Abstract

This study analyzed the effect of learner characteristics, online technologies self-efficacy, and learning style on satisfaction from distance education. This research included a sample (N = 45) of undergraduate students enrolled in an online course at a large Midwestern public university. The participants completed four different instruments measuring their individual demographic characteristics, learning styles, online technologies self-efficacy, and satisfaction.

The results of this study showed that online technologies self-efficacy scores were not correlated with student satisfaction. Of the Felder-Soloman Learning Style dimensions, there is a negative relationship between sequential-global score and level of satisfaction; students who scored higher on this subscale had lower satisfaction with online courses. In addition, satisfaction is related to gender, indicating that female student tended to have higher satisfaction from online courses. Finally, there is a positive correlation between distance education experience and satisfaction, indicating that more experienced students tended to be highly satisfied with online course. Furthermore, multiple linear regression analysis showed that distance education experience and sequential-global learning style score can help to predict satisfaction with online courses.
I dedicate this work to my mother, SEVIM AKTAN
for her eternal love, generous support, and determined encouragement.
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Fields of Study

Major Field: Education
Minor Field: Educational Technology
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Chapter 1: Introduction

Online education is a steadily growing phenomenon in higher education today; online courses and programs offered by colleges and universities have increased by about 55% (Fletcher, 2004), thus distance education and related research has proliferated. Research in this area has focused on instructional design, interaction, and their impact on student learning. The impact of learners’ characteristics is an important area of this research. It is often advised to “know your audience” before teaching, and this is especially important and critical in online courses to teach more effectively. Previous distance education research suggests that certain learning characteristics such as personality, demography, motivation, and past experiences can account for the success of learners in online learning (Boyd, 2004; Halsne & Gatta, 2002; Qureshi, Morton, & Antosz, 2002). Therefore instructors need to know more about differences in learners and how to effectively design and deliver instruction to their students. In this regard, online education may serve as a viable option to satisfy unique learning needs of learners.

Despite the wealth of research literature on distance education, drop-out rates are very high (Loxley & Julien, 2004). To explain and prevent student drop-out, it is important to study not only learning outcomes and achievement, but also the predictors of student satisfaction. Satisfaction from distance education; as previous research has shown,
distance learners’ satisfaction has an effect on their decision about whether to drop out or persist (Levy, 2007; Doo & Kim, 2000). Satisfaction may be dependent on external factors such as motivation, interaction with instructors and other students, support services, course materials, and learner characteristics (Biner, Dean, & Mellinger, 1994; Swan, 2001; Yukselturk & Bulut, 2007).

Understanding student characteristics may help predict satisfaction from distance education. Moreover recognizing the characteristics of target audience in designing effective instruction may increase distance learners’ satisfaction from the learning experience (Kanuka & Nocente, 2003). Furthermore, quality of learning can be evaluated by assessing learners’ satisfaction (Meyer, 2002; Sener & Humbert, 2003). Several research studies (Blickle, 1996; De Raad, 1996; Goff and Ackerman1992, Vermunt, 1998; Wolfe and S. D. Johnson, 1995) have indicated the significance of satisfaction of learner’s learning style and preference for traditional (e.g., classroom) and online instruction.

**Purpose of Study**

This study aims to contribute to the literature on student satisfaction and respond to calls for research on learner characteristics, by investigating the potential relationship between learner characteristics and learner satisfaction in distance education. The purpose is to predict learner satisfaction by selected learner characteristics.
Significance of the Study

As indicated earlier, predicting and understanding student satisfaction with distance education would be helpful in designing courses effectively that serve students’ needs, which in turn may improve their learning. Furthermore, the study’s findings may be used to improve advising services provided to distance education students. Both of these, in turn, may prevent drop-out.

Definition of Terms

**Learners’ characteristics** refer to special attributes of learners shaping their cognitive and affective characteristics.

**Demographics of learners** refer to the selected characteristics of a population (e.g., age, gender, education level or status, major, and household and employment responsibilities).

**Distance learning (DE)** refers to special forms of instruction which occur while learners and instructor are separated physically by time, location, or both. Distance learning experience refers to students’ self-reported reported prior experiences with distance learning courses. While distance education can take many forms, in most cases it is in the form of online learning (using a web-based content management system), as was the case for the population of this study.

**Self-Efficacy** refers to one’s perception that s/he has capability for performing a task which the result will be succeeded in something (Bandura, 1997).
**Online Technology Self-Efficacy** refers specifically to one’s confidence in his/her own capability to perform a variety of tasks associated with online courses.

**Satisfaction** is “a state felt by a person who has experienced a performance (or outcome) that has fulfilled his or her expectations” (Kotler & Clarke, 1987, p. 72). Students’ satisfaction with a course is the relationship between their expectations and their learning experience. If the learning experience exceeds the expectations, then the person is satisfied, whereas if learning experience is not good enough to meet the expectations, then he/she is dissatisfied (Kotler & Clarke, 1987).

**Learning style** is defined as patterns of behavior by which an individual takes in and retains new information and develops new skills (Dunn, DeBello, Brennan, Krimsky & Murrain 1981; Kolb, 1984). Various learning style inventories categorize and measure learning styles differently.

**Assumptions and Delimitations of the study**

This is an exploratory study about the satisfaction of students who have experiences with distance education; there is no control group. Additionally, the participants in the study are drawn from the pool of undergraduate students at a large university; although they have taken or are taking distance courses on campus, they are not enrolled in distance programs. Therefore, the study is not intended to describe satisfaction with distance education degree programs.

The study was limited to students age 18 or older who had or had been taking online courses during Spring 2010 at a large Midwestern public university. Further
studies using other populations (e.g. nontraditional students, smaller colleges) would be necessary to determine generalizability to other populations or settings.

It is possible that if other variables were included, the results would be different. The measures used to obtain the dependent and independent variables were subjective and self-reported by participants.

Also, this study is investigated under the following assumptions:

1) The used instruments are valid and reliable.
2) The participants answered the questions honestly.
3) The sample was drawn from the population is representative of the population.
Chapter 2: Literature Review

Distance Education

Distance education is an umbrella term that covers many terms and a variety of models, including distance learning, open learning, networked learning, online learning, and flexible learning and distributed learning in connected space (Gunawardena & McIsaac, 2004). Moore and Kearsley (1996) defines distance education as “Planned learning that normally occurs in a different place from teaching and as a result requires special techniques of course design, special instruction techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements.” (p.2)

Holmberg (1989) offered a similar definition: “Distance education is a new concept that covers the learning-teaching activities in the cognitive and/or psycho-motor and affective domains of an individual learner and a supporting organization. It is characterized by non-contagious communication and can be carried out anywhere and at anytime which makes it attractive to adults with professional and social commitments (Holmberg, 1989 p.168). And, according to Keegan (1980) distance education is characterized by six major components: separation of teacher and learner, influence of an educational organization, use of media to link teacher and learner, two-way exchange of communication, learners as individuals rather than grouped, and education as an
industrialized form. However, the advancement of communication technologies has altered our notion of distance education, which is more associated with internet technologies recently.

**History of Distance Education**

Even though the exact origins of distance education is unknown (Holmberg, 1986), the earliest form of distance education was correspondence courses (Garrison, 1989), which has been known for several generations, especially for adult education. The first correspondence program was established at the University of Chicago, and the delivery of printed materials via mail service was the backbone of the program. Students received course content in the mail, mailed written responses to questions back to the institution, and received feedback again in the mail. Even though the interaction was slow, it facilitated access to education (Gunawardena & McIsaac, 2004).

Development and proliferation of radio during World War I and television in the 1950s enabled new forms of distance education (Gunawardena & McIsaac, 2004). Institutions set up radio and television programs as new forms of correspondence study (Buckland & Dye, 1991). Development of satellite technology offered more qualified distance education programs. Government funds supported satellite-delivered instruction for further development in distance education (Schlosser & Anderson, 1994). With more advanced technologies, more effective delivery of instruction was possible; this, coupled with the idea of providing access to education led to proliferation of distance education. For example, Open University was established in Britain in 1970. Issues such as teacher shortage in science and math delayed the same developments in the USA (Gunawardena & McIsaac, 2004). There was a dramatic growth of network-based flexible learning in the
1990s, and the establishment of The Bipartisan Web-based Education Commission in 1998 highlighted the use of the internet at all levels of education, from pre-kindergarten to job retraining (Gunawardena & McIsaac, 2004). Recently, distance education has become more prevalent and offers more options with online delivery of instruction. Distance education is “moving toward virtual classrooms where instruction from a host site is delivered to distance sites via an integration of live, two-way interactive audio, video, or both and synchronous/asynchronous computer-based interactions that take advantage of local area networks (LANs), wide area networks (WANs), the Internet, and the WWW” (Williams, Paprock, & Covington, 1999, p.3).

Current State of Distance Education

Rapid development of communication technologies has led to a variety of course formats, where students can learn any time and any place, where the learner and the instructor are physically separated by place (and sometimes by time, in the case of email and discussion board communications). At the same time, offerings of distance courses have increased (Primary Research Group, 2002). In the 2001-2002 school years, more than three million students enrolled to more than 127,000 distance education courses (Waits & Lewis, 2003).

Even though distance education is appealing to many students due to the flexibility and freedom it provides for students, the drop-out rates in distance education are found to be high and problematic (Bonk, 2002; Parker, 1999). Duffy and Kirkley (2004) stress differences between distance education and traditional education in terms of constrains, affordances, and goals. Lawless and Kullikowich (1996) maintain that online
learning environment can be bewildering as well as flourishing, because separation of instructor and learner can inhibit those who rely on the instructor as a source of feedback, coaching, and motivation (Garrison, 1989). In face-to-face instruction it is easier to regulate the pace, content and activities according to students’ progress (Atkinson, 2001), because their paralinguistic cues can provide information about the teaching-learning process. In distance education it is more difficult for instructors to make the necessary adjustment, therefore this responsibility shifts to the learners (Steuer, 1992); however this might be challenging for many learners (Ebersole, 1997; Recker, Ram, Shikano, Li, & Stasko, 1995). Also, increased responsibility to pace their own learning activities and exploit online resources may be a struggle for distance learners (Lawless & Kullikowich, 1996).

Several studies indicate that these obstacles can be overcome by increasing understanding of learners’ characteristics (e.g., Dillon & Gabbard, 1998; Hartley & Bendixen, 2001; Martinez & Place, 2001; Russell, 1997). Understanding learner characteristics such as self-efficacy, demographic characteristics, and learning styles as well as the relationship between these characteristics and learning and satisfaction can be very useful for distance educators and instructional designers.

**Learner Characteristics**

The issue of learner characteristics has received wide attention in distance education research. Learners’ characteristics include their cognitive and affective attributes, such as ability, content delivery preference, experience, and motivation. Previous research has investigated such characteristics as learning styles, attitudes,
personality, locus of control, and motivation (Gunawardena & McIsaac, 2004). Academic success in distance education is impacted by a combination of personal, environmental, and social factors (Gunawardena & McIsaac, 2004); age and gender are some characteristics that predict the performance of distance learners (Koch, 2006). Characteristics of target population not only can explain the performance of learners, but they can also inform the design and delivery of suitable activities to engage the learners in distance education (Frankhauser & Lopaczuk, 1996). In addition to success and performance, learner characteristics might be significant in predicting students’ satisfaction in distance education. In turn, understanding of characteristics of distance learners may help improve the success and satisfaction of distance learners (Yukselturk & Bulut, 2007).

Past research has examined some learner characteristics (e.g., gender, age, educational level, major, online course experience, online technologies’ self-efficacy, computer experience, internet experience) in order to increase student satisfaction and thereby participation in distance courses. It was found that students who have little experience with computers are not likely to take online courses (Richards & Riddley, 1997). Similarly, Bee and Usip (1997) indicated that students who believed that taking online courses does not improve their academic success did not consider taking them. Therefore, it is important to gain a better understanding of the relationship between learner characteristics and student satisfaction in order to increase participation in distance education and satisfaction in distance education.
Demographic Characteristics

Demographics pertain “to the statistical science dealing with distribution, density, vital statistics, etc. of population” (Guralnik, 1984, p.375). A broad range of demographic statistics can include personal information such as age, gender, education level, race, and previous experience with distance education courses. Although a variety of demographic characteristics has been investigated in traditional learning, the characteristics of distance learners have not been explored (Kelly & Schorger, 2002; Navaria & Shoemaker, 2000; Saba, 2000; Saba & Shearer, 1994; Schlosser & Anderson, 1994; Smith & Dillion, 1999).

Learning Style

Learning styles are attributed to individual learners rather than to what is being learned. There are three kinds of learning style models (Curry, 1983; Gorham, 1986): (I) cognitive personality elements, including personality traits (e.g., Witkin et al., 1977); (II) information-processing style, including learning styles such as Kolb’s model of the experiential learning cycle (Kolb, 1984) and the associated learning styles (converger, diverger, accommodator, assimilator) or the related learning styles suggested by Honey and Mumford (1992) (activist style, reflector style, theorist style and pragmatist style); and (III) instructional preferences, including inventory measurements, such as the Grasha–Riechmann Student Learning Styles Scales (Riechmann & Grasha, 1974).

Understanding these different styles can improve the design of educational programs (Myers and McCauley, 1985). There are also other learning theories in literature, such as the learning style models of Dunn and Dunn (1974), Pask (1976), and Felder and Silverman (2004).
Learning style is a significant issue in distance education; recognizing the differences in learning styles may be helpful to adjust teaching strategies and techniques. Several studies have examined affective and physiological aspects of learning (Keefe, 1987; Messick, 1976); it has been concluded that considering differences in learning styles facilitates the instructional process. Learning, meaning connecting new information with one’s existing knowledge, is facilitated by strong connections between the individual and his/her preferred presentation of information (Lambert & McCombs, 1998; Mayer & Moreno, 2000). Conversely, it can be difficult for those who have a dominant style of learning new material when it is not presented in their preferred way (Bajraktarevic, Hall, & Fullick, 2003; Coffield, Moseley, Hall, & Ecclestone, 2004; Felder & Silverman, 1988; Ford & Chen, 2001; Graf, Lan, Liu, & Kinshuk, 2009; Hayes & Allinson, 1996; Pheiffer, Holley, & Andrew, 2005). Therefore, awareness of students’ learning styles and the utilization of this information in designing learning environments can improve student learning and success (Barrett, Sorenson & Hartley, 1985).

On the other hand, there is some research (e.g., Ahn & Ahn 2000; Dille & Mezack 1991; Ingebritsen & Flickinger 1998; Neuhauser 2002) that has not found such relationships between learning style and success in online learning.

Self-efficacy and Self-efficacy for Online Technologies

Bandura (1997) characterizes self-efficacy as one’s “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p.x) in his Social Cognitive Learning Theory. Self-efficacy is a reflection of learners’ level of confidence in performing a specific activity. A learner’s self-efficacy can be a predictor
of how much he/she endeavors in a given situation in order to get desired results; it can impact whether one is persistent to perform a task or not attempting to do it at all. Self-efficacy and personal competence affect the effort when facing difficulties; the higher the sense of self-efficacy, the greater effort, persistence and resilience (Pajares and Miller, 1994). In some learning situations, such as in distance education, self-efficacy can mean the difference between persisting and dropping out.

Using computer technology in distance education can make distance education more challenging than face-to-face learning for those who are not comfortable with using computers (Wyatt, 2005). Students’ self-efficacy beliefs and their confidence in using computer technologies may have an effect on their attitudes toward choosing online learning. Students' self-efficacy in distance learning has been investigated (Bures, Abrami & Amundsen, 2000; Lee & Witta, 2001; Miltiadou, 2000, 2001; Reinhart & Schneider, 2001; Wang & Newlin, 2002). They have established the importance of familiarity with technologies for success; also it is found that stronger self-efficacy for using computer technologies is related to positive attitudes toward distance education (Lammintakanen & Rissanen, 2005; Pituch & Lee, 2006; Salter, 2005; Shih et al., 2006; Weaver, 2008; Yan, 2006).

Past research has also investigated the relationship between self-efficacy and learner satisfaction in distance learning. Several studies have found a positive relationship between self-efficacy and satisfaction (Boverie, Nagel, McGee, & Garcia, 1998; Lee & Witta, 2001; Hill & Hannafin, 1997; Lim, 2001; Obsorn, 2001). However, some studies have indicated no significant relationship between those factors (Lee, 2000; Miltiadou &
Savenye, 2003). Thus, more research investigating this relationship is needed; especially in-depth or qualitative studies may shed more light on this potential relationship.

**Satisfaction**

Satisfaction can be defined as a desirable accomplishment of needs and wants out of any experience or service. Satisfaction is a particularly significant issue in distance education, as a measure of quality and effectiveness of teaching and learning. Success of a course, program, or and curriculum may be assessed with learners’ satisfaction (Phipps & Merisotis, 1999; Fullerton & Taylor, 2002; Reynolds & Biel, 2007; Swan & Bowers, 1998).

Dissatisfaction with distance education can reveal itself in high drop-out rates, because learners tend not to complete a course when they are not satisfied with the course or institution (McGivey, 2004). Analysis of students’ satisfaction can help educators and distance course developers in increasing effectiveness of learning (Biner, Dean, & Mellinger, 1994; Kelsey, Lindner, & Dooley, 2002; Schwitzer, Ancis, & Brown, 2001).

Previous research has determined a variety of factors that affect students’ satisfaction with distance education. These factors include learners’ characteristics such as self-efficacy (Lee & Witta, 2001; Lim, 2001; Miltiadou, 2000), age (Wyatt, 2005), gender (Stokes, 2003), Internet experience (Stokes, 2003), and distance learning experience (Arbaugh, 2004). On the other hand, other studies found no significant relationship between students’ satisfaction and their background characteristics such as gender, age, grade level, and computer literacy (Kitchen & McDougball, 1998; Yaverbaum & Ocker, 1998).
Chapter 3: Methodology

This chapter explains the methodological framework and procedures that are used to analyze the effects of demographic characteristics, learning styles, and online technologies self-efficacy on satisfaction in distance education.

Purpose of Study

Despite the wealth of research literature on distance education, drop-out rates are very high (Loxley & Julien, 2004). To explain and prevent student drop-out, more research is needed to investigate the predictors’ student satisfaction. This study aims to fill the gap by contributing to the literature on student satisfaction and responding to calls for research on learner characteristics by focusing on the potential relationship between learner characteristics and learner satisfaction in distance education.

Research Questions

In this study, the following research questions were examined:

1. What is the relationship between demographic characteristics and satisfaction in distance education?

2. What is the relationship between learning styles and satisfaction in distance education?

3. What is the relationship between online technologies self-efficacy and satisfaction in distance education?
4. Can demographic characteristics, learning style, and self-efficacy for online technologies predict satisfaction in online courses?

**Research Design**

**The Survey Research Method**

Tuckman (1999) indicates that survey research is “a particular kind of research that frequently appears in the educational milieu” (p.11). Generally survey research is used to collect data from a sampled population via constructed survey instruments in order to provide descriptive information about characteristics or perceptions or attitudes about chosen population. Usefulness of survey research is twofold. The first one is to gather information from a large sample of the population (Glasow, 2005) and the second is to present generalization of that population, although self-reporting biases may be an issue (Bell, 1996).

In this study, four surveys, with data collection at the same time, were used to investigate the demographic characteristics, learning styles, self-efficacy for online technologies, and satisfaction of distance learners in the sample.

**Variables**

The set of independent variables included in this study were: (a) demographic characteristics; (b) learning style; and (c) self-efficacy for online technologies. The dependent variable in this study was learners’ satisfaction with distance education.

**Instrumentation**

Instrumentation is defined as “the measurement or observation procedures used during an experiment” (Tuckman, 1999, p. 137). This section includes information on each instrument that was used in the study. The instruments included: (a) Demographic
Questionnaire; (b) The Online Technologies Self-efficacy Scale (OTSES); (c) Felder-Soloman Learning Style inventory; and (d) the satisfaction portion of The Collaborative Learning, Social Presence and Satisfaction Questionnaire (CLSS).

**Felder-Soloman Learning Style**

The Index of Learning Styles (ILS) was developed by Richard Felder and Barbara A. Soloman. It is based on a learning style model formulated in 1988 by Richard M. Felder and Linda K. Silverman. The survey consists of 44-questions. Several studies have verified the validity and the reliability of the index (Felder and Spurlin 2005; Litzinger et al. 2007; Zywno 2003). This particular instrument was chosen for particular reasons. Firstly, it is founded on several theories and links with other learning style modeling (Moallem 2007). Secondly, it is suitable for use in distance educational settings (Felder and Silverman 1988). Thirdly, categories across four learning scales are explained in detail in order to code the students’ learning style information. There are four learning scales, each with two learning dimensions: active-reflective, sensing-intuitive, visual-verbal, and sequential-global.

- **Active-Reflective.** Active learners learn best by testing and like working with others, whereas reflective learners prefer by comprehending on their own.

- **Sensing-Intuitive.** Sensing learners tend to be concrete and practical and oriented toward facts and procedures, while intuitive learners are inclined working toward theories and meanings.
• **Visual-Verbal.** Visual learners understand information with visual aids such as pictures, graphs, and charts, while verbal learners tend to learn best through written or spoken explanations.

• **Sequential-Global.** Sequential students tend to learn incremental steps by connecting one point or fact with another, whereas global learners learn best after gathering all the facts.

This classification is important to recognize the strength and weakness of the learners.

To function effectively as professionals, students will need skills associated with both categories of each learning style dimension; if they are never given practice in their less preferred categories, they will not develop the skills that correspond to those categories. The optimal teaching style is a balanced one in which all students are sometimes taught in a manner that matches their learning style preferences, so they are not too uncomfortable to learn effectively, and sometimes in the opposite manner, so they are forced to stretch and grow (Felder and Spurlin, 2005, p.105).

**The Online Technologies Self-efficacy Scale (OTSES)**

The Online Technologies Self-Efficacy Scale (OTSES) was created in 2000 by Miltiadou and Yu based on Bandura (1986)'s Social Cognitive Learning Theory. It was constructed on idea of “assessment of specific skills needed for performing on activity” (Bandura, 1986). The OTSES measures the confidence of subjects while performing various tasks associated with distance learning. It consists of 29 items. Each item is an indication of student’s level of confidence in using technologies with four-point Likert scale. It has four subscales; (a) Internet Competencies, (b) Synchronous Interaction, (c)
Asynchronous Interaction I and, (d) Asynchronous Interaction II. Construct validity and internal consistency were measured by Miltiadou and Yu (2000).

The Collaborative Learning, Social Presence and Satisfaction Questionnaire (CLSS)

The participants’ satisfaction with distance education was measured using the Satisfaction section of The Collaborative Learning, Social Presence and Satisfaction Questionnaire (CLSS), an instrument developed by So & Brush (2008).

The CLSS developed by So & Brush (2008) consists of 41 items clustered into four subscales; (a) General Information, (b) Satisfaction, (c) Collaborative Learning, (d) Social Presence. Students rate their perception level of items on each subscale using a five-point Likert Scale. Section 2 (Satisfaction) consists of eleven questions, which measure overall satisfaction with course, instructor and learning activities.

Population and Sample

Population is “the group about which the researcher wants to gain information and draw conclusions” (Tuckman, 1999, p. 259). The target population for this study was defined as undergraduate students enrolled in the main campus at a large Midwestern public university who have taken or are currently taking a distance education course and are 18 years or older. The sample for this investigation consisted of 45 students who are currently taking online course at a large Midwestern public university.

Data Collection Procedures

Data collection took place during Spring 2010. After IRB approval was obtained, and the study was announced, participant recruitment began. Participation in the study was voluntarily. Once volunteers contacted the researcher, they were given information
about the study. Of the fifty students who responded to the recruitment call, 45 (90%) agreed to participate in the study and completed all of the four surveys. Those that agreed to participate were met in person to complete the informed consent process and the completion of surveys.

**Ethical Research**

This investigation was carried out in accordance with ethical standards required by the Ohio State University. The study has been reviewed by the Institutional Review Board at OSU, and has been determined exempt. The determination letter is included in Appendix G. Consistent with the guidelines; informed consent has been obtained from all participants prior to data collection. In order to minimize any potential risks to student participants, names and identifying information of the students were kept confidential.

**Data Analysis Procedures**

The Statistical Package for Social Sciences (SPSS) was used for statistical analysis. The data were analyzed using descriptive analysis, ANOVA, and related means, Pearson correlation and Multiple Linear Regression.

The Index of Learning Style questionnaire (ILS) (Felder & Soloman, 1997) was used to detect learning styles based on FSLSM. It consisted of 44 questions, 11 for each dimension. FSLSM designates a personal preference for each of the four dimensions, indicated by a score between 1 and 11, with lower number indicating a more balanced learning preference on that dimension (balance is desirable according to the learning style model on which the instrument is based).

Participants’ online technologies self- efficacy was determined from their responses on the self- efficacy for online technologies (OTSES) scale items. Range of
OTSES scale is 29-116. Students’ raw scores were used for comparison. 116=very confident with every technology application included in the scale, 29=not confident at all with applications included in the scale. Lower score indicates low self-efficacy and higher score indicates high self-efficacy.

Participants’ satisfaction with distance courses was determined from their responses on satisfaction (CLSS) scale items. Range of satisfaction scale is 11-55. Students’ raw score were used for comparison. 55=very satisfied with everything included in the scale, 11=not satisfied at all included in the scale. Lower score indicates low satisfaction and higher scores indicate high satisfaction.

Research questions 1, 2, and 3 were answered using Pearson correlation to examine the relationship between demographic characteristics, learning style, computer self-efficacy (respectively) and satisfaction with distance courses. Pearson bi-variate correlation analysis was performed to calculate linear relationships. A standard conventional α level of p < .05 was used to evaluate statistical significance of all quantitative analyses performed.

Research question 4 examined the prediction of the satisfaction in terms of demographic characteristics, learning style, and self-efficacy for online technologies. Multiple linear regression analysis was performed to further examine the relationship among three variables under investigation. The next step was to investigate whether students’ satisfaction with distance course could be predicted with the variables examined in this study. Four variables entered in the stepwise regression analysis were sequential-global learning style dimension preference score, distance course experience, technological skills, and gender.
Chapter 4: Results

Introduction

This study investigated the relationship between demographic characteristics, Index of Learning Style Scale (Felder & Soloman, 1997), Online Technologies Self-Efficacy Scale (OTSES) (Miltidou & Yu, 2000), and Section 2 (Satisfaction) of Collaborative Learning, Social Presence, and Satisfaction (CLSS) Questionnaire (Brush & So, 2008) with distance courses. Further, also this study examined whether the independent learner variables can predict satisfaction with distance courses.

The sample for the study included forty-five (N=45) undergraduate students who had taken or had been taking a distance education course at a large Midwestern public university in Spring 2010.

There were 20 (45%) male and 25 (55%) female participants, whose ages ranged from 18 to 32 with a mean age of 21.3 years. All of the participants were undergraduate students. The undergraduate students consisted of 8 (17.8%) freshman, 8 (17.8%) sophomore, 10 (22.2%) juniors and 19 (42.2%) seniors.

Participants reported their employment status. 23 (51.1%) students are not working, 5 (11.1%) working part time (1-10 hrs/wk), 7 (15.6%) working part time (11-20 hrs/wk), 6 (13.3%) working part time (21-30 hrs/wk), and 4 (8.9%) working full-time.
Participants reported their prior education, referring to last attended school prior to this institution. Forty students (88.9%) have high school degree, 4 (8.9%) have some college education, and 1 (%2.2) have a college degree.

Regarding household responsibilities, 26 (57.8%) participants indicated living alone and, 19 (42.2%) indicated living with a partner.

Computer experience reported ranged from a minimum of 3 years to a maximum of 18 years. Participants reported having used the Internet for 2 - 17 years with a mean of 10.47 years. Subjects reported using a computer between 1 to 11 hours in a day.

Subjects’ self-reported computer proficiency ranged from 5 to 10 with a mean of 7.2, on a scale of 1 to 10.

Distance learning experience (i.e. number of distance courses previously taken) was self-reported by the participants. Of the participants 2 (4.4 %) indicated that they had never participated in a distance course, 12 (26.7%) participated in 1 course, 14 (31.1%) participated in 2 courses, 6 (13.3%) participated in 3 courses, 4 (8.9%) participated in 4 courses, 3 (6.7%) participated in 5 courses, 4 (8.8 %) participated in more than 5 courses.

The online technologies self- efficacy for the participants ranged from 83 to 116 with a mean value of 108.98, on a scale of 29 to 116.

The distance satisfaction for the participants ranged from 25 to 55 with a mean value of 40, on a scale of 11 to 55.
Research Question 1

What is the relationship between demographic characteristics and satisfaction in distance education?

Pearson correlation was used to determine whether demographic characteristics (gender, age, academic major, class rank, prior education, length of prior education, employment status, household responsibilities, percentage of household responsibilities, self-perceived technology skills rating, number of years using computer, number of years using internet, the average daily number of hours using computers, number of distance classes taken, number of classes which utilize online tools (such as e-mail, discussion board) are associated with satisfaction with distance courses. In terms of satisfaction, there were three correlations between variables.

First a statistically positive relationship was found between distance course experience and satisfaction ($r=.333$, $p=.025$) indicating that students reported more distance course experience tended to be highly satisfied(Figure.1). The result is in agreement with other researchers findings (Kirtley, 2002; Shea et al, 2002; Thurmond et al, 2002).
Secondly, a positive correlation was found between gender and satisfaction ($r=.312, p=.037$) indicating that female students tended to be more satisfied with distance courses.

Also, there was a positive relationship between computer skills and satisfaction, but it is not statistically significant.
Research Question 2

What is the relationship between learning styles and satisfaction in distance education?

Pearson correlation analysis within the distance group showed a negative relationship between sequential-global learning style and satisfaction ($r=-.323, p=.031$) (Figure 2). This correlation revealed that students who tended to have higher score on sequential-global learning style tended to be less satisfied with distance courses.

Figure 2. Relationship between Satisfaction and Sequential Global Score
Research Question 3

*What is the relationship between online technologies self-efficacy and satisfaction in distance education?*

Based on Pearson Correlation results, the evidence revealed that technical skill factors included in the OTSES are not significant predictors of the students’ satisfaction in distance courses.

Research Question 4

*Can demographic characteristics, learning style and self-efficacy for online technologies predict satisfaction with distance course?*

A multiple linear regression shows that the degree of satisfaction could be predicted with two variables previously experience with distance courses and sequential-global learning style score. The mean impact score of distance education experience reported by participants in this study was 3.16 (SD=1.15). Also, the mean impact score for sequential-global learning style was 5.57 (SD=2.29).

From the multiple regression analysis, we can estimate the overall mean of satisfaction by the fitted line: \( E[Y] = 43.71 - 0.935SG + 0.601DE \). This equation appears to suggest that for each unit increase in distance education experience, satisfaction increases by 0.601 point. Contrary to this, each unit increases sequential-global learning style score appear to induce a corresponding decrease of 0.935 points respectively in predicted score.

For this study, among the criteria included, learning style (sequential-global dimension) score and distance learning experience can help us predict satisfaction. The
rest of the variables entered did not significantly contribute to prediction of students’ satisfaction with distance courses.

**Summary**

The overall purposes of this study were to examine; a) the relationship between demographic characteristics, learning style, computer self-efficacy and satisfaction with distance courses, b) to predict satisfaction with distance courses with these learner characteristics. Results conveyed that participants’ satisfaction with distance course can differ by gender, distance education experience, and sequential-global learning score.

First, a significant correlation exists between gender and satisfaction with distance courses, indicating that female participants tended to be more highly satisfied with distance course than male participants. Second, distance course experience and satisfaction have a positive correlation, indicating students who have taken a higher number of distance courses tend to have higher satisfaction with distance courses. Third, there is a negative relationship between sequential-global learning style score and satisfaction with distance course which suggests that students who are more marginally sequential or global learners (as opposed to having less preference for one or the other) tend to be less satisfied with distance courses. Pearson correlation revealed no significant relationship between self-efficacy and satisfaction with distance courses.

Furthermore, based on ANOVA analysis results, distance course experience and sequential-global learning style score can help to predict satisfaction with distance courses.
A detailed discussion and the implications of the results described in Chapter 4 will be presented in Chapter 5.
Chapter 5: Discussion and Conclusion

Chapter 5 presents an overview of the study, discussion and interpretation of the results of analyses presented in Chapter 4, and discussion of limitations and conclusions of the study, including recommendations for distance educators and researchers of distance education.

Overview of the Study

Considering the increased demand for and offering of distance learning, it is necessary to identify the weakness and strengths of various distance education programs to meet learners’ expectations. By associating the characteristics of learners and appropriate learning delivery systems, distance education payoffs can be increased (Hoskins & vanHooff, 2005). Research is needed to determine if expressions of student satisfaction are related to learner characteristics, such as demographic characteristics, learning style and self-efficacy for distance technologies.

This study investigated the relationship among selected demographic characteristics, learning style, computer self-efficacy, and satisfaction with distance courses of undergraduate students. The sample for the study included forty-five (N=45) undergraduate students who had or had been taking a distance education course at a large Midwestern public university. The participants were asked to complete four surveys a) demographic characteristics, b) Index of Learning Styles (Felder & Solomon, 1997), c) Online Technologies Self-Efficacy (OTSES) (Miltidaou & Yu, 2000) and d) Section 2
(Satisfaction) of your Collaborative Learning, Social Presence, and Satisfaction (CLSS) Questionnaire (Brush & So, 2008) with distance courses.

Even though there have been some limitations, adequate data were collected to explore the relationship between learner characteristics and satisfaction with distance courses, and predict satisfaction with selected learner characteristics.

**Summary and Discussion of the Results**

The first research question investigated whether there was a relationship between each of selected demographic characteristics and satisfaction from distance education.

First a statistically positive relationship was found between distance course experience and satisfaction ($r=0.333$, $p=0.025$) indicating that students who reported more distance course experience (number of distance courses taken previously) tended to be highly satisfied. The finding is reasonable from the perspective that when a student gains more experience with distance courses, s/he is more likely to do well in and be satisfied with distance courses. Arbaugh (2004) found an increase in students’ satisfaction with distance courses between the first and second distance course taken by students. Overall, this result is in agreement with findings of past research (Kirtley, 2002; Shea et al, 2002), although it is in contrast with the findings of Thurmond, et al (2002).

Secondly, a positive correlation was found between gender and satisfaction ($r=0.312$, $p=0.037$) indicating that female students tended to be more satisfied with distance courses than did male students. While several researchers have reported that gender can have an impact on the outcomes of distance learning (Taplin& Jegede, 2001; Wang, Kanfer, Hinn, & Arvan, 2001, Hsu, Wang, and Hong 2003), the others did not (Dille &
Mezack, 1991; Lim, 2001), the effect of gender on satisfaction with distance courses is inconclusive. It would seem intuitive that females would have less satisfaction than males, considering the traditional roles of females with higher demands in the household, reducing the amount of time they can allocate to their distance education work. However, variables in the demographic survey regarding students’ other commitments, such as the amount of paid work, living arrangement, and percentage of household responsibilities were not found to be significantly correlated with satisfaction in distance education. Therefore, this study suggests gender has an impact other than those related to time commitments.

Technology skills were related to satisfaction with distance course, yet the relationship was not statistically significant. Other variables (e.g., age, previous education, amount of daily computer use) were not found to be significantly related to satisfaction. The finding regarding age of learners is in agreement with the general knowledge from past research (Biner, et. al, 1996; Lim, 2001; Yukselturk& Bulut, 2007).

The second research question investigated whether there was a relationship between learning styles and satisfaction in distance education. Learning style was measured using Index Learning Style (ILS) (Felder & Soloman, 1997), which identifies four dimensions for learning preferences, with two poles: active-reflective, sensing-intuitive, visual-verbal, and sequential-global. Participants received independent scores on each of the four dimensions ranging from 1 to 11, a lower score indicating one-sided preference while a higher score designates the other side of preference, (therefore more desirable).
The analyses indicate that there is no relationship between three of the learning style dimensions and satisfaction, whereas there was a significant negative relationship between sequential-global learning style and satisfaction. This correlation revealed that students who tended to have higher score on sequential-global learning style tended to be less satisfied with distance courses. This was to be expected, since according to Felder and Soloman, a lower score on ILS, indicating a more balanced preference for learning as opposed to a strong preference for either of the extreme styles is more conducive to learning. Sequential students tend to learn incremental steps by connecting one point or fact with another, whereas global learners learn best after gathering all the facts. The analyses indicate that having a strong preference for either of these styles is related to low satisfaction from distance education. What is unexpected is that the relationship to satisfaction was with only one dimension of learning style; in essence this study suggests that learning style (except global-sequential dimension) does not significantly affect satisfaction with distance courses.

The third research question investigated whether there was a relationship between learners’ online technologies self-efficacy and their satisfaction in distance education. In the current study no significant relationship was found between self-efficacy for online technologies and satisfaction. This finding is in agreement with other previous studies (Puzziferro, 2008, Lee, 2000; Miltiadou & Savenye, 2003), although there is one study with which it is in conflict (Lee & Witta, 2001).

The fourth research question investigated whether satisfaction with distance courses could be predicted with students’ demographic characteristics, learning styles, and online technologies self-efficacy. Based on linear regression, distance learning
experience and sequential-global learning score did account for a significant amount of variance in predicting satisfaction with distance courses. Specifically, the linear regression equation appears to suggest that for each unit increase in distance education experience, satisfaction increases by 0.601 point. Contrary to this, each unit increase in sequential-global learning style score appears to induce a corresponding decrease of 0.935 points respectively in predicted score. In other words, the equation suggests that as students gain more experience with distance education, and gain a more balanced learning preference on the global-sequential dimension, their satisfaction from distance education may increase.

**Conclusion**

This study examined the relationships between demographic characteristics, learning style, self-efficacy for online technologies, and satisfaction with distance courses. In conclusion, the findings of this study revealed that some learner characteristics (i.e., gender, distance education experience, and global-sequential dimension of learning style) were related to learner satisfaction with distance courses.

Even though the results of the study may not be generalized to the entire population of students taking distance courses, understanding these relationships may provide insights for distance courses’ instructors and designers, which would increase their understanding about their students. Moreover, the study provides several implications for future research.

**Implications and Suggestions for Future Research**

Some demographic variables were non-significantly related or not related to satisfaction. Further research is needed to investigate the potential relationship between
demographic characteristics and satisfaction from distance learning. Moreover, future research that investigates the impact of learner characteristics in conjunction with characteristics of the course (design, instructor, and setting) on learner satisfaction would be valuable. I recommend that future research focus on (a) examination of a more diverse group of students and course format options, (b) comparison of distance learning to traditional face-to-face learning in assessing student satisfaction, and (c) exploration of the additional learner characteristics beyond those investigated in this study.

Results indicate that self-efficacy, as measured by the Online Technologies Self-Efficacy Scale (OTSES), is not related to satisfaction from distance education. In other words, Technical skill factors included in the OTSES are not significant predictors of students’ satisfaction in distance courses. This could be due to the skills included in the OTSES instrument. For example, skills such as opening an e-mail or attaching a file to an e-mail may be familiar to the population of this study in their everyday computer use. Therefore, many participants in the study would answer similarly. The OTSES instrument should be revised to reflect the most current technologies in order to be a useful measure of online technologies self-efficacy for a broad range of distance learners. Future research measuring self-efficacy of distance learners, especially of college students with a traditional age and social background, should consider using more up-to-date measures of self-efficacy with online technologies.

The body of previous research on learner characteristics in distance education is not slim; however they usually lack qualitative richness and in-depth information (Bekele,
2008; Gilbert et al., 2007). Past research has generally concentrated on prior computer literacy (Erlich, Erlich-Philip, & Gal-Ezer, 2005); prior experience with technologies (Shih, Muñoz, & Sanchez, 2006; Yan, 2006); and perceived prerequisites for optimal use (Ostlund, 2008) by using quantitative measures such as Likert scales, rankings, and multiple-choice questions (Bekele & Menchaca, 2008). In this regard, comprehensive qualitative studies can contribute the answers how students can be more successful in online education (Gilbert et al., 2007, p. 561). Future research should consider qualitative designs to gain a better understanding of student satisfaction and how students explain their own satisfaction or lack of it thereof. In fact, qualitative interviews with selected participants are planned to follow-up on this study, to gain further insights on aspects of student satisfaction.

Limitations of This Study and Suggestions for Future Research

Due to time constraints, a small number of students responded to the announcements for participation in this study. This resulted in a small number of participants (N=45). The results and their generalizability may be impacted by the sample size. Future research should be conducted with a higher sample size.

The participants in the study were self-selected and non-random, so there may have been a self-selection bias (Sook and Compell, 1979). When possible, future research should consider selecting whole classes or other options.

The population (and therefore sample) of this study comes from a large Midwestern public university, which is likely to consist of a traditional undergraduate student population with low diversity and young students. For example, half the
participants of this study are not employed in paid work. Future research with a broader population or populations from different educational and social settings (e.g. community colleges) is strongly recommended.

**Implications for Distance Educators**

In this study, gender, experience with distance education, and balance in a global-sequential learning style are found to be associated with high satisfaction from distance education. While educators cannot change the gender or learning styles of students, educators and instructional designers can use different teaching strategies to meet the needs to students with a variety of learning styles. Especially, they can try to cater to learners on the whole spectrum of global-sequential learning preference. To address global learners’ needs, distance instructors should provide all courses content at the beginning of the course (as opposed to over the course of the semester); similarly, to address sequential learners’ preferences, distance instructors should provide a linear clear structure within their courses.

Experience with distance education is found to be an important contributor to satisfaction. Again, while educators cannot give past experience to students, providing training and coaching to students about distance learning pedagogies can help students with little or no experience navigate a distance learning environment better, thus increasing their satisfaction.
References


& M. Schraefel (Eds.), Proceedings of the workshop on adaptive hypermedia and adaptive web-based systems (pp. 41–52). Nottingham, UK: Eindhoven University.


Appendix A: IRB Exemption Form

Office of Responsible Research Practices
300 Research Foundation
1960 Kenny Road
Columbus, OH 43210-1063
Phone (614) 688-8457
Fax (614) 688-0366
www.orrp.osu.edu

May 3, 2010

Protocol Number: 2010E0305
Protocol Title: THE EFFECTS OF LEARNER CHARACTERISTICS ON SATISFACTION IN DISTANCE EDUCATION, Sebnem Cilesiz, Filiz Aktan, Educational Policy & Leadership
Type of Review: Request for Exempt Determination
ORRP Staff Contact: Cheri M. Pettrey
Phone: 614-688-0389
Email: pettrey.6@osu.edu

Dear Dr. Cilesiz,

The Office of Responsible Research Practices has determined the above referenced protocol exempt from IRB review.

Date of Exempt Determination: May 3, 2010
Qualifying Exemption Category: 2

Please note the following:

- Only OSU employees and students who have completed CITI training and are named on the signature page of the application are approved as OSU Investigators in conducting this study.
- No procedural changes may be made in exempt research (e.g., recruitment procedures, advertisements, instruments, enrollment numbers, etc.).
- Per university requirements, all research-related records (including signed consent forms) must be retained and available for audit for a period of at least three years after the research has ended.
- It is the responsibility of the Investigator to promptly report events that may represent unanticipated problems involving risks to subjects or others.

This determination is issued under The Ohio State University’s OHRP Federalwide Assurance #00006378.

All forms and procedures can be found on the ORRP website – www.orrp.osu.edu. Please feel free to contact the ORRP staff contact listed above with any questions or concerns.

Cheri Pettrey, MA, Certified IRB Professional
Senior Protocol Analyst—Exempt Research
Appendix B: Consent Form

CONSENT
Behavioral/Social Science

Exempt Protocol Number: 2010E0305
Exempt determination date: May 3, 2010
Version

The Ohio State University Consent to Participate in Research

Study Title: THE EFFECTS OF LEARNER CHARACTERISTICS ON SATISFACTION IN DISTANCE EDUCATION
Researcher: Sebnem Cilesiz and Filiz Aktan
Sponsor: N/A

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.
Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The purpose of this research study is to analyze the potential effect of learners’ characteristics on satisfaction from distance education courses at the undergraduate level. You are being asked to participate in this study because you have taken or are currently taking at least one distance education course and you are an Ohio State University student who is 18 or above 18.
To ensure eligibility, you may be asked to document your OSU student status and current or prior enrollment in a distance education course (e.g., show your Buck ID, and enrollment)

Procedures/Tasks:
This study consists of two parts. In the first part, you will be asked to respond to four surveys or questionnaires, which should take no more than one hour to complete. These are:
- Online Technologies Self-Efficacy Scale [29 items]
- Index of Learning Styles [44 items]
- Demographic Information Questionnaire [16 items]
- Satisfaction Questionnaire [11 items]
Based on the results of the above questionnaires, you may be invited for a follow-up interview. The selection of potential interviewees to this part is systematic and depends totally on your responses; however we cannot tell you the selection process until the end of the first part. Please respond to these questionnaires truthfully. If you are invited to the second part, you may decline participation in it.

If you are selected and agree to participate, then you will have a one-37 to-one interview with Filiz Aktan at an agreeable time and place on OSU campus. The interview should take between 30-60 minutes, and will be audio-recorded.

**Duration:**
All of the study procedures will be completed no later than the end of Summer 2010 quarter. You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The Ohio State University.

**Risks and Benefits:**
The risks in participating in this study are not more than minimal or those risks normally encountered in daily life. There are no other reasonably foreseeable risks or discomforts to you from participating in this study.

You will be given a copy of your responses and an explanation of your scores in the four questionnaires after your participation, if you request them. This information may help you understand yourself as a learner and benefit in future distance education courses. The findings of this study can help improve design of future distance education courses, thereby potentially benefiting the society.

There is a nominal incentive for participation in the second part of the study.

**Confidentiality:**
Efforts will be made to keep your study-related information confidential. Your name will not be included in any reports of the study. Additionally, if you participate in an interview, identifying information about you will be removed or altered, and reports referring to you will use a pseudonym (an assigned fake name) instead of your own name.

All study-related records will be kept in a safe location for three years after the end of the study (legally required), and thereafter be confiscated.

However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA regulated research) supporting the study.

**Incentives:** If you are currently enrolled in a distance education course and your professor agreed to coordinate with us, you may receive extra credits for participation in the first part of the study (i.e., questionnaires). Otherwise, there are no incentives.
If you are invited and you agree to participate in the second part of the study (i.e., interviews), you will be given a $10 gift card from Barnes & Noble.

**Participant Rights:**
You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you are a student or employee at Ohio State, your decision will not affect your grades or employment status.
If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights you may have as a participant in this study.

**Contacts and Questions:**
For questions, concerns, or complaints about the study you may contact
Dr. Sebnem Cilesiz, Assistant Professor of Education
cilesiz.1@osu.edu
(614) 688 – 4667

Ms. Filiz Aktan, Graduate Student in Education
aktan.1@buckeyemail.osu.edu
(614) 440 - 9729

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.
If you are injured as a result of participating in this study or for questions about a study related injury, you may contact The Wilce Student Health Center, located at 1875 Millikin 116 Rd., Columbus, OH 43210.
(614) 292-4321
http://shc.osu.edu/

**Signing the consent form**

I have read (or someone has read to me) this form and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

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<th>Printed name of person authorized to consent for subject (when applicable)</th>
<th>Signature of person authorized to consent for subject (when applicable)</th>
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<td>Relationship to the subject</td>
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**Investigator/Research Staff**

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

<table>
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<th>Printed name of person obtaining consent</th>
<th>Signature of person obtaining consent</th>
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<td>AM/PM</td>
<td>Date and time</td>
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Appendix C: Demographic Information Questionnaire

Gender: (circle one)
  a. Female  b. Male

Age: __________

Academic Major: ____________________________

Class rank: (circle one)

Prior education: (circle one)
  a. High school degree
  b. Some college (prior to your current program)
  c. College degree

Prior education: ____________ (enter the total number of years of schooling completed)

Employment status: (circle one)
  a. Working full time
  b. Working part-time for __________ hours/week (indicate number of hours)
  c. Not working

Household responsibilities: (circle one)
  Living alone  Living with partner

Household responsibilities: ____________ % (enter approximate percent YOU have responsibility in managing the household)

Household responsibilities: ____________ (enter number of people you care for such as children or elder family members)

Technology skills:
Rate your own computer proficiency (1=lowest skill, 10=highest skill): __________
Number of years you have been using computers: ___________________
Number of years you have been using the Internet: ___________________
Average daily number of hours you use computers: ___________________

**Distance education experience:**

Number of courses you have taken that are **fully** online (Consider all courses using Web-based tools (e.g. Carmen) in which 70% or more of the course was completed online): ..........

Number of regular courses you have taken that utilize **some** online tools (such as email, discussions, quizzes, grade reporting, etc): ______________
Appendix D: Permission for Index of Learning Style

Re: Index of Learning Styles
Dr. Richard M Felder [felder@unity.ncsu.edu]
You forwarded this message on 4/19/2010 10:17 PM.
Sent: Wednesday, April 07, 2010 6:05 PM
To: FILIZ AKTAN

Dear ILS user:

You have raised one of several frequently asked questions about the Index of Learning Styles. You will find a response at

http://www.ncsu.edu/felder-public/ILSdir/ILS-faq.htm

Regards,
Richard Felder

On Tue, 6 Apr 2010, FILIZ AKTAN wrote:

> Dear Dr. Felder,
> > I am a masters student in educational technology at The Ohio State University. I am working on my thesis under the supervision of Dr. Sebnem Cilesiz; I plan to investigate the relationship between learner characteristics and learner satisfaction in distance education. I am writing you to request your permission to use your Index of Learning Styles, available at http://www.ncsu.edu/felderpublic/ILSpage.html.
> > Your support would greatly enhance my study.
> > Thank you for your consideration, and I look forward to hearing from you.
> > Filiz Aktan
> > M.A. Candidate in Educational Technology
> > School of Educational Policy and Leadership
> > The Ohio State University
>

............................................................................
Appendix E: Permission for Online Technologies Self-Efficacy Scale

Re: Online Technologies Self-Efficacy Scale
Marios Miltiadou [marios01@cytanet.com.cy]

You forwarded this message on 4/19/2010 10:17 PM.
Sent: Wednesday, April 07, 2010 6:09 AM
To: FILIZ AKTAN

Dear Filiz,

You have my permission to use or modify the OTSES. Please don't forget to cite me!

Best wishes,

Marios Miltiadou, Ph.D.
ICT Inspector
ECDL Certified Training Professional
Ministry of Education and Culture
CYPRUS

----- Original Message ----- 
From: FILIZ AKTAN
To: marios01@cytanet.com.cy
Cc: cilesiz.1@osu.edu
Sent: Tuesday, April 06, 2010 7:32 PM
Subject: Online Technologies Self-Efficacy Scale

Dear Dr. Miltiadou,

I am a masters student in educational technology at The Ohio State University. I am working on my thesis under the supervision of Dr. Sebnem Cilesiz; I plan to investigate the relationship between learner characteristics and learner satisfaction in distance education. I am writing you to request your permission to use your Online Technologies Self-Efficacy Scale, which has been published in 2000 as Eric Document ED 445672 with Chong Ho Yu.

Your support would greatly enhance my study.

Thank you for your consideration, and I look forward to hearing from you.

Filiz Aktan
M.A. Candidate in Educational Technology
School of Educational Policy and Leadership
The Ohio State University
Phone: 614-440-9729
Dear Filiz Aktan,

I’ve received your message regarding the CLSS questionnaire from Dr. Brush. Since the questionnaire is already available in the journal, you are welcome to use. All the best to your research.

Thanks,
Hyo-Jeong

-------- Forwarded Message
From: FILIZ AKTAN <aktan.1@buckeyemail.osu.edu>
Date: Tue, 6 Apr 2010 12:34:01 -0400
To: Thomas Brush <tbrush@indiana.edu>
Cc: <clesiz.1@osu.edu>
Subject: CLSS Questionnaire

Dear Dr. Brush,

I am a masters student in educational technology at The Ohio State University. I am working on my thesis under the supervision of Dr. Sebnem Cilesiz; I plan to investigate the relationship between learner characteristics and learner satisfaction in distance education. I am writing you to request your permission to use Section 2 (Satisfaction) of your Collaborative Learning, Social presence, and Satisfaction (CLSS) Questionnaire, published in 2008 with Hyo-Jeong So in Computers and Education.

Your support would greatly enhance my study.

Thank you for your consideration, and I look forward to hearing from you.

Filiz Aktan
M.A. Candidate in Educational Technology
School of Educational Policy and Leadership
The Ohio State University
Phone: 614-440-9729
Re: CLSS Questionnaire

You forwarded this message on 4/19/2010 10:20 PM.

Sent: Tuesday, April 06, 2010 6:25 PM
To: FILIZ AKTAN

Filiz, let me check with Hyo-Jeong and verify that she gives permission as well.

Tom

On 4/6/10 12:34 PM, "FILIZ AKTAN" <aktan.1@buckeyemail.osu.edu> wrote:

Dear Dr. Brush,

I am a masters student in educational technology at The Ohio State University. I am working on my thesis under the supervision of Dr. Sebnem Cilesiz; I plan to investigate the relationship between learner characteristics and learner satisfaction in distance education. I am writing you to request your permission to use Section 2 (Satisfaction) of your Collaborative Learning, Social Presence, and Satisfaction (CLSS) Questionnaire, published in 2008 with Hyo-Jeong So in Computers and Education.

Your support would greatly enhance my study.

Thank you for your consideration, and I look forward to hearing from you.

Filiz Aktan
M.A. Candidate in Educational Technology
School of Educational Policy and Leadership
The Ohio State University
Phone: 614-440-9729

Dr. Thomas Brush
Associate Dean for Teacher Education and
Professor, Instructional Systems Technology
Indiana University
Education 1060
201 N. Rose Ave.
Bloomington, IN 47405