erdwins, Buffardi, Casper, & O'Brien, 2001; Lim, 2001), self-esteem (Duffy, Shaw, & Stark, 2000; Randolph, Kangas, & Ruokamo, 2010), and motivation (Denson, Loveday, & Dalton, 2010; Eom, Wen, & Ashill, 2006).

As one of the most important elements among personal characteristics, locus of control is a personal construct that deals with the orientation or beliefs regarding reinforcements that follow a behavior. It is an important antecedent personal trait that impacts communication motivation and behavior (Brenders, 1987). Students of internal locus of control orientation believe that a reinforcement or an outcome of their behavior is contingent upon their own action while students with an external locus of control orientation assume that the reinforcement is a result of chance, luck, fate, or is under the control of powerful others (Rotter, 1975). It is of great usefulness to explore the predictive ability of this construct with other variables so that students can receive different and customized instructions based on their different locus of control orientations. Some research has been conducted to explore the relationship between locus of control and other variables such as academic achievement (Findley & Copper, 1983; Maqsud, 2011), motivation (Strutt, Hill, Scott, Uber-Zak, & Fogel, 2011), anxiety (Rubin, 1993; Shepherd & Edelman, 2009),

health (Wallston & Wallston, 1978), and job satisfaction (Muhonen & Torkelson, 2004). However, the locus of control construct has not been widely studied in relation to students' satisfaction, especially in the online learning environment.

Purpose of the Study

The purpose of this study was to explore the relationship between locus of control and students' satisfactions of distance education experience. For this purpose, this study specifically focused on investigating the relationship of locus of control with students' satisfaction in online learning. Some selected personal characteristics and demographic information including gender, age, ethnic background and online learning experience were also examined to find out their relationship with students' online satisfaction.

The results of this study may provide insights into whether a relationship exists between locus of control and students' online satisfaction. Besides that, the study sought to identify relationships between students' personal characteristics and their satisfaction. Such information would be useful for educators in evaluating potential online students to determine their likelihood of satisfaction or possible persistence in an online course. It would also lead to planning, designing, and delivering online instruction in a manner that enhances students' satisfaction and suitability for students of different orientations of locus of control.

Research Questions

This study focused on students' locus of control, online satisfaction, and selected personal

characteristics. The research questions include:

1. What is the relationship between students' locus of control and their online satisfaction?

2. What is the relationship between students' gender and their online satisfaction?

3. What is the relationship between students' age and their online satisfaction?

4. What is the relationship between students' ethnic background and their online satisfaction?

5. What is the relationship between students' online learning experience and their online satisfaction?

Organization of the Proposed Study

Chapter One provides background information for the study, a statement of the problem and purpose, and the research questions. Chapter Two includes a review of the literature related to this study. This chapter includes four sections. The first section is a discussion of distance education. It includes definitions of distance education, a historical overview of distance education, discussions of transactional distance, and students' satisfaction with online education, in consideration of different personal characteristics including gender, age, ethnic background, and online learning experience. The second section provides an overview of the locus of control theory. It begins with an overview of Rotter's social learning theory, and follows with an introduction of locus of control concept, measurement, and related key studies. The third section

specifically discusses the relationship between locus of control and students' online satisfaction. Finally, Chapter Two ends with a summary of the literature review.

Chapter Three provides information related to the methodological approach that will be undertaken to answer the posited research questions. This chapter contains a discussion of the research design, research participants, research instruments, data collection procedures, and procedures for data analysis, delimitations, and limitations of the study.

Chapter Four provides results of the statistical analysis. The chapter begins with descriptive statistics of the participants, follows by a reliability test of the survey questions, and correlations for independent and dependent variables, and ends with a Multiple Linear Regression analysis of the variables. Chapter Five discusses contributions of the study, research findings, areas for future investigations, as well as the study summary.

Chapter 2: Review of Literature

Introduction

This study investigated possible personal factors that may affect students' distance education satisfaction, including locus of control and other demographic characteristics. This chapter presents a review of the literature in order to provide a rationale of how distance education students' satisfaction may be influenced by their locus of control and some possible personal characteristics. The review of literature includes three threads. In the first thread, the literature review defines the nature of distance education, maps its historical development, and reviews studies of students' satisfaction in the aspects of students' gender, age, ethnic background, and online learning experience. In the second thread, the review of literature clarifies the theoretical foundations on which it is based, and discusses locus of control concepts, measurements, and related research studies. The third thread moves on to review studies on the relationship between locus of control and students' online satisfaction. This chapter concludes with a discussion of the specific study focus, as well as a summary of the literature.

Distance Education

As a unique form of education process and practice, distance education has been growing as a reputable contender to traditional education in the higher education market. In traditional education settings, students' access to educational programs sometimes can be limited since the opportunity to pursue an education is often scare and exclusive (Matthews, 1999). However,

distance edcuation can provide a chance for students who cannot pursue their college degrees at the tradiational educational institutes due to time and location constraints (Fjortoft, 1995; Gibson & Gibson, 1995; White, 1999). Distance education has been growing and expanding its range to provide life-long learning opportunities in society and the workplace (Abernathy, 1998; Smith, 1998; Zajokwski, 1997). At least fifty percent of U.S. students are enrolling in educational programs after engaging in work or while still working (Hiltz & Goldman, 2005), and distance education provides great flexibility and benefits to students, their employers, and the public.

Distance education has made its way to the forefront of higher education as the latest wave of the future (Allen & Seaman, 2003) and the development of distance education has opened up new learning opportunities for students. Technology has a unique and important role in the development of distance education, from its earlier form as correspondance study to current trends in online education. Technology serves as an effective communication channel and bridges the gap between faculty and students. The past several decades have witnessed the exponential development of distance education with a great number of courses offered to students. The number of distance education programs and courses has increased dramatically from the 1980s to present (Maddux, Sprague, Ferdig, & Albion, 2007). At the fall semester of 2011, more than 6.7 million students were taking at least one online course and more than 32% of higher education students were then taking at least one online course (Allen & Seaman, 2011).

In spite of the great development of distance education and its growing student

enrollment, institutions that offer distance education courses and programs have also realized some challenges and issues such as low retention rates, poor communication between instructors and students, promotion of distance education programs and so on (Boling, Hough, Krinsky, Saleem, & Stevens, 2012). College and university administrators and teachers have been challenged to develop new and innovative ways to design distance education courses to accommodate students' needs (Coopter, 2000; Kop, 2011; Sharpe & Oliver, 2013).

Students' perceptions of their distance education experiences will determine their likelihood of enrolling in future distance education courses (Lee & Choi, 2011; Reio & Crim, 2013). Therefore, it is essential to examine factors that may impact students' distance education perceptions and experiences in order to enhance distance education effectiveness.

Definitions of Distance Education

With the evolvement of technology and the great demand of lifelong educational opportunities, distance education has become an important option for many people. A comprehensive review of literature reveals an inconsistency in the use of terms. Besides distance education, some other terms are also used interchangeably such as home study, correspondence study, independent study, distance teaching, external study, and distance learning (Keegan, 1996). The emergence of distance education in different learning environments such as in computer-assisted language learning (CALL), mobile learning, multiuser visual environments, and games and simulations has made it even more difficult to provide a uniformed definition

(Warren, Lee, & Najmi, 2013).

Due to the constraints of time as well as people's different perspectives on the application of technology, distance education is defined differently by different researchers (Keegan, 1983). The adoption of diverse delivery systems and the rapid evolution of technology make it difficult to provide a universally accepted definition of distance education (Lionarakis, 2008). Besides the development of technology, the evolutions in society and education have also influenced people's view about distance education (Lowyck, 2013).

Among early researchers in distance education, Holmberg (1989) provided a definition of distance education:

> Various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises but which, nevertheless, benefit from the planning, guidance and teaching of a supporting organization. (p. 3)

Holmberg's (1989) definition explicitly identified the distinctions between distance education and all other forms of face-to-face education. The definition also emphasized the absence of the traditional teacher presence, as well as the important role of planning in distance education. However, researchers argued that this definition is broadly and vaguely conveyed, and the role of communication is overlooked in the definition (Wang & Sun, 2001).

Garrison and Shale (1990) later offered a more flexible notion of distance education, in

which they proposed three criteria for characterizing it: 1) Noncontiguous communication between instructors and students. 2) Two-way communication between instructors and students. 3) The use of mediating technology in communication. Although they provided a broad frame for the definition of distance education and set as a premise for subsequent discussions of the term, many criticized this definition for its failure in defining an educational context (Keegan, 1988), and exclusive consideration of asynchronous communication (Moore, 1990).

In a more systematic way, Moore and Kearsley (2005) defined distance education as "planned learning that normally occurs in a different place from teaching, requiring special course design and instruction techniques, communication through various technologies, and special organizational and administrative arrangements" (p. 2). This definition emphasized the planning process by focusing on instructional design methods and delivery technologies from an administrative perspective.

Instead of providing a concrete definition of distance education like earlier researchers, Schlosser and Simonson (2006) identified essential components of distance education and they defined it as "institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors" (p.2). These components of distance education provided an overview of the distance education in general, and emphasized the collaborative role among learner, instructor, and technology (McIssac & Gunawardena, 1996).

Though the concept of distance education has been defined in different ways, there are some commonalities among those different definitions. Through a close scrutiny of the different historical definitions of distance education, the major conceptual attributes of the concept remain unchanged over time such as the physical and/or temporal separation of instructors and students and the dependence on communicating technology for course delivery.

Many researchers (Conceicao, 2006; Galbraith, 2004; Garrison & Shale, 1990; Gaspar & Thompson, 1995; Holmberg, 1986; Keegan, 1996; Schlosser & Simonson, 2006) seem to have reached an agreement about essential features and components in the distance education, in spite of certain phrasing differences. Most similarities and inherent key features of distance education can be especially reflected in Keegan's (1996) five essential characteristics of distance education:

1. The quasi-permanent separation of teacher and learner.

2. The impact of an educational institute.

3. The use of technical media to communicate and deliver course content.

4. The option of two-way communication.

5. The quasi-permanent deficiency of a learning group for didactic and social purposes.

Keegan's (1996) definition of distance education explicitly provided distinctions between distance education and other forms of education. However, some researchers such as Verduin and Clark (1991) also expressed concerns by arguing that this definition did not consider certain applications of distance education aided with teleconferencing technologies in a group-based

format.

Just as Schlosser and Anderson (1994) reflected on the development of distance education, distance has manifold implications and distance education has been applied to a variety of different programs assisting various audiences via types of technology. With the development of technology, especially modern Internet-based technology, what was considered an incapable alternative for traditional face-to-face classroom education has entered mainstream education (Moore, 2003). New and innovative instructional theories and strategies also emerged in accordance with the critical changes in education (Merrienboer & Bruin, 2013; Moore & Kearsley, 2005).

However, there is still a lack of attention to describing the field and lack of progress towards building an overall theoretical framework, and the volume of distance education research does not keep up with the growth in the field (Garrison, Anderson, & Archer, 2010; Moore, 1985; Schlosser & Simonson, 2010). Due to the separation of teachers and students in distance education, the interpersonal interaction is not a natural characteristic of distance education (Gasper & Thompson, 1995). This implication requires designers and instructors to reflect on the design and development of distance education, and generate effective learning outcomes through collaborations among instructors, learners, and technologies (McIssac & Gunawardena, 1996). Interrelationships among instructors, learners, and technologies should especially be considered since learner support has shifted from program or instructor toward

more shared and learner control with the development of educational technologies (Lowyck, 2013).

Historical Overview of Distance Education

From its origins in correspondence education in the early 1880s, distance education has undergone great changes in the past two centuries. The development of technology has opened up new possibilities for educators and students and the number of distance education programs and courses has been growing exponentially (Collins & Halverson, 2009; Foster & Carnevale, 2007). Instead of changing the goals of education, the emergence and development of new technologies merely changed the communication process to accomplish these goals within the educational system by delivering the same messages in different ways (Allen et al., 2004; Sherry, 1995). A variety of distance education delivery modalities evolved in the development of distance education that include print-based correspondence programs, broadcast radio and television, teleconferencing through phone and later computers, and the emergence of digital technologies and the Internet. The following sections will discuss the general evolvement of distance education through four different stages: correspondence education, educational radio/audio, educational television/video, and computer-based instruction.

Correspondence education. The history of distance education can be tracked back to the early 1800s in the form of correspondence study. Examples of correspondence studies can be found documented in the early newspaper advertisements (Moore & Kersley, 2005). As one of

the initial forms of distance education, correspondence education was originally developed for adult students' job training and professional development (Schlosser & Simonson, 2006). Nonresident students were provided with educational opportunities and they received their educational materials through postal mail and will return their assignments for evaluation and grading (Moore & Kersley, 2005).

Isaac Pitman, the inventor of shorthand, initiated the use of correspondence study through mail in the 1840 in England (Verduin & Clark, 1991). In his course, Pitman requested students to send him copied Bible passages in shorthand through the postal system for grading. In the United States, Anna Eliot Ticknor and William Rainey Harper were credited for the first use of correspondence study (Farnsworth & Bevis, 2007). Their Society to Encourage Studies at Home, founded in the 1870s, attracted more than 10,000 students who were guided with reading assignments via correspondence with instructors (Schlosser & Simonson, 2010).

Among the first correspondence schools in U.S., the Illinois Wesleyan College started their correspondence service in 1874, and the University of Chicago developed their first formal correspondence study in the 1880s (Belanger & Jordan, 2004; Moore & Kearsley, 2005). A correspondence university headquartered at Cornell University was later launched in 1883 and made its continuous efforts in promoting distance education (Gerrity, 1976). Among those institutes, Chautauqua College of Literal Arts was the first to officially grant degrees to students who successfully completed their study by correspondence, as well as at their summer institutes

(Watkins, 1991). From its initial development, approximately two million American students received correspondence education by 1958 and the number reached almost to three million by 1969 (Garrison & Shale, 1990).

Though correspondence study received great public attention at the beginning with its capacity of two-way communication, it is still difficult to achieve because of the limitations of the postal process (Sumner, 2000). Those limitations of correspondence eventually lead to the use of educational radio in the next era.

Educational radio/audio. Though the initial use of education radio/audio was first developed in the 19th century, it did not achieve its popularity until in the early 20th century. The development of audio technology and the evolvement of radio broadcasting created new forms of communication in education and opened up a new approach for distance education. Through education radio/audio, students can have access to the natural human voice, which was believed to greatly stimulate and enrich their learning experience (Thomas, 2001).

In 1921, the Latter Day Saints' University received their first educational radio license, followed by almost 200 distance education radio stations in the next decade. After that, the State University of Iowa started to offer their credit courses in 1925, and they attracted a great number of students from remote sites, with almost 400 broadcast programs in the 1930s (Moore & Kearsley, 2005). By the end of 1940s, more than 200 colleges, universities, and school boards were granted radio broadcasting licenses.

As technologies became less expensive and more accessible, audio and audio cassettes gradually took over the role of broadcasting in the 1970s. Students had a higher level of control over their studies with the use of audio recordings and cassettes (Thomas, 2001).

Though the development of educational radio and later audio recordings contributed to students' distance education experience, radio as a delivery medium did not live up to the expectations of most educators and students. Thus educational radio/audio did not gain much popularity during this period because of its lack of interaction (Moore & Kearsley, 2005; Parker, 1999). The popularity of radio/audio was eventually replaced by development of educational television/video in the subsequent decades.

Educational television/video. With the growth of satellite and video technology, the following two or three decades witnessed the integration of television and video into students' distance education experiences. Broadcast television was a popular and effective distance education technique because of its easy access to mass audience, as well as its availability to be recorded and watched at convenient times (Singh, 1999).

Though the first official televised courses were offered by Western Reserve University in the 1950s, television broadcasts did not reach great popularity until 20 years later (Simonson, Smaldino, Albright, & Zvacek, 2000). In the 1970s, satellites began to be widely adopted for television broadcasting for educational use (Moore & Kearsley, 1996; Wright, 1991). Several satellite-delivered projects emerged during this period such as the federally funded Appalachian

Education Satellite Project (Schlosser, Simonson, & Orellana, 2011). As one of the pioneer institutes, the University of Alaska also offered their distance courses via satellite by the end of 1970s (Emmerson, 2004).

In the development of educational uses of television, the Ford Foundation played an important role by providing grants to researchers in study of the application of various technologies in education (Reiser, 2001). Their grants helped generate a lot of research about the effectiveness and application of technology in distance education, especially televised instruction during this period (Almenda, 1988).

Computer-based instruction. The evolution and involvement of the personal computer and the World Wide Web brought the most significant changes to the development and reform of distance education. Computer-based instruction, especially online learning, is becoming popular and effective especially because it enables both synchronous and asynchronous communication to happen in easy and exciting ways (Williams, Paprock, & Covington, 1999). Asynchronous approaches included methods of instruction through email, Internet, CD Rom, and Bulletin Board Services (Mansour & Mupinga, 2007); while synchronous approaches included instruction delivered through applications such as Web-based audio/video conferencing, as well as other publicly shared social learning applications.

The creation of the Word Wide Web has created possibilities that earlier generations could hardly imagine. As one of the most revolutionary developments in the past century, the

Internet has played a significant role in distance education. The need for distance education continued to grow, as can be reflected in the expanding number of distance education programs and learners. The number of online programs and the enrollment of students have increased dramatically from the 1980s to present (Maddux, Sprague, Ferdig, & Albion, 2007), with a number 3.2 million online students in 2005 to 6.7 million in 2011(Allen & Seaman, 2011).

The Internet brought the chance for educational institutes to build upon their existing approaches and deliver existing and new programs to new groups of learners. Virtual universities and fully online programs became available to distance education students. As one of the largest distance education institutes in the world, the British Open University played a very important role in the development of distance education by serving as a successful model, as well as research base for distance education (Zigerell, 1984). Founded by Dr. John Sperling, the University of Phoenix in the U.S. offered its first online program in 1991, which greatly impacted the transition of correspondence courses into online courses (Baker, 2005). It is also interesting to note that the University of Phoenix enrolled only 5.1% of the students at degree granting schools in 2004 but attracted 37% of all online students (Foster & Carnevale, 2007). Launched in 1971, the New York State's Empire State College (NYSE) was accredited as the first Open University in the United States by offering more accessible higher education degrees to students (Gerrity, 1976).

In spite of the great development of computer-assisted instruction, especially online

instruction, there are some pedagogical and practical issues that have drawn the attention of distance program administrators, instructors, and instructional designers. For example, the rapid evolvement of computer technologies and their integration in education requires learners to have some computer literacy in order to have a successful learning experience. The pace of technology change also makes it difficult for teachers to keep up; therefore, appropriate and timely support services should be made available to both teachers and distance students (McDonald, 2002).

Teaching online also requires different pedagogics and strategies (Fetherston, 2001). Historically, distance education was perceived as inferior to face-to-face instruction (McCarthy & Samors, 2009). Some courses were even criticized as cheap alternatives to traditional forms of education (Halliwell, 2006), as they were designed in a static environment where online instructors simply upload their lecture notes with minimal interactions (Roehrig, 2008). This requires us to consider distance learning experiences from the students' perspective (Walcott, 1994) and design courses that can best accommodate their characteristics and needs.

Transactional Distance

The concept of transaction was originally developed by Dewey (1916) by taking into consideration the interaction among the situations, individuals, and behaviors. Moore (1997) proposed transactional distance theory which suggests that transactional distance is the pedagogical distance between students and teachers separated by physical distance. According to Keegan (1996), the distance between distance education students and the teacher separates the

learner from the learning community, so students might feel isolated. This feeling can lead to students' procrastination and drop-out. Moore's (1997) transactional distance has served as a pedagogical phenomenon which researchers can investigate and use the results to suggest strategies for overcoming the perceived distance. According to Moore (1997), the amount of transactional distance is influenced by dialogue throughout the course, the structure of the distance education program, and the independence of the students.

The first element of Moore's (1997) transactional distance theory is dialogue. According to him, dialogue refers to positive communications that help improve students' comprehension in the course. The extent of transactional distance varies from course to course. According to Moore and Kearsley (1996), the extent of the dialogue is influenced by the design of course, characteristics of teachers and students, and the medium of communication. Moore (1997) claimed in his theory of transactional distance that dialogue is different from interaction in that dialogue only includes positive encounters. Researchers argued that it is essential to take advantage of the delivery medium and related opportunities to reduce the transactional distance and improve students' satisfaction (Hackman & Walker, 1990; Moore, 1997). Dialogue also helps promote students' knowledge creation (Moore, 1997). The distance between the student and the teacher can be bridged through a student-centered teaching approach with an emphasis on interaction (Moore, 1997).

Structure within Moore's (1997) transactional distance theory relates to the design of a

course, rigidity and flexibility of the course's goals, thematic content, and teaching evaluation methods. Structure of the course determines the extent the course elements can satisfy learners' needs (Moore & Kearsley, 1996). According to Moore (1997), program structure is influenced by a number of factors including instructors, educational philosophy, the level of instruction, and the delivery medium (Moore, 1997). Moore (1997) claimed that a program with a lower level of structure and a greater amount of dialogue will have less transactional distance between the instructor and the learner. Therefore, reducing distance education course structure and creating more opportunities for dialogue are good approaches to reducing the transactional distance and promote students' satisfaction.

Autonomy of the learner refers to the extent to which learners decide learning objectives, constructs, learning processes, learning experiences, and the evaluation decisions (Moore, 1997). According to Moore (1997), learners with a high degree of autonomy tend to be more successful in a learning environment with great transactional distance. Autonomy ability is important for distance education students since students need to take more responsibility for the course (Moore, 1993). Moore (1997) further claimed that the success of a school could be measured by its effectiveness to prepare students to be autonomous. The transactional distance can be reduced when students exhibit more control over their learning process.

Overall, the general transactional distance theory provided a conceptual framework for the development of distance education (Jung, 2001). The theory helps provide suggestions on

how to structure distance education program by balancing the different elements in the course. However, transactional distance theory is still in its embryonic stage because of the lack of a unified theoretical framework (White, 2006). Moore's (1997) transactional distance theory was also criticized for the lack of clear explanations of its main variables, as well as the vague interrelationships among constructs of dialogue, structure and learner autonomy (Garrison, 2000; Gorsky & Caspi, 2005). These challenges in transactional distance theory require more research studies in understanding of the different elements in distance courses, as well as their relationship.

Student Satisfaction with Online Education

Students' satisfaction with distance delivered courses is based on their positive association between the course and their overall learning experience. This study focuses on students' online satisfaction since online education has become the most widespread format of distance education. Studies on distance education suggest that it is essential to investigate students' perceptions of their online learning experiences in order to generate effective online education for students (Biggs, 2006; Trinidad & Pearson, 2004). However, as Roach and Lemasters (2006) claimed, there is still a scarcity of research studies on students' satisfaction in online learning.

It is generally accepted that the quality of learning does not always vary directly with student satisfaction (Hiltz & Goldman, 2005). However, student satisfaction does serve as a good

indicator of the effectiveness and success of an online course and its online program (Biner, Welsh, Barone, Summers, & Dean, 1997). High satisfaction of an online course will enhance students' retention rates, as well as their commitment and motivation towards online learning (Reinhart & Schneider, 2001). Students with high satisfaction are more engaged, motivated, responsive in their efforts to promote effective online learning environment, while dissatisfied students contribute to a negative environment with fewer chances to communicate and learn. For example, while investigating factors that influence adult learners' decision to persist among 147 online learners, Park and Choi (2009) found that learners are less likely to drop out when they are satisfied with the courses. Similarly, researchers such as Scalese (1999) and Carr (2000) also found that students with more satisfaction towards their online programs are more likely to graduate.

The future of distance education programs will be impacted by students' satisfaction since adult distance learners are taking a more serious look at a greater array of programs options and also what they are paying for in their education (Parscal, 2000; Reid, 2005). School administers and teachers should consider the satisfaction of students in study of the effectiveness and success of online programs (Sachs & Hale, 2003).

Studies of student online satisfaction have determined that there are a number of factors affecting students' satisfaction, and their unique personal traits and situations across diversified geographic locations have been found to impact their perceptions of online courses (Artino, 2007;

Reinhart & Schneider, 2001; Sahin, 2007). Thus, the following sections will discuss studies on the relationship between students' online satisfaction and their personal traits and demographics including gender, age, ethnic background and prior online learning experience.

Gender. Gender differences in online learning have now been recognized as an important focus for researchers. Male and female students differ in many ways in their online learning due to different personal responsibilities (Yukselturk & Bulut, 2009).

Researchers (Rovai, 2002; Sullivan, 2001) found that male and female students differ in many aspects in their online learning experience such as their interaction, motivation, engagement, and performance. Thus, more research is needed to find out the similarities and differences between gender groups in their learning perceptions (Chyung, 2007; Lee, 2002)

Currently, there are a larger number of female online students than their male counterparts (Chen, Lambert, & Guidry, 2010). However, most research findings are not consistent regarding students' gender differences in the online learning. For example, Ong and Lai (2006) found in their study that male students have more positive attitudes towards their online learning experience than females do. Liu and Huang (2008) confirmed the same phenomenon while investigating students' online reading experience and they found that male students exhibited a higher degree of satisfaction with their online learning experience. However, in another study, Gonzalez-Gomez, Guardiola, Rodriguez, and Alonso (2012) investigated students' gender difference in online satisfaction on a sample of 1185 students (34.55% female)

out of 27 courses. They found that female students were more satisfied than male students learning online. Apart from the above differences, other researchers such as Astleitner and Steinberg (2005), and Ory, Bullock, and Burnaska (1997) found in their respective studies that gender effects are not significant in perceptions of the online learning experience.

Those inconsistent findings about gender differences in students' online learning experience suggest that more research studies are needed in order to have a better insight into students' gender differences related to online learning satisfaction.

Age. Online students of different age groups might have different perceptions about their online learning experiences due to their different life events and experience. Most adult students are more intrinsically motivated than their younger colleagues with clearer learning goals in online learning (Liu & Ginther, 1999). Students of different age groups may also have different study behaviors and preferences. For example, Richardson (2006) argued that older students are more used to a behaviorist environment while younger students are more interactive learners with a preference for collaborative and real-world learning environments. Also, when compared with younger, more computer saavy learners, some senior online students may encounter more technical problems during their online learning which may hinder their interest or satisfaction.

Research studies about age as an indicator for students' satisfaction are mixed. In one study, Al-Asfour (2012) found that younger students exhibited more satisfaction in their online learning environment than their senior colleagues. However, in another study on students' online

satisfaction, Fredericksen, Pickett, Pelz, Shea, and Swan (2000) and Swan et al. (2000) reported that mature students are more satisfied with online learning experiences.

Other researchers had different views about age difference. Tucker (1999) claimed that though age may make a difference in motivation, life and educational experience, it does not affect the learning experience. Some other researchers such as Hong (2002), Jiang and Ting (1998), and Yaverbaum and Ocker (1998) had the same findings in their investigation that there is no relationship between students' age and their online satisfaction.

These mixed results related to age group differences in online learning satisfaction indicate a further need for more studies on this topic.

Ethnic background. Each individual person has his/her own personal traits that differ from others depending on their gender, age, ethnicity, educational experience, and so on. Holmberg (1995) claimed that no evidence suggests that distance education students should be a homogeneous group. In fact, groups may exhibit a variety of different traits, including differing ethnicities.

Ke and Kwak (2013) discussed that students of different ethnic groups might have different online learning processes and perceptions of their online learning experience. According to them, it can be predicted that students of different ethnic groups will have different attitudes towards their learning experience, with minority groups of students reporting positive perceptions. Helm, Sedlacek, and Prioto (1998) found in their study that there are consistent

patterns of perceptions across races in correlations with their online learning satisfaction. According to their study, Hispanic Americans have the highest satisfaction, followed by African Americans while Asian Americans and Caucasians have the lowest levels of satisfaction.

However, there also exists disagreement about students' ethnic background in relation to their educational satisfaction. According to Thompson (1998), it is difficult to make generalizations about participation of different race groups, which explains the relatively few research studies on online students' satisfaction differences among different ethnic groups. The scarcity also requires more studies on satisfaction among different online students of diverse ethnic backgrounds, so that school administers, instructors, and course designers can better predict and observe different students' perceptions across different ethnic groups in order to help to make decision on enrollment or providing better guidance.

Online learning experience. With the development of online technology, distance education in the format of online learning has developed as an important mechanism for the delivery of educational offerings. According to Allen and Seaman (2011), online enrollment has a growth rate of 21%, compared with the 2% growth in the overall university student population, and during the fall semester of 2011, there were more than 6.7 million students taking at least one online course.

Among a number of studies on students' online learning experiences, Makoe, Richardson, and Price (2008) argued that learners' observations of their online learning were contingent upon

their prior academic experience. Arbaugh (2000) further claimed that if students had a dissatisfying experience with the online learning via one delivery strategy, they will not likely to take online courses again using the same approach.

Research studies have indicated that students' prior experience of using computer is a good predictor of their attitudes towards computer and Internet usage (Atkinson & Kydd, 1997; Whitley, 1997). Dziuban and Moskal (2001) also claimed that students with prior online experience will be more satisfied with their online learning experience. Arbaugh and Duray (2002) also found that the more experience students have, the more satisfied they are with their online learning experience. Marks, Sibley, and Arbaugh (2005) confirmed the same findings in their study.

In spite of the above findings, inconsistent results still exist in literature. For example, Arbaugh (2000) failed to find a significant relationship between previous online learning experience and satisfaction in a study of 114 students from five online courses.

The differing results in these research findings indicate a need for further research on online students' perceptions of the course based on their different online learning experiences.

Locus of Control

Locus of control is a construct that deals with personal orientations or beliefs regarding the reinforcement that follows a behavior (Rotter, 1966). Though the construct was originally rooted in clinical psychology, it has now been studied across various fields including education,

health, and clinical practice, and so on, in order to observe individuals and predict their behaviors. Rotter (1966) proposed that people can be categorized along a continuum from internal to external control. He argued that people with a strong internal locus of control orientation expect that they have more control over their life events and therefore they are more responsible for the outcomes in their life; people with a strong external locus of control perceive that the consequences of their life events depend on their luck, chance or powerful others.

Rotter (1966) was generally accredited as the initial developer of the locus of control construct and his social learning theory is the framework by providing theoretical background for the development of locus of control. In the following sections, four primary themes will be introduced in order to better examine the locus of control construct including an overview of Rotter's social learning theory, the concept of locus of control, its measurement as well as related studies.

Rotter's Social Learning Theory

Rotter (1954) developed his social learning theory of personality with an aim to provide maximum prediction and control of behavior. The theory provides a general conceptual framework for the development of the nature and outcomes of reinforcement (Rotter, 1966). Rotter's social learning theory (1954) is composed of three basic components in measuring and predicting human behaviors: behavior potential, orientation, and reinforcement value.

Rotter (1954) explained that behavior potential is an individual's potentiality in any

situation related to any single reinforcement or set of reinforcements. According to him, the potential existence of individual behavior is derived from its actual occurrence in a situation with other concurrent variables. The second important construct in Rotter's (1954) social learning theory is orientation which is interpreted as "the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations" (p. 107). According to him, orientation is not dependent on the significance of the reinforcement. In elaborating the third factor in his social learning theory, Rotter (1954) introduced that the value of an external reinforcement is the extent of preference for any reinforcement to occur if equal situations are present. It is usually consistent and reliable in the degree of individual person or group's preference, and the expectancy of a reinforcement does not determine people's preferences. Rotter (1954) further distinguished the difference between internal and external reinforcement. He argued that internal reinforcement is a subject's experience or observation that a past event is somewhat valuable for him while external reinforcement is the occurrence of an event that has some reinforcement value for the subject.

It is interesting to note that though psychological situation was implied in Rotter's (1954) interpretation of his social learning theory of personality, he did not explicitly include that as an separate component in his earlier statement. However, he explicitly added psychological situation as the fourth element in his later explanation of the theory (Rotter, 1982). Though the construct of locus of control was not mentioned or described in his early social learning theory

work, these arguments led to the development of locus of control in his later research studies.

In his later investigation of general expectancies for reinforcement, Rotter (1966) claimed that the influence of reinforcement on prior behavior is partly dependent on whether the person observes the reward is a result of his own behavior or independent of it. In other words, the effect of a reinforcement depends on whether people recognize a causal connection between their own behavior and the reward. When people do not see reinforcement as being entirely contingent upon a person's behavior, they interpret this as a result of luck, chance, fate or under the influence of powerful others. These arguments gradually shaped the development of the locus of control construct.

Rotter (1966) further asserted that people's perceptions of the causal relationship vary in degree between internal control and external control. A person with an internal control belief usually believes that life event is contingent upon his own action, while a person of external control belief feels the reward is controlled by forces outside of him. The construct of locus of control was explicitly elaborated in Rotter's (1966) interpretation on the reinforcement and then following researchers gradually studied locus of control as a unique construct.

Rotter (1954) categorized his theory as social learning theory since it is focused on the explanation of human behaviors in social situations, as well as needs requiring for their satisfaction in the mediation of others. Though his social learning theory has been criticized for being too subjective by placing too much emphasis on the cognitive aspect of the individual

(Carducci, 2009), Rotter's (1975) social learning theory of personality made great strides towards integrating two distinct but important trends in American psychology – reinforcement theories and cognitive theories. His attempt in exploring the interaction between behavior and cognitive theories promoted the growth of studies on behavior change and cognitive development. Rotter's social learning theory of personality provided a fundamental framework for systematically understanding individual differences in their personality. Rotter's monograph in 1966 later became one of most cited publications between 1965 and 1975 (Furnham & Steele, 1993).

Among the studies of social learning theory, Bandura (1977) was also accredited for his influence and contributions towards interpreting individual differences. However, Bandura and Rotter explained their theories in many different ways. According to Bandura (1977), his focus is on outcomes that result from individual's perceptions of control. Bandura's (1977) social learning theory suggests that a greater extent of personal control is associated with the greater use of adaptive and active coping strategies. However, Rotter (1982) claimed that his social learning theory provides a comprehensive and systematic basis for describing individual differences by providing an explanation for relatively stable, generalized aspects of personality.

Concepts of Locus of Control

A review of literature indicates that it is widely accepted that locus of control is an individual's generalized orientation of reinforcement. People of internal locus of control perceive

their reinforcement is contingent upon their own behavior, while those of external locus of control attribute life events as dependent on others. Rotter (1975) argued that one of the conceptual problems is the failure to treat reinforcement value as a separate variable, which requires systematic planning during research studies.

Since its initial development in the 1960s, there has been a growing number of similar constructs emerging such as perceived control, controllability, personal causation, helplessness, personal competence, and so on (Lefcourt, 1992). These different terms have been explained within different psychological theories such as learned helplessness theory, attribution theory, self-efficacy theory, and so on (Bandura, 1977; Seligman, 1975; Weiner, 1986). Though there is some overlap in the meanings among these constructs, locus of control helps understand an individual's perceptions of underlying causes of events in life, as well as perceived control over personal success or failure.

Measurements of Locus of Control

The development of the locus of control measurement is based upon the understanding of the construct and systematic research into the measure of locus of control began after Rotter's (1954) development of social learning theory in the 1960s. In a review of current locus of control measures and research, although interviews and ethnographic observation methods were occasionally adopted (Chance, 1965; Katkovsky, Crandall, & Good, 1967), questionnaires are the most widely used tool in measuring people's belief of their locus of control. With researchers'

evolving arguments about dimensionality of the locus of control construct, different locus of control measures also emerged with the development of literature. Various scales have been developed to measure people's locus of control.

Rotter's I-E scale. As one of the initial investigators of locus of control, Rotter's (1966) measurement of the construct has been widely adopted in research studies and his measure was developed based on a series of early attempts from his students (James, 1957; Phares, 1957), as well as through his collaboration with colleagues (Rotter, Liverant, & Crowne, 1961).

According to Rotter (1966), Phares (1957) made the first attempt to measure individual differences in a generalized orientation. He developed a Likert-type scale with 13 items measuring internal orientations and another 13 items measuring external orientations. The measure however was tested with low predictions for individuals with external control (Phares, 1957). James (1957) later revised the scale in his dissertation with 26 questions, as well as some filler items. Rotter et al. (1961) later broadened the scale with 60 items by developing subscales for different areas, and the scale was tested with reliable internal consistency and reliability.

To further validate the scale, Rotter (1966) eliminated those less correlated items in his study and finalized his scale with a 29-item, forced-choice test including 6 filler items. The total score will be summed from the 23 items and a higher score implies a more external locus of control orientation and a lower score indicates a more internal locus of control orientation. The question items were also changed to fit non-college adults, as well as high school students. The

scale was tested with a relatively stable internal consistency ranged from .65 to .79. The scale also achieved consistent test-retest reliability from .49 to .83.

Though Rotter's (1966) locus of control measurement has been widely cited by researchers, it is also criticized for its forced-choice format, irrelevant scale items, confounding relationships with different types of locus of control, as well as its difficult reading level (Duttweiler, 1984; Nowicki & Duke, 1974a). Thus subsequent researchers began to turn to more varieties of locus of control measures, as well as multidimensional measures (Marsh & Richards, 1987).

Levenson's IPC scale. Another widely used general locus of control measure was developed by Levenson (1974) in study of the relationship between one's orientations for control and their participation in social action. Levenson (1974) argued that locus of control is not unidimensional and should include various factors, including perceived mastery over personal life, expectancies of control over political situations, and views about role of internal and external forces in social life. Levenson (1974) claimed that early researchers did not explicitly explain the concept of external control since it is broadly defined and she further divided external control into two dimensions, including powerful others and chance.

Based on the previous argument, Levenson (1974) extended the bipolar dimension to a three-part subscale to include Internal, Powerful Others, and Chance (IPC) factors and belief in chance was especially studied as a separate variable from powerful others. Based on Rotter's

(1966) early scale items, Levenson (1974) developed a Likert-6 point scale with 24 items and each factor is composed of 8 items. Levenson (1974) further tested the scale in two subsequent studies. The three dimensions were tested to account for a moderate portion of the variance and scale was tested with moderately high internal consistency ranged from .64 to .78. The new scale was also tested with high split-half and test-retest reliabilities from .62 to .78.

Levenson's (1974) new refinement of locus of control scale was useful for researchers to measure the construct from a new dimension and served as a model for a number of spinoffs and derivative measures (Lefcourt, 1991; Lumpkin, 1988; Sapp & Harrod, 1993; Shewchuk, Foelker, Camp, & Blanchard-Fields, 1992; Shewchuk, Foelker, & Niederehe, 1990). In spite of its popular generalization in subsequent research studies, Levenson's multidimensional scale, however, also received certain criticisms regarding its effectiveness. For example, Shewchuk et al. (1992) contended that the IPC scale does not provide sufficient construct validity across different fields of subjects. They also claimed that Levenson's (1974) scale did not fit well for participants of all ages since it was tested only on undergraduate students.

Nowicki-Strickland I-E scale. With an aim to measure locus of control belief among different age groups, Nowicki and his colleagues developed a series of age-specific scales in their research studies (Nowicki, 1976; Nowicki & Duke, 1974; Nowicki & Duke, 1982; Nowicki & Duke, 1983; Nowicki & Strickland, 1971; Nowicki & Strickland, 1973; Strickland, 1978). Among those scales, Nowicki and Strickland's (1973) locus of control scale for children, and

Nowicki and Duke's (1974a) locus of control for adults were most widely used by subsequent researchers and have played an important role in the field.

In an attempt to extend the investigation of locus of control variable to children, Nowicki and Strickland (1973) developed their locus of control scale for children based on Rotter's (1966) theory of locus of control. After removing 19 less relevant items through item analysis, the final scale consists of 40 yes-or-no question items covering diverse reinforcement situations. Construct validity was found through their studies of the relationship among locus of control, achievement and age. A further test of the scale indicated a moderate, but consistent bi-serial item correlation. The scale was also tested with satisfactory internal consistency ranged from .63 to .81, as well as consistent test-retest reliabilities.

With an aim to overcome the shortcomings of previous locus of control scales, Nowicki and Duke (1974a) developed a locus of control scale for non-college and college adults based on their earlier version for children (Nowicki & Strickland, 1973). The 40 items were rewritten to fit general adult reading literacy. Locus of control beliefs are rated based on responses to the yes-or-no questions and a higher score implies a more external locus of control orientation. The scale was tested with satisfactory discriminative validity since scores were not related to those of social desirability or intelligence tests (Nowicki & Duke, 1974a). The construct validity was supported through significant positive correlations between this scale and Rotter's scale (1966). Reliability of the scale was also greatly supported with a split-half reliability from .74 to .86 and

a test-retest reliability from .48 to .83.

Nowicki and his colleagues made a great contribution by developing age-specific scales and the scales have been widely adopted because of its greater simplicity and continuity with previous measures (Nowicki & Duke, 1974b). However, the scale inevitably has the same inherent problems with previous once since item contents were not selected in a systematic and balanced way (Nowicki & Duke, 1974b).

In conclusion, it is commonly accepted that the measures of locus of control are derived primarily based on its conceptualizations. The current body of literature surrounding locus of control has examined the construct from diverse perspectives and disciplines. This has led to diversified measures of locus of control construct. Furthermore, the development of these measures has not been without controversy (Leone & Burns, 2000). For example, Carton and Nowicki (1994) contended that some of the scales are domain-specific with narrowly defined control expectancies, therefore the scales can only be applied within specific situations instead of being generalized across different fields. Therefore, the locus of control measures should be developed based on an explicit theoretical framework through rigorous validation (Carton & Nowicki, 1994). It would also be desirable to test the scale in a variety of areas (Wolf, Sklov, Hunter, & Berenson, 1982).

Locus of Control Studies

The research studies on locus of control generally emphasize two aspects: the antecedents

and the consequences of locus of control (McArthur, 1972). Researchers with a focus on the antecedent side of locus of control are interested to find out how behavior traits and circumstances lead to subject's locus of control, while researchers focused on the consequence side examine the cognitive, affective, and behavioral outcomes of locus of control (Kelly & Michela, 1980).

In the initial developing stages of the locus of control construct, researchers conducted studies to discover the antecedents that could lead to the development of locus of control. For example, as the initial developer of the locus of control construct, Rotter (1966) defined locus of control as the level one perceives a reinforcement as the result of his own behavior or outside forces independent of his own actions. Therefore, according to Rotter, the antecedents of locus of control come from either a person's traits and behaviors or outsides forces. A 29-item questionnaire was developed based on the two broad categories and the question items dealt with the subject's observations about the nature of the world (Rotter, 1966). The questionnaire was administered to a group of 200 male and 200 female students. Question items were tested with moderately high internal consistency ranged from .65 to .79, as well as a consistent test-retest reliability from .49 to .83.

With a multi-dimensional perspective, Levenson (1974) argued that Rotter's (1966) definition of externals is too broad to differentiate between those who are involved and those who are not. Therefore, Levenson (1974) further divided external locus of control expectancies

into powerful (P) others and chance (C), together with internal (I) locus of control. A 24-item scale was developed based on the three dimensional framework and each dimension is comprised of eight question items in a Likert format. Two studies were reported to test the validity of the three dimensions of locus of control (Levenson, 1974). In the first study, a sample of 96 male and female students were selected to take the survey and the mean differences showed that the I scale was significantly different from both the P and C scales. Significant difference between P and C scales was only found within the male group. P and C scales were also found to be moderately correlated with each other with a negative relation to I scale. In another study, a questionnaire was administered to 329 male undergraduate students. A varimax rotation yielded seven factors and the first three factors, ICP, accounted for the major percentage of the variance. The results from these two studies indicated the validity of the tripartite division of locus of control expectancies.

Besides the above primitive antecedents of locus of control, researchers have also been exploring social antecedents that lead to people's growth or chance of locus of control. For example, Katkovsky et al. (1967) conducted their study to examine the influence of parental behavior on children's locus of control expectancies. Of the nine maternity scales, four were found to be consistently relevant to students' locus of control: babying (.68), general protectiveness (.64), affectionateness (.38), and approval instead of criticism (.57).

Besides studies on the antecedents of locus of control, there have been many studies on

the consequences of locus of control ever since its initial development. As an important personality variable, researchers have been studying the construct in a variety of subject areas in order to find out its potential influences. The construct of locus of control has been found to have influence in a variety of areas including people's achievement (Nowicki & Strickland, 1973; Phares, 1976; Stipek & Weisz, 1981), stress (Sandler & Lakey, 1982; Schmitz, Neumann, & Oppermann, 2000), motivation (Clarke, 2004; Jackson, Laurence, & Coursey, 1988), depression (Benassi, Sweeney, & Dufour, 1988), coping styles (Petrosky & Birkimer, 1991), effort (Weiner, Heckhausen, Meyer, & Cook, 1972), and compliance with authority (Spector, 1982).

Among those studies on the consequences of locus of control, Duke and Nowicki (1974) conducted an interesting study on the relationship between adult students' locus of control and their academic achievement. Students' locus of control was measured using both Rotter's (1966) locus of control scale and Nowicki-Strickland locus of control scale (Nowicki & Duke, 1974a). Academic achievement was obtained from school records based on their grade point average and SAT scores. Twenty-two male university students and 26 females were invited to complete the scales. Researchers found through the correlation results that the scores on neither measure of locus of control were related to students' SAT scores. A significant correlation was found between students' GPA scores and their locus of control when measured by Nowicki-Strickland locus of control scale, but not by Rotter's scale. This correlation indicated that male students with higher expectancies of internal locus of control will have higher GPA scores while

externality was related to high achievement for females. Similar results were also found in two other replicated tests by researchers (Duke & Nowicki, 1973; Pappas & Nowicki, 1972).

To sum up, with a basis in social learning theories, locus of control, as a psychological construct, has been studied extensively since its initial development in the 1960s (Hannafin, 1984). The construct has been studied in a variety of subject settings including education, psychology, health, clinical practice, and so on. Studies on the antecedents and the consequences of locus of control mapped a general picture of the development of the field of locus of control. In one study, Judge, Locke, and Durham (1997) claimed that there are four specific dispositional traits that contribute to people's self-evaluation including self-esteem, generalized self-efficacy, locus of control, and emotional stability. Those core self-evaluation traits could generally determine how people exert their efforts in their performance and social behaviors (Judge et al., 1997). As one of the most important traits, locus of control needs to be more widely studied, especially in the current technology-based settings.

Locus of Control and Online Student Satisfaction

When studying locus of control in the context of everyday life, Lefourt (1976) argued that a person's perceived control is positively related to his/her access to opportunity. People with internal control expectancies are able to achieve more readily the valued outcomes that allow people to feel more satisfaction. Brenders (1987) further maintained that people of internal locus of control orientation tend to develop more satisfactions from situations that require personal

control. Similarly, Roueche, Mink, and Abbott (1978) interpreted that people of internal locus of control orientation usually have higher self-concept, perform more independently, have better flexibility, become less anxious and have better emotional adjustment. Hoffman, Novak, and Schlosser (2003) further elaborated that internals tend to take more efforts to actively manage events around them and more likely to perform on innovative takes.

Similarly, researchers have been making consistent statements when studying locus of control in terms of online learning. For example, Drennan et al. (2005) argued that students with internal locus of control perceive difficulties in their online learning experience as associated with their own abilities and they will invariably make efforts to take advantage of learning materials to build up their knowledge. Drennan et al. (2005) further claimed internals perceive flexibility as a more positive experience that enables them to select materials that better serve their purpose. Therefore, online students with an internal locus of control orientation will probably feel more satisfied with their online course. On the other hand, those students with an external locus of control orientation may attribute their online learning difficulties to the course itself and they might feel at lost in the online course. Consequently, they may be less satisfied when encountering difficulties in their online experience. Similarly, Crandall and Crandall (1983) asserted that people with an internal locus of control orientation usually take more initiative in searching their learning environment for information, have better performance in cognitive processing and recall, obtain more intentional and incidental knowledge, challenge more difficult

tasks, persist under pressure, make greater efforts to overcome problem, achieve better performance, and therefore will have greater learning satisfaction.

A number of empirical research studies have been conducted regarding the relationship between locus of control and satisfaction in a variety of subject settings (Chen & Silverthrone, 2008; Mitchell, Smyser, & Weed, 1975; Ormrod, 2000; Ponto, 1999; Seipel, 1988; Sing, 1978; Singh & Dubey, 2011; Spector & Michaels, 1986). For example, Mitchell, Smyster, and Weed (1975) conducted a study with 900 employees in a large city in order to investigate the relationship between locus of control and job satisfaction. The subjects were further divided into three groups based on their locus of control scores (external, moderate, and internal). Results indicate that internals have significantly higher job satisfaction than externals. Seipel (1988) made similar findings in their study of the relationship between locus of control and life satisfaction. Fifty-four males and 23 females of Korean community in Utah participated in the study. The results revealed that Korean immigrants with an external locus of control orientation disclosed a lower level of life satisfaction in the United States.

A review of literature indicates that most of the above studies have been focused on locus of control's consequences on people's life, career, and health satisfaction. Some studies explore the relationship between students' locus of control and their educational experience. For example, in investigating the interrelationship between adolescents' locus of control and their school satisfaction, Huebner, Ash, and Laughlin (2001) found a significant relationship with internals

demonstrating more satisfaction towards school. Drennan et al. (2005) also made similar findings in their study of students' attitudes towards flexible online learning in management education. However, compared with the large number of studies in life and career satisfaction, those limited number of studies in online education cannot adequately lead to a reliable conclusion about the relationship between locus of control and satisfaction in education settings, especially in the online learning environment. As an important indicator in students' online learning, students' satisfaction has an important role in evaluating the effectiveness of online education programs and it is also critical to the success of online education programs (Allen & Seaman, 2003). Therefore, more studies should be conducted to investigate locus of control's influence on learning satisfaction, with an emphasis in the online learning settings.

With the widespread development of online learning, students' affective perspectives of their online learning experiences have come to the attention of school administers and researchers (Kuo, 2010). Among those affective constructs, students' satisfaction is an important indicator of their online learning experience and can help evaluate the success of online program (Biner et al., 1997). To better explore students' online satisfaction, this study focuses on studying students' locus of control orientation and their personal characteristics in relation to students' online satisfaction.

As Phares (1976) claimed, locus of control "signifies about us as human beings" (p. 173) and it determines the way people respond to desirable outcomes. As an important construct

within the framework of social learning theory, locus of control has been extensively studied for its the antecedents of behavior traits and social circumstances as well as its consequences in people's cognitive, affective, and behavioral outcomes (Kelly & Michela, 1980; McArthur, 1972). Among many variables that are associated with locus of control, relationship between locus of control and student satisfaction in the online learning environment needs to be further examined because of the limited number of research studies with an emphasis on online learning. This study will contribute to the limited literature and help explore the possible relationship between online students' locus of control and their online satisfaction.

Besides the construct of locus of control, a review and analysis of literature also implied that student's personal characteristics such as gender, age, ethnic background, and online learning experience can contribute to their perceptions of their online learning experience. However, there are currently mixed findings about the relationship between those variables and online students' satisfaction. Therefore, more research studies should be conducted to explore the possible relationship among those variables.

With a better understanding of the relationship among students' personal characteristics, locus of control and students' online satisfaction, school administers, teachers, and relevant supporting staff can make better decisions on their student enrollment and possibly better predict students' potential development.

Chapter 3: Methodology

The purpose of this study was two-fold: (1) to investigate whether online students' personal characteristics correlate with the satisfaction of their online learning experience and (2) to explore and describe students' locus of control orientation in relation to their online learning satisfaction. The findings of this study will provide information relevant to students' online satisfaction and contribute to the literature of both students' online satisfaction and their locus of control orientations. The information could be used to help school administers, teachers, and instructional designers to better predict students' potential performance as well as designing online courses with appropriate instructional control for different students.

Chapter Three outlines the research methodology used for the present study. It includes a discussion of the research participants in the study, the survey instrument, the data collection procedure, the data analysis technique, delimitations and limitations of the study.

Study Design

This study used a survey method with a correlational and descriptive approach to investigate the potential existence of significant relationship of locus of control with students' satisfaction in online learning. The same method was also utilized to determine if a correlational relationship exists between students' personal characteristics (gender, age, ethnic background, and online learning experience) and their satisfaction. The purpose of using this survey method was to provide "a quantitative description of trends, attitudes, or opinions of a population by

studying a sample of that population" (Creswell, 2003, p.153).

Fraenkel and Wallen (2006) also claimed that survey method is appropriate when the population as a whole is studied based on different variables such as their gender, age, and ethnicity. The survey method is appropriate for this study since students' personal characteristics and demographic information are examined as research variables in relation to students' satisfaction.

Research Participants

For the purpose of this study, a total of 583 undergraduate students who were enrolled in an online course, PHS3534-Drug Education, at Virginia Polytechnic Institute and State University (Virginia Tech) were invited to participate in the study during the spring semester of 2012. This was an online, asynchronous course that required students to read the text, walk through practice exams and take a graded exam on the material. Students studied the latest information on drug use and its effects on society, as well as on the individual. Students also examined drugs and drug use in the course from a variety of perspectives—behavioral, pharmacological, historical, social, legal, and clinical.

From that initial pool of participants, a total of 353 valid responses were used for data analysis after matching both pre-course survey and post-course survey results and after the removal of incomplete responses. Participants of the study were diverse in their gender, age, ethnic backgrounds, and online learning experience.

Survey Instrumentation

A pre-course survey and post-course survey questionnaire were used and distributed separately in this study. The pre-course survey of this study consists of two sections. The first section includes five items, with four items asking students' personal characteristics including their gender, age, ethnic background, and prior online learning experience; the last question item asks for students' last four digits of their student ID number in order to match their responses in both pre-course and post-course surveys while ensuring their anonymity.

The second section of the questionnaire used Rotter's (1966) Internal-External Scale that includes 29 questions in a forced-choice format, with 23 valid question items as well as 6 filler items excluded from score calculation (questions 1, 8, 14, 19, 24, and 27). Within each question item, students selected one answer out of two that most matches their own personal belief. Among the valid 23 items, students received either one point or zero point based on their answers. For example, question 2 asks students to choose between "A: Many of the unhappy things in people's lives are partly due to bad luck" and "B: People's misfortunes result from the mistakes they make"; students receive one point if they select A for their answer and receive zero point if their answers are B. The higher score represents the higher level of external locus of control orientation.

Rotter's (1966) measure of locus of control has been proven to be a valid and reliable instrument and it has also been widely used to assess individual's locus of control orientation. As

initial investigators of locus of control, Rotter (1966) tested the scale with an internal consistency ranged from .65 to .79 and a test-retest reliability from .49 to .83. The scale also demonstrated great stability over time in subsequent studies (Layton, 1985; Lange & Tiggemann, 1981; Zerega, Tseng, & Greever, 1976). For example, Zerega, Tseng, and Greever (1976) found in their study that the stability of Rotter's (1966) scale was established over an eight-month period by comparing test and retest scores through correlational analysis ($r=.55$, $N=306$, $p<.001$) and t-tests ($p>.05$). Zerega, Tseng, and Greever (1976) also found that the construct validity of Rotter's (1966) scale was established when compared to MacDonald-Tseng's (1971) scale ($r=.42$, $p<.001$). Shrauger and Schoeneman (1979) also confirmed the moderate validity of the scale when correlating locus of control scores with observer ratings in other response formats.

The post-course survey questionnaire was used to collect students' overall satisfaction with their online course. The 9-item questionnaire was adopted from Arbaugh's (2000) measure originally used in online MBA courses with a focus on the evaluation of factors from two aspects: satisfaction with the course and satisfaction with the delivery medium.

The scale was validated through factor analysis with one factor "student satisfaction" identified, and all questions have a minimum item loading of .62, with most items loading at .75 or higher (Arbaugh, 2000). McGorry (2003) also found a similar meaningful factor pattern for each question through his factor analysis. In the meantime, a high internal reliability of Arbaugh's (2000) satisfaction survey was also established by finding a coefficient of .92.

Researchers such as Giannousi, Vernadakis, Derri, Michalopoulos, and Kioumourtzoglou (2009) further confirmed high reliability of the survey in their related study.

Data Collection Procedure

Before distributing questionnaires, permission was received from the Virginia Tech Institutional Review Board (IRB # 12-027). In this study, data was collected through an email survey sent to online students. The pre-course survey (Appendix A) was sent at the beginning of the semester with a cover letter (see Appendix B) describing the details of the study such as the purpose, significance and benefits of the research, criteria for participation, and the estimated time, together with a link to the web-based survey instrument. The post-course survey (see Appendix C) was distributed separately at the end of the semester together with brief introductory information. To increase the return rate of the survey, a reminder email was also sent to participants before the due date for both surveys. Permission to use the measures was sought from the appropriate personnel of each corresponding organization (see Appendix D and E).

Data Analysis Techniques

Data for this study consists of students' personal characteristic information including gender, age, ethnic background, and online learning experience, as well as scores of students' locus of control and their online satisfaction. All data was stored in the online survey database and was retrieved to perform statistical analysis using PASW Statistics version 19.0. Descriptive statistics involving demographic distribution of subjects, central tendency, mean, and standard

deviation was used to describe subjects' general personal information, their locus of control, and online satisfaction. In addition, Pearson correlations and Multiple Linear Regression analysis were also used to detect the influence of students' personal characteristics and locus of control orientation on their online satisfaction, as well as the set of variables that explain the variation of online satisfaction. Multiple Linear Regression was selected because of its ability to statistically depict the degree of relationship between individual independent variables and the variance in a dependent variable (Cohen & Cohen, 1983).

Delimitations

This study was confined to a sample of current students enrolled in the online course, PHS3534-Drug Education, at Virginia Polytechnic Institute and State University. The outcome of this study made no specific claims extrapolating its results to other populations.

Limitations

Interpretations of the study's research findings warrants guidance in regards to the following two limitations. On the one hand, this study employed a convenience sample method, which reduces the generalizability of its findings to the entire online student population. On the other hand, since this study was distributed to a required online course for undergraduate students at Virginia Tech, the sample included a relatively higher proportion of students within the same age group.

Chapter 4: Results

This chapter presents data collected from students enrolled in one online course at Virginia Tech during the Spring 2012 semester. The findings were interpreted to describe the relationship among students' characteristics, locus of control and their satisfaction towards online learning. The chapter begins with descriptive statistics of those students enrolled in the online course. The data were examined and analyses were conducted to determine if there were statistically significant relationships between students' locus of control and their online satisfaction, as well as between students' characteristics including gender, age, ethnic background, and online learning experience and their online satisfaction (see Table 1).

Table 1

Summary of Research Questions, Statistical Analysis Methods and Variables

Research Question	Statistics Method		Independent Variable	Dependent Variable
1. What is the relationship between students' locus of control and their online learning satisfaction?	Pearson correlation	Multiple regression	Locus of control	Course satisfaction
2. What is the relationship between students' gender and their online learning satisfaction?	Pearson correlation		Gender	
3. What is the relationship between students' age and their online learning satisfaction?	Pearson correlation		Age	
4. What is the relationship between students' ethnic background and	Pearson correlation		Ethnic background	

their online learning satisfaction?				
5. What is the relationship between students' perceived online learning experience and their online learning satisfaction?	Pearson correlation		Online learning experience	

The data were obtained via self-reported survey instruments distributed to a sample of undergraduate students enrolled in an online course at Virginia Tech. The data were analyzed and coded using PASW Statistics version 19.0. The chapter includes the following sections (a) descriptive statistics, (b) reliability test of the survey questions, (c) correlations for independent and dependent variables, and (d) Multiple Linear Regression analysis.

Descriptive Statistics

From a population of 583 potential participant candidates, 478 responses were received on the pre-course survey, and 403 responses were received on the post-course survey. Responses from the two surveys were matched based on students' last four digits of their student ID number and 382 matched responses were retrieved from both surveys. Twenty nice responses with incomplete answers were excluded from the data analysis and therefore a total of 353 responses were used in the final analysis.

Gender

As shown in Appendix G, Table G1, a total of 353 responses were counted as usable data. Among all participants, 56.9% of the participants (n=201) were female, and 43.1% (n=152) were

male students.

Age

Participant ages in years ranged from 18 to 45 years old including: 340 (96.3%) between 18 and 25 years old; 12 (3.4%) between 26 and 35 years old; 1 (0.3%) between 36 and 45 years old (see Appendix G, Table G2).

Ethnic Background

Survey participants were diverse in their ethnic background, as shown in Appendix G, Table G3. A total of 353 responses include: 44 (12.5%) Asian/Pacific Islanders, 3 (0.8%) American Indians/Alaskan Natives, 16 (4.5%) Blacks/Non-Hispanics, 7 (2.0%) Hispanics, and 283 (80.2%) White Non-Hispanics.

Online Learning Experience

Among the 353 valid responses, 89.2% (n=315) of the participants primarily enrolled in campus-based face-to-face courses, and 10.8% (n=38) of them primarily enrolled in distance (online) courses. Results of online learning experience of participants are presented in Appendix G, Table G4.

Locus of Control and Satisfaction

Data for locus of control consisted of numeric scores based on students' ratings on the locus of control scale developed by Rotter (1966). Among the 29 question items, students receive one point if they select A in questions 2, 6, 7, 9, 16, 17, 18, 20, 21, 23, 25, and 29, and B in

questions 3, 4, 5, 10, 11, 12, 13, 15, 22, 26, and 28. Filter questions 1, 8, 14, 19, 24, and 27 were excluded from data analysis. According to Rotter (1966), a higher total score indicates a more external locus of control orientation and a lower total score indicates a locus of control that is more internal. As shown in Appendix G, Table G5, scores of students' locus of control ranged from 3 to 21 (out of a possible 23).

Participants' satisfaction was assessed using Arbaugh's (2000) 9-item satisfaction questionnaire. Questions 1-8 asked students' positive attitudes towards online learning experience, and in the Likert scales range, their answers "strongly agree", "agree", "neutral", "disagree", and "strongly disagree" were conveyed to numeral data as 5, 4, 3, 2, and 1. Question 9 asked students' negative attitude towards their online experience, and the numeral data of students' responses were coded inversely, with range 1-5 representing from "strongly agree" to "strongly disagree". Therefore, a higher numeral score represents more positive attitudes towards the course. The minimum, maximum, mean, and standard deviations of the mean score are presented in Appendix G, Table G5.

Reliability Test of the Survey Questions

The internal consistency reliability statistic test was conducted to test the reliability of both locus of control and satisfaction survey questions. Cronbach's Coefficient Alpha measures the internal consistency reliability and the closer the Alpha's value is to 1.0, the better the reliability is.

Rotter's (1966) Internal-External Scale was used to measure students' locus of control orientations. Six filer questions were excluded from the reliability test. As shown in Appendix G, Table G6, the Cronbach's α of this instrument was 0.654. This value is consistent with earlier tested range from .65 to .79 (Rotter, 1966).

The satisfaction questions were developed by Arbaugh (2000) to measure MBA online students' satisfaction towards the course and its delivery medium. The reliability statistic test was conducted to test the reliability of the satisfaction survey questions. The Cronbach's Alpha value of the survey was found to be 0.761 and the α value of the instrument indicates that this instrument is acceptably reliable (Appendix G, Table G6).

Correlations for Independent and Dependent Variable

Pearson correlation coefficients were calculated for all independent variables including gender, age, ethnic background, online learning experience, and locus of control and dependent variable, course satisfaction. No significant correlation was found between the independent variables and the dependent variable. Two weak correlations were found among independent variables (see Appendix G, Table G7).

Independent Variables and Dependent Variables

A Pearson correlation was run between the independent variables and the dependent variable. As shown in Appendix G, Table G7, no significant correlation was found between the five independent variables (gender, age, ethnicity, online learning experience, and locus of

control) and one dependent variable (satisfaction).

Inter-Item Correlations and Multicollinearity

As displayed Appendix G, Table G7, among five independent variables, two significant correlations were found including the relationship between gender and locus of control ($r=-.155$, $p\leq.01$) and the relationship between ethnicity and online learning experience ($r=-.133$, $p\leq.01$).

As an important step in multiple regression analysis, it is important to check and ensure that multicollinearity has not been violated by having any variables that are too closely related to one another (Field, 2009). High correlations between the independent variables might influence the interpretation of the relationship between the independent variables and the dependent variables (Howell, 2002). Therefore, the correlations between the students' locus of control and their personal characteristics including gender, age, ethnicity, and online learning experience were examined before the Multiple Regression analysis. As none of the correlations reached the .80 threshold, the analysis shows that no two variables are closely related (Whitley, 2001).

Multiple Linear Regression Analysis

Multiple Linear Regression analysis was selected to find out whether a relationship exists between students' online satisfaction and their locus of control, as well as students' personal characteristics including gender, age, ethnicity, and online learning experience. Five independent variables include students' gender, age, ethnicity, online learning experience and their locus of control orientation. The single dependent variable is students' general course satisfaction. The

results of statistical tests for the regression model are reported in Appendix G, Tables G8 - G10.

As shown in the following tables, the overall regression equation was not statistically significant. Students' locus of control orientation and their personal characteristics including gender, age, ethnicity, and online learning experience as a set accounted for only 1.1% of the variance in general course satisfaction. No variable was found to be a significant source of variance in general course satisfaction.

Chapter 5: Discussion

The purpose of this study was to investigate whether students' online satisfaction correlates with students' locus of control orientation, as well as their personal characteristics. Students' personal characteristics in the study specifically include students' gender, age, ethnic background, and their online learning experience. The participants were undergraduate students enrolled in an online course "Drug Education" at Virginia Tech. Specifically, this course focuses on the latest information on drug use and its effects on society, as well as on the individual.

Students' locus of control orientation was collected at the beginning of the semester using Rotter's (1966) Internal-External Scale, and students' satisfaction related to the online course was gathered by the end of the semester using Arbaugh's (2000) online satisfaction survey. Besides descriptive statistics, Pearson correlations and Multiple Linear Regression methods were adopted to answer research questions.

In this chapter, the contributions of the study are introduced, followed by discussion of the findings and areas for future investigations.

Contributions of the Study

This study was instigated by research on personal characteristics and personal traits in the field of online distance education. As an important indictor to the success of an online course or program (Reinhart & Schneider, 2001; Swan, Shea, Fredericksen, Pickett, & Pelz, 2000), online course satisfaction is examined in the current study to explore its correlation with online students'

locus of control orientation and their personal characteristics including gender, age, ethnic background, and previous online learning experience. The contributions of this study are discussed in the following two aspects.

First of all, this study will help contribute to the literature by addressing the relationship between locus of control and satisfaction in the online learning environment. Among current studies, much is known about the influence of environment on the development of locus of control, however, little is known about the possible moderating influence of the learning environment on the relationship between locus of control and students' action (Anderson, Hattie, & Hamilton, 2005). The online learning environment fundamentally transfers the locus of control from the online facilitator to the learner (McFadzean, 2001), but not all online learners are willing to take more control of their own learning (Esterhuysen & Stanz, 2004). Therefore, it is valuable to understand what factors may impact learner success in online learning and what factors may influence attitudes towards online learning experiences (Esterhuysen & Stanz, 2004).

On the other hand, this study consummated prior research related to students' characteristics and their satisfaction with online learning. Kerka (1989) contended that students' participation in the learning experience can result from the interaction of a variety of student characteristics, circumstances, and the educational environment. A review of literature indicated there are inconsistent findings regarding students' characteristics and their online satisfaction

(Al-Asfour, 2012; Arbaugh & Duray, 2002; Ke & Kwak, 2013; Lee, 2002; Marks et al., 2005; Roach & Lemasters, 2006; Swan et al., 2000). Besides that, relatively little is known about the characteristics of online students (Wang & Newlin, 2000). Determining online students' characteristics and evaluating their attitudes towards online learning will help distance program administers and instructors make informed decisions regarding plans for online courses and programs.

Discussion of the Findings

Students' Overall Characteristics, Locus of Control and Online Satisfaction

Though participants of this study were invited from an online course at Virginia Tech, they are diverse in their personal characteristics, locus of control orientations and attitudes. Dutton, Dutton, and Perry (2002) contended that it is difficult to paint a uniform picture of typical online learners because of their diversity, but some constants do exist. For example, Sullivan (2001) claimed that more distance learners are female students than their non-traditional counterparts, and this study supported the argument to some extent with more female students. Though a majority of participants are undergraduate students aged between 18 to 25, they are diverse in their ethnic backgrounds, representing diverse distribution of online learners in higher education (Noel-Levitz, 2011). Most of the participants of the study are primarily enrolled in the campus-based face-to-face courses, and this is also in accordance with the fact that 88% of the residential universities offer online course to students who live on campus (Parker, Lenhart, &

Moore, 2011).

According to Rotter (1966), a higher total score from the scale indicates a more external locus of control orientation. Participants in the study had a locus of control score ranging from 3 to 21 (out of a possible 23), with a mean score of 11.42. This is consistent with Rotter's (1966) elucidation that most people's locus of control orientations are placed on a continuum between internal locus of control on the one end and external locus of control on the other end. Students' overall satisfaction towards their online learning experience was also diverse, ranging from 1.56 to 5.00 on a Likert scale, with a mean score of 3.86. This indicated that most students were satisfied with their experience of taking the online course.

Research Questions

In order to find out the relationship between online students' locus of control, personal characteristics, and their satisfaction towards online learning experience, the research questions in this study are:

1. What is the relationship between students' locus of control and their online learning satisfaction?

2. What is the relationship between students' gender and their online learning satisfaction?

3. What is the relationship between students' age and their online learning satisfaction?

4. What is the relationship between students' ethnic background and their online learning

satisfaction?

5. What is the relationship between students' perceived online learning experience and their online learning satisfaction?

Locus of control and online satisfaction. There is a substantial amount of previous research suggesting that there exists a significant relationship between locus of control and students' satisfaction. Research studies and reviews (Chen & Silverthrone, 2008; Drennan et al., 2005; Huebner et al., 2001; Roueche et al., 1978; Singh & Dubey, 2011) have been consistently showing that students with an internal locus of control orientation tend to be more satisfied in their life as well as in their study. Drennan et al. (2005) also further claimed that internals will be more satisfied with their online learning experience since they perceive flexibility as a more positive feature that enables them to progress through using this format of learning. This study, however, did not find a significant correlation between students' locus of control orientation and their online satisfaction. The findings of the study do not provide further evidence to support the relationship between locus of control and online satisfaction.

Gender and online satisfaction. Though male and female students differ in many ways in their online learning due to their different personal responsibilities (Yukselturk & Bulut, 2009), previous research has produced mixed results regarding the relationship between students' gender and their online satisfaction. Some studies have indicated that male students are more satisfied with their online learning experience (Liu & Huang, 2008; Qng & Lai, 2006), while

other studies found that female students have more positive attitudes than their male counterparts (Fredericksen et al., 2000; Gonzalez-Gomez et al., 2012; Swan et al., 2000). A majority of studies also found that there are no significant differences between males and females in their attitudes towards online learning (Astleitner & Steinberg, 2005; Jiang & Ting, 1998; Ory et al., 1997).

Because of the conflicting results of previous studies, this study was expected to add to the literature regarding gender differences related to online learning attitudes. However, the results of the study showed no correlation between gender and online learning satisfaction, further adding to the mixed results in the area of gender differences in online learning.

Age and online satisfaction. The age variable has also been widely studied by researchers to determine its correlation with students' online learning satisfaction and the results of those studies are mixed as well. Some studies indicate that older students are more satisfied (Billings, Connors, & Skiba, 2001; Fredericksen et al., 2000; So & Brush, 2008; Swan et al., 2000), while other studies indicate that younger students tend to be more satisfied (Al-Asfour, 2012; Chen, Gonyea, & Kuh, 2008), and even others indicate no significant difference related to age of the learner (Hong, 2002; Jiang & Ting, 1998; Karuppan, 2001, Tucker, 1999).

The results of this study do not find a significant correlation between students' age and satisfaction with online learning. It is worth noting that most participants in this study are between 18 to 25 years old, which does not represent a diverse population of learners with regard

to age.

Ethnicity and online satisfaction. Considering different cultural backgrounds and life circumstances, people might be different in their personal traits. A review of research suggests that there have been inconsistent findings regarding online satisfaction of students of different ethnicities. For example, Ke and Kwak (2013) asserted that minority ethnic groups usually have positive perceptions towards their experience. Helm et al. (1998) found in their study among students in the U.S. that Hispanic Americans have the highest online learning satisfaction, followed by African Americans. However, other researchers such as Thompson (1998) claimed that it is difficult to make such kind of generalizations among different race groups.

The results of this study did not find significant correlations between students' ethnicity and their satisfaction towards online learning, which supports Thompson's (1998) statement.

Online learning experience and online satisfaction. Many previous studies have looked at the relationship between students' previous online learning experience and their satisfaction towards online learning. A great number of studies have found that students with prior online learning experience will be more satisfied with online learning (Arbaugh & Duray, 2002; Atkinson & Kydd, 1997; Dziuban & Moskal, 2001; Marks et al., 2005; Whitley, 1997). However, other studies have also indicated that there is no such kind of correlation between the two variables (Arbaugh, 2000; Richardson & Newby, 2006).

The results of this study failed to find a significant correlation between students' prior

experience with online learning and their satisfaction towards online education. This finding aligns with the earlier studies that found no difference in online satisfaction among students with prior online learning experiences.

Additional Findings

Multiple Regression analysis was conducted in the study, but the results did not find a statistically significant overall regression equation. All variables together, including students locus of control, gender, age, ethnicity, and online learning experience explained only 1.1% of the variance in general online course satisfaction. Besides their personal factors, research has suggested that other factors that could affect students' online satisfaction including online interactions (Anderson & Garrison, 1995; Bolliger & Martindale, 2004; Sher, 2009; Tweney, 1999), self-efficacy (Artino, 2007; Reinhart & Schneider, 2001), course design (Huang, 2002; Sahin, 2007), types of support (Johnson, Aragon, & Shaik, 2000), student autonomy (Sahin, 2007), and technology skills (Rodriguez, Ooms, Montanez, & Yan, 2005).

Areas for Future Investigations

This study has provided several topics for future research inquiries. First of all, considering locus of control is a personality construct dealing with the expectancy or belief, Brenders (1987) argued that people of internal locus of control orientation tent to develop more satisfaction from situations that require personal control. As online learning has generally been perceived as providing more personal control for online students, it is worthwhile to investigate

students' attitudes towards different online courses that require different levels of personal control.

Second, as one limitation in this study, participants did not represent a wide range of age groups of online students since they are mostly undergraduate students. Therefore, future investigations can be conducted to include participants of diverse age groups and also cross various online programs or locations in order to best represent the diversity of online learners.

Last, as indicated in the study, online students' personal characteristics and traits only contributed to a minimal variance of students' satisfaction. Therefore, more areas that are mostly predictive of students' online satisfaction need to be further addressed such as general course design, online interactions, types of support, online community building, and so on.

Summary

Since the initial development of the Internet, online learning and its associated influential factors have been greatly discussed and examined by researchers. According to the Sloan Consortium (2007), there are five pillars of quality for distance education that include learning effectiveness, cost effectiveness and commitment, access, faculty satisfaction, and student satisfaction. As one of the important pillars, student satisfaction should be taken into great consideration, especially since it is an important indicator of the success of online programs (Allen & Seaman, 2003), as well as its potential association with students' motivation (Bollinger, 2004), learning performance (Levy, 2003; Petraglia, 1998), and course completion rate (Reinhart

& Schneider, 2001).

Though diverse online learners might bring varied learning experiences depending on their different personal characteristics and traits, this study did not find correlations between online students' satisfaction and their locus of control orientation, as well as their personal characteristics including gender, age, ethnicity, and online learning experience. Personal characteristics and traits included in the study also explained a very minimal part of online students' satisfaction. As an important factor in online education, online student satisfaction should be addressed in future studies in combination of a wide diversity of variables ranging from students' characteristics to general course design issues. Researchers should also expand their interest and efforts to other features of distance education environment in order to fully explore the characteristics of distance education.

As Saxena (2011) asserted in her study, needs assessment is essential for instructors to obtain relevant information regarding specific student population and develop effective, engaging and culturally competent instruction for diverse distance learners. Therefore, distance education instructors and instructional designers should also consider needs assessment analysis at the beginning of their instructional design process, and design and develop more reliable and suitable instruction for distance education students in order to enhance their satisfaction and learning outcome.

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Appendix A: Pre-Course Survey

Instruction: The purpose of this study is to investigate factors that influence students' satisfaction with online courses. For this purpose, this pre-course survey will ask (1) your background information and (2) locus of control (This definition refers to a person's beliefs about control over life events). This survey will take appropriately 10 minutes to complete. Please answer the following questions honestly.

Part 1 Background Information

Please complete the following questions regarding your personal background:

1. Please enter your last four digits of your Hokie Passport ID number: ☐ ☐ ☐ ☐
2. Gender: ☐ Male ☐ Female
3. Age: ☐ 18-25 years ☐ 26-35 years ☐ 36-45 years ☐ 46-55 years ☐ 56 or older
4. Ethnic Background:

☐Asian/Pacific Islander
☐American Indian/Alaskan Native
☐Black/non-Hispanic
☐Hispanic
☐White Non-Hispanic

5. Are you enrolled primarily in:

☐ Campus-based face-to-face courses ☐ Distance (Online) courses

Part 2 Locus of Control

Instructions:

1. Please read each pair of statements below.
2. Choose the letter (A or B) of the one that most closely matches your own personal belief.
3. It is important that you do not skip any questions.

1.	A	Children get into trouble because their parents punish them too much.
	B	The trouble with most children nowadays is that their parents are too easy with them.
2.	A	Many of the unhappy things in people's lives are partly due to bad luck.
	B	People's misfortunes result from the mistakes they make.
3.	A	One of the major reasons why we have wars is because people don't take enough interest in politics.
	B	There will always be wars, no matter how hard people try to prevent them.

4.	A	In the long run people get the respect they deserve in this world.
	B	Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5.	A	The idea that teachers are unfair to students is nonsense.
	B	Most students don't realize the extent to which their grades are influenced by accidental happenings.
6.	A	Without the right breaks one cannot be an effective leader.
	B	Capable people who fail to become leaders have not taken advantage of their opportunities.
7.	A	No matter how hard you try some people just don't like you.
	B	People who can't get others to like them don't understand how to get along with others.
8.	A	Heredity plays the major role in determining one's personality.
	B	It is one's experiences in life which determine what they're like.
9.	A	I have often found that what is going to happen will happen.
	B	Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10.	A	In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
	B	Many times exam questions tend to be so unrelated to course work that studying is really useless.
11.	A	Becoming a success is a matter of hard work, luck has little or nothing to do with it.
	B	Getting a good job depends mainly on being in the right place at the right time.
12.	A	The average citizen can have an influence in government decisions.
	B	This world is run by a few people in power, and there is not much the little guy can do about it.
13.	A	When I make plans, I am almost certain that I can make them work.
	B	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14.	A	There are certain people who are just no good.
	B	There is some good in everybody.
15.	A	In my case getting what I want has little or nothing to do with luck.
	B	Many times we might just as well decide what to do by flipping a coin.
16.	A	Who gets to be the boss often depends on who was lucky enough to be in the right place first.
	B	Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17.	A	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
	B	By taking an active part in political and social affairs the people can control world events.
18.	A	Most people don't realize the extent to which their lives are controlled by accidental happenings.
	B	There really is no such thing as "luck."
19.	A	One should always be willing to admit mistakes.
	B	It is usually best to cover up one's mistakes.
20.	A	It is hard to know whether or not a person really likes you.
	B	How many friends you have depends upon how nice a person you are.
21.	A	In the long run the bad things that happen to us are balanced by the good ones.
	B	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22.	A	With enough effort we can wipe out political corruption.
	B	It is difficult for people to have much control over the things politicians do in office.
23.	A	Sometimes I can't understand how teachers arrive at the grades they give.
	B	There is a direct connection between how hard I study and the grades I get.
24.	A	A good leader expects people to decide for themselves what they should do.
	B	A good leader makes it clear to everybody what their jobs are.
25.	A	Many times I feel that I have little influence over the things that happen to me.
	B	It is impossible for me to believe that chance or luck plays an important role in my life.
26.	A	People are lonely because they don't try to be friendly.
	B	There's not much use in trying too hard to please people, if they like you, they like you.
27.	A	There is too much emphasis on athletics in high school.
	B	Team sports are an excellent way to build character.
28.	A	What happens to me is my own doing.
	B	Sometimes I feel that I don't have enough control over the direction my life is taking.
29.	A	Most of the time I can't understand why politicians behave the way they do.
	B	In the long run the people are responsible for bad government on a national as well as on a local level.

Appendix B: Cover Letter

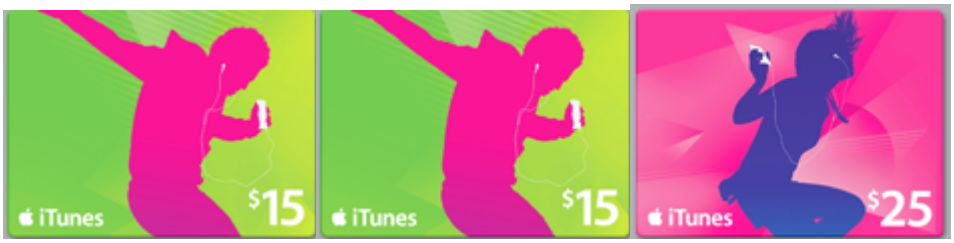
Dear Participants,

I am conducting a study titled "Students' Characteristics, Locus of Control and Satisfaction with Online Courses" as part of an investigation to investigate factors that influence students' satisfaction with online courses. You are invited to participate in this research. The answers you provide on this survey will be useful and help provide insight into whether a relationship exists among different variables possibly related to students' online course satisfaction. More information about participation in this study includes:

- Participants will be invited to take part in **TWO** surveys. One pre-course survey link is enclosed with this letter and one post-course survey will be sent to you by the end of the semester;

- Each survey should take you **approximately 10 minutes** to complete.

- If you complete **BOTH** surveys, you will receive extra credits from Dr. Smith and will also automatically be entered into a drawing and have the chance to win three iTunes Gift Cards (One of $25 Value and Two of $15 Gift Value).



- Special notes for taking this pre-course survey:
  - Click the link below to enter;
  - After you submit your responses, you will be directed to a very short survey regarding your personal information;
  - Enter your personal information and submit again.
  - Please make sure to submit your personal information to receive extra credits.

- The risks associated with participating in this research are minimal. You will be asked to provide your last four digits of Hokie Passport ID number as an identification number in this study.

- Your responses will remain confidential and your personal information will only be used to contact prize winners and give credits.

- After Dr. Smith gives you credit for completing this study, students' names and email addresses will be deleted from the file and the researchers will not know who participated.

- This study has been approved by Virginia Tech Institutional Review Board (IRB #12-027). Your responses will be confidential and anonymous.

- Participation in this research is entirely voluntary and refusal to participate involves no penalty. Participants are free to withdraw at any time.

- If you have any questions about the survey, please contact Andy-Guoqiang Cui at guoqiang.cui@vt.edu, (540) 818-3367, or Dr. Barbara Lockee at lockeebb@vt.edu, (540) 231-9193.

If you would like to participate in this study, please follow the link below. It would be most appreciated if you would complete this first survey prior to **February 3, 2012**.
Click this link: https://survey.vt.edu/survey/entry.jsp?id=1326246595991

Appendix C: Post-Course survey

Instruction: The purpose of this study is to investigate online students' characteristics, locus of control and students' satisfactions of online courses. For this purpose, this first survey will ask about (1) background information, and (2) course satisfaction. This post-course survey will take appropriately 15 minutes to complete. Please answer the following questions honestly.

Part 1: Background Information

Please complete the following questions regarding your personal background:

1. Please enter your last four digits of your Hokie Passport ID number: ☐ ☐ ☐ ☐

2. Gender: ☐ Male ☐ Female

3. Age: ☐ 18-25 years ☐ 26-35 years ☐ 36-45 years ☐ 46-55 years ☐ 56 or older

4. Ethnic Background:

☐Asian/Pacific Islander
☐American Indian/Alaskan Native
☐Black/non-Hispanic
☐Hispanic
☐White Non-Hispanic

Part 2: Online Course Satisfaction

The following statements concern your overall satisfaction with this course. Please indicate your degree of agreement or disagreement.

1. The quality of the course compared favorably to my other courses.
   ☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

2. I was very satisfied with this course.
   ☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

3. I feel that this course served my needs well.
   ☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

4. The quality of class discussions was high throughout the course.

☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

5. My choice to take this course via the Internet was a wise one.
☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

6. Conducting the course over the Internet improved the quality of the course compared to other courses I have taken.
☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

7. I am satisfied with my decision to take this course via the Internet.
☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

8. If I had another opportunity to take another course via the Internet I would gladly do so.
☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

9. Conducting the course over the Internet make it more difficult than other courses I have taken.
☐Strongly agree, ☐Agree, ☐Neutral, ☐Disagree, ☐Strongly disagree

Appendix D: Permission to use Locus of Control Survey

-----Original Message-----
From: guoqiang@vt.edu [mailto:guoqiang@vt.edu]
Sent: Monday, January 16, 2012 11:47 PM
To: eleanor.coldwell@uconn.edu
Subject: Locus of Control Survey Permission

Dear Dr. Rotter,
This is Andy-Guoqiang, a doctoral student of Instructional Design and Technology at Virginia Tech. I am currently working on my dissertation entitled "Effects of Students' Characteristics and Locus of Control on their Satisfaction with Online Distance Education Experience" under the guidance of Professor Barbara Lockee. I am asking your written permission to use your survey (Rotter, 1966) in my study to measure students' perceptions of their locus of control.
The 29-item survey you developed (Rotter, 1966) has been proved to be very powerful in measuring students' locus of control and tested with great validity and reliability. I am looking forward to your reply.
Thanks for your help in advance!

Andy-Guoqiang Cui
Ph.D. Candidate
Instructional Design and Technology
Learning Sciences and Technologies Department Virginia Tech
-----Original Message-----

From: lindy.coldwell@uconn.edu
To: guoqiang@vt.edu
Date: Tue, 17 Jan 2012 08:34:44 -0500
Subject: RE: Locus of Control Survey Permission
Andy,
Dr. Rotter has the following conditions for use of his scales:
1) collect all copies of the scale from participants
2) do not publish the scale anywhere, other than in your dissertation
3) use the scale for research purposes only
4) get assistance from someone with previous experience administering and interpreting personality scales if you have none yourself.

Please let me know if you can agree to these.

Lindy

Eleanor (Lindy) Coldwell, Ph.D.
Academic Advisor & CLAS Dean's Representative
CLAS Academic Services Center
423 Whitney Rd. U-1126
UConn, Storrs, CT 860-486-2822
http://www.services.clas.uconn.edu
http://catalog.uconn.edu
-----Original Message-----

From: Andy-Guoqiang Cui [mailto:andyguoqiang@hotmail.com]
Sent: Tuesday, January 17, 2012 10:09 AM
To: Coldwell, Eleanor (Lindy)
Subject: RE: Locus of Control Survey Permission

Hi Dr. Codlwell,

Thanks for your prompt reply. I am using this scale for my dissertation study only. The survey I provided will be offered online and will be closed as soon as the study is completed. Also, I am conducting my study under the guidance of a group of well-experienced committee members. So I think my situation would fit all the conditions you described earlier. I definitely agree to these conditions and will be aware of them during my study process. Thanks a lot!

Andy

-------- Original Message --------
Subject:RE: Locus of Control Survey Permission
Date: Tue, 17 Jan 2012 10:18:17 -0500
From: Coldwell, Eleanor (Lindy) <lindy.coldwell@uconn.edu>
To: Andy-Guoqiang Cui <andyguoqiang@hotmail.com>

Approved. Good luck with your study.

Lindy
Eleanor (Lindy) Coldwell, Ph.D.
Academic Advisor & CLAS Dean’s Representative
CLAS Academic Services Center
423 Whitney Rd. U-1126

Appendix E: Permission to use Satisfaction Survey

----- Original Message -----

From: guoqiang@vt.edu
Date: Monday, January 16, 2012 10:57 pm
Subject: Online Satisfaction Survey Permission
To: arbaugh@uwosh.edu

Dear Dr. Arbaugh,

This is Andy-Guoqiang, a doctoral student of Instructional Design and Technology at Virginia Tech. I am currently working on my dissertation entitled Students Characteristics, Locus of Control and Satisfaction of Online Courses" under the guidance of Professor Barbara Lockee. I am asking your written permission to use your survey (Arbaugh, 2000) in my study to measure students' online satisfaction. The 14-item survey you developed (Arbaugh, 2000) was used to measure students' satisfaction in the Web-based courses and has been tested with great validity and reliability. I am looking forward to your reply.

Thanks a lot for your help in advance!

Andy-Guoqiang Cui
Ph.D. Candidate
Instructional Design and Technology
Learning Sciences and Technologies Department
Virginia Tech

-------- Original Message --------
Subject: Re: Online Satisfaction Survey Permission
Date: Tue, 17 Jan 2012 08:42:10 -0600
From: Ben Arbaugh <arbaugh@uwosh.edu
To:guoqiang@vt.edu

Hi Andy,

I'd be delighted if you used the survey items. If they're the ones I think they are, those 14 items are measures for perceived learning and delivery medium satisfaction. The items for perceived

learning came from Maryam Alavi's (1994) measures (she has some updated measures in Alavi et al., (2002)), and the delivery medium satisfaction items originally appeared in a 2000 article in the Journal of Management Education. I've provided the references for those below.

Over the years I've been paying increasing attention to the instructional design literature (apparently I'm one of the very few folks in a business school who has read "Green Books 1, 2, and 3" :-)), so I'd be interested in seeing more of your work when you have time to send it along. Good luck with your study, Ben

Alavi, M. (1994). Computer-mediated collaborative learning: An empirical evaluation. *MIS Quarterly*, *18*, 159-174.

Alavi, M., Marakas, G. M., & Yoo, Y. (2002). A comparative study of distributed learning environments on learning outcomes. *Information Systems Research*, *13*, 404-415.

Arbaugh, J. B. (2000). Virtual classroom characteristics and student satisfaction with internet-based MBA courses. *Journal of Management Education*, *24*, 32-54.

J. B. (Ben) Arbaugh, Ph.D.
John McNaughton Rosebush Professor
Professor of Strategy and Project Management
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Appendix F: IRB Approval

VirginiaTech

Office of Research Compliance
Institutional Review Board
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MEMORANDUM

DATE: January 18, 2012

TO: Barbara B. Lockee, Guoqiang Cui

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires May 31, 2014)

PROTOCOL TITLE: Students' Characteristics, Locus of Control, and Satisfaction of Online Courses

IRB NUMBER: 12-027

Effective January 17, 2012, the Virginia Tech IRB Chair, Dr. David M. Moore, approved the new protocol for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at http://www.irb.vt.edu/pages/responsibilities.htm (please review before the commencement of your research).

PROTOCOL INFORMATION:
Approved as: **Exempt, under 45 CFR 46.101(b) category(ies) 2**
Protocol Approval Date: **1/17/2012**
Protocol Expiration Date: **NA**
Continuing Review Due Date*: **NA**
*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:
Per federally regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals / work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Appendix G: A Breakdown of Result Summaries

Table G1

Gender of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	201	56.9	56.9	56.9
Male	152	43.1	43.1	100.0
Total	353	100.0	100.0	

Table G2

Age of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
18-25 years	340	96.3	96.3	96.3
26-35 years	12	3.4	3.4	99.7
36-45 years	1	.3	.3	100.0
Total	353	100.0	100.0	

Table G3

Ethnicity of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Asian/Pacific Islander	44	12.5	12.5	12.5
American Indian/Alaskan Native	3	.8	.8	13.3
Black/non-Hispanic	16	4.5	4.5	17.8
Hispanic	7	2.0	2.0	19.8
White Non-Hispanic	283	80.2	80.2	100.0
Total	353	100.0	100.0	

Table G4

Online Learning Experience of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Campus-based face-to-face courses	315	89.2	89.2	89.2
Distance (Online) courses	38	10.8	10.8	100.0
Total	353	100.0	100.0	

Table G5

Locus of Control and Satisfaction of Respondents

	N	Minimum	Maximum	Mean	Std. Deviation
LOC	353	3	21	11.42	3.589
Satisfaction	353	1.56	5.00	3.8621	.52419
Valid N (listwise)	353				

Table G6

Outcome of the Reliability Statistics of Locus of Control and Satisfaction Surveys

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Locus of Control	.654	.649	23
Satisfaction	.761	.808	9

Table G7

Outcome of Pearson Correlation Coefficients

					Online		
		Gender	Age	Ethnicity	Experience	LOC	Satisfaction
Gender	Pearson Correlation	1	-.028	-.090	-.062	-.155**	-.011
	Sig. (2-tailed)		.598	.091	.245	.003	.831
	N	353	353	353	353	353	353
Age	Pearson Correlation	-.028	1	.038	-.022	-.011	.030
	Sig. (2-tailed)	.598		.471	.678	.841	.577
	N	353	353	353	353	353	353
Ethnicity	Pearson Correlation	-.090	.038	1	-.133**	.039	.034
	Sig. (2-tailed)	.091	.471		.012	.460	.526
	N	353	353	353	353	353	353
Online Experience	Pearson Correlation	-.062	-.022	-.133**	1	-.102	.088

	Sig. (2-tailed)	.245	.678	.012		.057	.100
	N	353	353	353	353	353	353
LOC	Pearson Correlation	-.155**	-.011	.039	-.102	1	-.008
	Sig. (2-tailed)	.003	.841	.460	.057		.874
	N	353	353	353	353	353	353
Satisfaction	Pearson Correlation	-.011	.030	.034	.088	-.008	1
	Sig. (2-tailed)	.831	.577	.526	.100	.874	
	N	353	353	353	353	353	353

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

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

Table G8

Outcome of the Multiple Regression Model Summary

				Std. Error	Change Statistics				
Model	R	R Square	Adjusted R Square	of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.103[a]	.011	-.004	.52513	.011	.750	5	347	.586

a. Predictors: (Constant), LOC, Age, Ethnicity, OnlineExperience, Gender

Table G9

Outcome of the Multiple Regression ANOVA Summary

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.034	5	.207	.750	.586[a]
	Residual	95.688	347	.276		
	Total	96.723	352			

a. Predictors: (Constant), LOC, Age, Ethnicity, OnlineExperience, Gender

b. Dependent Variable: Satisfaction

Table G10

Outcome of the Multiple Regression Coefficients Summary

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.533	.232		15.212	.000
	Gender	-.001	.058	-.001	-.013	.989
	Age	.075	.134	.030	.564	.573
	Ethnicity	.017	.021	.045	.835	.405
	OnlineExperience	.159	.092	.094	1.732	.084
	LOC	-.07297	.008	.000	-.009	.993

a. Dependent Variable: Satisfaction