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The Effects Of Instructor-Learner Interactions On Learner Satisfaction In Online Masters Courses

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THE EFFECTS OF INSTRUCTOR-LEARNER INTERACTIONS ON LEARNER SATISFACTION IN ONLINE MASTERS COURSES

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DEDICATION

This work is dedicated first and foremost to my family. Your constant love and support made this journey possible. Also, to my friends, instructors, and colleagues who supported, encouraged, and mentored me throughout this process … thank you all from the bottom of my heart.

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CHAPTER 1 STATEMENT OF THE PROBLEM

The number of online undergraduate and graduate courses and programs being offered in the United States is ever-increasing. According to a joint publication from the Penn State University Office of Outreach Marketing and Communications and the University Continuing Education Association, enrollment in distance education programs from traditional and for-profit higher education institutions is projected to grow 10 times faster than enrollment in on-campus programs over the next 10 years (Burns, 2006). Even as general enrollment in higher education is at a virtual standstill, the numbers for enrollment in online programs continue to climb (Golden, 2006).

According to data released by the research firm Ambient Insight, nearly 12 million postsecondary students in the United States currently take some or all of their classes online (Nagel, 2009). This number is projected to increase to more than 22 million in the next 5 years. Currently, 1.25 million students in higher education programs take all of their classes online, while another 10.65 million take some of their classes online. These two groups are still outnumbered by students who take all of their courses in traditional classrooms, who numbered approximately 15.14 million as of 2009 (Nagel, 2009). By 2014, the number of students taking all of their courses online is forecasted to reach 3.55 million, while the number of students taking some of their classes online will peak at around 18.65 million, according to Ambient Insight projections (Nagel, 2009).

Even as the quantities of such programs multiply, university students have been vocal in their level of dissatisfaction with most online course offerings (Rogers, Finley, & Patterson, 2006). The majority of online courses and programs reflect independent

study or correspondence work where there is very little interaction between students and instructors (Gossmire, Morrison, & Osdel, 2009; Sadaowsky, 1999). Learning requires two main types of interaction: interaction with the course content and interaction with other people (Berge, 2002). To date, there have been few studies investigating interaction and learner satisfaction in online learning environments. Most studies have measured learner satisfaction as it pertains to the entire online learning experience (Mason & Weller, 2000; Motiwalla & Tello, 2000; Robertson & Klotz, 2002). Few have examined learner satisfaction as it relates to instructor–learner interaction (Bolliger & Martindale, 2004; Dennen, Darabi, & Smith, 2007; Salyers, 2005).

This research study was intended to investigate the extent to which instructor–learner interactions affected learner satisfaction in online, semester-long masters courses. This research study lent itself to several questions:

1. To what extent does instructor–learner interaction (instructor presentations, discussion board postings, emails, Blackboard® announcements, and feedback) affect learner satisfaction in online masters courses in Instructional Technology?
2. To what extent does instructor availability affect learner satisfaction in online masters courses in Instructional Technology?
3. To what extent does instructional immediacy affect learner satisfaction in online masters courses in Instructional Technology?
4. To what extent does transactional distance affect learner satisfaction in online masters courses in Instructional Technology?

This research may lead to the discovery of which types of instructor–learner interaction

have the most impact on learner satisfaction in these types of learning environments.

Learners in online courses need more interaction with instructors than those in traditional settings (McKnight, 2000). In *Quality on the Line: Benchmarks for Success in Internet-Based Distance Education* (2000), the Institute for Higher Education Policy (IHEP) listed student interaction with faculty as a necessary component of quality online courses. Additionally, Ryan (2004) stated that close personal interaction (between students and faculty) is one of the 14 benchmarks of good instructional practice in online teaching. The issue of instructor–learner interaction as it relates to learner satisfaction is a concern that must be addressed in the evaluation of online courses and programs.

Although research into online learning has expanded greatly in the past 10 years, most studies in this area have been comparative and focused on the tools used to create courses (Allen et al., 2002; Conole, 2004). The question of whether learners in online graduate courses are satisfied with their learning experience deserves further stddy (Allen, Burrell, Timmerman, Bourhis, & Mabry, 2007). The theoretical foundations of this research study will now be discussed.

Theoretical Foundations

This research study is guided by transactional distance theory and motivation theory.

Transactional Distance Theory

Transactional distance theory (TDT), as posited by Moore (2007), is concerned with the pedagogical significance of distance in learning rather than mere geographic distance separating learners from instructors and/or other learners. TDT consists of

three parts: structure, dialogue, and learner autonomy.

Structure. According to Moore (2007), *structure* is the result of how a course is designed, how instruction is organized, and how communication media are used.

Dialogue. *Dialogue* is the interpersonal interaction between the teacher and learner when one teaches and the other responds (Moore, 2007). The nature of this dialogue is determined by the educational philosophy of the course designers, the teacher, the students, the content of the course, and environmental factors.

Learner autonomy. Carl Rogers (1969) established the idea of *learner autonomy*. He stated that learners of varying degrees of ability can construct personal learning plans, find needed resources, and evaluate their own learning progress. Courses that have little transactional distance, where there is much dialogue and structure, seem better suited to less autonomous learners. On the other hand, autonomous learners can deal with lower levels of dialogue and structure along with high transactional distance (Moore, 2007). By paying attention to levels of transactional distance, learning abilities, and learner autonomy, educators can design and execute e-learning courses with learner satisfaction in mind.

So why is this important? For the purposes of this study, it is imperative to understand transactional distance and its influence on the learning experience of online learners. Let's explore more deeply Moore's notions of dialogue and structure. Online programs are structured in different ways in order to facilitate the need to produce, copy, deliver, and control mediated messages. The structure of these courses can be either rigid or flexible, depending on educational objectives, teaching strategies, and evaluation methods. Rigidity and flexibility describe the extent to which a course can

accommodate or be responsive to each learner's individual needs and characteristics (Moore, 2007). Courses that are highly structured offer little or no opportunity for deviation or variation in order to meet individual learner needs or characteristics. This implies that the higher the level of structure in a course, the higher the transactional distance, and thus the lower the level of student satisfaction. Therefore, course structure, when used as Moore posits, should be something that instructional designers give a great deal of time and attention if the goal is not only higher educational outcomes, but also higher levels of learner satisfaction and student retention in online courses (see Figure 1).

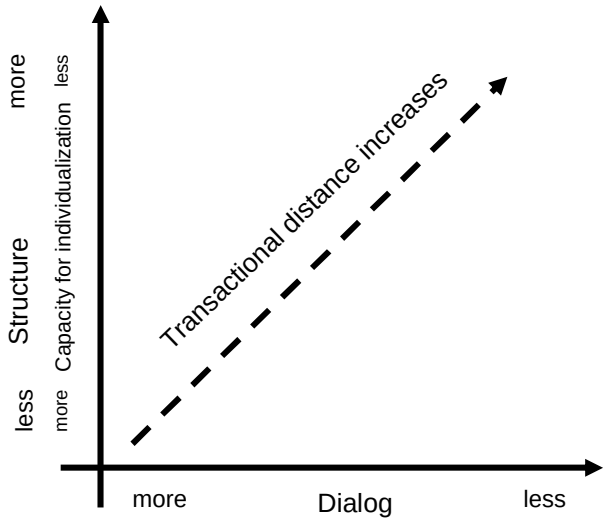

Figure 1. Dialogue and structure. This figure illustrates the relationship between structure and dialogue and its effect on transactional distance.

If an online course is structured to give directions and guidance, for example, but offers no opportunities for dialogue, learners may decide for themselves whether the instruction will be used and, if so, when, where, in what ways, and to what extent.

For some learners, this level of autonomy is too much and may leave them feeling lost and overwhelmed (see Figure 2). Learners need opportunities to ask questions and to seek clarification. Therefore, Moore (2007) posits that online courses that offer opportunities for dialogue (via online live chats, instant messaging, email, or discussion boards), a flexible structure that can accommodate various learner characteristics, as well as the right level of learner autonomy will result in relatively low transactional distance (see Figure 3).

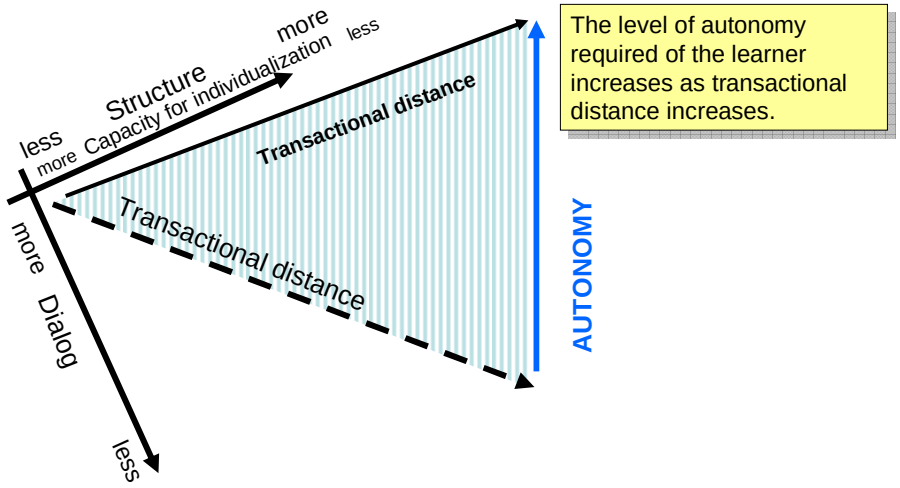

Figure 2. Autonomy and transactional distance. This figure illustrates the relationship between autonomy and transactional distance.

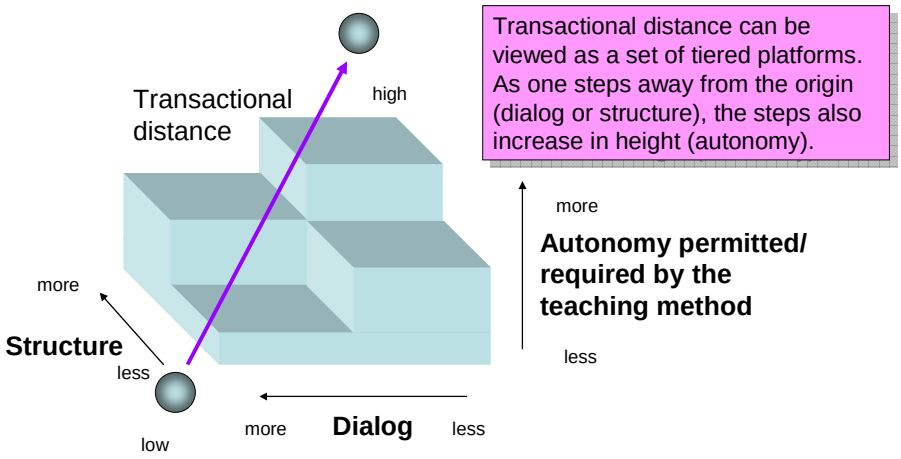

Figure 3. 3D model of transactional distance. This figure illustrates how the various components of transactional distance interact.

The online courses in this study offered both flexible structure and opportunities for dialogue between learners and instructors as well as between learners and learners. Learner autonomy varied from course to course and from instructor to instructor.

The ARCS Motivational Design Model

John Keller (1983) developed the instructional design model focusing on learner motivation known as the ARCS model. ARCS stand for *attention*, *relevance*, *confidence*, and *satisfaction*. The ARCS model is especially useful in e-learning environments, as motivation appears to be a key factor in determining completion rates. Although each of these categories is important, for this study, learner satisfaction will be examined.

According to Keller, satisfaction is realized through intrinsic reinforcement, extrinsic rewards, and equity (Keller, 1983, 1984, 1987, 1999). For learning to be

beneficial and lasting, learners must acquire some type of satisfaction from the learning experience. Instructors can help students gain satisfaction by fostering a sense of achievement. Encouraging feedback on assignments can be one way to foster this sense of achievement. Apart from extrinsic rewards such as promotions or praise, learners must develop their own intrinsic reinforcement. One of the best ways to do this is to connect newly learned information to current work and life experiences. In addition, learners must feel like they are being treated fairly in order to maintain their motivation and improve their sense of satisfaction (Keller, 1999). Many e-learning courses and programs fail because they fail to address the issue of learner satisfaction as it correlates to motivation (Fenby, 2006).

Keller's ARCS model of motivational design provides strategies to make instruction more appealing. What makes a learner eager and willing to remain in an e-learning course? How do you keep the learner interested? Interest is not based on the amount of multimedia elements that one utilizes in a course design. The strategies and tactics employed must support the instructional goals. As Keller (1999) notes, motivational design is concerned with connecting instruction to the goals of learners, providing stimulation and appropriate levels of challenge, and influencing how learners feel following successful goal accomplishment or even following failure.

Purpose of the Study

The purpose of this study was to determine the extent to which instructor–learner interaction affects learner satisfaction in online Masters courses. The general purpose lent itself to the following four research questions:

1. To what extent does instructor–learner interaction (instructor presentations,

discussion board postings, emails, Blackboard announcements, and feedback) affect learner satisfaction in online masters courses in Instructional Technology?

2. To what extent does instructor availability affect learner satisfaction in online masters courses in Instructional Technology?
3. To what extent does instructional immediacy affect learner satisfaction in online masters courses in Instructional Technology?
4. To what extent does transactional distance affect learner satisfaction in online masters courses in Instructional Technology?

Definition of Key Terms

For the purpose of this research study, the following definitions will be used.

Online Learning/E-Learning

In this study, online learning, distance learning and e-learning will be used synonymously. The study will adopt a definition of *e-learning* from the National Center for Supercomputing Applications (NCSA), which stated,

> e-learning is the acquisition and use of knowledge distributed and facilitated primarily by electronic means … e-learning can take the form of courses as well as modules and smaller learning objects. E-learning may incorporate synchronous or asynchronous access and may be distributed geographically with varied limits of time. (NCSA, 2000)

Interaction

The definition of interaction used in this study is the one posited by Thurmond (2003, p. 4), who defined interaction as

> … the learner's engagement with the course content, other learners, the instructor, and the technological medium used in the course. True interactions with other learners, the instructor, and the technology results in a reciprocal exchange of information. The exchange of information is intended to enhance knowledge development in the learning environment. Depending on the nature of the course content, the reciprocal exchange may be absent—such as in the

case of paper printed content. Ultimately, the goal of interaction is to increase understanding of the course content or mastery of the defined goals.

The Blackboard Learning Management System

Blackboard is one of the many web-based learning management systems available to K–12 and higher educational organizations. It is a collection of software tools designed to manage user learning interactions. It goes beyond training records management and reporting by providing tools to deliver and manage instructor-led synchronous and asynchronous online learning interactions. It also provides tools for authoring and reusing or repurposing content and virtual spaces for learner interaction, such as discussion forums and live chat rooms (www.blackboard.com).

Instructor–Learner Interaction

Instructor/learner interaction has been shown to take place in even the most technologically poor e-learning environments. Types of instructor–learner interactions might include stimulating students' motivation and interest in the course content, organizing students' learning process, and providing counseling, support, and encouragement to students. These interactions can take place via online chats, live messaging, emails, discussion boards, and/or assignment feedback. What is essential, however, is the quality of that interaction. The quality of instructor–learner interaction impacts learner outcomes and learner satisfaction (Anderson & Kuskis, 2007; Jin, 2005). Instructor–learner interactions include instructor presentations, threaded discussion boards, email, announcements, and assignments.

Instructor Presentations (Video, Audio, Text, Live Classroom WIMBA)

Instructors often present introductory, instructional, and/or additional resource information through the Blackboard learning management interface used in the online

masters courses under study. These presentations may be provided in video, audio, text, or live classroom modes of delivery. The Blackboard learning management system supports streaming and compressed video, audio streaming, and text-based content, as well as a newly added live classroom component. The live classroom offers the instructor the ability to meet with students synchronously online at a prearranged time. Here, the instructor can share his or her desktop with students in order to present course content while engaging students in discussion and answering questions. This structure also offers students an opportunity to interact with each other (www.blackboard.com).

Threaded Discussion Board

This is an electronic text-based discussion forum where users can contribute to discussion topics asynchronously. Messages tend to be grouped by topic, and messages belonging to one topic are called a “thread” (www.blackboard.com).

Live Chat

Live chat offers learners and instructors the opportunity to meet and converse synchronously in real time. This can be done via voice chat or through text-based instant messaging (www.blackboard.com).

Live Classroom

The live classroom is a live, virtual classroom environment with robust features that include audio, video, application sharing and content display, and MP4 capabilities. MP3 and MP4 files are container formats that can hold a mix of multimedia objects (audio, video, images, animations, menus, etc.). Online tools such as polling, whiteboarding, presenter on-the-fly, resizable chat areas and participant lists, usage

analytics tools, and MP3 or MP4 downloads enable further dynamic interaction between students and instructors (www.blackboard.com).

Useful Web Links (Resources)

Instructors from time to time post relevant web resources to enhance students' learning.

Email

Electronic mail is a way to compose, send, retrieve, and store messages over electronic communication systems (”Email,” 2010).

Announcements

Blackboard offers instructors the ability to send “mass” messages to everyone enrolled in a course through the use of the announcements tool. Announcements inform students of upcoming lecture presentations, assignment due dates, exams, changes in electronic office hours, and any other pertinent information that needs to reach the student in a timely manner (Blackboard, 2010).

Instructor Feedback

Many instructors interact with their students via feedback given on turned-in assignments. This feedback on assignments is extremely relevant to student satisfaction in e-learning environments (Laurillard, 1997, 2000).

Group Projects

Learners often work on group assignments to meet the learning requirements of the courses. Groups, projects, and final products vary from course to course.

Learner Satisfaction

According to Keller, satisfaction is realized through intrinsic reinforcement,

extrinsic rewards, and equity (Keller, 1983, 1984, 1987, 1999). For learning to be beneficial and lasting, learners must acquire some type of satisfaction from the learning experience.

Instructor Availability

Instructor availability is defined in this study as the instructors' response time to student queries, assignment submissions, discussion posts, and/or any other form of student-initiated interaction (DeBourgh, 2003).

Instructional Immediacy

Instructional immediacy was first defined by Mehrabian (1969) as any set of behaviors that increase closeness and nonverbal interaction with another. Later, Gorham (1988) elaborated on this basic definition by adding the element of verbal interaction that advances psychological closeness between teachers and students. This verbal interaction may include humor, using student names frequently, promoting future contact, and sharing personal experiences. This latter definition by Gorham is used in this research study.

Transactional Distance

Moore (1980, 2007) defined transactional distance as the cognitive space between learning peers, teachers, and content in a distance education setting. Transactional distance is a function of dialogue and structure in dispersed adult learning settings. According to Moore, distance decreases with dialogue and increases with structure. Therefore, learning environments with high interaction and a less rigid format will be more engaging to learners and thus will improve learner satisfaction (Moore, 2007).

Significance of the Study

Instructor–learner interaction in online courses is an essential part of the teaching/learning experience. The literature is rich with research findings about the importance of this type of interaction, but very few studies link it directly to learner satisfaction. The potential significance of this study is that once key variables in online student satisfaction can be empirically identified, these findings can help lower attrition rates for online courses of study. If it is determined that a certain amount and/or type of instructor–learner interaction incorporated into distance education courses significantly impacts student satisfaction levels, then this level and type of interaction could be recommended as instructional activities to be used when designing distance education courses in an effort to secure higher rates of completion and lower attrition rates. This study may also give further insights into the importance of interaction between faculty and learners in the online learning environment. Additionally, the findings of this study could help to shape policy and practice for online instruction as well as serve as an assessment tool for evaluating the effectiveness of online instruction.

CHAPTER 2 REVIEW OF THE LITERATURE

The purpose of this research study was to investigate to what extent instructor–learner interactions affect learner satisfaction in online masters courses in Instructional Technology. The key independent variables in this study were instructor–learner interactions in online courses, instructor availability, instructional immediacy, and transactional distance; the dependent variable was learner satisfaction. A discussion of evaluating online courses and a review of the literature related to each variable follow.

Evaluating Online Courses

An evaluation is “a study designed and conducted to assist some audience to measure an object’s merit and worth” (Stufflebeam, 1999, p. 3). An evaluation, in this context, seeks to identify the value that online courses and programs offer learners. As Thompson and Irele (2007) points out, as institutions of higher learning devote more of their resources to the design, development, and hosting of online courses and programs, those efforts need to be duplicated in the area of online education evaluation.

The focus of online learning evaluation for the past 10 years or so has been a plethora of comparative media studies aimed at showing that online courses were equal to traditional courses (Clark, 1985; Russell, 1999, 2005; Thompson, 1994). The argument can be made that these types of studies were necessary at the inception of online education to fuel its survival; this is no longer the case. Most would agree that online learning is here to stay—at least for the foreseeable future. This being the case, careful evaluation has never been more necessary (Thompson & Irele, 2007).

Evaluation serves many purposes, including a means to determine quality and effectiveness. Quality usually refers to technological infrastructure and student

services, while effectiveness usually refers to learning outcomes and learner satisfaction (Thompson & Irele, 2007). To assess quality and effectiveness, there needs to be quality and effectiveness standards in place against which these courses can be tested.

Currently, there is a movement to develop standards for online educational practices that will guide not only evaluation, but also design and development. However, these evaluations must go a step beyond requiring online courses to mirror traditional learning environments. According to Ehrmann (2002), the full promise of online education will not be fulfilled until evaluations are used in such a way as to make improvements that will expand the traditional learning experience for learners. That is to say, evaluations needs to go beyond comparing and contrasting differences between online and classroom settings. Evaluation should serve as catalyst for change, innovation, and expansion in order to provide for a more satisfying learning experience for both sets of learners.

Interaction in Online Courses

Berge (2002) asserts that there are usually three types of interaction available in online learning environments: instructor–learner, learner–learner, and learner–content. Learning requires two main types of interaction: interaction with the course content and interaction with other people. Although there have been many discussions of the importance of instructor–learner interaction, there have been few studies conducted in this area.

In a study conducted by Levine (2007), several strategies for effective online interaction in distance education courses were suggested. For instance, online

instructors should provide a positive and supportive learning environment for online students, communicate clear expectations for conducting an activity, give appropriate support to students, supply multiple opportunities for participation and acknowledgement of individual students, keep every student active in discussions, and create discussion questions that promote professional reflection and application to real-world situations.

DeLoach and Greenlaw (2007) found that when instructors guided the discussion, interaction was more effective than when they led it. Fisher (2003) also recommends that instructors play the role of facilitator for the most effective interaction. Specifically, DeLoach and Greenlaw (2007) emphasized clear goals for the discussion groups; appropriate, individualized levels of intervention by the instructor; and the assignment of grades that are tied to both the quantity and the quality of student discussion.

Martyn (2005) researched the need to purposefully create online learning environments that support collaboration not only among all students, but also between students and the instructor. Martyn (2005) believes that for online students to be successful, the social aspects of learning should be deliberately planned. More research to identify specific instructional strategies is needed (Martyn, 2005).

Perceived Learning

Jiang and Ting (1999) examined what variables were predictive of students' perceived learning. Using a questionnaire, data were collected from 287 students in 78 web-based courses. Results of a multiple stepwise regression analysis indicated that instructor–learner interaction was the most significant predictor of perceived learning.

Similarly, Fredericksen, Pickett, Shea, Pelz, and Swan (2000) reported that the most significant indicator of learning in an online course was students' interaction with their instructors.

Fredericksen et al. (2000) found a positive relationship between the reported level of interaction with the instructor and the level of perceived learning. Data from this study came from 1,406 students enrolled in an asynchronous online course. This relationship was significant because those students who felt that they did not have adequate access to their online instructors tended to feel that they learned less.

Importance

The pedagogical importance of instructor–learner interaction in online learning environments cannot be understated. In their findings, T. Anderson and Kuskis (2007), as well as Dibiase (2000), demonstrated that successful instructor–learner interaction is possible, even in technologically poor online learning environments. Findings in a study by Farahani (2003) revealed that participating in email communication and providing online feedback to students' work were the two most important aspects of online interactivity in e-learning environments. There is, however, little to point to instructor–learner interaction and its bearing on learner satisfaction. This study attempted to fill this gap in the current literature.

Asynchronous Settings

Instructor–learner interaction usually occurs in asynchronous online learning environments through the use of discussion boards, email, and instructor feedback on assignments. In their studies, Su, Bonk, Magjuka, Liu, and Lee (2005) and Driver (2002) demonstrated that both instructors and learners believe that interaction is

important to the learning process. For online courses to be effective and foster learner satisfaction, they must offer more than text-based content displayed in an online format. According to Palloff and Pratt's 2001 study, without instructor–learner interaction where social connections can be forged, a successful learning experience cannot be constructed. These social connections include interacting with the instructor and other learners in ways that are not always instructional. When instructors and students share real-life examples, personal stories, anecdotes, and reflections, it helps to build and forge social connections among them. Instructor–learner interaction in online courses is an important component of a satisfying online learning experience. This study attempted to show to what degree this is true.

Caboni, Mundy, and Duesterhaus (2002) and Kearsley (2000) provided strong evidence to support the importance of instructor–learner interaction in online learning environments. However, Baker (2001) stated that the onus has been on individual instructors to determine the levels and quality of instructor–learner interactions without guidance from empirical evidence. In two other studies conducted by Kearsley (2000) and Clow (1999), it was determined that in online learning environments, instructors must facilitate adequate levels of quality interaction and participation to avoid learner isolation and dissatisfaction. *Quality interaction* in this study refers to instructors creating a sense of personalization and customization of learning. Use of learners' names when interacting with them is one way of creating quality interaction. However, without sound empirical evidence of what "adequate" looks like, these levels vary greatly from instructor to instructor. The need for empirical data that will inform instructional practice was a driving force for this study. Wilkinson and Thomas (1991) in

their findings found that infrequent interaction with instructors was cited as the main reason for learner dissatisfaction and failure to complete distance-learning courses.

The level of instructor–learner interaction needed in online learning environments varies from learner to learner. Adult online learners need to form impressions of their instructors' personalities as they pertain to their courses. Thurmand (2003) noted that learners who perceive that they know their instructors feel that their courses offer a variety of ways to assess their own learning and tend to participate more in online discussions. Conrad (2002) found that online learners expect to be able to ask clarifying questions about their courses prior to their start dates and need to know that instructors are willing and able to meet individual needs. Not all students, however, need the same level of instructor interaction (Su et al., 2005).

According to Burnham (1998), women, for instance, tend to seek out more supportive communication environments and thus may expect and require more instructor interaction than their male counterparts. Regardless of learner differences, however, Clow (1999) found that all learners need to feel that they have sufficient interaction with their instructors.

It is not enough, however, to have sufficient instructor–learner interaction. Berge (2002) found that the content of those interactions is equally important. Parks and Floyd in their 1996 study provided further evidence that these interactions must be of high quality. Although text-based interactions such as email and discussion board threads are characterized as shallow communication, there are ways to improve these forms of interaction. Walther (1996) found that by adding communication cues such as emoticons, the quality of these types of communication can be enhanced. An *emoticon*

is a textual face indicating a writer's mood or facial expression ("Emotion," 2010). Emoticons are often used to alert a responder to the tenor or temper of a statement and can change and improve the interpretation of plain text. Examples of widely known emoticons are the smiley face [:)] and the sad face [:( ]. This study attempted to present quality and sufficient instructor–learner interactions as necessary components of online learning success and learner satisfaction.

Stein, Wanstreet, Calvin, Overtoom, and Wheaton (2005) emphasized the importance of instructor–learner interaction by concluding that it is a significant component of satisfaction with terms of perceived gained knowledge. Hatfield (1995) also concluded that the most important factor in student motivation is frequent instructor–learner contact. Umbach and Wawrzynski (2005) ascertained that instructor behaviors and attitudes affect students profoundly in online learning environments and suggested that instructors may be the most crucial component of student learning and overall satisfaction with the online learning experience.

Instructor Feedback

According to Shute (2008), instructor feedback is critical to learning for online students. Shute (2008) suggests that for feedback to be most effective, it should be nonevaluative, supportive, timely, and specific. Shute found that whether the setting was online or in the classroom, the purpose of instructor feedback was the same—to enhance either learning or performance, or both.

Online Discussions

Tallent-Runnels, Thomas, Lan, and Cooper (2006) reviewed findings from 40 quantitative and 20 qualitative studies about teaching online courses. From the findings

of their research, they recommend the creation of small learning communities. They found that instructor–learner interaction as well as prompt feedback from the instructor promoted learning (Tallent-Runnels et al., 2006). DeLoach and Greenlaw (2007) recommended that instructors intervene in online discussions only when the discussion begins to lag, when there are identified learning gaps, or when they wish to offer learner support.

Instructor Availability

According to a study by Gagne and Shepherd (2001), “students in an online course indicated that they were less satisfied with instructor availability than the in-class students” (p. 58). As such, while instructors may feel they are providing adequate one-on-one interaction via email and feedback, students are demanding a greater level of facilitation in daily interactions. This may be the case because students in online classes are more likely to expect the instant, continually available interaction simulated by the limitless nature of the Internet. This mismatch between instructor availability and learner expectations of instructor availability in online courses may lead to increased frustration and decreased levels of satisfaction for both learners and instructors.

Roach and Lemasters (2006) investigated the level of satisfaction with online learning. In their comparative descriptive study, they compared the perceived quality of the online program to that of the on-ground delivery of the same program. One of the findings of this study suggested that instructor availability was a key determinant for the future success of online instruction.

Instructional Immediacy

Instructional immediacy also refers to communication behaviors that reduce

social and psychological distance between individuals. According to Myers, Zhong, and Guan (1998), this type of communication includes verbal as well as nonverbal forms. Gorham (1988) stated that verbal immediacy centers on using speech to convey personal examples, to express humor, to provide and invite feedback, and to address learners by name. Nonverbal communication behaviors include eye contact, smiling, moving around the classroom, and body position. Verbal immediacy behaviors are more expected and relevant in online learning environments.

Verbal Immediacy

Verbal immediacy behaviors produce a sense of psychological closeness through the words instructors choose to use. Words such as *we* and *us* foster psychological closeness and are more immediate than *you* and *I* (Anderson, 1979). Although online learners have lower expectations in regard to nonverbal immediacy behaviors, Frietas, Myers, and Avtgis (1998) found that the presence of these behaviors through the use of compressed video, for example, directly correlated to learner satisfaction. To a greater degree, verbal immediacy is relevant in online courses.

Arbaugh (2001) sought to determine the impact of verbal immediacy behaviors (including offering personal examples, using humor, providing and inviting feedback, and addressing and being addressed by name) in an online setting. He concluded that immediacy behaviors are significant predictors of student learning and that these behaviors were positively associated with the student's satisfaction with a course. Thweatt and McCroskey (1998, 1996) found that students evaluated teachers who exhibited "immediate" behaviors more positively than those who did not.

Learner Expectations

Research directly relating to student expectations of instructors is very limited. Several studies indicate that students are interested in timely responses to email (Dahl, 2004; Vonderwell, 2005, 2003). Vonderwell found that students like to construct interpersonal relationships with their instructors. One study indicated that students preferred that the instructor be consistent in the amount of time taken to respond to email and return grades. Students reported that instructors tend to respond more and more slowly as a class progresses (Vonderwell, 2003). Another study conducted by Carswell, Thomas, Petre, Price, and Richards (1999) found that an underlying expectation of traditional students of an online course that email and assignments are answered and returned faster than in traditional classroom settings. This expectation could stem from the instantaneous, 24-hour nature of the Internet, and not necessarily from those outline by online programs or instructors. Online students in this study corroborated this by reporting that for the most part, emails and assignments were responded to and returned quickly.

Learning Outcomes

There have been studies that have researched instructional immediacy strategies in distance learning courses and their effect on learning, cognition, and instructor competence (Freitas et al., 1998; Hackman & Walker, 1990). Few, however, have made direct links with instructional immediacy and learner satisfaction. One such study was conducted by Arbaugh (2001). Although learner satisfaction was not the main concern of the Arbaugh study, it was a major finding. The study attempted to determine the impact of verbal immediacy behaviors (including personal examples, humor,

providing and inviting feedback, and addressing and being addressed by name) on learning outcomes in an online learning environment. The study concluded that immediacy behaviors were significant predictors of student learning and were also positively associated with students' satisfaction with the online learning experience. Apart from trying to bridge psychological distance through instructional immediacy strategies, online courses have an equally daunting task of trying to bridge transactional distance.

Transactional Distance

Moore (2007) defined *transactional distance* as a psychological and communication gap that results from the interaction between structure and dialogue. *Structure* refers to elements of course design such as learning objectives, assignments, and activities (Moore & Kearsley, 1996). *Dialogue* relates to the extent that instructors and learners can relate to each other. It is a kind of interpersonal interaction, constructive in nature that is aimed at facilitating learning (Moore, 2007). Transactional distance is a result of the interplay between dialogue and structure.

Since Moore's assertion of his theories, there have been studies that have supported and discredited his assertions. However, many studies have cited the benefits of interaction in distance learning. Morgan and McKenzie (2003), for example, found that instructors who used WebCT—a learning management system akin to Blackboard—to support students discovered that regular contact led to increased satisfaction on the part of learners. Additionally, Morgan and McKenzie found that the retention rate was much higher for learners who maintained regular contact with the instructor using WebCT. Students' comments revealed that regular contact with the

instructor increased their motivation, kept them on task, encouraged them to make studying a priority, removed their sense of loneliness, and increased their likelihood of completing the class (Morgan & McKenzie, 2003).

Courses, whether online or traditional, that have a high degree of structure—where there is often very little dialogue—have high transactional distance. In contrast, when dialogue increases and structure decreases, transactional distance is minimized. In a study conducted by Saba and Shearer (1994), the notion of a dynamic relationship between structure and dialogue was supported. The quandary, however, is in finding just the right amount of each. According to Saba and Shearer, this will vary according to the nature of the course.

Other studies, such as Clouse (2001), found that transactional distance was minimized in online courses that utilized text chat functions and was higher in those that used threaded discussion. Additionally, Lowell (2004) found that learners who were satisfied with the course structure and the level of dialogue reported higher levels of perceived knowledge gained and satisfaction in those courses overall. Another study by Stein et al. (2005) supported the benefits of increased interaction by concluding that learner–instructor and learner–learner interaction had significantly contributed to satisfaction with perceived knowledge gained.

On the opposite side of this discussion, Morgan and McKenzie (2003) noted that despite positive feedback from students and increased completion rates, the quantity of personal time needed on behalf of the instructor to achieve these outcomes was considerable. Robertson and Klontz (2002) determined that the tasks associated with remaining current with reading email and responding were very time-consuming. Ryan,

Carlton, and Ali (2004) likewise reported that some faculty members feel compelled to be available at all times. In addition, Cavanaugh (2005) found that twice the amount of time is needed for teaching online classes versus their classroom counterparts. The study found that the majority of that time was spent in communications with students in the online class.

Learner Satisfaction

Frederickson, Reed, and Clifford (2005) noted the importance of evaluating distance education innovations in terms of both learner outcomes and learner satisfaction. They argued for the need for well-designed and carefully controlled studies that investigate both. In particular, they emphasized that evaluation should be an integral part of the online course implementation stage, rather than an add-on at the end.

Mayzer and DeJong (2003) took an extra step by suggesting that the research on student satisfaction within distance learning, though less prevalent, may in fact be more useful than research on student performance as a standard for evaluating distance learning. Though research has shown little or no difference between traditional and distance education in terms of course grades and overall grade point average (Russell, 1999), they felt that such performance indicators may reflect background preparation, effort, or test-taking ability more than any experiential sense of learning. The perspective here posits that education can be seen as a product geared toward customer satisfaction—hence the need for such student feedback. This was a guiding premise behind the need for this study. Satisfaction represents learners' perception of the quality of their learning experiences.

Northrup (2002) conducted a study at the University of West Florida that focused on the importance of interaction as it relates to learner satisfaction and its effect on learner retention in distance learning courses. She specifically examined the types of interactions that students perceived to be important for online learning, including content interaction, conversation and collaboration, intrapersonal and metacognitive skills, and need for support. The study consisted of 52 graduate students in an online program in Instructional Technology. Intact classes of students were selected from two courses at the beginning of their online learning sequence and two courses at the end of their sequence. Most of the students had selected online courses for convenience and flexibility, even though they could have attended classes on campus.

In this study, conversation and collaboration were deemed important components of the online learning experience. Students relied on both peers and instructors in forming and maintaining an online learning community. For example, many students said that being able to discuss ideas and concepts and share information with peers was essential in an online environment. Feedback from the instructor was important to students, though not necessarily on a daily basis; at least 2 times per week was regarded as sufficient (Northrop, 2002).

Motivation and Academic Success

Chute, Thompson, and Hancock (1999) found that learner satisfaction is extremely important, as it impacts learner motivation and academic success. Satisfaction is realized through intrinsic reinforcement, extrinsic rewards, and equity (Keller, 1983, 1984, 1987, 1999). For learning to be beneficial and lasting, learners must acquire some type of satisfaction from the learning experience. This perception of

satisfaction is highly influenced by learners' attitude toward instructors, courses, instructional methods, and online learning technology. In their study, Chiu, Hsu, Sun, Lin, and Sun (2005) found that the key factor, however, in aiding learner satisfaction is the instructor. Instructor enthusiasm and individual rapport have been shown to have a high correlation with learner satisfaction.

Smith and Dillon (1999) and Finaly-Neumann (1994) in their studies found that the instructor is the key component of learner satisfaction in online learning environments. Instructors who are available and responsive to online learners provide a more satisfying learning experience. Additionally, Smith and Dillon (1999) found that instructors who provide timely and detailed feedback on assignments tend to keep learners motivated and involved in the learning process. Kooker, Itano, Efinger, Dungan, and Major (1994) found that instructor–learner interactions also influence learners' perception of learning satisfaction and learning quality.

According to research conducted by Swan (2001), online learners who perceive high levels of interaction with instructors tend to report higher levels of learning and course satisfaction. Picciano (1998) found that learners in these environments observe that their learning is directly related to the amount of active interaction offered by the instructor. Therefore, one can conclude that learner satisfaction in online learning environments is in part due to the perceived quality of instructor–learner interactions.

Summary

Research conducted with university-level distance learners illustrates three issues surrounding instructor behavior: (a) competency of instruction, (b) communications, and (c) availability (Noel-Levitz, 2006). Palloff and Pratt (2007)

agreed that online learner success is linked to the instructor's ability to create learning communities and to interact effectively with learners. Conole (2004) also states that online communities allow for social and collegial interaction between faculty and learners, which directly impacts learner satisfaction.

Effective interaction, whether it be learner–content, instructor–learner, or learner–learner, is critical for online learning to be successful. The studies presented here provide evidence that instructor–learner interaction, when done according to recommended researched guidelines, increases learner satisfaction within online learning environments.

Online learning is a growing delivery method that seems more than just a passing trend. Providing online instructors with evidence-based practices for effective instruction are essential to if we are to meet prescribed learning outcomes and decrease attrition rates. The interaction of the learner with the content, other students, and the instructor provides the pedagogical foundation for learning to take place (Berge, 2002). Additionally, by purposefully incorporating strategies and methods to decrease transactional distance, educators can improve learning outcomes and learner satisfaction (Keller, 1999; Moore, 2007).

The full promise of online education will not be fulfilled until evaluations are used in such a way as to make improvements that will expand the traditional learning experience for learners and provide for a more satisfying learning experience. As noted, Fredericksen et al. (2000) reported that the most significant indicator for learning in an online course was students' interaction with their instructors, which also leads to higher levels of learner satisfaction. In addition, Lowell (2004) found that learners who

were satisfied with the course structure and the level of dialogue reported higher levels of perceived knowledge gained and satisfaction in those courses overall. The importance of studying learner satisfaction was expressed most strongly by Mayzer and DeJong (2003), who suggested that research on student satisfaction within distance learning, though less prevalent, may in fact be more useful than research on student performance as a standard for evaluating distance learning.

Conclusion

The research cited here shows that the variables in this study have some impact on the level of learner satisfaction in online courses, either directly or indirectly. Although researchers have noted ways to assure student satisfaction with e-learning, most of the data were not specific to online professional programs at the graduate level. There continues to be a need to research student satisfaction with online professional programs at the graduate level. This research study attempted to study learner satisfaction within online masters courses. Its aim was to add to the body of research in the field of online instruction and to address some of the gaps in online instruction research cited by Tallent-Runnels et al. (2006). Each variable was looked at individually and interactively to determine to what extent it directly affected student satisfaction. The literature shows that instructor–learner interaction is essential in the online learning classroom. It gives learners a sense of connectedness to their online courses. Fostering instructor–learner interaction may also give online learners opportunities to refine knowledge and better master the curriculum. The research shows that learner success and satisfaction in online courses may depend greatly on the amount of interaction and the quality of interaction between learners and instructors.

CHAPTER 3 METHODOLOGY

This study investigated applied research questions; therefore, a survey research design was employed. A survey research design methodology aims to measure variables by asking people questions and then to examining relationships among the variables. A sample of subjects is drawn from a population and studied to make inferences about the population (Vogt, 1999). This research study utilizes the most common form of survey design, the cross-sectional design, which asks questions of people at one point in time. An online questionnaire was administered, allowing respondents to fill it out themselves. The following section describes the target population, study participants, program under investigation, research design, instruments, procedures, data collection, and data analysis.

Target Population

The target population of this study was composed of exclusively online masters students residing in the United States. According the National Center for Education Statistics (NCES, 2007), during the 2006–2007 academic year, 66% of 2-year and 4-year Title IV degree-granting postsecondary institutions reported offering online, hybrid/blended or other distance education courses. Distance education courses account for an estimated 12.2 million enrollments. There were 11,200 college-level programs designed to be completed totally at a distance, 66% of which were degree programs and 34% of which were certificate programs. Seventy-five percent of all courses were delivered through asynchronous Internet-based technologies (NCES, 2007). In another report dated 2006, National Postsecondary Student Aid Study (NPSAS) data showed that of the students enrolled in graduate education programs,

60% were enrolled in masters-level coursework (Choy & Forrest-Cataldi, 2006). Currently, 1.25 million students in higher education programs take all of their classes online via distance learning in the United States, and approximately 700,000 of those students are masters students (Nagel, 2009).

As universities try to meet the demand for flexible schedules, give access to nontraditional college students who might not otherwise have access, provide updated course offerings and curricula, as well as increase student enrollment, the demand or need for online learning has never been greater. Studies show that the typical student in online courses is White and male. Few, less than 10%, are representative of a minority group (Bocchi, 2004). Research also indicates that these students are highly motivated and want the convenience provided by online courses (Graff, 2003). This study did not capture demographic data pertaining to race or ethnicity, therefore cannot speak to this variable. However, for both participant groups cited below, the majority were female. These differences in sample versus population trends may be due to the nature of the course of study. Traditionally, women are more represented in the field of education than men, and that could be the reason for the differences noted here.

Participants

The primary participants in this research study consisted of online masters students registered for classes in the online masters program in Instructional Technology at Wayne State University during the Fall 2009 semester, which will be referred to from this point as Group A. Only masters students who were exclusively learning online were solicited to participate in the study. Students enrolled exclusively in online courses during the fall semester of 2009 received an email during week 13

requesting their participation in the study, providing a link to the online questionnaire, and directing them on how to complete it. Follow-up reminder emails were sent during weeks 14 and 15. After week 15, a thank-you email was sent (see Appendices A, B, and C).

There was a participant pool of 20 students based on reported data provided by the administrative records of the Instructional Technology program. From the potential participant pool, 11 completed the questionnaire, which resulted in a 55% response rate. The demographic data collected from those who completed the questionnaire showed that 3 (27.3%) were male and 8 (72.7%) were female. The data also indicated that the majority of respondents ranged in age from 26 to 55. The age ranges reported were as follows: 26–30 (36.4%); 31–35 (9.1%); 46–50 (27.3%); 51–55 (18.2%); and 55 and above (one person; 9.1%).

A second participant group consisted of the first graduating cohort of the online masters program in Instructional Technology, which will be referred to from this point as Group B. This participant group graduated in August 2008. There was a potential participant pool of 20 students. Fourteen completed the questionnaire for a response rate of 70%. The demographic data collected from the questionnaire showed that there were 6 males (42.8%) and 8 females (57.2%). The data also showed that the majority of the respondents (28.6%) reported being between the ages of 26 and 30. The next-largest age groups were between ages 31 and 35 and 36 and 40 at (21.4%). One person (7.1%) responded in each of the following age categories: 51–55 and 56 and above. All learners graduating in the 2008 cohort received an email during the first week of August 2008 requesting their participation in the study, providing a link to the

online questionnaire, and directing them on how to complete it (see Appendix A). This secondary participant group was used to provide a comparison group as well as to increase the participation size of the study. This group of students went through the online masters program as an intact cohort, while the primary participation group did not.

Due to the restriction of using exclusively online students versus using all masters students in the program, including those who might take online classes along with traditional face-to-face classes, the potential pool of available participants was greatly reduced.

Setting

The university itself is located in an urban metropolitan area. The classes are made up of online learners who are a part of the concentration cohorts, as well as general masters students who opt to take the online versions of courses offered in the traditional setting. Because of this mix of student populations, levels of exposure and experience with online learning vary.

The online masters program in Instructional Technology at Wayne State University is an online program consisting of four areas of concentration: K–12 technology integration, human performance improvement and training, interactive technology, and instructional design. It is a 36-semester-hour program that also offers a state endorsement for teachers interested in integrating technology into the teaching and learning process. Most of the learners live within the immediate metropolitan area of the campus but desire the flexibility that an online learning environment offers.

The first graduating cohort of the online Masters in Instructional Technology

program in Summer 2008 and exclusively online students studying in the fall of 2009 were under investigation. The data collection for this study was conducted in August 2008 and weeks 13, 14, and 15 of the fall semester of 2009. The courses were designed and developed by doctoral graduate research assistants in collaboration with course instructors. Class enrollment usually consisted of a minimum of 15 students and a maximum of 23 students. For some students, this was their first semester in the program, while for others it may have been their last. Some classes were completely asynchronous in nature, while others had some synchronous components built in. Course content was available via Blackboard in the form of text, video, PowerPoint presentations, PDF readings, and/or external web-page links. Students were expected in most of these courses to participate in discussion board activities, which varied in length. Blackboard also offered learners and instructors other ways to interact via email, a live classroom, and file exchange.

Research Design

This survey research design employed a Likert-scale questionnaire (Appendix D). This research design was chosen because the study focused on investigating applied research questions; therefore, this type of research design was deemed appropriate. A survey research design methodology aimed to measure variables by asking questions and then to examining relationships among the independent and dependent variables. This research study utilizes a cross-sectional design, which asked questions of people at one point in time. An online questionnaire was administered. This research design allowed the investigator to make inferences about the population from the responses of the study sample.

Instrumentation

This research study used a Likert-scale questionnaire designed specifically to rate student satisfaction levels in the areas of instructor interaction, instructor availability, instructional immediacy, transactional distance behaviors, engagement, and relevancy (see Appendix D). Learners were also asked to rank the main types of instructor-initiated types of interactions present in their current course of study from the most satisfying experiences to the least. For example, learners were asked to indicate their satisfaction in using the threaded discussion board, the availability of their instructors via email, the immediacy of their instructor's responses to queries, and so forth.

The questionnaire used in this study was based on an instrument designed and validated for a study entitled *Existence and Importance of Online Interaction* (Farahani, 2003). The original instrument consisted of 41 items. The original instrument was reviewed by 12 members of the Maryland Community Colleges Research Group for content validity. All reviewers were either research directors or research analysts at different community colleges in the State of Maryland. The instrument was also piloted with 11 graduate students at Virginia Tech in Spring 2002. The questionnaire used in this research study consisted of 59 items, and some questions from the original instrument were modified to reflect the needs of the study and this audience. Other items were added as needed. This current questionnaire was not validated with these participant groups. The questionnaire's lack of validity is a limitation of the current study.

The first nine items in the questionnaire reflect different modes of online

interactivity that are typically used in online courses at Wayne State University. The purpose of including these items was to provide an understanding of the format used for interaction in the various courses. Students responded to each item in two ways to assess both the perceived availability and importance of each interaction. Responses were provided in the form of a 4-point scale, with 1 representing *not available* and 4 representing *highly available* for the availability section. In the importance section, responses were provided in the form of a 4-point scale with 1 representing *not important* and 4 representing *very important*. Students were also asked to comment or give more information regarding the interaction availability. See Table 1 for further elaboration.

The second part of the questionnaire consisted of 59 items, divided into four sections (Level of Satisfaction With Instructor Interactions, Level of Satisfaction With Discussion Forums, Level of Satisfaction With Student Interactions, and Overall Level of Satisfaction). These questions were designed based on the five-step model for e-moderating criteria of interactivity in online courses (Farahani, 2003; Salmon, 2001). The model consists of five categories: access and motivation, online socialization, information exchange, knowledge construction, and development. Responses were provided in the form of a 4-point scale of *strongly agree*, *agree*, *disagree*, and *strongly disagree*. In addition, a “not available” category was provided if the content of each of the 59 items was not available to the students.

According to Farahani (2003), the majority of the questions for the original instrument were constructed based on Salmon’s (2001) criteria for successful moderation of online courses or, as she labeled it, “computer mediated conference.” Using a special computer program designed for observing data entry, Salmon

“concentrated on understanding the naturally occurring online behaviors” (p. 24) by evaluating 3,000 messages produced from virtual discussions in MBA courses conducted at Open University. “E-moderating” training was developed based on the knowledge gained from this research. Later, she developed a five-step model of “e-moderating” based on data collected during 1997–1999. The information that Salmon gathered was obtained from content analysis of participants, exit interviews, and focus groups (Salmon, p. 25).

Determining the level of satisfaction with each type of interaction was based on interactivity criteria listed in the 51 interactivity items in the second part of the student questionnaire. For example, item 1 in section 2 states, “Instructors greeted students before first class session.” This is derived from Salmon’s first step, which stresses access and motivation. She recommends that instructors “welcome participants individually” (Salmon, 2001, p. 116). In addition to Salmon’s effective e-moderating criteria, other sources were used to construct some of the statements used in the student questionnaire.

The questionnaire also collected demographic information such as age, gender, grade point average, amount of previous experience with online courses, previous computer experience, perceived factors contributing to success in the program, likelihood of recommending the current program, and likelihood of taking another online course. The questionnaire was administered in August 2008 for the cohort participant group and during weeks 13, 14, and 15 of the Fall 2009 semester for the other group. The questionnaire was hosted online via SurveyMonkey.com, and a link was sent out by the researcher via email to prospective participants.

Data Collection Method

Each student graduating from the first graduating cohort group of the summer of 2008, as well as those enrolled exclusively in online classes during the Fall 2009 semester, was contacted via email (see Appendix A) and asked to complete a one-time online questionnaire. The questionnaire was administered during August 2008 and weeks 13, 14, and 15 of the Fall 2009 semester. The questionnaire measured the effect of instructor–learner interactions on student satisfaction. Instructor–learner interaction, instructor presentations, threaded discussion boards; email, Blackboard announcements, instructor feedback, instructor availability, instructor immediacy, and transactional distance being the independent variables. Learner satisfaction was considered the dependent variable. This questionnaire was based on a validated instrument and then modified to meet the needs of this study. This modified questionnaire was not validated for use with these participant groups, and is noted as a limitation of this study. The questionnaire was then created and housed on the SurveyMonkey website.

The email addresses of students in the cohort participant group were obtained from administrative records of the Instructional Technology program. For students in Group A, the solicitation for volunteers' email was sent to each online instructor with the request that they forward it to their online masters students only. Additionally, the administrative staff of the Instructional Technology program gathered the school email addresses of registered online masters students for the Fall 2009 semester and forwarded them to the researcher. A copy of the solicitation for volunteers' email (see Appendix A) was also sent to these email addresses. After the first invitation, the email

was sent out on two additional occasions (see Appendix B). At the end of the data collection period, a thank-you email was sent out to everyone, as the researcher had no way of knowing which students participated and which ones did not (see Appendix C).

The email for both participant groups explained the nature and implications of the study, sought their participation in the study, and assured them of the confidentiality of their responses. Instructors did not, and would not, have access to questionnaire information; therefore, participants were encouraged to be as candid as possible with their responses. Students were also assured that their participation or lack thereof would not in any way impact their grade in the course.

Learners were directed to access the questionnaire link and complete the questionnaire. The questionnaire was hosted by an independent website, www.surveymonkey.com, where the research data were collected and stored. The questionnaire was made available for all of August 2008 and for last 3 weeks of the Fall 2009 semester. Participants and the researcher communicated via email only. After the data from both participant groups were collected, the data for sections 1 through 5 of the questionnaire were then downloaded to two separate Excel data sheets, where they were further coded and made ready for analysis via SPSS. The data were prepared separately according to each participant group and later combined. For items 6 through 16, the researcher utilized the data analysis tools available via the SurveyMonkey website. The qualitative responses to sections 1 through 5 were copied to a Word document and labeled by section heading and participant group.

Data Analysis Method

The questionnaire was analyzed utilizing quantitative and qualitative methods.

The Statistical Package for the Social Sciences (SPSS 14.0) was used to process and tabulate the quantitative data in sections 1 through 5. The statistical procedures that were utilized in this research after completing the frequency tables and tabulating the mean responses of the participant groups were multiple regression, independent-samples *t* tests, one-way ANOVA, and Cronbach's alpha internal consistency reliability.

Multiple Regression

The general purpose of utilizing multiple regression is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. Multiple regression was used to find a linear relationship between students' responses to different items designed to gain an understanding of the perceived availability and importance, and satisfaction of interactions. In this study, the researcher wanted to understand if there was a relationship between any of the independent variables (instructor/learner interactions, instructor availability, instructor immediacy, and transactional distance) and the dependent variable (learner satisfaction) at a statistically significant level.

***t* Test**

A *t* test was used to assess whether the means of two participant groups were statistically different from each other. This analysis was appropriate because the researcher wanted to compare the means of the two participant groups and the significance of each regression coefficient.

One-Way ANOVA

A one-way analysis of variance (ANOVA) was used to measure whether one or more components of a multiple-level independent variable predicted the value of a

dependent variable. In this case, the goal was to determine which instructor interactions, if any, were predictive of learner satisfaction.

Cronbach's Alpha Internal Consistency Reliability

Cronbach's alpha internal consistency reliability was separately applied to sections 2 through 5 of the Student Satisfaction Questionnaire. This procedure was used to determine the extent to which the items in each section were related to each other and to determine the internal reliability of the data collection instrument.

Learners were offered the opportunity to enter free text within each section of the online questionnaire. The purpose of this was to collect data that would offer some explanation for the quantitative data collected. This information was coded and sorted into themes for analysis. These data were then interpreted in the context of the overall study. The results of the questionnaires were used to determine the relationship between certain instructor-initiated interactions, immediacy, availability, and transactional distance behaviors and learner satisfaction. See Table 1 for a full explanation of the data analysis plan.

Table 1. Research Questions and Data Analysis Plan

Research question	Data source	Statistical test
1. To what extent does instructor–learner interaction (instructor presentations, discussion board postings, emails, Blackboard announcements, Web links, and feedback) affect learner satisfaction in online masters courses in Instructional Technology?	Section 2 of the Student Satisfaction Questionnaire: Items 1–20. Section 3 of the Student Satisfaction Questionnaire: Items 1–20.	1. Multiple regression 2. One-way ANOVA (if applicable)
2. To what extent does instructional immediacy affect learner satisfaction in online masters courses?	Section 2 of the Student Satisfaction Questionnaire: Items 1, 17, 18, 19, & 20.	1. One-way ANOVA
3. To what extent does instructional availability affect learner satisfaction in online masters courses?	Section 2 of the Student Satisfaction Questionnaire: Items 13 &16.	1. One-way ANOVA
4. To what extent does transactional distance affect learner satisfaction in online masters courses?	Section 2 of the Student Satisfaction Questionnaire: Items 1, 4, 5, 8, 9, 11, & 14.	1. One-way ANOVA

CHAPTER 4 RESULTS

The purpose of this study was to determine the extent to which instructor–learner interaction affects learner satisfaction in online masters courses. The general purpose lent itself to the following four research questions:

1. To what extent does instructor–learner interaction (instructor presentations, discussion board postings, emails, Blackboard announcements, and feedback) affect learner satisfaction in online masters courses in Instructional Technology?
2. To what extent does instructor availability affect learner satisfaction in online masters courses in Instructional Technology?
3. To what extent does instructional immediacy affect learner satisfaction in online masters courses in Instructional Technology?
4. To what extent does transactional distance affect learner satisfaction in online masters courses in Instructional Technology?

This chapter presents the results of the study. Section 1 gives an overview of the study, including a description of the participants and other demographic information. Section 2 addresses the results related to the main effects of each of the variables related to the study: interaction availability and importance, instructor–learner interaction, instructor availability, instructor immediacy, and transactional distance. Additionally, the results of the reliability testing of sections 2 and 3 of the Student Satisfaction Questionnaire (Appendix D) are presented here. Further, the significant interactions that contributed directly to learner satisfaction in this study are highlighted. The next section presents findings for students' overall satisfaction with their online experience, along with their willingness to take another online course and to

recommend the online masters program to others. The chapter concludes with a summary of these results.

Participants

One participant group of this research study consisted of masters students who were exclusively learning online and registered for classes in the online masters program in Instructional Technology during the Fall 2009 semester. There was a participant pool of 20 students based on reported data provided by the administrative records of the Instructional Technology program. From the potential participant pool, 11 completed the questionnaire, which resulted in a 55% response rate. The data also indicated that the majority of respondents ranged in age from 26 to 55. The age ranges reported were as follows: 26–30 (36.4%); 31–35 (9.1%); 46–50 (27.3%); 51–55 (18.2%); 55 and over (one person; 9.1%; see Table 2). The demographic data collected from those who completed the questionnaire showed that 3 (27.3%) were male and 8 (72.7%) were female, which is different from the demographic norm of the population of online graduate students (see Table 3).

Table 2. Group A Participant Age Data Results.

Age	Response percent	Response count
21–25	0.0%	0
26–30	38.4%	4
31–35	9.1%	1
36–40	0.0%	0
41–45	0.0%	0
46–50	27.3%	3
51–55	18.2%	2
56 and above	9.1%	1
		N = 11

Table 3. Group A Gender Data Results.

Gender	Respondent percent	Respondent count
Male	27.3%	3
Female	72.7%	8
		N = 11

A second participant group consisted of the first graduating cohort of the online masters program in Instructional Technology at Wayne State University. This participant group graduated in August 2008. There was a potential participant pool of 20 students. Fourteen completed the questionnaire with a response rate of 70%. The data also showed that majority of the respondents (28.6%) reported being between the ages of 26 and 30. The next largest age groups are 31 and 35, and 36 and 40 at (21.4%). Two people (14.2%) responded in the 41–45 age category, while one person (7.2%) responded in each of the age categories 51–55 and 56 and above (see Table 4). The demographic data collected from the questionnaire showed that there were 6 (42.8%) males and 8 (57.2%) females (see Table 5).

Table 4. Graduating 2008 Cohort Participant Age Data Results.

Age	Response percent	Response count
21–25	0.0%	0
26–30	28.6%	4
31–35	21.4%	3
36–40	21.4%	3
41–45	14.2%	2
46–50	0%	0
51-55	7.2%	1
56 and above	7.2%	1
		N = 14

Table 5. Graduating 2008 Cohort Participant Gender Data Results.

Gender	Respondent percent	Respondent count
Male	42.8%	6
Female	57.2%	8
		N = 14

Other Demographic Data

Tables 6 through 11 summarize other demographic information collected from Group A of this study. This information includes data on academic ability, prior computer skills, prior Internet skills, number of previous online classes taken, and previous online interaction utilization.

Table 6. Academic Ability Data Results.

Current GPA	Response percent	Response count
3.75–4.0	81.8%	9
3.50–3.74	9.1%	1
3.25–3.49	0%	0
3.00–3.24	9.1%	1
2.99 and below	0%	0
		N = 11

Table 7. Prior Computer Skills Data Results.

Computer skills	Response percent	Response count
No skills	9.1%	1
Novice	0%	0
Average	0%	0
Good	63.6%	7
Excellent	27.3%	3
		N = 11

Table 8. Prior Internet Skills Data Results.

Internet skills	Response percent	Response count
No skills	0%	0
Novice	9.1%	1
Average	9.1%	1
Good	45.5%	5
Excellent	36.4%	4
		N = 11

Table 9. Prior Online Learning Experience Data Results.

Prior online learning	Response percent	Response count
Yes	63.3%	7
No	36.4%	4
		N = 11

Table 10. Number of Prior Online Learning Courses Data Results.

Number of prior courses	Response percent	Response count
1–2	44.4%	4
3–4	11.1%	1
5–6	0%	0
7 or more	22.2%	2
N/A	22.2%	2
		N = 9

Table 11. Prior Interactions Utilization Data Results.

Interaction	Response percent	Response count
Sending email	100%	11
Replying to email	100%	11
Forwarding an email	100%	11
Attaching a file to an email	100%	11
Downloading an email file	100%	11
Using discussion boards	63.6%	7
Using chat rooms	72.7%	8
Using instant messaging	72.7%	8
Live classroom	36.4%	4
Navigating a LMS	72.7%	8
Downloading files from a LMS	54.5%	6
		N = 11

The following tables (12 through 17) summarize other demographic information collected from Group B of this study. This information also includes academic ability, prior computer skills, prior Internet skills, number of previous online classes taken, and previous online interaction utilization.

Table 12. Academic Ability Data Results.

Current GPA	Response percent	Response count
3.75–4.0	78.6%	11
3.50–3.74	21.4%	3
3.25–3.49	0%	0
3.00–3.24	0%	0
2.99 and below	0%	0
		N = 14

Table 13. Prior Computer Skills Data Results.

Computer skills	Response percent	Response count
No skills	0%	0
Novice	7.1%	1
Average	14.3%	2
Good	14.3%	2
Excellent	64.3%	9
		N = 14

Table 14. Prior Internet Skills Data Results.

Internet Skills	Response percent	Response count
No skills	0%	0
Novice	7.1%	1
Average	14.3%	2
Good	7.1%	1
Excellent	71.5%	10
		N = 14

Table 15. Prior Online Learning Experience Data Results.

Prior online learning	Response percent	Response count
Yes	50.0%	7
No	50.0%	7
		N = 14

Table 16. Number of Prior Online Learning Courses Data Results.

Number of prior courses	Response percent	Response count
1–2	36.4%	4
3–4	9.1%	1
5–6	9.1%	1
7 or more	18.2%	2
N/A	27.2%	3
		N = 11

Table 17. Prior Interactions Utilization Data Results

Interaction	Response percent	Response count
Sending email	100%	14
Replying to email	100%	14
Forwarding an email	100%	14
Attaching a file to an email	100%	14
Downloading an email file	100%	14
Using discussion boards	100%	14
Using chat rooms	100%	14
Using instant messaging	92.8%	13
Live classroom	28.5%	4
Navigating a LMS	85.7%	12
Downloading files from a LMS	78.5%	11
		N = 14

Table 18. Summary of Groups Combined

Items	Group A	Group B
Academic Ability Average	3.78	3.82
Prior Computer Skills (Good/Excellent)	90.9%	78.6%
Prior Internet Skills (Good/Excellent)	81.9%	78.6%
Prior Online Learning (Yes)	63%	50%
Number of Prior Online Learning Courses:		
1-2	44.4%	36.4%
3-4	11.1%	9.1%
5-6	0%	9.1%
7 or more	22.2%	18.2%
N/A	22.2%	27.2%
		N = 25

The demographic data showed (Table 18) that most students had very high grade point averages; the majority had a GPA of 3.5 or higher on a 4.0 scale. Additionally, the majority of the participants rated themselves as having good-to-excellent computer skills prior to beginning the online program. The same was true for Internet skills, where the majority of respondents rated themselves as good to excellent. A little more than half (56%) responded that they had taken an online course prior to enrolling in the online masters program in Instructional Technology at Wayne State

University. Of those who had taken online courses, the majority of participants responded that they had taken one to two online courses previously. Respondents rated participating in Live Classroom (a synchronous online learning environment) as their least performed prior interaction.

Interaction Availability and Importance

The first section of the Student Satisfaction Questionnaire (Appendix D) asked learners to rate the levels of availability and the importance of various online interactions. Indications of frequency and percentages were calculated in response to this item. In addition, comments from students were solicited and are included. Section 1 of the student questionnaire contained nine items designed to gain an understanding of students' perceptions about the availability and importance of different interactions in their online courses. These nine interactions were as follows:

1. *Discussion board*. This is an electronic text-based discussion forum where users can contribute to discussion topics asynchronously.
2. *Live chat*. Live chat offers learners and instructors the opportunity to meet and converse synchronously in real time. This can be done via voice chat or through text-based instant messaging.
3. *Live classroom*. The live classroom is a live virtual classroom environment with robust features that include audio, video, application sharing and content display, and MP4 capabilities.
4. *Instructor announcements*. Blackboard offers instructors the ability to send "mass" messages to everyone enrolled in a course through the use of the announcements tool. Announcements inform students of upcoming lecture

presentations, assignment due dates, exams, and changes in electronic office hours, or any other pertinent information that needs to reach students in a timely manner.

5. *Instructor presentations*. Instructors often present introductory, instructional, and/or additional resource information through the Blackboard learning management interface used in the online masters courses under study. These presentations may be provided in video, audio, text, or live classroom modes of delivery.
6. *Instructor feedback*. Many instructors interact with their students via feedback given on turned-in assignments. This feedback on assignments is extremely relevant to student satisfaction in e-learning environments.
7. *Group projects*. Learners often had to work on group assignments to meet the learning requirements of the courses. Groups, projects, and final products varied from course to course.
8. *Useful web links (resources)*. Instructors from time to time would post relevant web resources to enhance students' learning.
9. *Email communication*. Electronic mail is a way to compose, send, retrieve, and store messages over electronic communication systems.

Availability is shown as A1–A4, with A1 being not available and A4 being most available. Importance is shown as B1–B4, with B1 being not important and B4 being most important (see Tables 19 and 20).

Table 19. Group B: Interaction Availability and Importance Data Results (*N* = 14).

Type	A1	A2	A3	A4	B1	B2	B3	B4
Discussion board	0% (0)	0% (0)	7.1% (1)	92.9% (13)	7.1% (1)	42.9% (6)	21.4% (3)	28.6% (4)
Live chat	14.3% (2)	50% (7)	14.3% (2)	21.4% (3)	35.7% (5)	21.4% (3)	35.7% (5)	0% (0)
Live classroom	0% (0)	35.7% (5)	35.7% (5)	28.6% (4)	0.0% (0)	14.3% (2)	50% (7)	35.7% (5)
Announcements	0% (0)	14.3% (2)	28.6% (4)	57.1% (8)	14.3% (2)	7.1% (1)	14.2% (2)	64.3% (9)
Instructor presentation	0% (0)	21.4% (3)	50% (7)	28.6% (4)	0.0% (0)	14.3% (2)	42.9% (6)	50% (7)
Instructor feedback	0% (0)	21.4% (3)	28.6% (4)	50% (7)	0.0% (0)	0% (0)	28.6% (4)	64.3% (9)
Group projects	0% (0)	7.1% (1)	64.3% (9)	28.6% (4)	7.1% (1)	42.9% (6)	35.7% (5)	14.3% (2)
Web links	7.1% (1)	35.7% (5)	42.9% (6)	14.3% (2)	7.1% (1)	50% (7)	14.3% (2)	28.6% (4)
Email	0% (0)	0% (0)	21.4% (3)	78.6% (11)	7.1% (1)	7.1% (1)	7.1% (1)	71.4% (10)

Learners reported high levels of availability for different online interactivity types. Email communication and discussion board were the two most available interactions for both participant groups. Instructor presentations were also highly available to Group A, while instructor announcements were also highly available to Group B.

Although both participant groups rated instructor feedback as highly available—50% and 54.5% for Group B and Group A, respectively—the textual comments provided by one of the students revealed a different perspective about the availability of instructor feedback, as reported below. One of the participants from Group A reported,

> I did not receive personal feedback on any of my assignments for the entire Fall semester (I took one class). Finished quizzes were not made available for students to determine which answers were wrong … and we are being taught INSTRUCTIONAL TECHNOLOGY? Teacher, teach thyself.

Table 20. Group A: Interaction Availability and Importance Data Results (*N* = 11).

Type	A1	A2	A3	A4	B1	B2	B3	B4
Discussion board	0% (0)	0% (0)	27.3% (3)	63.6% (7)	0% (0)	18.2% (2)	36.4% (4)	36.4% (4)
Live chat	27.3% (3)	36.4% (4)	0% (0)	18.2% (2)	27.3% (3)	9.1% (1)	18.2% (2)	36.4% (4)
Live classroom	20% (2)	40% (4)	10% (1)	10% (1)	10% (1)	20% (2)	40% (4)	20% (2)
Announcements	9.1% (1)	9.1% (1)	45.5% (5)	18.2% (2)	0% (0)	18.2% (2)	45.5% (5)	27.3% (3)
Instructor presentation	0% (0)	9.1% (1)	18.2% (2)	63.6% (7)	0.0% (0)	9.1% (1)	18.2% (2)	63.6% (7)
Instructor feedback	9.1% (1)	9.1% (1)	18.2% (2)	54.4% (6)	0.0% (0)	0% (0)	9.1% (1)	81.8% (9)
Group projects	0% (0)	0% (0)	63.6% (7)	27.3% (4)	9.1% (1)	36.4% (4)	9.1% (1)	36.4% (4)
Web links	9.1% (1)	0% (0)	42.5% (5)	36.4% (4)	0% (0)	18.2% (2)	36.4% (4)	36.4% (4)
Email	0% (0)	18.2% (2)	18.2% (2)	63.6% (7)	0% (0)	0% (0)	0% (0)	90.9% (10)

In terms of importance, Group B and Group A rated email communication as most important—71.4% and 90.9%, respectively. It is worth noting that although the discussion board was top rated for availability by both groups; it was not rated as highly important by either. Additionally, instructor feedback, instructor announcements, and instructor presentations were ranked as highly important by both groups. Overall, students rated these types of interactions as more important than other types of interactions listed in section 1 of the questionnaire.

The Student Satisfaction Questionnaire (Appendix D) also asked students to rate their level of satisfaction with various online interactions (instructor interaction, discussion board, learner–learner interaction, and overall satisfaction) in their online learning experience with the online masters program in Instructional Technology at Wayne State University, which will now be discussed in context of the research

questions of this study.

This research study lent itself to the following questions:

Q1. To what extent did instructor–learner interactions affect learner satisfaction in online masters courses?

Q2. To what extent did instructional immediacy affect learner satisfaction in online masters courses?

Q3. To what extent did instructor availability affect learner satisfaction in online masters courses?

Q4. To what extend did transactional distance affect learner satisfaction in online masters courses?

Each research question will now be presented with its associated data results and findings.

Q1: To What Extent Did Instructor–Learner Interactions Affect Learner Satisfaction in Online Masters Courses?

Sections 2 and 3 of the Student Satisfaction Questionnaire (Appendix D) contained 39 items designed to gain an understanding of students' perception of their level of satisfaction with the level of interaction they had with their instructors in their online courses. There were 20 items in section 2 and 19 items in section 3.

Instructor–Learner Interaction

Types of instructor–learner interaction might include stimulating students' motivation and interest in the course content, organizing students' learning process, and providing counseling, support, and encouragement to students. These interactions can take place via online chats, live messaging, emails, discussion boards, and/or assignment feedback. In section 2 of the questionnaire (Appendix D), students were

asked to rate their level of satisfaction with each item from *strongly agree* to *strongly disagree*. The multiple regression model revealed no linear relationship between instructor interaction and learner satisfaction for Group B with p< .05 (see Table 21).

Students from Group B commented on their level of satisfaction with instructor interaction in their online courses. Two respondents had this to say:

> Some instructors spent more time getting to know the students individually, responding to discussion boards and mentoring, others did little of this.
>
> Some instructors would receive higher rankings that others. The two most effective instructors were … for the online experience. All instructors were available via email. The interaction between students and their instructors varied greatly from one course to another.

Table 21. Instructor Interaction Multiple Regression 2008 Group B.

	Coefficients[a]				
	Unstandardized		Standardized		
Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	-14.099	11.549		-1.221	.250
Instructor interaction	.289	.195	.434	1.481	.169

[a]Dependent variable: satisfaction

When asked to select what contributed most to their success in their online courses (see Figure 4), the respondents from Group B rated online learning community highest (35.7%) and rated instructors the second lowest (14.3%).

The multiple regression model did, however, reveal a strong linear relationship between instructor interactions and learner satisfaction for Group A with p<.05 (see Table 22).

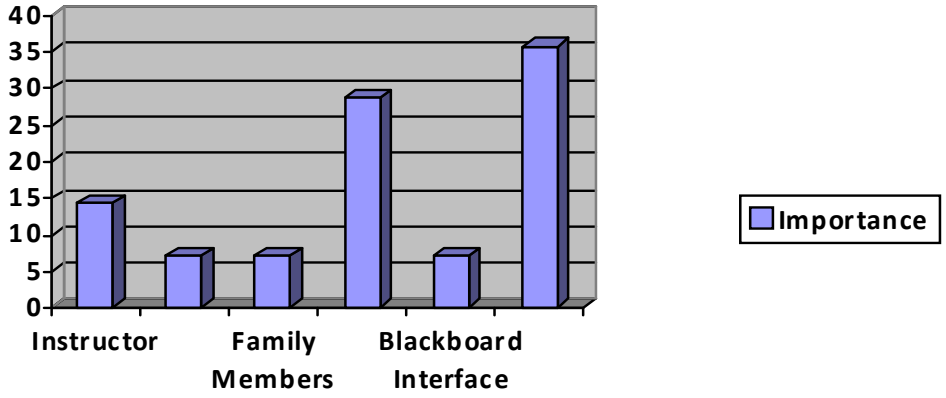

Figure 4. Group B choices of most important contributors to success.

Table 22. Instructor Interaction, Multiple Regression, Group A.

	Coefficients[a]				
	Unstandardized		Standardized		
Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	-12.791	10.578		-1.209	.281
Instructor interaction	.781	.152	1.044	5.121	.004

[a]Dependent variable: satisfaction

Students from Group A also had comments about their level of satisfaction with instructor interaction in their online courses. Two respondents said the following:

> This is my second program/degree at WSU done completely online. I am very happy overall.

> Instructors were challenged with the technology … missing deadlines and making excuses while admonishing students that they would be held accountable for timely delivery of assignments. This is an excellent program …. with some great instructors. WSU can and deserves to recruit more of those great instructors and get rid of the dead weight. You need to aim higher … this program can lead educational reform rather than muddle through it … IT is no longer just the "A/V guy" you need to demonstrate that WSU can be a leader rather than making excuses. I am not very proud to say that I am an IT grad student at WSU. I hope you turn this program into something I can eventually be proud of. Many of my fellow students have said the same.

The members of Group A were also asked to select what, in their opinion, had contributed most to their success in their online courses (see Figure 5). Respondents

rated instructors highest (36.4%) and online learning community second highest (27.3%).

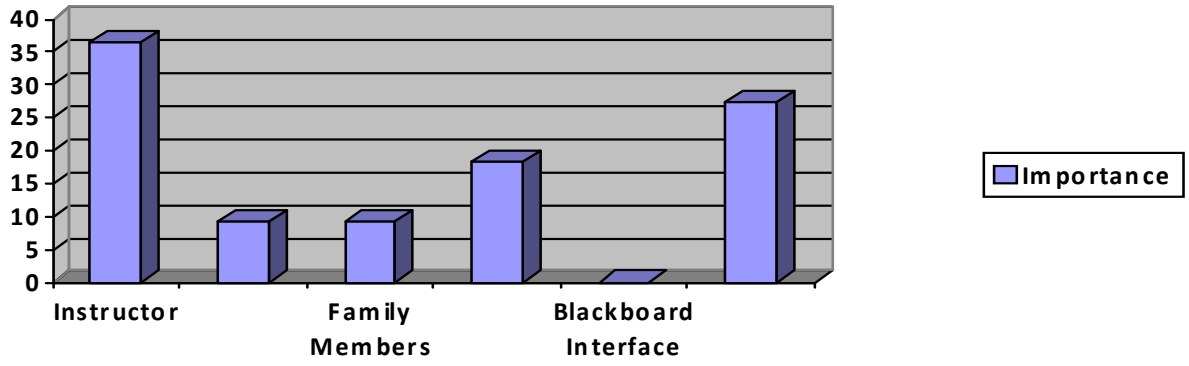

Figure 5. Group A: Choices of most important contributors to success.

When the data from the participant groups were combined and analyzed, there was a statistically significant linear relationship between instructor interaction and learner satisfaction with $p < .05$ (see Table 23).

Table 23. Instructor Interaction, Multiple Regression Combined.

	Coefficients[a]				
	Unstandardized		Standardized		
Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	-10.027	10.454		-.959	.350
Instructor interaction	.426	.161	.572	2.652	.016

[a]Dependent variable: satisfaction

Once significance was established for the combined groups within section 2 of the questionnaire (Appendix D), a one-way analysis of variance (ANOVA) was used to determine which items were directly predictive of learner satisfaction. The results identified items 6, 7, 10, 12, and 15 as statistically significant.

Item 6: *Instructors regularly monitored discussions.* The results of the one-way ANOVA for item 6 showed that it was significant at (.001) with $p < .05$ (see Table 24).

Table 24. ANOVA of Item 6, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	536.602	3	178.867	9.273	.001
Within groups	347.217	18	16.260		
Total	883.818	21			

Item 7: *Instructors regularly monitored discussions*. The results of the ANOVA testing for item 7 showed that this item was statistically significant in contributing to learner satisfaction with p<.05 (see Table 25).

Table 25. ANOVA of Item 7, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	674.133	3	224.711	13.820	.000
Within groups	325.200	20	16.260		
Total	999.333	23			

Item 10: *Instructors provided detailed comments and feedback on all assignments.* The results of the ANOVA testing for item 10 showed that this item was statistically significant (.000) in contributing to learner satisfaction with p< .05 (see Table 26).

Table 26. ANOVA of Item 10, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	606.475	3	201.158	10.928	.000
Within groups	368.150	20	18.408		
Total	971.625	23			

Item 12: *Instructors provided links to suitable sites to stimulate online discussions*

and to improve learning. The results of the ANOVA testing for item 12 showed that this item was statistically significant in contributing to learner satisfaction with a significance level of .05 (see Table 27).

Table 27. ANOVA of Item 12, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	400.063	3	133.354	4.119	.019
Within groups	679.937	21	32.378		
Total	1080.00	24			

Item 15: *Instructors interacted with students regularly via text, video, or PowerPoint presentations.* The results of the ANOVA testing for item 15 showed that this item was also statistically significant in contributing to learner satisfaction (see Table 28).

Reliability Testing

Cronbach's alpha scores range from zero through one, with a coefficient closer to one indicating higher reliability. Reliability coefficients should be at least .70 or higher to be considered reliable for effective instruments. Cronbach's alpha internal consistency reliability was applied to section 2 of the Student Satisfaction Questionnaire. This procedure was used to determine the extent to which the items in each section were related to each other and to determine the internal reliability of the data collection instrument.

Table 28. ANOVA of Item 12, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	223.822	2	111.911	3.637	.044
Within groups	646.136	21	30.768		
Total	869.958	23			

With a rating of .890, this section's items were deemed reliable. The results are illustrated in Table 29. This is important because although the instrument is not valid, it is reliable. The next section discusses the results for section 3 of the questionnaire (online discussions).

Table 29. Reliability Testing for Section 2 of the Student Satisfaction Questionnaire.

Cronbach's alpha	*N* of items
.890	20

Online Discussion

This is an electronic text-based discussion forum where users can contribute to discussion topics asynchronously. Messages tend to be grouped by topic, and messages belonging to one topic are called a *thread* (www.blackboard.com).

Section 3 of the Student Satisfaction Questionnaire (Appendix D) asked students to rate their level of satisfaction with online discussions in their online courses. They were asked to rate their level of agreement with each of 19 items from *strongly agree* to *strongly disagree*. The multiple regression model revealed no linear relationship between online discussions and learner satisfaction for Group B with $p < .05$ (see Table 30).

In addition, students from Group B commented on their level of satisfaction with

online discussions in their online courses.

Table 30. Online Discussion, Multiple Regression, Group B.

	Coefficients[a]				
	Unstandardized		Standardized		
Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	-14.099	11.549		-1.221	.250
Online discussion	.269	.205	.367	1.311	.219

[a]Dependent variable: satisfaction

Four online learners from this group stated,

> "The online discussions brought a feeling of community to our cohort group. We were able to get to know each other through these discussions. Some instructors interacted more than others in the discussions and the amount of participation depended on whether it was required as a part of our grade. At no time in any of the classes do I recall a wrap up discussion."
>
> Instructor ... used the discussion board effectively. She was actively involved in discussion when she needed to be. It seemed like discussion board was "busy work" for most courses.
>
> I see value in the discussion boards in early courses, towards the end they become more of a burden and tend to become very redundant. Interaction was imperative to this online learning experience. There were times when I felt isolated, but then I would enter a discussion on the discussion board or work on a group project and that would disappear.

Although there was not a statistically significant linear relationship established between the discussion board and learner satisfaction, for this group, the discussion board did help to increase a sense of community. One learner responded, "The online discussions brought a feeling of community to our cohort group. We were able to get to know each other through these discussions." When asked to select what contributed most to their success in their online courses (see Figure 6), the respondents from Group

B rated online learning community highest (35.7%).

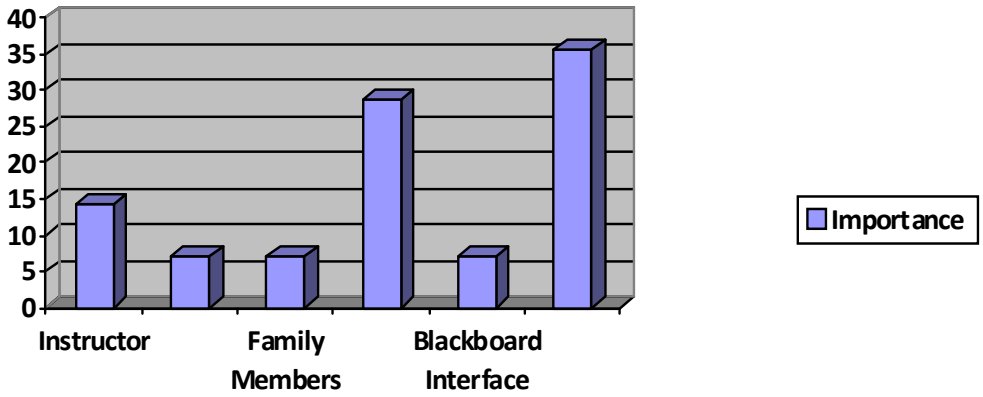

Figure 6. Group B choices of most important contributors to success.

The multiple regression model did not reveal a linear relationship between online discussion and learner satisfaction for Group A either (see Table 31).

Table 31. Online Discussion, Multiple Regression, Group A.

	Coefficients[a]				
	Unstandardized		Standardized		
Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	-12.791	10.578		-1.209	.281
Online discussion	-.283	.233	-.252	-1.216	.278

[a]Dependent variable: satisfaction

Students from Group A also had comments about their level of satisfaction with online discussions in their online courses. Two respondents said:

> I hate discussion boards. Discussion boards still just do not take the place of face-to-face communication. I also hate the fact that I keep signing on throughout the week. I'm very busy and I just want to sign on, post my thoughts and move on.
>
> When instructors emphasize the importance of quantity as well as quality of responses, things get ridiculous. Some students post 100 times and the value/relevance is lost. I have taken so many online courses, and I now dread discussion boards. I hate when instructors reward those who post too much—

but say nothing—yet it happens.

The members of Group A were also asked to select what, in their opinion, contributed most to their success in their online courses (see Figure 7). Respondents rated online learning community second (27.3%).

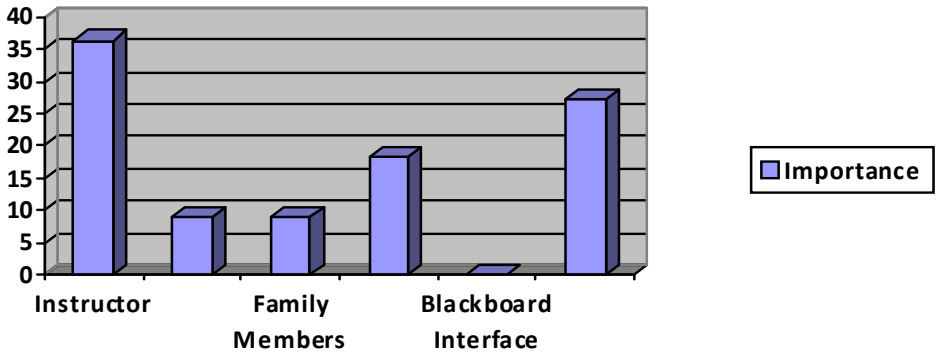

Figure 7. Group A: Choices of most important contributions to success.

When the participant groups were combined and the data analyzed, there was still no statistically significant linear relationship between online discussions and learner satisfaction with $p < .05$ (see Table 32).

Table 32. Online Discussion, Multiple Regression Combined.

	Coefficients[a]				
	Unstandardized		Standardized		
Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	-10.027	10.454		-.959	.350
Online discussion	.143	.205	.150	.696	.495

[a]Dependent variable: satisfaction

The combined data from Group B and Group A showed no statistically significant linear relationship between online discussions and learner satisfaction at a significance level of .05 (see Table 32). With no linear relationship established with section 3 (Appendix D) and learner satisfaction, a one-way analysis of variance was not

conducted. It was concluded that these items did not directly contribute to learner satisfaction in this study.

Reliability Testing

Cronbach's alpha internal consistency reliability was applied to section 3 of the Student Satisfaction Questionnaire. This procedure was used to determine the extent to which the items in each section were related to each other and to determine the internal reliability of the data collection instrument. With a rating of .829, this section's items were deemed reliable. The results are illustrated in Table 33.

Table 33. Reliability Testing for Section 3 of the Student Satisfaction Questionnaire

Cronbach's alpha	*N* of items
.829	19

Q2. To What Extent Did Instructional Immediacy Affect Learner Satisfaction in Online Masters Courses?

Instructional immediacy was first defined by Mehrabian (1969) as any set of behaviors that increase closeness and nonverbal interaction with another. Later, Gorham (1998) elaborated on this basic definition by adding the element of verbal interaction that advances psychological closeness between teachers and students. This verbal interaction may include humor, using student names frequently, promoting future contact, and sharing personal experiences. This latter definition by Gorham was used in this research study.

To investigate to what extent instructional immediacy affected learner satisfaction, items 1, 17, 18, 19, and 20 from section 2 of the questionnaire were chosen for study:

1. Instructors greeted students before first class sessions.

17. Instructors took the time to get to know me as a student and a person.
18. Instructors shared personal and professional experiences to elaborate on course materials.
19. Instructors provided a learning environment where everyone was treated with respect.
20. Instructors mentored me and encouraged me to do my best work.

With significance already established for section 2 of the questionnaire, a one-way analysis of variance (ANOVA) was conducted to measure these items for their influence on learner satisfaction. The results of the one-way ANOVA test showed that only item 20 (*Instructors mentored me and encouraged me to do my best work.)* significantly contributed to learner satisfaction in this study (see Table 34).

Table 34. ANOVA of Item 20, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	326.405	2	108.802	3.110	.049
Within groups	699.595	20	34.980		
Total	1026.000	23			

Q3. To What Extent Did Instructor Availability Affect Learner Satisfaction in Online Masters Courses?

Instructor availability was defined in this study as the instructors' response time to student queries, assignment submissions, discussion posts, and/or any other form of student-initiated interaction (DeBourgh, 2003). To investigate to what extent instructional availability affected learner satisfaction, items 13 and 16 from section 2 of the questionnaire (Appendix D) were chosen for study. A one-way analysis of variance (ANOVA) was conducted to measure items 13 and 16 for their influence on learner

satisfaction. The results of the one-way ANOVA revealed that item 16 (*Instructors were available to me when I needed extra assistance.)* was not statistically significant, but that item 13 was.

Item 13: *Instructors responded to inquiries in a timely fashion*. The results of the ANOVA testing for item 13 showed that this item contributed to learner satisfaction with $p < .05$ (see Table 35).

Q4. To What Extent Did Transactional Distance Affect Learner Satisfaction in Online Masters Courses?

Moore (1980, 2007) defined *transactional distance* as the cognitive space between learning peers, teachers, and content in a distance education setting.

Table 35. ANOVA of Item 13, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	729.893	2	364.946	31.704	.000
Within groups	241.732	21	11.511		
Total	971.623	23			

Transactional distance is a function of dialogue and structure in dispersed adult learning settings. According to Moore, distance decreases with dialogue and increases with structure. Remember, Moore stated that structure is the result of how a course is designed, how instruction is organized, and how communication media are used. Dialogue is the interpersonal interaction between the teacher and learner when one teaches and the other responds (Moore, 2007). Therefore, learning environments with high interaction and less rigid formats will be more engaging to learners and thus will improve learner satisfaction (Moore, 2007).

To investigate to what extent transactional distance affected learner satisfaction,

items 1, 4, 5, 8, 9, 11, and 14 from section 2 of the questionnaire were chosen for study:

1. Instructors greeted students before first class sessions.
4. Instructors provided guidance for online success.
5. Instructors provided frequently asked questions (FAQs) or other information to ease unnecessary communication.
8. Instructors ensured students knew how to send and receive messages as soon as courses became available.
9. Instructors offered structured exercises and activities.
11. Instructors offered practical ways of sharing information online.
14. Instructors provided detailed information about assignment expectations.

A one-way analysis of variance (ANOVA) was conducted to measure items 1, 4, 5, 8, 9, 11, and 14 for their effect on learner satisfaction. The results of the one-way ANOVA revealed that only items 8 and 14 were statistically significant.

Item 8: *Instructors ensured students kn*ew *how to send and receive messages as soon as courses became available.* Table 36 shows the results of the ANOVA testing.

Table 36. ANOVA of Item 8, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	416.211	2	208.106	6.897	.005
Within groups	663.789	22	30.172		
Total	1080.000	24			

Item 14: *Instructors provided detailed information about assignment expectations.* Table 37 shows the results of the ANOVA testing for this item. The next section of this chapter will report the findings for students' overall satisfaction with their

online learning experience.

Overall Satisfaction

Section 5 of the Student Satisfaction Questionnaire (Appendix D) asked students to rate their overall satisfaction with their online learning experience. There were 10 items in this section, and frequencies and percentages were calculated for each item.

Table 37. ANOVA of Item 14, Section 2 for Combined Groups.

	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	376.267	2	188.133	5.881	.009
Within groups	703.733	22	31.988		
Total	1080.000	24			

Table 38 illustrates these findings for Group B, while Table 39 reflects the findings for Group A. *Strongly agree* is represented by *SA*, *agree* is represented by *A*, *disagree* is represented by *D*, *strongly disagree* is represented by *SD*, and *not applicable* is represented by *N/A*.

Reliability Testing

Cronbach's alpha internal consistency reliability was applied to section 5 of the Student Satisfaction Questionnaire. This procedure was used to determine the extent to which the items in each section were related to each other and to determine the internal reliability of the data collection instrument. With a rating of .935, this section's items were deemed very reliable. The results are illustrated in Table 40.

Table 38. Group B: Overall Satisfaction Data Results.

Item	SA	A	D	SD	N/A	Count
I was very satisfied with the level of interactivity in my online courses.	35.7% (5)	51.1% (8)	7.1% (1)	0% (0)	0% (0)	14
I was very satisfied with the level of instructor–learner interactions in my online courses.	35.7% (5)	51.1% (8)	7.1% (1)	0% (0)	0% (0)	14
I was very satisfied with the level of learner–learner interactions in my online courses.	35.7% (5)	51.1% (8)	7.1% (1)	0% (0)	0.0% (0)	14
I was very satisfied with the level of instructor availability in my online courses.	28.6% (4)	64.3% (9)	7.1% (1)	0% (0)	0% (0)	14
I was very satisfied with the level of instructor immediacy displayed in my online courses.	21.4% (3)	71.4% (10)	7.1% (1)	0% (0)	0.0% (0)	14
My instructors contributed greatly to my success in the program.	35.7% (5)	42.9% (6)	14.3% (2)	0% (0)	7.1% (1)	14
The structure of the online courses contributed greatly to my academic success in the program.	35.7% (5)	42.9% (6)	21.4% (3)	0% (0)	0% (0)	14
The online courses interface was easy to navigate and user friendly.	35.7% (5)	64.3% (9)	0% (0)	0% (0)	0% (0)	14
I was very satisfied with the level of instructor presence in online courses.	21.4% (3)	71.4% (10)	7.1% (1)	0% (0)	0% (0)	14
I am very satisfied overall with the online masters program in Instructional Technology at Wayne State University.	50% (7)	50% (7)	0% (0)	0% (0)	0% (0)	14

Enroll in Another Online Program?

In section 6 of the Student Satisfaction Questionnaire (Appendix D), as another indication of satisfaction, students were asked to report how likely they would be to enroll in another online program. For Group B, the data showed that 71.4% of respondents said that they were very likely to enroll in another online program, while 21.4% said they were likely to do so. Figure 8 illustrates the results from Group B.

Group A data showed that 45.5% of respondents said that they were very likely to enroll in another online program, whereas 18.2% stated that they were not likely to do so. Figure 9 shows the results from Group A.

Table 39. Group A, Overall Satisfaction Data Results.

Item	SA	A	D	SD	N/A	Count
I was very satisfied with the level of interactivity in my online courses.	9.% (1)	63.6% (7)	18.2% (2)	0% (0)	0% (0)	11
I was very satisfied with the level of instructor–learner interactions in my online courses.	9.% (1)	54.5% (6)	9.% (1)	27.3% (3)	0% (0)	11
I was very satisfied with the level of learner–learner interactions in my online courses.	9.% (1)	81.8% (9)	0% (0)	9.1% (1)	0.0% (0)	11
I was very satisfied with the level of instructor availability in my online courses.	27.3% (3)	54.5% (6)	0% (0)	18.2% (2)	0% (0)	11
I was very satisfied with the level of instructor immediacy displayed in my online courses.	27.3% (3)	36.4% (4)	9.1% (1)	18.2% (2)	9.1%% (1)	11
My instructors contributed greatly to my success in the program.	27.3% (3)	36.4% (4)	18.2% (2)	18.2% (2)	0% (0)	11
The structure of the online courses contributed greatly to my academic success in the program.	9.1%	63.6% (7)	18.2% (2)	9.1% (1)	0% (0)	11
The online courses interface was easy to navigate and user friendly.	27.3% (3)	72.7% (8)	0% (0)	0% (0)	0% (0)	11
I was very satisfied with the level of instructor presence in online courses.	36.4% (4)	27.3% (3)	9.1% (1)	27.3% (3)	0% (0)	11
I am very satisfied overall with the online masters program in Instructional Technology at Wayne State University.	36.4% (4)	27.3% (3)	27.3% (3)	9.1% (1)	0% (0)	11

Table 40. Reliability Testing for Section 5 of the Student Satisfaction Questionnaire.

Cronbach's alpha	*N* of items
.935	10

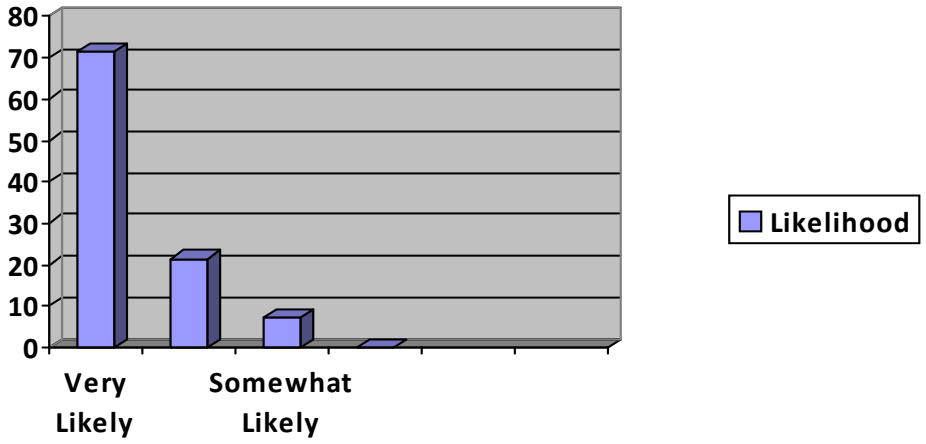

Figure 8. Group B enroll in another online program data results.

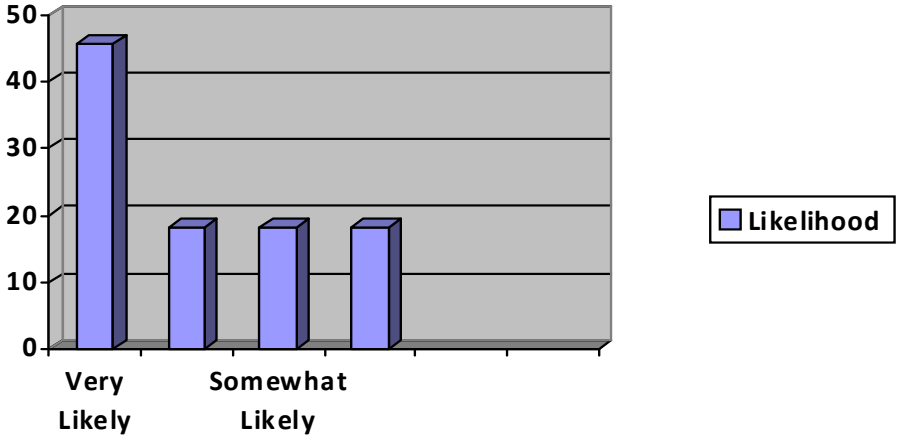

Figure 9. Group A: Enroll in Another Online Program Data Results.

Recommend To Others?

As another measure of satisfaction, section 7 of the Student Satisfaction Questionnaire (Appendix D) asked students to report how likely they would be to

recommend this program to others. For Group B, the data showed that 42.9% of respondents said that they were very likely to recommend this program to others; 57.1% stated that they were likely to do so. Figure 10 illustrates the results for this participant group.

Group A participant data showed that 45.5% of respondents said that they were very likely to recommend this program to others, 18.2% stated that they were likely to do so, 18.2% said that they were somewhat likely to do so, and 18.2% stated that they were not likely to do so.

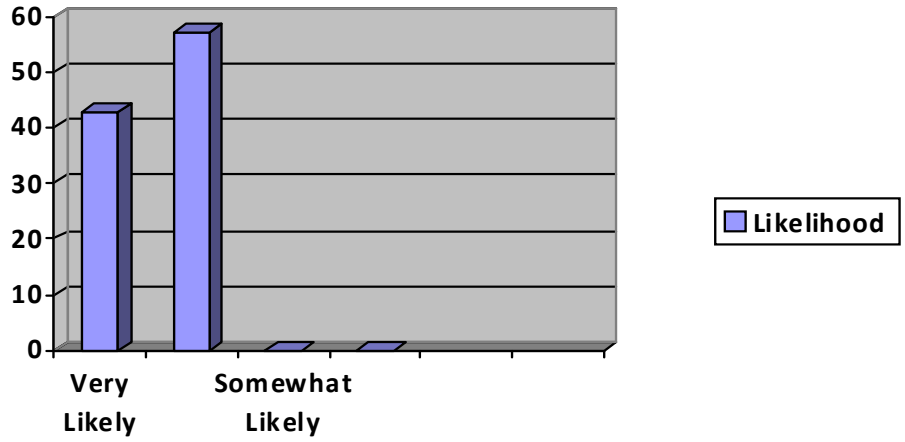

Figure 10. Group B: recommend to others data results.

Figure 11 shows the results for Group A.

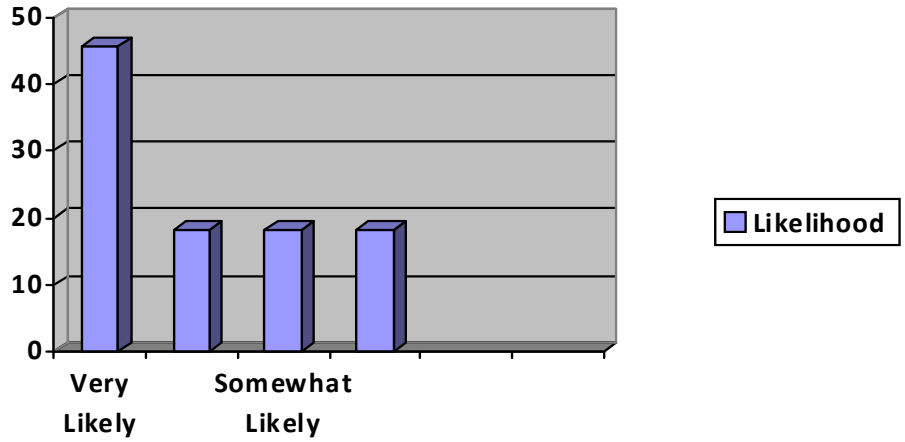

Figure 11. Group A: Recommend to others data results.

Summary

The results of the multiple regression data for instructor interaction showed that there was a strong linear relationship between instructor interaction and learner satisfaction for Group A. This result was confirmed by student comments, as well as by participant responses to section 8 of the Student Satisfaction Questionnaire (Appendix D). Students from this participant group indicated that instructors contributed most to their success in their online courses at 35.4%. Additionally, a one-way analysis of variance (ANOVA) reported that items 6, 7, 10, 12, and 15 of section 2 of the questionnaire (Appendix D) were directly predictive of learner satisfaction. For both participant groups, respondents indicated overwhelmingly that email communication was the most important interaction. In addition, instructor announcements, presentations, and feedback on assignments were ranked highly as important or very important by both participant groups. These results were consistent with the findings of a study by Farahani (2003) that revealed that participating in email communication and

providing online feedback to students' work were the two most important aspects of online interactivity in online learning environments.

The results of the multiple regression data for online discussions revealed no linear relationship between online discussions and learner satisfaction for Group A, Group B, or the groups combined. Although there was no statistically significant relationship established, student responses indicated that online discussions, when administered according to best-practice methods, did contribute to their sense of community, which was cited as a key contributor to their online learning success.

Students' responses to section 8 of the questionnaire (Appendix D) indicated that learners valued the online learning community. For Group B, 35.7% of respondents said that the online learning community contributed to their success in the program. This was the highest rated item along with course design. For Group A, 27.3% cited the online learning community as a contributor to their success in the program. This was the second highest rated item for this group. Respondents conveyed in their written responses that discussion-board effectiveness varied greatly from course to course and from instructor to instructor. This variety could account for its inability to contribute to directly to student satisfaction in this study.

Research Question 2 investigated the impact instructional immediacy had on learner satisfaction within this study population. Instructional immediacy was first defined by Mehrabian (1969) as any set of behaviors that increase closeness and nonverbal interaction with another. Later, Gorham (1988) elaborated on this basic definition by adding the element of verbal interaction that advances psychological closeness between teachers and students. Items 1, 17, 18, 19, and 20 from section 2

of the questionnaire (Appendix D) were chosen for study. The results of the one-way ANOVA revealed that only item 20 (*Instructors mentored me and encouraged me to do my best work.)* significantly contributed to learner satisfaction in this study. Additionally, learners from both participant groups were asked to rate their level of agreement with the following statement: *I was very satisfied with the level of instructional immediacy displayed in my online courses.* Among the participants in Group B, 21.4% strongly agreed and 71.4% agreed with this statement. Among Group A, 27.3% strongly agreed and 36.4% agreed with this statement. These findings are consistent with those of Arbaugh (2001), who concluded that immediacy behaviors are significant predictors of student learning and that these behaviors were positively associated with the student's satisfaction with a course.

Next, this study investigated the effect instructor availability had on learner satisfaction in this online learning environment. Instructor availability is defined in this study as the instructors' response time to student queries, assignment submissions, discussion posts, and/or any other form of student-initiated interaction (DeBourgh, 2003). Items 13 and 16 from section 2 of the questionnaire (Appendix D) investigated the extent to which instructional availability affected learner satisfaction. A one-way analysis of variance (ANOVA) found that item 13 (*Instructors responded to inquiries in a timely fashion.)* contributed to learner satisfaction. In addition, respondents from Group A indicated that their instructors were the key contributor to their success at 36.4%. Students were also asked to rate their level of agreement with the following statement: *I was very satisfied with the level of instructor availability in my online courses.* Among the participants of Group B, 28.6% strongly agreed and 64.3% agreed with this

statement. Among respondents of Group A, 27.3% strongly agreed and 54.5% agreed with this statement. These results were consistent with the findings of Roach and Lemasters (2006), who investigated the level of satisfaction with online learning. One of the findings of this study suggested that instructor availability was a key determinant of the future success of online instruction.

Question 4 sought to determine what relationship transactional distance had to learner satisfaction in this sample population. Remember, Moore posits that learning environments with high interaction and less rigid formats will be more engaging to learners and thus will improve learner satisfaction (Moore, 2007). To investigate to what extent transactional distance affected learner satisfaction, items 1, 4, 5, 8, 9, 11, and 14 from section 2 of the questionnaire (Appendix D) were investigated. The results of the one-way ANOVA revealed that only items 8 and 14 were statistically significant.

Items 8 (*Instructors ensured students kn*ew *how to send and receive messages as soon as courses became available.)* and 14 (*Instructors provided detailed information about assignment expectations.)* align with Moore's description of structure and dialogue. Additionally, respondents from Group B and Group A were asked to rate their level of agreement with the following statement: *The structure of the online courses contributed greatly to my academic success in the program.* Among the Group B participants, 35.7% strongly agreed and 42.9% agreed. Among the Group A participants, 9.1% strongly agreed while 63.6% agreed with this statement. These results are therefore consistent with Moore's proposal that when dialogue and structure are offered in the appropriate amounts, learner satisfaction will result (2007).

As a measure of satisfaction, learners were also asked to rate their overall

satisfaction with their online experience. Participants were asked to state their level of agreement with the following statement: *I am very satisfied overall with the online masters program in Instructional Technology at Wayne State.* Group B responded with 50% strongly agreeing and 50% agreeing with this statement. Group A indicated that 36.4% strongly agreed and 27.3% agreed with this statement.

Another means of capturing the level of students' satisfaction with their online learning experience was asking them to indicate their likelihood of enrolling in another online program. Among Group B participants, 71.4% stated that they were very likely and 21.4% stated that they were likely to enroll in another program. Of the participants in Group A, 63.3% responded that they were very likely and 9.1% stated that they were likely to enroll in another online program.

As a final indicator of satisfaction with the online learning experience, participants were asked to indicate their likelihood of recommending this program to others. In Group B, 42.9% indicated that they were very likely and 57.1% indicated that they were likely to recommend the program to others. Group A participant responses indicated that 45.5% were very likely and 18.2% were likely to recommend this program to others.

CHAPTER 5 DISCUSSION

Instructor–learner interaction has been shown to be a key factor in the academic success and satisfaction rates of learners in online learning environments (Conole, 2004). The findings of this study prove that certain types of instructor–learner interactions, instructional immediacy, instructor availability, and transactional distance did impact learner satisfaction within this online learning environment.

Availability and Importance

Students in this study indicated that of the nine interactions offered in the online learning environment under study, most were rated as available or highly available. Both participant groups rated online discussions, instructor presentations, instructor feedback, and email correspondence as the most available. When looking at the data for what was deemed most important to these learners, one sees that, for the most part, these results were consistent with what was highly available. For example, instructor feedback was rated as highly available by 54.4% and 50% of the respondents from Group A and Group B respectively.

Both groups saw instructor feedback as very important to their learning, performance, and satisfaction with their online learning experiences. Instructor feedback was rated as highly important by 81.8% of respondents of Group A and 64.3% of Group B. This disparity may be explained by the differences in the composition of the two groups. Group A was comprised of ad-hoc students, who may not have had prior established relationships with other members of the course. Therefore, they would turn to their instructor as a primary source of feedback and direction. Group B, on the other hand, was comprised of a cohesive cohort, where members were familiar with each

other and who had established relationships. This group, as indicated by their responses credited the online learning community as being more important to their success in the program than instructor [feedback].

With the cohort model no longer in practice in this program, it seems more important than ever for this online program to be successful at delivering instructor feedback in a way that is most beneficial to this community of online learners. Instructors in this setting can enhance this particular interaction by utilizing best practices as outlined by those like Shute. According to Shute (2008), instructor feedback is critical to learning for online students. Shute suggested that for feedback to be most effective, it should be nonevaluative, supportive, timely, and specific. Shute found that whether the setting was online or in the classroom, the purpose of instructor feedback should be the same—to enhance learning, performance, or both.

Learners did overwhelmingly choose email correspondence, instructor presentation, and instructor feedback as their most important interactions, all of which were also cited as being highly available. Email was rated as highly important by 90.9% of respondents from Group A, and by 71.4% of respondents from Group B. Email was cited as the most important interaction type by both respondent groups. This being the case, it is extremely important that instructors in this setting utilize email communication and feedback with their learners over other interaction types like announcements, which was not rated as highly important to this group of learners.

This is especially important, because interaction in traditional classroom instruction occurs through human contact by interaction of student-to-instructor and student-to-student. This interaction must be replicated in a virtual space in online

courses. In this learning environment, learners must be able to establish and maintain connectivity to instructors and to other learners. For online instruction to be successful, interaction must alleviate the lack of human contact and face-to-face communication. The critical component of an effective online course is the incorporation of the virtual human interaction. Effective communication, connection, and interaction in online courses are the foundations for a successful online learning and student satisfaction (Palloff & Pratt, 2001).

These findings in this study align with the findings of Farahani's (2003) study, which revealed that participating in email communication and providing online feedback to students' work were the two most important aspects of online interactivity in online learning environments. Therefore, enhancing these interactions — email correspondence, instructor feedback, and instructor presentations — can only further improve learner satisfaction within this particular student population.

There was one instance when this was not the case. For both groups, online discussion was rated as one of the most available interactions, yet neither group rated it as one of its most important interactions. This may be due to instructors rewarding quantity versus quality, the varying degrees of instructor presence on the discussion boards, varying instructor competency in utilizing online discussions effectively, or learners viewing these discussions as a "burden and redundant," as was indicated in some of the student responses.

Studies show that students find discussion boards most beneficial, effective, and engaging when learners were encouraged to exchange personal information, sustain reflection on course offerings and other learners' writings, and learn from a combination

of practical experiences and theoretical insights that occurred as a result of participating in the online discussion. Also, when online discussions offered increased access to the instructor, increased student interaction and participation, offered opportunities to develop the ability to apply the course material to new contexts and to make connections between diverse ideas and information, students valued the discussions more (Smith, Smith, & Boone, 2000).

To this end, instructors might incorporate the recommendations of DeLoach and Greenlaw (2007). They recommend that instructors act more as facilitators versus active participants in online discussions. They also recommended that instructors intervene only when the discussion begins to lag, when there are identified learning gaps, or when there is a need to offer learner support. The discussion board cannot be used by instructors as just "busy work." If used effectively, it can contribute greatly to student learning and overall sense of satisfaction with an online course.

Online Learning Community

Interestingly, 64% of respondents from Group B rated instructor feedback as most important, while 81.8% of respondents from Group A rated it as most important. This disparity in the ratings could be due to the fact that Group B participated in the program as a cohort, while Group A did not. In their responses to what contributed most to their success in section 8 of the questionnaire (Appendix D), Group B cited the online learning community at 35.7%, while citing instructors at 14.3%. For the same items, Group A cited instructors at 36.4% and the online learning community at 27.3%. Comments from respondents of Group B indicated that because they completed the program as a cohort group, they were able to interact with each other consistently via

the discussion boards, live classroom, chats, and group assignments over a two-year period. These interactions facilitated a certain level of familiarity that decreased feelings of isolation, and contributed to them being able to build a learning community, which contributed to their learning and sense of satisfaction.

This is further illustrated by the data collected from Section 4 of the questionnaire (Appendix D). Learners were asked to rate their level of satisfaction with student-to-student interaction. Learners were asked to rate their level of agreement to the following statement: *A sense of community improved my learning.* Respondents from Group A agreed 45.5%, while 64.3% of respondents from Group B agreed with this statement.

Learners were also asked to rate their agreement with the following statement: *I felt connected to other students*. Group A had 72.7%, while Group B had 84.6% of respondents agreeing with this statement. Also, learners were asked to rate their level of agreement with the following statement: *I felt isolated in my online courses.* Although there was not a huge difference in the responses, a difference does exist. For Group A, 72.7% disagreed, while 78.6% of respondents from Group B disagreed with this statement. A final indicator to the variance in the importance of the online learning community to these groups was illustrated in their response to the following statement: *Interacting with my fellow classmates is very important to my learning experience.* Learners were asked to rate their level of agreement to that statement. Respondents from Group A agreed 36.4%, while 42.9% of respondents from Group B agreed with that statement. These responses might explain why Group A cited instructor and instructor feedback as being most important to them, and why Group B sited online

learning community as being most important to them.

Instructional Immediacy

Instructional immediacy is defined as any set of behaviors that increase closeness and nonverbal interaction with another. In traditional classroom settings, nonverbal immediacy behaviors include eye contact, smiling, movement (or lack thereof) around the classroom, and body position. Verbal immediacy behaviors, on the other hand, include speaking behaviors like using personal examples, using humor, providing and inviting feedback, and addressing and being addressed by students by name (Gorham, 1988).

It was interesting that although learners from both participant groups highly agreed with the statement *I was very satisfied with the level of instructional immediacy displayed in my online courses,* only one of the five items under study for the category of instructional immediacy was deemed statistically significant in predicting learner satisfaction. Item 20 (*Instructors mentored me and encouraged me to do my best work.)* significantly contributed to learner satisfaction in this study. That being the case, instructors may want to stress demonstrating this particular immediacy behavior in an effort to improve learner satisfaction.

Although the researcher identified five items from the available literature that could significantly contribute to learner satisfaction, only one item proved significant in this study. Items 1, 17, 18, and 19 were not statistically significant for either groups or the groups combined.

Item 1: *Instructors greeted students before first class session*.

Item 17: *Instructors took the time to get to know me as a student and a person.*

Item 18: *Instructors shared personal and professional experiences to elaborate on course materials.*

Item 19: *Instructors provided a learning environment where everyone was treated with respect.*

Although these immediacy behaviors are touted in the literature to be a contributing factors to reducing psychological distance between learners and instructors and to improve learner satisfaction, this did not bear true with this audience. This could be due to learner expectations. If learners saw these behaviors exhibited by their online instructors as something "normal" and not above and beyond their expectations around performance, they might go unnoticed. It could be also be due to inconsistency in experiences. Maybe some instructors exhibited these behaviors more frequently and effectively than others.

Instructors can influence student satisfaction by improving their immediacy behaviors. This could be done by providing personal examples of the course material, demonstrating a sense of humor about the online course experience, inviting students to seek feedback from them and from other students, and to offer encouragement and support. Arbaugh (2001) found that immediacy behaviors were highly transferable from traditional classroom practice to online courses. Being able to exhibit these behaviors was deemed to be more important than technological savvy in predicting success of online courses. Arbaugh (2001) concludes that immediacy behaviors are significant predictors of student learning and students' satisfaction with online courses. The findings of this study are in agreement.

Instructor Availability

Learners from both participant groups indicated that for the most part, they were very satisfied with the level of instructor availability in their online courses. Yet only one of the two items used to measure this in section 2 of the questionnaire (Appendix D) resulted in being statistically significant. The results of the one-way ANOVA revealed that item 16 (*Instructors were available to me when I needed extra assistance.)* was not statistically significant. Anecdotally, one might assume that this type of availability would correspond with higher levels of satisfaction, but the statistics in this case did not bear that out. This may be due to the fact that learners from the cohort group may have relied on each other for additional assistance, more so than their instructors. Another explanation might be Also, many of these learners in this setting are educators themselves and therefore might have higher levels of self-efficacy and understanding of their own learning than other learners might. Also, the item: *Instructors responded to queries in a timely manner*, could encompass queries regarding extra clarification, assistance, and/or direction.

Item 13 (*Instructors responded to inquiries in a timely fashion.)* was found to be statistically significant. Remember, instructor availability is very different from instructional immediacy. One deals the time taken to respond to queries, while the other addresses diminishing psychological distance. If an online instructor is perceived as not being available to the online learner by not answering queries in a timely manner, this can lead to students feeling overwhelmed, isolated, and unsure how to proceed. By responding to queries in a timely fashion, instructors can ensure that learners quickly get the information or clarity they need to move forward. These findings support those

of Roach and Lemasters (2006), whose study suggested that instructor availability was a key determinant of the future success of online instruction.

Transactional Distance

Transactional distance, according to Moore (2007), is the cognitive space between learning peers, teachers, and content in a distance education setting. Transactional distance is a function of dialogue and structure in dispersed adult learning settings. Distance decreases with dialogue and increases with structure. It was interesting to note that in this study, there were seven items selected to investigate the effects of transactional distance. Only two were found to have any predictive quality pertaining to learner satisfaction. Items 9 and 11 were not found to be statistically significant.

Item 9: *Instructors offered structured exercises and activities.*

Item 11: *Instructors offered practical ways of sharing information online.*

Reasons why item 9 was not found to be statistically significant might include too much structure, and not enough flexibility. Moore states that for learners to be truly engaged in the learning process, they must feel that they have some autonomy about how they learn the material. The structure of the course cannot be so rigid as to exclude the diversity of approaches that learners bring to the learning experience. There must be a delicate balance between course structure and learner autonomy for satisfaction to be realized. Learners should have some choice as to how they will learn the course content. This way they can align their learning in a way that suits them best. Also, when a course is highly structured, many of the learning objects and items may be repeated. Unless learners can clearly link these experiences to the mastery of the

course content, they may view such items as “busy work” and become disengaged and dissatisfied with the learning experience.

Most respondents agreed or strongly agreed to item 11, yet it was not statistically significant in contributing to learner satisfaction. This may be due to the fact that most learners had prior online learning experience, and were technologically savvy prior to their online courses at Wayne State University. Therefore, even though the instructors may have offered practical ways for them to share information, these ways may have not been anything new, and therefore not seen as adding additional value to their learning experience.

Item 8 of section 2 of the questionnaire (Appendix D) (*Instructors ensured students kn*ew *how to send and receive messages as soon as courses became available.),* which is the dialogue part of Moore’s model (see Figures, 1, 2, & 3), affected learner satisfaction. Additionally, item 14 (*Instructors provided detailed information about assignment expectations),* which could fall under dialogue and structure, also affected leaner satisfaction in this study. Another key indicator that addressed learner satisfaction in this category was that learners from both participant groups agreed overwhelmingly that the structure of the online courses contributed greatly to their success. The other items—*The instructor greeting the students prior to the start of classes; Instructors provided guidance for online success; Instructors provided FAQs or other information to ease unnecessary communication; Instructors offered structured exercises and activities;* and *Instructors offered practical ways of sharing information*—were surprisingly insignificant. Many of these items would fall under Moore’s definition of structure. He points out that having too much structure impedes meeting all the

needs of the entire learning population. There needs to be just enough structure that learners don't feel lost or isolated, but not so much so that they feel that they cannot learn in their own way (Moore, 2007). Therefore, it is important to look at structure when designing online instruction if learner satisfaction is to be achieved.

Overall Satisfaction

In terms of overall satisfaction, the data shows that there was an overall drop in the level of overall satisfaction with the online program, and with the levels of satisfaction within different items of Section 5 of the questionnaire (Appendix D) from one group to another.

For example, learners were asked to rate their level of agreement with the following statement: *I was very satisfied with the level of interactivity in my online courses.* Group B respondents, indicated that 35.7% strongly agreed, 57.1% agreed, and 7.1% disagreed with this statement. Group A participants, on the other hand, responded that 9.1% strongly agreed, 63.6% agreed, 18.2% disagreed, and 9.1% strongly disagreed. For Group A, only one person indicated that they disagreed, and none indicated that they strongly disagreed with this statement. However, for Group A two people indicated that they disagreed and one person indicated that they strongly disagreed with this statement. This data indicates that participants from Group A, were much more satisfied with the level of interactivity in the online courses, than respondents from Group B.

This was the case for most of the responses for items in Section 5. One that bears particular attention is item 2. Learners were asked to rate their level of agreement with the following statement: *I was very satisfied with the level of instructor-*

learner interactions in my online courses. Group A participants responded that 35.8% strongly agreed, 57.1% agreed, and 7.1% disagreed. Group B respondents indicated that 9.1% strongly agreed, 54.5% agreed, 9.1% disagreed, and 27.3% strong disagreed. Three participants from Group A indicated that they strongly disagreed with this statement. This group also cited instructors as the most important contributor to their success in their online courses. This being the case, it's very important that learners in this online environment rate instructor-learner interactions highly, if satisfaction with the online learning program is to be sustained.

Another area of disparity between these two groups was in the area of instructor presence. Learners were asked to rate their level of agreement with the following statement: *I am very satisfied with the level of instructor presence in my online courses.* Participants from Group B indicated that 21.4% strongly agreed, 71.4% agreed, and 7.1% disagreed with this statement. Respondents from Group A indicated that 36.4% strongly agreed, 27.3% agreed, 9.1% disagreed, and 27.3% strong disagreed with this statement. No one from Group A strongly disagreed with this statement, but three individuals indicated that they strongly disagreed with this statement from Group A.

Learners were also asked to rate their level of overall satisfaction with the online program. Respondents were asked to rate their level of agreement with the following question: *I am very satisfied with the online masters program in Instructional Technology at Wayne State.* Respondents from Group B indicated that that 50% strongly agreed and 50% agreed with this statement. Conversely, of the respondents from Group A 36.4% strongly agreed, 27.3% agreed, 27.3% disagreed, and 9.1% strongly disagreed with this statement.

This data was collected in the Summer of 2008 and the Fall of 2009. In an effort to stop the decline of overall satisfaction rates among online learners in this program, it is recommended that administrators take a look at what changes occurred between the Summer of 2008 and the Fall of 2009 to the program structure, course offerings, and instructor preparedness and expertise, that might be indicative of why there is this difference in overall satisfaction levels with the program from group to group.

Implications for Practice

Measuring student satisfaction can be used as one way to identify those instructional behaviors that are of the most importance to online learners. This study agreed with most of the literature that online learners place a strong sense of importance on interaction with instructors, course content and other learners. Learners have an expectation of faculty interaction and support. Learners need course content that is relevant and rich. Instructors need to understand their role in the online learning environment, and how it differs from the traditional classroom setting. Learners also need to clarify expectations and interact with their fellow learners. A lack of feeling connected to faculty, content and/or other learners has been shown in past research to be a significant variable in the learners' sense of satisfaction (Berge, 2002). Also, course designers need to pay attention to online learners and their expectations in order to build effective online learning environments.

Instructor Interaction

Stein, Wanstreet, Calvin, Overtoom, and Wheaton (2005) emphasized the importance of instructor–learner interaction by concluding that it is a significant component of satisfaction with terms of perceived gained knowledge. Hatfield (1995)

also concluded that the most important factor in student motivation is frequent instructor–learner contact. Umbach and Wawrzynski (2005) ascertained that instructor behaviors and attitudes affect students profoundly in online learning environments and suggested that instructors may be the most crucial component of student learning and overall satisfaction with the online learning experience.

This study also agrees with those findings and those of Berge (2002) that illustrates the ineffective use of interactivity and technology can lead to loss of the learners' attention, boredom, information overload, and frustration. To increase learner satisfaction in online courses, the quality of interaction must always be considered. This study suggests key considerations for practice for instructors in online learning environments.

Instructors need to apply good overall instructional practices to enhance the online learning experience for online learners. This includes regularly monitoring and participating in discussion forums. Some studies have tried to find a magic number for instructor presence in discussion board forums (Woods, 2002), while others caution against it (Rourke, et al, 1999). For the benefit of online instructors struggling with this issue, there is a general guideline. This rule of thumb states that instructors should maintain at least the same level of participation as they expect from their learners. Or, instructors should post 10-15% of the messages in the online discussion forum (Woods, 2002).

Also, instructors should provide detailed comments and feedback on all assignments and provide links to stimulate discussion and improve learning. According to Shute (2008), instructor feedback is critical to learning for online students. Shute also

suggests that for feedback to be most effective, it should be nonevaluative, supportive, timely, and specific. Shute found that whether the setting was online or in the classroom, the purpose of instructor feedback was the same—to enhance either learning or performance, or both. Quality feedback in an online course is critical because it is one of the few instances where online learners interact with their instructors one-on-one and attain individual feedback on their progress (Berge, 2002).

Instructors also need to set learner and instructor expectations early on in the course. The best way to do this is to post the course syllabus online. Part of managing expectations is letting learners know up front how the course is organized, how course content will be presented, when assignments are due, how assignments will be graded, and specifics around online participation in discussion forums, live classes, and group assignments. Instructors should specify expected response times to online queries, discussion board postings, emails, and feedback on assignments (Umbach & Wawrzynski (2005). Also, instructors should interact with students via text, video, PowerPoint presentations, or whatever interactive methods are available to them via their learning management systems.

Content Interaction

Instructors must offer rich content that is relevant to students' real life experiences. Online learning environments can be enhanced by continuous interaction with the course content (Swan, 2001). Online courses can afford learners the opportunity to become more immersed in the course content than traditional classes. Instead on interacting with the course content for one or two days of the week, like in traditional classroom settings, online learners can usually interact with course content

throughout the week via online discussion boards, online readings, and interacting with other learners (Swan, 2001). Contrast this to traditional classroom students who only meet a few hours a week and usually complete course readings and assignments a few hours prior to their scheduled meeting times. This extended exposure to course content for online learners requires that instructors develop and post course content that is relevant, timely, up-to-date, and speaks to learners' life experiences. Instructors in this environment must also understand the differences in teaching in an online setting versus instructing in a traditional classroom environment.

Instructing Online vs. Classroom

Studies show that there are definite differences between learning and teaching online, and learning and teaching in a traditional classroom setting (McNeil et al., 2000). For example, the role of teacher in an online setting is one of facilitator and mentor and learners take a more active role in the learning process. Interaction between learners and instructors is more collaborative because traditional barriers are done away with. Instructors in online settings move away from the traditional role of content providers to content facilitators. To be effective they must learn to be comfortable and proficient in using the web as the primary instructor-learner connection and to instruct without the visual control of direct eye contact (Smith, Ferguson, & Caris, 2002).

Some instructors shifting from traditional classroom settings to online environments may feel that their years of classroom experience do not translate effectively in online settings. For instance, they in online learning environments, they cannot use their physical presence to get a point across, or use their oral abilities to improvise on the spot to seize an educational opportunity (Smith, Ferguson, & Caris,

2002). However, in the past few years faster internet connections have allowed for greater use of live video web casting that offers two-way interaction. This allows online instructors the ability to utilize effective classroom teaching practices more in their online courses, and offers real-time interaction between learners and instructors. To be truly effective in the online learning environments, instructors must develop certain competencies.

Many of the different types on interaction types available in today's online learning environments are learner-centered and collaborative, which calls for certain skills and competencies on the part of the online instructor. For example, to be an effective online discussion moderator means that online instructors must: allow learners time to reflect, keep discussions alive and relevant, and archive and summarize discussions for future use. Also, instructors must set ground rules for discussion, guide the discussion with minimum interference, and be aware of cultural and linguistic differences in learners (Spector & Anderson, 2000).

Are these competencies unique to online instruction? At the applied level there are many parallels with good classroom instructional practices and online instruction. Getting students to talk and share experiences and knowledge and being aware of cultural, linguistic, and learning diversity are all traits of good teachers – whether online or in the classroom. However, how instructors manifest these competencies in the online setting is quite different than in traditional classroom environments (Spector & Anderson, 2000). Online instructors must have a firm grasp on the online learning environment to deploy these competencies effectively. Distance, lack of visual cues, time lapses in communication, and psychological distance are not present in the

traditional classroom settings, but are very much a part of the online teaching experience. Additionally, online instructors must also be able to take on the roles of content facilitator, technologist, course designer, researcher, assessor, advisor/counselor, process facilitator, and manager/administrator via an online medium to be truly effective (Spector & Anderson, 2000).

Learners

Learners in these environments find that they are most satisfied when their expectations regarding their online courses are consistent with their course experiences. Therefore, learners should clarify expectations with instructors early on in the course. Learners should ask for a copy of the course syllabus, if one is not posted on the course site. After reading it, they should address any areas of concern and seek clarification within the first two weeks of the course.

Online learners show interest in timely responses to email, grade postings, and feedback on assignments (Dahl, 2004). Therefore they should make sure that their expectations are aligned with the practices of their instructors. Online learners need instructors to state expectations clearly and stick to them. Consistency of practice is key to retain online learner satisfaction, and when inconsistency arises, learners must communicate and get feedback from the instructor (Vonderwell, 2003).

Also, learners should not depend solely on the instructor for support and feedback, but should try to establish learning and social relationships with their peers. Learner interaction is critical for learner success and satisfaction. Online learners should participate in online discussions, respond to other learners' inquiries, provide effective feedback, and participate in collaborative learning teams to complete academic

assignments (Palloff & Pratt, 2001). Group projects have been shown to not only promote understanding of course content, but to also alleviate feelings of isolation and promote learning communities (Palloff & Pratt, 2001).

Course Designers

The study by Swan (2001) indicated that students learned with fewer modules and when the modules had similar designs. Streamlining structural course content for simplicity may help improve learner-content interactions and help make up for the lack of face-to-face meetings. Online course designers should therefore design online courses with fewer modules and ensure that the modules have the same look and feel, sequencing of items, and the same mix of media (text, PowerPoint, images, video, etc.).

Online learners also indicate that email is the most important form of interaction type for interacting with their instructor (Farahani, 2003). Therefore, online course designers should incorporate design elements that make email easy and effective to do in online courses.

Martyn (2005) researched the need to purposefully create online learning environments that support collaboration not only among all students, but also between students and the instructor. Martyn (2005) believes that for online students to be successful, the social aspects of learning should be deliberately planned. Therefore, course designers must create online courses where interaction, collaboration, and deliberate social interaction are central components of the course design. One way to do this might be to offer online spaces where the instructor will not or cannot intrude. These spaces can be where learners meet outside of the “classroom” to share

concerns, offer support, or to otherwise connect socially. Learners must be given many opportunities to interact with the instructor, the content and each other.

Also, adult learners must feel some ownership over their own learning; therefore courses must be designed with a balance of structure and flexibility in mind to be able to meet the needs of all learners (Moore, 2007). For example, course designers must offer learners multiple ways of interacting with and completing course content. Therefore, similar course materials should be offered in various forms (text, video, images, etc). Learners should also have options as to how they demonstrate mastery of the course content. Consequently, instead of making everyone write a paper for a midterm assessment, offer a menu (paper, test, project, demonstration) that allows learners flexibility in demonstrating their learning. This way more learner needs are met (Moore, 2007).

Limitations of the Study

In conjunction with this research study's assumptions, there were some limitations to this study that limit its generalization to other research settings. Using a survey research design was cost-effective and efficient, but suffers from inherent weaknesses. The greatest weakness is probably due to the fact that all surveys are basically exploratory. The investigator can make inferences, but not at the level of cause-and effect and ruling out rival hypotheses, as can be done with experimental or quasi-experimental research.

This study highlights the importance of having a valid and reliable instrument when conducting survey research. As far as reliability is concerned, a critical step that was missed was conducting a pilot test to modify the instrument prior to final

implementation. The researcher did, however, make sure that the items within each section under study and the instrument were reliable. The Cronbach alpha coefficient was used to determine the instrument's internal consistency reliability, which was deemed highly reliable.

The participants' involvement in this study was voluntary and random, which contributed to nonrepresentation of the population. The study sample size was extremely small and may be nonrepresentational of the study population. The study sample was limited to exclusively online masters students in the Instructional Technology program at Wayne State University. Additionally, the data collection instrument used, although based on a validated tool, did not itself go through a validation process. The researcher did not provide standardized definitions for any of the interaction items within the questionnaire to participants of this study; therefore, the content of these items may not have been clear or consistent for everyone. This may have led to diverse interpretations of a single item by different respondents, which might have affected the way participants responded to the interactivity items.

Also, the study was restricted to exclusively online masters students studying Instructional Technology; therefore, the results of this study may not be generalized to the entire population of exclusively online masters students. The results may be indicative of only the responding sample and restricted to this population of online learners. The constructs of this study were analyzed at a given point in time; however, dynamic technological changes are continuously occurring in the online learning environment.

Future Research

This research suggests promising opportunities for new studies on instructor–learner interactions and learner satisfaction specifically, as well as for online learning in general. The findings of this study provide important insights into learners' perceptions of the online learning experience and offer practical considerations for improving learner satisfaction. However, this study involves the use of online learning in only one setting.

A future study might incorporate many different fields of study (engineering, business, nursing, etc.) online learning technologies (synchronous and asynchronous), differing student populations (undergraduate and graduate) and multiple universities. Learning and learners vary greatly depending on their particular field of study. For example, this study was done within the college of education. Therefore instructional practices, learner expectations, course content and leaner demographics, reflected this particular student body and area of study. The findings of this study would look very different if it was conducted, for example, with undergraduate online learners within a college of engineering in a school on the west coast. Future research is needed to examine these variables and their implication on learner satisfaction in online graduate courses.

Another possibility is to examine user perceptions of online learning satisfaction with instructors who are professionally trained to teach online versus those who are not. With the debate raging whether there needs to be specific, targeted training provided and even certification for online instructors (Spector & Anderson, 2000), there needs to be further research in this area. Are classroom teachers ready and able to teach effectively online? Are there certain instructional competencies that are particular to the

online setting? These are questions that future research needs to address. This could also provide further insights into how consistency of practice affects learner satisfaction.

Also, as students become more experienced in online learning, their attitudes toward online learning may change. Further research can explore issues of familiarity and technical skills related to leaner satisfaction. Questions may center on prior online learning experience, learner expectations, and leaner satisfaction. A research question might be: Do learners who have completed more than five online courses have different expectations of their online instructors than those learners who have yet to complete one?

This study highlights the importance of having a valid and reliable instrument when conducting survey research as well as having a large sample population. Therefore, a future research study should employ a validated instrument. This instrument should also utilize standardized definitions for key interaction items. This would ensure consistency of respondent responses. Expanding the sample population pool to include various geographic locations, fields of study, and learning institutions would allow for generalizabilty of the research results.

Although online learning cohorts was not a variable in this study, studying the effect of belonging to an online cohort has on learner satisfaction is worth considering. Belonging to a cohort, building a learning community, and having peers to learn and grow with and from was important to learners in this study, and was almost statistically significant in terms of predicting leaner satisfaction. Therefore, a future research study might investigate online learning cohorts and what learner demographics and characteristics, course content, and area of study make them effective and predictive of

learner satisfaction.

Further studies may also consider a comparative analysis of learners' perceptions of satisfaction in online courses with and without instructor interactions. Therefore, conducting a comparative study between instructor-led courses and student-led, self-paced online courses and their effects on learner satisfaction.

This study only looked at learners' perception of satisfaction in their online experience and a future study might look at online instructors regarding their perceptions of the nine interactions utilized in this online learning environment. The research could investigate online instructors regarding competency with utilizing interaction tools, effective facilitation of discussion boards, and overall technological competency.

A larger study might include investigating which types of courses are best suited for delivery in online settings. This study could be expanded to look at how to best deliver those courses, once they've been identified, to increase learner satisfaction and learner outcomes.

Summary

This study examined the relationship among variables associated with instructor-learner interactions and student satisfaction in online courses. Significant relationships are found for satisfaction with instructor interactions. Certain behaviors were highlighted that showed a strong correlations to learner satisfaction, suggestions for instructor utilization, and implications for practice were discussed.

The strong positive relationship between satisfaction with the instructor and satisfaction in the course showed that this is an important variable to learners studying

in online settings. Also, social interactions are an integral part of satisfaction with this population. Providing learners with the opportunities to connect with each other in a social way, to offer support, to gripe, and/or to assist in the learning process enhances the online learning experience by diminishing a sense of isolation. Learners must be able to interact richly with instructors, the course content and with other learners for them to have a satisfying online learning experience.

With the ever-expanding role of distance education in higher education in the past few years, the relationship between learners and the instructors has been shown to be critical for learner success and course completion. Learners' sense of satisfaction with their instructors drives satisfaction within online courses. It is interaction, which technology can support, that is most importance in these settings. Technology for technology's sake is useless. Technology must be used in a way that leverages the positive aspects of the online learning experience.

Instructor–learner interaction in online courses is an essential part of the teaching/learning experience. The literature is rich with research findings about the importance of this type of interaction, but very few studies link it directly to learner satisfaction. This study indicated key instructor interaction types and behaviors that contributed directly to online student satisfaction. This study made recommendations on how online instructors can improve learner satisfaction in their online courses. This study also gave further insights into the importance of interaction between faculty and learners in the online learning environment. Additionally, the findings of this study may help to shape policy and practice for online instruction as well as serve as an assessment tool for evaluating the effectiveness of online instruction.

University faculty and administrators view online learning as a vehicle to deliver educational services to a wider, broader and deeper student population. The rapid growth of online instruction is quickly changing the face of higher education nationally and internationally. Therefore, it is increasingly important to begin to understand the online teaching and learning experience in order to leverage what works and to build best practices. Research such as this study can build toward that understanding. Factors that influence student satisfaction with online courses can help institutions of higher education design quality online courses that will enhance the teaching and learning process in these technologically-rich settings.

APPENDIX A: RESEARCH INFORMATION SHEET

The Effects of Instructor–Learner Interaction on Learner Satisfaction in Online Masters Courses

Angelene McLaren

Instructional Technology

313.377.4340

In an effort to enhance your online learning experience in the online masters program in Instructional Technology at Wayne State University, you are being asked to participate in a research study to be conducted online via SurveyMonkey.com. The title of this study is *Instructor–Learner Interactions and Their Effect on Learner Satisfaction in Online Masters Courses*. Please read the email completely before following the link to the survey.

Purpose

The purpose of this research study is to investigate the effects of instructor–learner interaction on learner satisfaction in online courses in the online masters program in Instructional Technology at Wayne State University.

Study Procedures

You will be asked to complete one 25-minute online survey pertaining to instructor interaction behaviors and their effect on your satisfaction with your online courses and with the online program in general.

Benefits

- There may be no direct benefits for you; however, information from this study may benefit other people now or in the future.

Risks

- There are no known risks at this time to participants in this study.

Costs

- There will be no costs to you for participation in this research study.

Compensation

- There will be NO compensation for participating in this study.

Confidentiality

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. This survey is completely anonymous, and no identifying information will be collected.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates or other services you are entitled to receive.

Questions

If you have any questions now or in the future, you may contact the Primary Investigator, Angelene McLaren, at (313) 377-4340. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628.

Participation

By completing the survey, you are agreeing to participate in this study.

If you wish to participate in the study, please follow the link below to complete the online anonymous survey.

http://www.surveymonkey.com/MySurvey_EditorPage.aspx?sm=VIcco9oRj7pAMswLVkv847dLqOPYsVpO2gIYJFBCx8E%3d

APPENDIX B: REMINDER SOLICITATION FOR VOLUNTEERS' EMAIL

This is a reminder email to all online graduate students in the online masters program in Instructional Technology to complete the online survey regarding the study that was described to you in my previous email. Remember, participation in the study is voluntary and completely anonymous. The survey will take only 25 minutes at the most to complete, and completing it signifies your consent to participate in the study. Please follow the link below to complete the online anonymous survey.

http://www.surveymonkey.com/MySurvey_EditorPage.aspx?sm=VIcco9oRj7pAMswLVkv847dLqOPYsVpO2gIYJFBCx8E%3d

If you have any questions now or in the future, you may contact the Primary Investigator, Angelene McLaren, at (313) 377-4340. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628.

Thank you,

Angelene McLaren

APPENDIX C: THANK YOU EMAIL

Dear students enrolled in the online masters program in Instructional Technology here at Wayne State University:

I wanted to take this opportunity to thank each of you for your time and consideration. Being the end of the semester, I know that it was extremely difficult for you to take 25 minutes out of your busy schedules to participate in this study by completing the online survey. I wanted to let you know how much your efforts were appreciated. Your participation will hopefully make the online learning experience a greater and more satisfying one not only for you, but for online students everywhere.

Many thanks and all the best,

Angelene McLaren

Primary Investigator

APPENDIX D: ONLINE STUDENT SATISFACTION SURVEY

The purpose of this survey is to collect data regarding the level of learner satisfaction with the online masters in Instructional Technology program at Wayne State University. It will take approximately 25 minutes to complete. Please answer each question as honestly as possible. You will not need to give your name or access ID. Please DO NOT use your name, names of fellow students, names of instructors, or any other form of identifying information in the "Additional Comments" sections. If you have any questions, please feel free to contact the Primary Investigator, Angelene McLaren, at at75451@wayne.edu.

Section 1: Interaction Availability:

Directions: Please rate the availability and the importance of the following in the online program. Please assign a rating on a scale of 1 to 4. In the "**Availability Section,**" 1 represents "Not Available" and 4 represents "Highly Available." In the "**Importance Section,**" 1 represents "Not Important" and 4 represents "Very Important" in helping you to learn in an online environment.

	Availability				**Importance**			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1) Discussion Board	o	o	o	o	o	o	o	o
2) Live Chat	o	o	o	o	o	o	o	o
3) Live Classroom	o	o	o	o	o	o	o	o
4) Email	o	o	o	o	o	o	o	o
5) Announcements	o	o	o	o	o	o	o	o
6) Instructor Presentations	o	o	o	o	o	o	o	o
7) Instructor Feedback	o	o	o	o	o	o	o	o
8) Group Projects	o	o	o	o	o	o	o	o
9) Useful Web Links	o	o	o	o	o	o	o	o

Additional Comments: Please add any additional comments regarding interaction availability. Please DO NOT use any names or other types of identifying information.

Section 2: Level of Satisfaction with Instructors:

Directions: Please rate the level of your agreement with the following statements about different aspects of instructor interaction in your online courses. Select **NA** if the content of the statement was not available to you.

Strongly Agree = SA	Agree = AG	Disagree = DA	Strongly Disagree = SD				
			SA	AG	DA	SD	NA
1) Instructors greeted students before first class sessions.			o	o	o	o	o
2) Instructors rewarded for discussion participation.			o	o	o	o	o
3) Instructors provided directions for discussions.			o	o	o	o	o
4) Instructors provided guidance for online success.			o	o	o	o	o
5) Instructors provided frequently asked questions or other information to ease unnecessary communication.			o	o	o	o	o
6) Instructors regularly monitored discussions.			o	o	o	o	o
7) Instructors regularly participated in discussion forums.			o	o	o	o	o
8) Instructors ensured students knew how to send and receive messages as soon as courses became available.			o	o	o	o	o
9) Instructors offered structured exercises and activities.			o	o	o	o	o
10) Instructors provided detailed comments and feedback on all assignments.			o	o	o	o	o
11) Instructors offered practical ways of sharing information online.			o	o	o	o	o
12) Instructors provided links to suitable sites to stimulate online discussions and to improve learning.			o	o	o	o	o
13) Instructors responded to inquiries in a timely fashion.			o	o	o	o	o
14) Instructors provided detailed information about assignment expectations.			o	o	o	o	o
15) Instructors interacted with students regularly via text, video, or PowerPoint presentations.			o	o	o	o	o
16) Instructors were available to me when I needed extra assistance.			o	o	o	o	o
17) Instructors took the time to get to know me as a student and a person.			o	o	o	o	o
18) Instructors shared personal and professional experiences to elaborate on course materials.			o	o	o	o	o
19) Instructors provided a learning environment where everyone was treated with respect.			o	o	o	o	o
20) Instructors mentored me and encouraged me to do my best work.			o	o	o	o	o

Additional Comments: Please add any additional comments regarding instructor interactions. Please DO NOT use any names or other types of identifying information.

Section 3: Level of Satisfaction with Discussion Forums:

Directions: Please rate the level of your agreement with the following statements about different aspects of the discussion forums in your online courses. Select **NA** if the content of the statement was not available to you.

Strongly Agree = SA	**Agree = AG**	**Disagree = DA**	**Strongly Disagree = SD**				
			SA	**AG**	**DA**	**SD**	**NA**
1) Most students contributed to online discussions.			o	o	o	o	o
2) Online discussions encouraged interaction.			o	o	o	o	o
3) A few students dominated online discussions.			o	o	o	o	o
4) Discussion participation was rewarded.			o	o	o	o	o
5) Directions for discussions were provided.			o	o	o	o	o
6) Online discussions improved my learning.			o	o	o	o	o
7) Course environments allowed me to feel confident about discussing unfamiliar topics.			o	o	o	o	o
8) Instructors regularly monitored discussions.			o	o	o	o	o
9) Instructors regularly participated in discussions.			o	o	o	o	o
10) The online discussions were summarized at the conclusion of each discussion.			o	o	o	o	o
11) Students were given the opportunity to lead the online discussions.			o	o	o	o	o
12) The online discussions guided my thinking on the selected topics.			o	o	o	o	o
14) I usually compose my ideas, reread, and then possibly revise them before posting.			o	o	o	o	o
15) The online discussion board was not interactive but was just a series of messages posted on an electronic bulletin board.			o	o	o	o	o
16) Having access to the permanent records of the discussion board helped me to understand the topics better.			o	o	o	o	o
17) Online discussions helped me to explore issues, take positions, and discuss my positions in an argumentative format.			o	o	o	o	o
18) Online discussions provided me with a sense of community.			o	o	o	o	o
19) Online discussions were used effectively in my courses.			o	o	o	o	o
20) Online discussions were very important to my learning experience.			o	o	o	o	o

Additional Comments: Please add any additional comments regarding discussion board forums. Please DO NOT use any names or other types of identifying information.

Section 4: Level of Satisfaction with Student Interactions:

Directions: Please rate the level of your agreement with the following statements about different aspects of student interactions in your online courses. Select **NA** if the content of the statement was not available to you.

Strongly Agree = SA	**Agree = AG**	**Disagree = DA**	**Strongly Disagree = SD**				
			SA	**AG**	**DA**	**SD**	**NA**
1) A sense of community improved my learning.			o	o	o	o	o
2) Working on group projects improved my learning.			o	o	o	o	o
3) I felt connected to other students.			o	o	o	o	o
4) Students' introduction of themselves was helpful in interactions during the courses.			o	o	o	o	o
5) I did not feel any sense of connection with my fellow classmates.			o	o	o	o	o
6) I learned as much from other students as I did from my course materials.			o	o	o	o	o
7) I learned as much from other students as I did from the instructor.			o	o	o	o	o
8) Students were given the opportunity to interact informally by email, chat, or online discussion.			o	o	o	o	o
9) I felt isolated in my online courses.			o	o	o	o	o
10) Interacting with my fellow classmates is very important to my learning experience.			o	o	o	o	o

Additional Comments: Please add any additional comments regarding student interactions. Please DO NOT use any names or other types of identifying information.

Section 5: Level of Overall Satisfaction:

Directions: Please rate the level of your agreement with the following statements about different aspects of overall satisfaction in your online courses. Select **NA** if the content of the statement was not available to you.

Strongly Agree = SA	Agree = AG	Disagree = DA	Strongly Disagree = SD				
			SA	AG	DA	SD	NA
1) I was very satisfied with the level of interactivity in my online courses.			o	o	o	o	o
2) I was very satisfied with the level of instructor–learner interactions in my online courses.			o	o	o	o	o
3) I was very satisfied with the level of learner–learner interactions in my online courses.			o	o	o	o	o
4) I was very satisfied with the level of instructor availability in my online courses.			o	o	o	o	o
5) I was very satisfied with the level of instructor immediacy displayed in my online course. (Instructors responded to students without much delay.)			o	o	o	o	o
6) My instructors contributed greatly to my academic success in the program.			o	o	o	o	o
7) The structure of the online courses contributed greatly to my academic success in the program.			o	o	o	o	o
8) The online courses interface was easy to navigate and user friendly.			o	o	o	o	o
9) I was very satisfied with the level of instructor presence in my online courses.			o	o	o	o	o
10) I am very satisfied overall with the online masters program in Instructional Technology at Wayne State.			o	o	o	o	o

Additional Comments: Please add any additional comments regarding overall satisfaction. Please DO NOT use any names or other types of identifying information.

6. How likely is it that you will enroll in another online program?

o Very Likely
o Likely
o Somewhat Likely
o Not Likely

7. How likely would you be to recommend this program to others?

o Very Likely
o Likely
o Somewhat Likely
o Not Likely

8. If you had to choose the most important thing that contributed to your success in this program, what would it be?

- o Instructors
- o Other students
- o Family members
- o Course design
- o Ease of using the Blackboard interface
- o Online learning community

Section 9: Demographic/Background Information:

Directions: Please select the appropriate answer to the following questions, which will provide demographic data for this study.

A) What is your gender?

- o Male
- o Female

B) Please indicate your age.

- o 21–25
- o 26–30
- o 31–35
- o 36–40
- o 41–45
- o 46–50
- o 51–55
- o 56 and above

C) What is your current GPA?

- o 3.75–4.00
- o 3.50–3.74
- o 3.25–3.49
- o 3.00–3.24
- o 2.99 and below

D) How would you describe your computer skills when you started this program?

- o No Skills
- o Novice
- o Average
- o Good
- o Excellent

E) How would you describe your Internet skills when you started this program?

- o No Skills
- o Novice
- o Average
- o Good
- o Excellent

F) Had you taken any other online course(s) prior to beginning this program?

o Yes
o No

G) If you answered "Yes" to the previous question, please indicate how many online courses you took prior to beginning this program. If "No," go on to H.

o 1–2
o 3–4
o 5–6
o 7 or more

H) Prior to beginning this program, which of the following interactions had you performed before? (Choose all that apply.)

o Sending email
o Replying to email
o Forwarding an email
o Attaching a file to an email
o Downloading a file attachment from an email
o Using a threaded discussion board
o Using a chat room
o Using instant messaging
o Participating in a virtual classroom, like the Live Classroom in Blackboard
o Navigating an online learning management system like Blackboard
o Downloading files from an online learning management system like Blackboard

Thank you for completing in this online student satisfaction survey on the online masters in Instructional Technology program at Wayne State University. Your participation is greatly appreciated.

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ABSTRACT

THE EFFECTS OF INSTRUCTOR-LEARNER INTERACTIONS ON LEARNER SATISFACTION IN ONLINE MASTERS COURSES

by

ANGELENE C. MCLAREN

May 2010

Advisor: Dr. Monica Tracey

Major: Instructional Technology

Degree: Doctor of Philosophy

The purpose of this research study was to investigate the extent instructor-learner interactions affected learner satisfaction in online, semester-long Masters courses. This research study lent itself to several questions: To what extent do instructor-learner interactions affect learner satisfaction in online Masters courses; To what extent does instructional immediacy affect learner satisfaction in online Masters courses; To what extent does instructor availability affect learner satisfaction in online Masters courses; To what extend does transactional distance affect learner satisfaction in online Masters courses?

The participants in this study consisted of 25 exclusively online Masters students in the Instructional Technology program at Wayne State University. Students were asked to complete an anonymous online Student Satisfaction Questionnaire that asked them about their level of satisfaction with various interactions within their online learning courses. The findings of this research showed that certain types of instructor-learner interactions had greater effects on learner satisfaction in these types of learning environments than others.

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