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THINKING SYSTEMICALLY: A STUDY OF COURSE COMMUNICATION AND  
SOCIAL PROCESSES IN FACE-TO-FACE AND ONLINE COURSES

by

Tanya Joosten

A Dissertation Submitted in

Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in Communication

at

The University of Wisconsin-Milwaukee

May, 2015

## ABSTRACT

### THINKING SYSTEMICALLY: A STUDY OF COURSE COMMUNICATION AND SOCIAL PROCESSES IN FACE-TO-FACE AND ONLINE COURSES

by

Tanya Joosten

The University of Wisconsin-Milwaukee, 2015  
Under the Supervision of Professor Nancy Burrell, Ph.D.

Traditionally, research that has examined online courses compared course modes, online and face-to-face (f2f). Studies tend to examine the two modes to determine whether online courses are as effective as online courses by comparing student outcomes, such as student learning and satisfaction. Seldom has research examined how the course communication in online and f2f courses impact student outcomes. Moreover, there is little examination of the relationship between the design of the course and the relationship with social processes, in particular, communication. In this study, t-tests indicated that there were no significant differences between antecedents (technological familiarity and instructional characteristics) and outcomes variables (learning, performance, and satisfaction) between online or face-to-face courses. However, there were significant differences in course communication constructs including richness, social presence, learning community, and active learning behaviors. Multiple regression analyses indicated assessment and evaluation in instructional characteristics explained 36% of the variance in social presence, 42% of the variance in richness, and 27% of the variance in a learning community. Two components in instructional characteristics,

organization and instructional design and course support, did not contribute to the model predicting these communication variables. However, they did predict 55% of the variance in engagement. Assessment and evaluation did not contribute to the model for predicting engagement. Assessment and evaluation are key factors in predicting communication variables where organization and instructional design and course support are a key factor in predicting engagement. Finally, multiple regression analyses indicated that 67% of the variance of learning can be predicted by communication variables of social presence, richness, engagement, and learning community, 52% of the variance of performance can be predicted by richness and engagement, 72% of the variance of satisfaction can be predicted by richness, engagement, and presence. Self-reported active learning behaviors did not predict learning, performance, or satisfaction.

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“That which does not kill me can only make me stronger.” *Tupac*

“That which does not kill us makes us stronger.” *Friedrich Nietzsche*

## Thinking systemically: A study of course communication and social processes in face-to-face and online courses

The first chapter briefly defines concepts, highlights the history of research comparing face-to-face and online learning, specifically the efficacy of online learning. Also, the chapter presents a proposed model from a systems approach by examining the inputs-process-outputs. Starting with a discussion of outputs, student outcomes, where traditionally the most attention has been given, moving to identify recent efforts to examine social variables, including course communication, and antecedent variables, such as instructional characteristics (e.g., instructional design), the first chapter gives a holistic perspective of the teaching and learning process. Technology has created new situations through which additional research efforts are needed that examine the instructional practices facilitated through course design influencing course communication and social processes within a course and student behaviors that may predict student outcomes.

As communication technologies have evolved throughout the years, social scientists have been exploring the influences on communication. Historically, scholars and researchers have explored the efficacy of communication technologies in facilitating social processes (e.g., Short, Williams, & Christie, 1976; Hiltz & Turoff, 1978; Kiesler, Siegel, & McGuire, 1984; Daft & Lengel, 1986). Many times, there is a comparison of computer-mediated communication (CMC) and face-to-face (F2F) communication in order to ensure CMC is as effective as F2F communication (e.g., Dubrovsky, Kiesler, & Sethna, 1991; Hollingshead & McGrath, 1995, Walther, 1996). CMC can be defined as communication that flows through a computer mediated channel. The exploration of CMC started decades ago becoming more prominent in the 80's and 90's. However,

more recently, other terms are used to describe CMC, including Web-based, Internet, online, and digital communication. CMC started changing the way people build relationships, sustain family networks, organize and work, and disseminate news and information.

One area that has undergone a transformation due to the widespread adoption of the Internet and further diffusion of communication technologies is the sector of education. CMC can facilitate instruction just as it enables organizational and interpersonal communication. Decades ago, researchers started using communication technologies to enhance instruction and learning in the classroom. In the pivotal book by Hiltz and Turoff (1978) titled *The Network Nation*, which some call a “visionary book on communicating through computers” (Kielser, 2007, p. 1), the authors discuss pilots underway using computer software in high school and university courses in Sweden and their own use of computer conferencing software in their higher ed classes indicating that CMC was already being explored in educational contexts as early as the 70s. Furthermore, the authors describe a long list of scenarios in education where implementing CMC could increase effectiveness in education processes.

Some scholars, who were examining CMC and group processes, started to explore CMC in the classroom. Most notably, Hiltz (1988, January) assessed the effectiveness of online learning or what she referred to as the virtual classroom in which students and teachers communicate through communication technology. Later, Hiltz and Meinke (1989) shared their study comparing courses in the virtual classroom, “a teaching and learning environment in a computer-mediated communication system” (p. 431), with

courses in the traditional F2F environment. They reported increased access and improved learning in the virtual classroom.

This investigation moves beyond the traditional medium comparisons in research examining outcomes, such as satisfaction and learning, and focuses on an examination of the relationship between instructional characteristics, social processes, and student outcomes.

### **The history of online education**

While social scientists were studying computer-mediated communication systems, CMC itself, and communication technologies in the 1970s, at the same time, scholars in education were starting to explore something called distance education. The study of distance education started in the 70s but is better documented in the 80's through journals such as the Journal of Distance Education with a focus on examining students and teachers that were distanced throughout time and space for a portion or all of a course. Moore and Kearsley (2011) go into great detail on the differences in definitions. They describe distance education as "...teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (p. 2). Moore claims to have taught the first course in distance education at the University of Wisconsin-Madison in the 70s. The authors do allude to the fact that other terms used include eLearning and online learning, and note that when these are discussed, the focus is not just on learning, but teaching as well. Online learning is the term most commonly used today.

Most interest in this area arose in the past decade or so when increasingly more courses were delivered partially or completely online. Even entire programs were delivered partially or completely online. More recently, online courses are usually those

that a large percentage, if not 100%, of the course is delivered online. For instance, Allen and Seaman (2013) state, “Online courses are those in which at least 80 percent of the course content is delivered online” (p. 7) whereas earlier Means, Toyama, Murphy, Bakia, and Jones (2009) mention, “online learning is defined as learning that takes place partially or entirely over the Internet” (p. 9). Additionally, online courses can be described as 100% of the course being online and sometimes called “fully online courses” (see Rovai & Jordan, 2004; Joosten, 2012).

Blended, or sometimes referred to as hybrid, courses are more complex to define. Some researchers define blended courses as a percentage of online activities as seen with online courses. Allen, Seamen, and Garrett (2007) define blended courses as “having between 30 percent and 79 percent of the course content delivered online” (p. 5). Also, blended learning definitions can center on the action of moving activities online. Specifically, some definitions indicate a F2F portion of a course remains while a certain percentage of activities are now conducted online. Garnham and Kaleta (March, 2002) defined blended courses as courses where “a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated” (para. 1). This percentage moved online can be from a small to significant percent. Moreover, these online activities can be mandatory or optional.

Other definitions move beyond the focus on moving activities online and pay particular attention to the blending or integration of the two mediums, F2F and online. Specifically, these definitions highlight more the process of blending the learning in their explanations. Picciano’s (2006) definition is more detailed and broadly used describing blended learning not only as courses where a portion of F2F time is replaced by online

activity, but that integrate online with traditional F2F class activities in a planned, pedagogically valuable manner. Again the focus on integration and blending of mediums, Joosten, Barth, Harness, and Weber (2013) describe blended courses as those that “‘blend’ the two mediums in order to find the most effective method of teaching, which is dependent on the characteristics of the medium” (p. 175). These definitions indicate that the differences in modes of delivery for instruction are due to the amount of online activity, but also importantly, the planning and alignment of instructional choices based on the appropriateness of the medium to assist students in successfully accomplishing their learning activities. In determining effectiveness of instruction in blended courses, it is imperative to examine the blending and integration of the two modes through course design by examining instructional characteristics that indicate pedagogical choices in course design that can influence social processes in the classroom.

Online learning, or what is sometimes traditionally called distance education, is still seeing growth decades after its conception. According to Allen and Seaman (2013), “In the face of the softening in the growth of overall enrollments the number of students taking at least one online course continued to increase at a robust rate. There were 572,000 more online students in fall 2011 than in fall 2010 for a new total of 6.7 million students taking at least one online course” (p. 17). Although the differences between F2F and online learning have been well documented for over a decade, it still interests scholars and practitioners alike. There are two main reasons that interest into online learning research continues to increase.

First, as educational institutions continue to develop growth agendas and strategic plans around online education, many institutional members are still skeptical of the move

to online and the perceived devaluing of F2F education. For instance, Allen and Seaman (2013) reported that "...in 2002, less than one-half of all higher education institutions reported online education was critical to their long-term strategy. That number is now close to seventy percent" (p. 16), yet "almost one-quarter of all academic leaders polled continue to believe the learning outcomes for online courses are inferior to those for face-to-face instruction" (p. 24). Also, Jaschik and Lederman (2013) reported that 85% of faculty believe that the quality of online interaction is less than F2F. Other studies reported that "teachers still perceived distance instruction negatively (even among generally approving teachers) because of diminished contact with students..." (Allen, Mabry, Mattrey, Bourhis, Titsworth, & Burrell, 2004, p. 404; Mottet, 2000). Even though universities are planning on offering additional online courses and programs, still some individuals are not always convinced that online learning is as good, if not better, than traditional or F2F instruction.

Second, researchers are finding that there are many process or social variables that impact the outcomes beyond the delivery mode or medium. Traditionally, studies of distance education or online learning have implemented research designs focusing on medium comparisons between F2F and online (see Allen, Bourhis, Burrell, & Mabry, 2002) or even F2F, blended, and online (see Means et al., 2009). However, more research is being conducted that identifies effective instructional practices in online courses and programs placing more emphasis on understanding the process, such as course communication, as well as exploring the relationships between the process and student outcomes. For instance, Shea, Pickett, and Pelz (2003) examined teacher presence in online courses while Swan and Shih (2005) explored social presence in

online course discussions. Also, Shea, Fredericksen, Pickett, Pelz, and Swan (2001) examined level of interaction with the instructor in relation to student learning and satisfaction.

Furthermore, new models of learning have varying components of online, including hybrid or blended learning and flipped instruction, different pedagogical and assessment models, such as self-paced and competency-based, and with different features than traditional classes (e.g., open and massive sometimes referred to as MOOCs). These new models of online learning are receiving a great deal of attention from news and media outlets beyond the typical traditional academic publications, including the New York Times and Wall Street Journal. In return, they are increasing the variability in the conception of an online or distance education course due to the array of instructional features and characteristics that the mediums facilitate in delivering these courses.

As with the early models of distance education, some higher education institutions and technology companies believe that these new models of online education will ensure a democratizing or equalization effect regarding the participation of individuals in the higher education process increasing the access of marginalized individuals to bachelorette degrees (see Hollands & Tirthali, 2014). This has been claim of CMC research for decades (Hiltz & Turoff, 1982; Kielser et al., 1984). Counterarguments assert that by increasing access and transforming paths to degree institutions are devaluing the F2F experience, teachers and teaching, and higher education overall, which raises questions regarding the purpose of higher education and the value of a higher education (see Schmitt, December 23<sup>rd</sup>, 2013; Li Yuan & Powell, 2013). With much attention paid to the technology and the medium, online learning has become a blanket classification for a



type of instruction. However, instruction and the communication that facilitates it may require further attention. Traditionally, the interest has been in determining if the mode was as effective as F2F, yet as practice and research grows, new attention is deserved to examine the instruction and impact on course communication rather than the technology. Poor instruction can take place despite the course mode placing greater interest on course design and instructional choices.

Instruction in the F2F medium is different than in the online due to the emphasis on the appropriate selection of media, including technology-enhanced, to match the learning activities and achieve the desired results. How a course is designed and taught F2F, does not precisely translate to the online or in blended mediums. Although the learning outcomes do not change based on the medium, the course design must take into account the characteristics of the media and how they align with the learning tasks to best impact student outcomes, in particular course completion. While not examined as part of this investigation, course completion is a primary driver in course redesign for blended and online environments, which has led to the acquisition of more active learning than passive or teacher-centered learning models in blended and online courses. As seen the rise in research in distance education in higher education and CMC since the 1980's, additional findings on the process in the classroom emphasizing the importance of communication and interactivity have evolved (e.g., Chickering & Gamson, 1987). Therefore, whether a course is delivered F2F, blended, or online, courses with consideration of instructional characteristics to enhance course communication may significantly impact student outcomes than a course that lacks these components.

### **Is online education effective?**

A predominant amount of research and literature regarding distance education examines how effective it is, and the majority of this effectiveness research centers on comparison studies that examine distance education and traditional education, or F2F education (e.g, Allen et al., 2002; Allen et al., 2004). Distance education, according to Allen et al. (2004), is “a course in which the expectation is that the student and instructor will not be physically copresent in the same location” (p. 403). This track of research mirrors the early CMC research of the 70’s and 80’s that compared how people built relationships and worked F2F versus using CMC (e.g., Short et al., 1976; Kiesler et al., 1984). Many of these early studies explored whether or not CMC was as effective as F2F communication in accomplishing relational or work tasks. The same is present in instructional and distance education research.

In the late 80’s and 90’s when distance education became more popular due to broadcast technologies, many scholars performed these comparison studies examining primarily televised or video and audio broadcasting of instruction in comparison with a traditional F2F classroom (e.g., Ritchie & Newby, 1989; Biner, Dean, and Mellinger, 1994). Later in the 90’s and into 2000, more distance education courses utilized computers and the Internet, specifically CMC (email, asynchronous communication tools) or websites, to facilitate activities (e.g., group work) or entire courses. A similar strain of research in education developed (e.g., Benbunan-Fich & Hiltz, 1999; Benbunan-Fich, Hiltz, & Turoff, 2001, January). Likewise, there were comparisons of F2F and CMC activities.

Just like the early studies of CMC in non-educational contexts, the research on education followed the same path initially focusing on comparisons between mediated

communication and F2F in determining a difference in the impact on outcomes. Despite the context, research focuses on performance, more or less, answering the question can individuals perform online or using CMC at the same level as they do F2F. Allen et al. (2004) highlight that “systematic comparisons of factors that can differentiate traditional classroom and distance learning outcomes” are lacking while “the comparison of distance learning with other formats for education involves a number of potential outcomes” (p. 403). Effectiveness could be defined as having an impact on student performance (e.g., Cheng, Lehman, & Armstrong, 1991; Benbunan-Fich, 1997), while others also focused on the impact on student satisfaction (e.g., Benbunan-Fich, 1997; Merisotis & Phipps, 1999) when compared to F2F. In those comparison studies, the researchers examined the effectiveness between the two mediums viewing mediated communication as the variable and F2F as the control in an effort to replicate an experimental design in their studies.

In early 2000, there was a move to experiment more with alternate forms of distance education. There was an increase in fully online courses being offered and the establishing of blended courses at institutions in higher education. These courses are delivered through course websites, sometimes in a learning management system (LMS), that may provide digital content (written, audio, or video), and/or be facilitated through the use of asynchronous and synchronous communication technologies. These courses may even possibly administer assessments or collect student work documenting their learning. LMS's have assisted in advancing research in online learning, in part, due to their ability through their embedded tools to facilitate synchronous and asynchronous group and class communication as well as student communication with their peers and

the instructor. Furthermore, LMS's capture data around classroom interactions and assessment of students, including assignment and overall grades.

It was clearly established in the last decade that the online mode could be as effective as the F2F or traditional mode of instruction and learning in achievement as student outcomes. Specifically, research indicates that there was little difference in student satisfaction (Allen et al., 2002; Castle & McGuide, 2010; Lim, Morris, & Kupritz, 2006) and learning (Allen et al., 2004; Park & Gemino, 2001). However, as Dziuban and Picciano (2015) discuss the "no significant difference phenomenon" referring to Roberts (2007) where they allude to the idea that research in online learning as "a kind of collective amnesia [that] surrounds changes that happened over a more distant time frame. Individuals tend to trust what they have seen for ourselves and thus dismiss events that occurred in the more distant past" (p. 13). Some researchers in disciplines newer to online learning tend to replicate the same studies with very little new to contribute to the understanding of the phenomenon. Moore and Kearsley (2011) mention "...one of the major threats to good practice as well as to good scholarship in distance education is the common failure of the newcomers to the field to understand what a depth of knowledge there is" (p. xvi). More recently, some practitioners and researchers realized to better understand online learning they need to look more at process variables and build off of the previous decades of research.

Practitioners have identified instructional practices through experiences of teaching blended and online courses that could increase the success of instruction in these modes. With large resources, human and financial, invested in blended and online programs and a key area for growth for institutions, there was a need to ensure quality in

this mode of instruction and throughout blended and online programs. Specifically, institutions started investing resources in instructional improvement opportunities for faculty and teaching academic staff to implement these effective instructional practices and guarantee that the instruction met certain standards. The development of such opportunities has been grounded and qualitative in nature historically due to newness of the processes and the lack of research and quantitative measurement of such processes. Slowly, researchers have begun to examine instructional practices and their relationship to student outcomes. Institutions and other organizations have been sluggish to invest and support research on distance education.

As this line of research progressed, some scholars started to focus on communication in online and blended classes. The progression may be due in part to the diffusion of findings on the impact of interactivity and engagement on student learning in general (e.g, Chickering and Gamson, 1987; Kuh, 2001) or the advancement of the objective characteristics of the technologies available to instructors. For instance, new LMS functions, communication or social technologies, and digital media became easier to use and offer greater interactivity than seen in previous technologies. More research began examining communication variables such as interactivity, engagement, presence, and others in the online classroom and how they impacted learning and satisfaction (e.g., Picciano, 2002). Even Allen et al. (2002) in their meta-analysis of distance education studies of the 80's and 90's documented the existence of interaction in several studies, but also found no differences. Additionally, they did note the limitation of the technology and instructional method in providing quality and frequent feedback. It is evident that in the literature over the past few decades, learning, performance, and satisfaction are well

documented student outcomes of online learning and distance education. These outcomes are documented not only in comparison studies, but when examining social variables in online courses as well. Any further research requires further examination of these predominant student outcomes in the existing literature.

### **Student outcomes**

To better understand the influence of instructional and social variables on student outcomes, the research documenting the effectiveness of online learning is expanded. As mentioned, in the early research in distance education and the meta-analyses completed, three student outcomes are prevalent: satisfaction, performance, and learning. Some organizations, such as the Sloan-C, have identified satisfaction and learning effectiveness as key indicators of quality (Moore, 2005). In key meta-analyses in distance education, satisfaction (Allen et al., 2002), performance (Allen et al., 2004), and learning (Means et al., 2009) were explored.

First, satisfaction is a measure of whether students enjoyed their experience in their online course. Since students will choose the format of their future instruction based in part on their previous experiences with that format, satisfaction is an important outcome variable to better understand the efficacy of online learning and usually is compared to F2F instruction. As Moore (2005) illustrated in describing the five pillars that support quality learning environments, student satisfaction can have implications for the recruitment and retention of students. Traditional teacher and course evaluations have measured whether students found the instruction and course satisfying along with other measures. If students are unsatisfied with a method of instruction and learning, it is less likely that they will complete the course or pursue enrollment in future courses or programs of the same nature.

Researchers have examined attitudes toward technology and illustrate the relationships surrounding attitudes toward communication media and media use behavior (Fulk, 1993; Shumate, Fulk, & Monge, 2005). These researchers argue that individuals monitor their behavior in the past and the present. Moreover, Individuals' evaluations of their past behavior and experiences with technology, good or bad, influence their future behaviors and attitudes. If students are not satisfied with their online learning experience, it could be hypothesized that they will not continue to enroll in future online courses, therefore satisfaction is an important variable in determine the impact of CMC on learning.

Findings have shown that online learning can be as satisfying as F2F learning, while some studies show a preference for blended classes. Allen et al. (2002) conducted a meta-analysis that examined studies where student satisfaction was compared between online and F2F instruction and little difference was noted indicating online learning is just as satisfying as F2F learning. Other studies have shown that student satisfaction is higher in F2F courses. For example, Castle and McGuire (2010) conducted an analysis of student course evaluations and discovered students both preferred F2F classes over blended or online courses. However, undergraduates preferred blended to fully online whereas graduate students preferred online over blended. Lim, Morris, and Kupritz (2006) conducted a mixed-method study and found that student satisfaction was higher in F2F and blended than in online courses although students reported online learning to be more work. Jackson, Jones, and Rodriguez (2010) examined student evaluations and found that online teacher actions do influence student satisfaction in online courses, including the timeliness and accessibility of the instructor, clear expectations, perceived

enthusiasm of instructor and course climate. As indicated in this study, further attention may be needed examining instructional characteristics. In reviewing the literature on satisfaction, there is little indication that one medium is better than another and leads to further research examining what variables in a course, F2F or online, can lead to greater student satisfaction.

Second, performance measures the output of a particular process. In examining online learning, student performance is a measure of the output of teaching and learning, which is most often in the form of a grade. The grade in a class is whether or not students performed well or poorly in the course. Other performance measures may include students' scores on exams or assignments. As Allen et al. (2004) describe in explaining effectiveness, performance measures are "scores on tests, grades achieved, or other similar evaluations of student performance" (p. 406). They conducted a meta-analysis that explored the effectiveness of online learning when compared to F2F finding a small increase in student performance in online classes. Also, Parker and Gemino (2001) reported no significant difference between the online and F2F students in overall exam scores or performance.

Third, learning effectiveness has been documented by most as the primary outcome of online or blended instruction in higher education. Actually, some researchers refer to the variable of performance described previously as learning. Performance is a measure across contexts. Individuals' ability to achieve outcomes successfully or desired results resonates in groups, organizations, relationships, and instructional contexts. Although the goal of teaching is for students to learn, documenting learning can be challenging beyond course grades, typically a performance measure.



In addition to grades, other movements to better document learning are becoming evident in higher ed. Today, educators are using rubrics more, which is traditionally a qualitative or subjective measure that can be quantified into a numeric representation of learning or performance. They provide students with a better understanding of how their performance is being assessed, what criteria are used to assess performance, what are the different levels of performance, and what artifacts of their performance will allow them to meet the proficiency requirement for the course or program. Also, a few small group of educators are using pre and post testing to document a change in knowledge, yet some argue that examinations and testing do not effectively measure certain learning outcomes. Therefore, there are several methods that result in a grade or numerical representation that documents student performance or the ability to achieve learning outcomes in courses or programs, yet some scholars question these methods.

Many scholars from a more interpretive or humanistic paradigm may focus on the process with a goal of change in knowledge, behavior, and abilities rather than focus on a performance measure, per se. These scholars may focus on more qualitative methods to document the growth or learning. The only quantifiable measure may be an overall grade for the course since all other assessment may be subjective. The ability to quantify learning does not necessarily lie as an issue in measurement, but one in paradigmatic approach to instruction.

Along with the paradigmatic differences in assessing learning, there is a question of a reliable and valid measurement. The assumption is that grades, exam scores, and assignment scores could be considered indicators of what degree a student achieved the learning outcomes that are assessed by these different methods being that the assessments

are designed and administered based on the learning outcomes of the course or modules. Some may argue that assessment in higher education is not accurate in their measurement of student outcomes due to the lack of psychometric consideration in their development. Other alternatives are considered for understanding whether students have learned.

The research results are discussed in two predominant methods of measuring student learning. The first is through a numerical representation of students' performance or documentation that they learned. This may be from a grade in course, exams (including pre and post-test), or other assessments. For instance, Moore (2005) describes a progress index for learning effectiveness in online learning versus F2F as a "direct assessment of student learning is equivalent or better" (p. 3). Students' completion of the assessment is providing documentation or evidence that they have achieved the outcomes. As seen in recent research, Means et al. (2009) conducted a meta-analysis of online learning and found that online instruction is as effective as F2F instruction. The second is through students' self-reports of learning or perspective on whether they learned. For example, Lim, Morris, and Kupritz (2006) conducted a mixed-method study where both online and blended students reported increases in perceived and actual learning with little difference between the two. Overall, research suggests that satisfaction, performance, and learning are predominate outcomes to be considered.

### **Course communication and instructional characteristics**

In looking at the comparison studies between F2F and distance education, evidence is presented showing little difference between distance education and F2F education in examining outcomes. Importantly, some researchers are discovering that student satisfaction, performance, and learning may be influenced by other antecedent

variables, such as course and instructional design rather than mode (e.g., Jackson, Jones, & Rodriguez, 2010). With new technologies being used in online learning further investigation is needed to understand effective instructional practices. Some researchers have already begun exploring the process variables, what takes place within the course, to better understand and predict outcomes of online courses and programs (e.g., Picciano, 2002). Attention is given to practices in the online courses that lead to increased learning and satisfaction.

Again, much of this research is a continuation of early research from the 80's and 90's that investigated the efficacy of CMC (e.g., Short et al., 1976; Kiesler et al., 1984; Daft & Lengel, 1986). Many researchers examined the differences between F2F and communication technology (electronic or digital audio, video, and text communication) in different contexts, but mainly with a focus on task performance. Therefore, understanding the relationship between instructional characteristics and social processes and the impact on student performance, including learning, and satisfaction can be greatly informed by this research.

Moving forward, considerations in effective practices include choices around how to deliver course information or digital content, interactions with the instructor, and interactions among students (Shea et al., 2001; Picciano, 2002; Shea, Pickett, & Pelz, 2003; Swan & Shea, 2005; Means et al., 2009). In short, more attention should focus on the instructional and social practices inside and outside of the classroom, even across and between modes, rather than simply examining mode differences in relation to student outcomes. More exploration is needed to illustrate the choices instructors make about

their courses evident in the instructional characteristics of a course and how they impact student perceptions and behavior in a course.

There are an array of instructional practices that can potentially have an impact on student satisfaction, performance, and learning. Some practices focus on interactions with content while others focus on interaction with individuals (Moore, 1989).

Traditionally, course information is provided to students in textbooks, videos, or lectures providing students with a foundation of cognitive knowledge. Also, instructors can provide reading assignments to students, lecture on important information, or show videos to illustrate concepts. In online courses, lectures often take the form of text-based or audio presentations, but some instructional materials are videos of instructors' lectures that mirror the interactions students have with content and content delivery in the F2F environment. Currently, many instructors are moving towards using open educational resources or online content created by others through social media like YouTube to help provide their students with rich and current learning experiences (Joosten, 2012).

Besides examining interactions with content, decades of research indicate the importance of instructor-student and student-student interactions in augmenting student learning.

Chickering and Gamson (1987) decades ago reported, "Frequent student-faculty contact in and out of classes is the most important factor in student motivation and involvement" (p. 3). Many researchers have continued to find that formal and informal student interactions with faculty enhance student learning and success (Astin, 1993; Bernard, Abrami, Gorokhovski, Wade, Tamim, Surkes, & Bethel, 2009; Carini, Kuh, & Klein, 2006; Kuh & Hu, 2001; Pascarella & Terenzini, 1991; Tinto, 2000). Also, research has indicated that interactions with instructors and peers can impact student

learning (Kuh, 2001; Pascarella, 2001). Specifically, in online learning, Lou, Bernard, and Abrami (2006) reported that “when media were used to support collaborative discussion among students in asynchronous undergraduate DE, the DE students on average significantly outperformed classroom students” (p. 163). In short, research in online learning needs to further examine what practices online can lead to interactions with instructors and among students to impact student outcomes. In return, these practices need to be considered in developing courses to enhance the instructional quality.

Online learning has led to value the importance of online interactions among students and instructors in courses where active and interactive models are most successful over teacher-centered, passive models. Passive learning models can lead to higher rates of attrition, particularly in online courses. The research over the past decade has explored the impact of the use of CMC to facilitate these interactions. Researchers have argued that interactions among students are critical to online learning success. Swan, Shea, Fredericksen, Pickett, Pelz, and Maher (2000) assert that asynchronous discussions are one of the most influential elements in online courses and Bernard, Abrami, Lou, Borokhovski, Wade, Wozney, Wallet, Fiset, and Huang (2004) declare that the presence of any class of interaction treatment enhances achievement outcomes.

Early studies did not always support this claim, as Picciano (2002) did not find a significant relationship between interaction (number of posts) and performance in an online course. Later studies such as Chang and Smith (2008), found student-instructor interaction, student-student interaction, and student-content interaction were all significant predictors of satisfaction in the course. Also, Means et al. (2009) meta-

analysis found that online instruction that was collaborative or instructor-directed had larger effect sizes where as independent learning did not. They also found that practices including asynchronous discussions among peers and with the instructor are associated with more effective online learning.

Other researchers looked at the difference between asynchronous and synchronous communication mediums. In the early times of distance education, video broadcasts might have even had a synchronous video communication component. More recently, the majority of CMC in online courses takes place in asynchronous discussions forums or communication that is not taking place in real time, but with the advances in technology more course designs are exploring the impact of synchronous or real-time online communication. The use of synchronous technologies is also appealing to programs that are new to online learning because of the familiarity to the F2F classroom.

The majority of research has not found a significant impact on students' outcomes influenced by whether the communication is in real-time or not. In examining asynchronous or synchronous nature of communication media, there are mixed findings again. Both Bernard et al. (2004) and Means et al. (2010) in their meta-analyses did not find a significant relationship between synchronous communication and student learning. However, Allen et al. (2004) meta-analysis indicated performance did not differ based on asynchronous or synchronous communication technologies. When examining the use of multiple communication channels in online courses, Dixson (2010) did report that synchronous communication tends to increase levels of student engagement.

The findings may differ depending on whether the courses are undergraduate or graduate level. Castle and McGuire (2010) examined graduate students, in online courses

utilizing synchronous communication resulted in the highest levels of self-reported learning. Currently, there is little support, except in graduate education, for using synchronous communication solely. Conclusions support the use of asynchronous mediums or multiple communication channels for courses.

Through the decades of research, it is evident that student interactions are key to influencing student outcomes, such as satisfaction, performance, and learning.

Instructors need to carefully design their courses ensuring that the course contains the instructional characteristics evident in their course and instructional design that will influence social processes in a way that lead to increased student success. Therefore, an examination of social processes and course communication will inform the development of courses to ensure quality in higher education.

### **Media richness**

Instructors make several choices in determining in what interactions (content, instructor, peers) a student will participate in a course. Scholars have identified that in the delivery of information, the richness of the medium or the objective characteristics of media, should be considered in the selection of the technology (Daft & Lengel, 1986). Many early instructors in distance education online felt that the more cues available would lead to more effective teaching and learning experiences. Therefore, history indicates that early developments focused on broadcast and televised lectures with some having a synchronous communication experience as well. Later, there was a move to video recorded lectures. Moreover, some instructors due to their familiarity with F2F lectures felt more comfortable developing online video or audio lectures that mirror the characteristics of the F2F facilitating richer experiences due to cues available. The desire

to replicate the F2F was apparent. However, research is not consistent as to which type of digital content delivery has the greatest impact on students.

Several studies have examined the impact of content with different levels of richness with mixed results. Allen et al. (2002) meta-analysis indicated students preferred video (broadcast video) over written instruction as information in the channel is reduced. However, Means et al. (2010) meta-analysis did not find that video had an impact on learning, but reported that the use of text and other media were associated with more effective online learning. It is not necessarily clear that richer media used is most effective whether to transmit content or to enhance student activity. However, it is important that the media or the medium facilitates effective communication and interactions with the content and other individuals. There needs to be an alignment between the communication task and the media selected to facilitate the task.

Instructors need to make choices about the type of media they use, the cues available, in order to determine what technology will be most effective to enhance the classroom and impact students. In the 1980's one theory developed in organizational communication can inform the understanding of just that. Media richness theory was developed to describe media choice in relation to task requirements where researchers attributed the selection of technology to the richness of the medium, or the objective characteristics of media (e.g., Daft & Lengel, 1986). The importance of matching task to medium in order to better understand the effectiveness of a medium is clear as provided in this theory and should be considered in enhancing the understanding of course communication in online learning and the impact on student outcomes. Media richness theory is used to describe media choice in organizations and has been applied to several



other contexts. Daft and Lengel (1986) assert that workers process information based on two criteria, uncertainty and equivocality. Individuals process information in order to reduce uncertainty and gain clarity. With these two ideas in mind, they developed a theory that depicts our choice of media is dependent on several factors.

Similarly, instructors should choose media based on the requirements of the learning task that they are trying to facilitate. The level of media richness can be determined by examining the media's objective characteristic and cues available. The factors in determining level of media richness needed to support different communication scenarios include: the desired speed of feedback (immediate or delayed), the available channels (verbal, nonverbal, text), the personal nature of the media, and the richness of the language needed based on the message being sent. For instance, face-to-face is considered the richest medium because there is immediate feedback and all channels are available. E-mail would be considered a lean medium because the feedback is typically not immediate and text is the main available channel. However, with the advancements of LMS's and social technologies, new technologies offer an array of leanness and richness all in one tool or in a combination of tools used in online courses. By understanding students' perceptions of richness and its relationship to student outcomes, the impact of course communication and technology appropriateness becomes more defined.

Richer does not always mean better. Many times in the online environment, instructors attempt to emulate the F2F classroom by using video lectures and synchronous communication tools for class meetings. However, F2F is not necessarily the gold standard either. Video lectures can take great resources for instructors to create

and for students to download and view, which can be problematic. For example, an instructor decides to contact the media unit on campus to video tape his/her lectures. It takes an individual with video recording expertise and video recording equipment to capture the lecture. Then, the video might need to be digitized, edited, and stored requiring additional resources. Depending on the size of the video and Internet bandwidth of the student's device, it could take a great amount of time to download and to view or even stream.

Moreover, there is little agreement in the research that video lectures as the primary student interaction with content influences learning. Rather than video lectures, many studies have documented the potential for video to enhance student learning in certain disciplines that require visual aids in learning (Al-Seghayer, 2001; Herron, Dubreil, Cole, & Corrie, 2000; Herron, Dubreil, Cole, & Corrie, 2002; Herron, Cole, Corrie, & Dubreil, 1999; Weyers, 1999). For instance, in chemistry it is useful and almost necessary to see a video of a chemical reaction rather than just read or hear an instructor illustrate the chemical reaction. Although distance education in the 90's might have shown an appreciation for broadcast video (Allen et al., 2002), online education in the 2000's appears to prefer text and images (Means et al., 2009). The need for video media tends to fall on learning tasks that require a visual understanding of a phenomenon.

In addition to providing cognitive learning opportunities and visual aids in learning, audio and video of instructors themselves can be created to enhance the instructor's voice giving students a better idea as to who their instructor is as a person in online education courses. Students can actually see and hear their instructors in the audio and video learning tools. As seen in this example, depending on the media characteristics,

CMC can enhance the humanness of educators in the classroom from the perspective of their students. In short, social presence is another important variable of course communication when examining online learning.

### **Social presence**

Researchers have stated that media providing characteristics leading to a strong perception of one's social presence can be considered more effective media in facilitating communication (Short, Williams, & Christie, 1976). Communication media vary in their degree of social presence, as they do in richness, affecting individuals' perceptions of their interactions with others. Therefore, CMC is seen as less socially present where "social presence, or the salience of another person in an interaction, is said to depend on the number of channels or codes available within a medium; the fewer the channels, the less attention paid by the user to the presence of other social participants" (Walther, Anderson, & Park, 1994, p. 461). More specifically, according to Russo (2000), social presence is the degree to which a person is perceived to be real in a mediated environment, that is, the degree to which the communicators recognize that they are communicating with another human being and not with the technology that is between them. Therefore, instructors can provide students a greater sense of who they are.

Although earlier research indicated that reports of social presence were indicators of the objective characteristics of the media or richness (cues available to communicators), more recently scholars are understanding social presence as a social construct that allows one to connect with another despite the technology. Some argue the richness of the media is not indicative of the ability to facilitate social presence (Walther, 1996). Recent research has been conducted to identify practices in enhancing social

presence and the impact of this enrichment on learning and satisfaction (e.g., Picciano, 2002).

Social presence has been identified as an indicator of an effective, mediated social environment, which can have a positive impact on student interactions and outcomes. Dixson (2010) suggested that active learning activities could increase student presence indicating that instructors can make choices about their instruction and pedagogy to enhance social presence. Others studied the impact of social presence on outcomes. Picciano (2002) found a significant relationship between student perceptions of social presence and performance on written assignments. Also, Richardson and Swan (2003) found that students with greater perceptions of social presence reported that they learned more from the course than students with perceived lower levels of social presence. Social presence developed through CMC in a course can lead to feelings of connectedness potentially impacting students' perceptions of learning and satisfaction (Joosten, 2012).

### **Learning community**

Along with the discussion of effective communication using technology based on the objective characteristics of the medium, other areas in the literature arise that deserve attention. One in particular is that of the learning community. Brown (2001) developed a process of community-building in online learning courses. She developed a three-stage model using grounded theory. The stages were from making friends and being comfortable communicating to a camaraderie among students after long-term interaction involving personal communication. Brown describes each of the stages as involving a greater degree of engagement in both the class and the dialogue.

Some researchers further this work on learning community to explore how to best design and instruct a course to ensure that a learning community would develop. Rovai (2002) examined how to effectively design and instruct to foster a learning community in an online course identifying specific course design principles, including developing social presence, incorporating group activities, and facilitating group discussion. Vesely, Bloom, and Sherlock (2007) also identified key elements in building an online community, which included instructional support, higher order learning activities, interaction and dialogue among students, and time for discussions.

Roblyer and Wiencke (2003) designed a rubric of interactive qualities in distance courses including the work of Brown (2001) on learning community. They identified three concepts that form a foundation for their work, including Moore's (1989) types of interaction (learner-content, learner-instructor and learner-learner), Shannon and Weaver's (1949) interactive model of communication, and Zhang and Fulford's (1994) interaction as social and psychological connections. All of the concepts are important to understanding social processes in courses.

As a result of their efforts, Roblyer and Wiencke (2003) identified five elements to encourage interactivity and community including rapport building, instructional design for interaction, interactivity of technology resources, evidence of learner engagement, and evidence of instructional engagement. Later, work on learning communities was used to inform other influential works in research and practice, such as the Community of Inquiry by Garrison and Arbaugh (2007) and Palloff and Pratt's (2003) guide to working with online learners. There is an obvious link to be considered between course

communication, such as learning community, and instructional characteristics in the design of a course.

Empirical studies exist on the learning community as well. Shea, Li, and Pickett (2006) explored learning community in fully online and web-enhanced courses finding a significant relationship between students' sense of learning community and effective instructional design and organization. Although encouraging frequency of contact among students and between the instructor and student resulting in increased interactivity is important, the development of a virtual community or online learning community with meaningful relationships can result in a higher level of relational communication taking place in online courses that could impact student outcomes. As indicated, course design exhibited in the instructional characteristics could greatly impact course communication, such as learning community, and student outcomes.

### **Engagement**

As more researchers pay attention to the importance of student interactions with each other and instructional staff, it has become an important criteria for assessing institutions. Engagement is a key construct that is even used at a national level to determine the effectiveness of institutions. Several researchers discuss engagement in the other social variables that are highlighted as part of this study (e.g., Brown, 2001). Engaged students are those that are interacting, connecting with others, thinking critically about their tasks, and creating knowledge. Therefore, it is about communication and connecting, and it is also about the academic challenge of these activities.

One of the most recognized measures of engagement in higher education institutions is the National Survey of Student Engagement (NSSE). This instrument was

developed based on decades of research on course interactivity to measure engagement. The survey measures students' reports of their participation in activities linked to engagement (e.g., collaboration) and to student outcomes (e.g., learning). This instrument is distributed at institutions across the country and is thought to be a mark of quality in higher education.

The engagement construct contains five benchmarks of effective educational practices that best define engagement, including level of academic challenge, active and collaborative learning, student interactions with faculty members, enriching educational experiences, and supportive campus environment (Kuh, 2001). Zhao and Kuh (2004) found that participating in a learning community is positively linked to student engagement (at the institution level) and student outcomes, including learning and satisfaction with college. Engagement is thought to be a key attribute as a result of quality education and is considered in this study. Although typically a measure of institutional effectiveness, engagement can be applied at the course level.

### **Active learning**

For decades researchers and practitioners have seen a move from more passive learning or teacher-focused learning models to pedagogical models that focus on active and student-centered models. As Kaleta, Skibba, and Joosten (2009) discuss, the instructional models that are mediated by technology focus on a role shift for instructors from the sage on the stage to the guide on the side. This means that students are taking a more active role in their learning where instructors focus additional efforts on designing and facilitating activities than providing expert information on topic areas. As described previously, perceptions of richness in communication in technology's mediated settings

impacts students' ability to communicate, develop authentic identities and social presence, and connect with others to build relationship and community. Therefore, it only seems natural that the students' behaviors in the course would be more active and less passive.

Research should contribute to understanding the influences on students' behaviors in the classroom and how students' behaviors influence their success. As mentioned, it is important to examine students' perception of objective media characteristics and their impact on students' ability to develop relationships and attachments with others and course activities. Yet, researchers need to better recognize the impact of active learning behaviors in the classroom on student outcomes. More importantly, there needs to be a heightened understanding of how certain instructional characteristics, which include designing courses in ways to facilitate active learning, influence student behaviors in a course.

There are an array of tracks of research and theory that can enhance the understanding of instruction and learning and many overlap. Six constructs of perceived social processes have been identified: media richness, social presence, learning community, engagement, and active learning behaviors. The research also indicates that course design and instructional strategies can greatly impact each of these areas of course communication. This study examines how course and instructional design can positively impact course communication and social processes.

The argument presented in this study is that research has shown there is no difference in student outcomes, such as learning performance, and satisfaction, between online and F2F. To conduct a study that explores such relationship would be redundant



at best. Although there is little literature to support a hypothesis regarding the relationship between antecedent variables, such as technological familiarity and instructional characteristics, including student support, course organization and instructional design, and course assessment and evaluation, practice in course design is not necessarily specific to technology mediated courses nor is student selection of online courses specific to their technological familiarity. Therefore, this study asserts that there is no difference between the antecedent effects and course mode either. A hypothesis claiming that course communication and social processes is no different in face-to-face courses and online courses is less unclear. In particular, these processes variables include media richness, social presence, engagement, learning community, engagement, and active learning behaviors. For decades, there have been studies that have shown that f2f communication tends to have greater potential for richness and relational capacity than CMC. However, the hypotheses presented below assume that there are no differences between course modes and focus attention on understanding the linear relationship from a systems approach between antecedent, process, and outcomes to help clarify the relationships with communication variables across modes.

A good amount of research has been conducted that compares the effectiveness of online courses with traditional F2F courses. Furthermore, the last decade has had substantial movement in examining social variables that impact student outcomes in online courses while considering course design and instructional strategies. Prior to testing the hypothesis presented, this study will examine between group differences between course mode (F2F and online) to justify the proposed hypotheses below examining effects across courses though rather than between differences to illustrate

there is no difference between modes that needs to be explored (see Figures 1-3).

Drawing from this past research, technology has created new situations through which additional research efforts are needed that examine the instructional practices facilitated through course design resulting in course communication and behaviors that may predict student outcomes. Moving beyond a comparison between course mode, the following hypothesis proposes relationships across input, throughput or process, and output variables. H1 will examine the input of instructional characteristics through course design and process variables of social variables including course communication

Based on the review of literature the overarching hypothesis guiding this investigation examining input, process, and output variables based on mode is:

*H1: Across course mode (F2F and online), student reporting of instructional characteristics in course design, including support, organization and instructional design, and assessment and evaluation, will increase students' perceptions of course communication, including (a)media richness, (b)social presence, (c)engagement, (d)learning community, (e)engagement, and (f)active learning behaviors.*

This general hypothesis breaks down into the following:

H1a: Student reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation, will increase perceptions of media richness.

H1b: Student reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation, will increase perceptions of social presence.

H1c: Student reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation, will increase perceptions of learning community.

H1d: Student reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation, will increase perceptions of engagement.

H1e: Student reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation, will increase perceptions of active learning behaviors.

In addition to the relationship between course design on the teaching and learning process, the relationship between these process variables and outcomes variables is addressed in the next overarching hypothesis:

*H2: Across course modes (F2F and online), students reporting of course communication, including (a)media richness, (b)social presence, (c)learning community, (d)engagement, and (e)active learning behaviors will predict students' perceptions of (1)learning, (2)performance, and (3)satisfaction.*

This overarching hypothesis breaks down into the following:

H2a: Student perceptions of social interaction, including media richness, social presence, learning community, engagement, and self-reported active learning behaviors will significantly increase perceived learning.

H2b: Student perceptions of social interaction, including media richness, social presence, learning community, engagement, and self-reported active learning behaviors will significantly increase self-reported performance.

H2c: Student perceptions of classroom interaction, including media richness, social presence, learning community, engagement, and self-reported active learning behaviors will significantly increase satisfaction.

The model being described takes a systems approach by examining input, process, and outcome variables. See Figure 4. The input variables include student and course variables, including student technological familiarity, instructional characteristics, and course mode. Process variables focus on those related to interactivity. Those variables include students' perceptions of media richness, social presence, learning community, engagement, and self-reported active learning behaviors. The output variables are common educational outcomes and include student perceptions of learning, satisfaction, and performance.

### **Methods**

The purpose of this second chapter is to describe the procedure for this investigation. The chapter will discuss the participants, instrumentation development, measures included in the survey and their reliability measures, procedure for data collection, and methods of data analyses. The data collection included survey administration and data analyses, including multiple methods. Each will be explained in more detail.

A survey instrument was developed to enhance the understanding of undergraduate students' perceptions of instructional characteristics, course communication and social processes, and student outcomes. The survey requested that students report on their attitudes about instruction and course design and communication in their class. Moreover, they were asked about their learning and performance in the

class and satisfaction with the class and the instruction. The survey contained numerous Likert items.

### **Participants**

Participants (N = 165) were undergraduate students enrolled in a course section, F2F or online, at a Midwestern university in the United States. Of the students that participated, 86% used the women's restroom and 15% used the men's restroom. Instructors teaching F2F and online courses were solicited through an instructional development listserv and asked to administer the survey to their students. Participants completed a web-based survey via Qualtrics online application (See Appendix A). IRB approval was received prior to the study.

The students included freshman (26%), sophomores (29%), juniors (21%), seniors (16%), and other student status (9%). Of the students who participated, the majority were full time students (87%) with other students reporting part time (9%), less than part time (2%), or overloaded or didn't respond (1%). Students reported on their employment status with the majority of the students reporting working part time (54%). Others reported either working full time (15%) or other (30%). Students' physical and mental health was reported with a small percentage of the students reporting having a disability or needing an accommodation (4%) and having a mental health illness or concern (8%). The majority of the students were Caucasian or European American (71%) with other students reporting Asian (12%), Latino (4%), African American (4%), or of multiple races (9%).

A range of disciplines were represented including the professions (72%), natural sciences (16%), social sciences (8%), humanities (1%), and other (4%). The courses

were lower level (88%) and upper level (12%) courses. Course mode was captured, both F2F (28%) and online (72%).

### **Instrumentation**

The students that agreed to participate in the study were provided with a link to access the web-based version of the survey that had the same survey questions and format for every student (see Appendix A for a complete list of all survey items). The survey requested that students report their (a) demographic information, (b) perceptions of instructional characteristics in course design (c) perceptions of course communication, including media richness, engagement, social presence, learning community, in-class support, and active learning behaviors, and (d) perceptions of student outcomes of their class, including learning, performance, and satisfaction. Each measure is described, including the number of items, mean, standard deviation, sample items, and inter-item reliability.

### **Measures**

***Technology familiarity.*** Technological familiarity is a measure of students' familiarity of a technology based on their experience or exposure to a series of different hardware and software applications. Items include, "How frequently do you use social media for networking," "How frequently do you use social media for image or video sharing," and "How frequently do you chat using instant messenger." A total of 12 items are included in this measure, with high internal consistency ( $\alpha = .83$ ).

***Instructional characteristics.*** The measure referred to the effectiveness of the course design and delivery reflecting the instructor's pedagogical model in determining how active or passive the course is designed to facilitate interaction, which was a

composite of support, organizational, instructional design and delivery, and assessment and evaluation.

*Support.* Items included, “I had adequate support in completing my activities” and “I received support materials prior to starting the class activities.” A total of 9 items were included in this measure, with high internal consistency ( $\alpha = .84$ ).

*Organization and instructional design.* Items included, “The course was well-organized,” “Course content is ‘chunked’ for more manageable learning,” and “Each reading assignment and each activity matches a learning objective,” and “Activities have an assessment piece that links to a learning objective.” A total of 21 items were included in this measure, with high internal consistency ( $\alpha = .92$ ).

*Assessment and evaluation.* This item focused on how students were assessed and grading rubrics. Items included, “The instructor shared the criteria used to assess class participation and discussions,” “I was not assessed solely on tests/quizzes,” and “I was provided ample opportunity to demonstrate proficiency in different ways.” A total of 13 items are included in this measure, with high internal consistency ( $\alpha = .82$ ).

*Course mode.* Course mode was reported by students to determine whether the course, on which students were reporting their perceptions, was delivered F2F or online.

*Media Richness.* The measure consisted of 12 items that determined students’ perceived richness of the medium or ability to transmit messages and receive feedback as needed. Items included, “I was able to receive feedback from others right away,” “I was able to understand what others were communicating to me,” “I was able to convey multiple types of information (verbal and nonverbal).” Higher scores reflect more agreement, and internal consistency was reliable ( $\alpha = .80$ ).

***Social Presence.*** This component measures the immediacy and intimacy of another individual and being perceived as being a real human being rather than being inanimate due to technology. Items included, “I felt as if I was communicating with a real person” and “I was able to develop a closeness with others.” A total of 15 items are included in this measure, with high internal consistency ( $\alpha = .88$ ).

***Learning Community.*** Measured the students’ perception of her/his ability to build connections with the instructor and other students. Items included, “I created social networks,” “I developed personal relationships with my classmates,” and “The learning activities encouraged contact between myself and my classmates.” A total of 9 items are included in this measure with higher scores indicating more agreement and reliable internal consistency ( $\alpha = .82$ ).

***Engagement.*** This measure referred to students’ perception of her/his commitment to educational activities. Items included, “The learning activities were academically challenging,” “The learning activities required me to think critically,” and “I willingly participated in the learning experiences. A total of 21 items are included in this measure with higher scores indicating high internal consistency ( $\alpha = .91$ ).

***Active Learning Behaviors.*** Active learning measured student’s perceptions of the degree to which they were involved in activities associated with active learning pedagogies. Items included, “How frequently did you explain course ideas or concepts to other students?” A total of 9 items are included in this measure with higher scores indicating more satisfaction ( $\alpha = .82$ ).

***Learning.*** Learning was self-reported perceptions of knowledge that students acquired in the class. Items included, “The class allowed me to better understand



concepts,” “The class helped me understand the course material,” and “The class made it easy to connect ideas together.” A total of 10 items are included in this measure with higher scores indicating more satisfaction ( $\alpha = .90$ ).

***Satisfaction.*** This measure centered on students’ attitude towards the course and the instructor. The measure captured several dimensions of satisfaction including technical support, recommendation of continued use, and overall effectiveness. Items included, “I would recommend that the instructor continue teaching this course,” “I liked the course,” and “I would not recommend this course to a friend.” A total of 8 items are included in this measure with higher scores indicating more satisfaction ( $\alpha = .81$ ).

***Performance.*** This measure was students’ self-reported grade in the course and performance level on assignments. Items included, “The class activities helped me get a better grade,” and “I got higher scores on my assignments because of my class experiences.” A total of 5 items are included in this measure with higher scores indicating more satisfaction ( $\alpha = .79$ ).

## **Procedures**

Instructors shared a link to the web-based survey administered via Qualtrics cloud survey software with their students through e-mail or the LMS between early November and late December of 2014. After accessing the survey through the link, students were presented with an online informed consent form where they could indicate consent, confirm that they were age 18 or older, and voluntarily agree to participate in the research study by clicking on a button on the bottom of the first page to enter the survey. The survey took approximately 30 minutes to complete.

## Data Analysis

Statistical analyses included a series of t-tests to analyze differences between course mode, F2F and online courses, to provide a baseline for the regression studies across modes. Next, multiple regression analyses were used to examine the relationship between instructional characteristics in course design and the ability to predict course communication and social variables in response to hypothesis one (H1) and to examine the relationship between course communication and social variables and the ability to predict student outcomes in response to hypothesis two (H2).

## Results

The purpose of the third chapter is to organize and report the study's main findings.

### Course mode differences

Independent sample t-tests were used to analyze differences between course mode, F2F and online courses to provide justification for an across mode study. In examining antecedent variables, there was no significant difference, and in examining outcome variables, there was no significant difference. However, there were significant differences in examining course communication and social processes across mode.

The results indicated that technological familiarity of students in F2F courses ( $M = 43.12, SD = 6.75$ ) and online courses ( $M = 40.97, SD = 8.48$ );  $t(150) = 1.47, p = .144$  was not significantly different. Also, student reports of instructional characteristics, including support, course organization and instructional design, and assessment and evaluation, in F2F and online courses, were not different. There was no significant difference for support for F2F courses ( $M = 38.43, SD = 3.66$ ) and online courses ( $M = 36.99, SD = 4.81$ );  $t(156) = 1.80, p = .074$ , for instructional design and organization in

F2F courses ( $M = 103.98$ ,  $SD = 9.27$ ) and online courses ( $M = 101.99$ ,  $SD = 11.88$ );  $t(150) = .984$ ,  $p = .327$ , and for assessment and evaluation there was no significant difference for F2F courses ( $M = 52.55$ ,  $SD = 5.56$ ) and online courses ( $M = 50.55$ ,  $SD = 6.39$ );  $t(155) = 1.820$ ,  $p = .713$ . In examining antecedent effects, mode did not play a factor.

Student reports of student outcomes of learning effectiveness, including learning, performance, and satisfaction, there were no significant differences for any of the three. No significant differences existed in perceptions of learning in F2F courses ( $M = 41.00$ ,  $SD = 5.12$ ) and online courses ( $M = 39.05$ ,  $SD = 6.69$ );  $t(155) = 1.76$ ,  $p = .056$ , perceptions of performance in F2F courses ( $M = 19.62$ ,  $SD = 2.93$ ) and online courses ( $M = 18.68$ ,  $SD = 3.39$ );  $t(155) = 1.64$ ,  $p = .392$  or in satisfaction in F2F courses ( $M = 32.96$ ,  $SD = 3.90$ ) and online courses ( $M = 31.53$ ,  $SD = 4.65$ );  $t(155) = 1.82$ ,  $p = .39$ . Learning effectiveness was no different in online courses than face-to-face courses. See Table 1 for t-test results examining differences between course mode.

The examination of student reports of course communication and social processes, including media richness, social presence, learning community, engagement, and active learning behaviors in F2F courses led to mixed results. In examining perceptions of course communication and social processes in F2F and online courses, there was a significant difference in perceptions of richness for F2F courses ( $M = 46.23$ ,  $SD = 4.72$ ) and online courses ( $M = 43.51$ ,  $SD = 5.90$ );  $t(149) = 2.70$ ,  $p = .008$ , social presence for F2F courses ( $M = 57.48$ ,  $SD = 7.11$ ) and online courses ( $M = 52.19$ ,  $SD = 8.62$ );  $t(150) = 3.54$ ,  $p = .001$ , learning community for F2F courses ( $M = 32.84$ ,  $SD = 4.68$ ) and online courses ( $M = 27.74$ ,  $SD = 5.67$ );  $t(155) = 5.34$ ,  $p < .001$ , active learning

behaviors for F2F courses ( $M = 59.05$ ,  $SD = 8.97$ ) and online courses ( $M = 52.05$ ,  $SD = 12.78$ );  $t(148) = 3.15$ ,  $p = .002$ . However, there was no significant difference in perceptions of engagement for F2F courses ( $M = 78.33$ ,  $SD = 8.42$ ) and online courses ( $M = 76.43$ ,  $SD = 11.22$ );  $t(146) = .35$ ,  $p = .346$ . See Figure 5.

### **Influence of instructional characteristics**

Hypothesis one (H1) examined the relationship between instructional characteristics in course design and the ability to predict course communication and social processes. The thought is instruction characteristics of a course can predict course communication with the idea that course design criteria can impact course communication for a better learning experience. Multiple regression analyses were used to test if the instructional characteristics of the course design in the areas of support, organization and instructional design, and assessment and evaluation significantly predicted students' perceptions of course communication as proposed in hypothesis one.

H1a examined the impact of instructional characteristics on students' perceptions of media richness. The results of the regression indicated the predictors explained 42% of the variance ( $R = .646$ ,  $F(3,156) = 37.14$ ,  $p < .001$ ). It was found that assessment and evaluation of instructional characteristics in course design significantly predicted richness ( $\beta = .39$ ,  $p < .05$ ). However, again, the other two components, support ( $\beta = .16$ ,  $p = .202$ ) and organization and instructional design ( $\beta = .14$ ,  $p = .247$ ), did not contribute significantly to the model.

For H1b, student reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation, were examined to better understand student perceptions of social presence. The results of the

regression indicated the predictors explained 36% of the variance ( $R = .600$ ,  $F(3,156) = 29.23$ ,  $p < .001$ ). Assessment and evaluation of instructional characteristics in course design significantly predicted social presence ( $\beta = .36$ ,  $p < .05$ ) where the other two components, support ( $\beta = .21$ ,  $p = .109$ ) and organization and instructional design ( $\beta = .06$ ,  $p = .616$ ), did not add significantly to the model. Tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern.

Hypothesis H1c centered on students' reports of instructional characteristics and perceptions of learning community. The results of the regression indicated the predictors explained 27% of the variance ( $R = .578$ ,  $F(3,156) = 19.02$ ,  $p < .001$ ). Results showed that assessment and evaluation of instructional characteristics in course design significantly predicted learning community ( $\beta = .50$ ,  $p < .001$ ). However, once again, the other two components, support ( $\beta = .09$ ,  $p = .534$ ) and organization and instructional design ( $\beta = -.07$ ,  $p = .581$ ), did not add significantly to the model

H1d focused on predictions of students' perceptions of engagement in relation to students' reports of instructional characteristics, including support, course organization and instructional design, and course assessment and evaluation. The results of the regression indicated the predictors explained 55% of the variance ( $R = .742$ ,  $F(3,156) = 63.54$ ,  $p < .001$ ). Results indicated that organization and instructional design of instructional characteristics in course design significantly predicted engagement ( $\beta = .42$ ,  $p < .001$ ) as did course support ( $\beta = .22$ ,  $p < .05$ ). Unlike the previous two hypothesis subsets, assessment and evaluation ( $\beta = .15$ ,  $p = .130$ ) did not add significantly to the model.

Finally, H1e centered on predicting perceptions of active learning behaviors through support, course organization and instructional design, and course assessment and evaluation. The results of the regression indicated that the predictors explained 14% of the variance ( $R = .373$ ,  $F(3,156) = 8.45$ ,  $p < .001$ ). Results indicated that assessment and evaluation of instructional characteristics in course design significantly predicted perceptions of active learning behaviors ( $\beta = .58$ ,  $p < .001$ ). However, once again, the other two components, support ( $\beta = -.13$ ,  $p = .388$ ) and organization and instructional design ( $\beta = -.17$ ,  $p = .227$ ), did not add significantly to the model. See Table 2 for regression results for the influence of instructional characteristics on social processes.

Tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern (Support, Tolerance = .24, VIF = 4.19; Organization and instructional design, Tolerance = .27, VIF = 3.76; Assessment and evaluation, Tolerance = .31, VIF = 3.22).

### **Influence on student outcomes**

Hypothesis two (H2) examined the relationship between students' report of course communication and student outcomes of learning effectiveness, including learning, performance, and satisfaction. Course communication included social presence, richness, engagement, learning community, and active learning behaviors.

For H2a, student perceptions of social interaction, including media richness, social presence, learning community, engagement, and self-reported active learning behaviors were examined to understand their ability to predict perceived learning. The results of the regression indicated the predictors explained 67% of the variance ( $R = .817$ ,  $F(5,155) = 62.32$ ,  $p < .001$ ). Results showed that richness ( $\beta = .17$ ,  $p < .05$ ), presence ( $\beta =$

.24,  $p < .05$ ), engagement ( $\beta = .64$ ,  $p < .001$ ), and learning community ( $\beta = -.17$ ,  $p < .05$ ) significantly predicted perceptions of learning. However, the component of active learning behaviors ( $\beta = -.06$ ,  $p = .258$ ) did not add significantly to the model.

In examining H2b, the goal was to look at the prediction of self-reported performance in relation to student perceptions of course communication and social processes, again, including media richness, social presence, learning community, engagement, and self-reported active learning behaviors. Regression results indicated the predictors explained 52% of the variance ( $R = .722$ ,  $F(5,155) = 33.79$ ,  $p < .001$ ). Again, richness ( $\beta = .24$ ,  $p < .01$ ) and engagement ( $\beta = .58$ ,  $p < .001$ ) significantly predicted perceptions of performance, but the previously significant components of presence ( $\beta = -.03$ ,  $p = .978$ ) and learning community ( $\beta = -.06$ ,  $p = .556$ ) did not add significantly to the model. Also, active learning behaviors ( $\beta = .04$ ,  $p = .565$ ) did not add significantly to the model.

Finally, H2c centered on student perceptions of classroom interaction, including media richness, social presence, learning community, engagement, and self-reported active learning behaviors and their contribution to significantly predicting satisfaction. The results of the regression indicated the predictors accounted for 72% of the variance ( $R = .848$ ,  $F(5,155) = 79.27$ ,  $p < .001$ ). Once again, richness ( $\beta = .20$ ,  $p < .01$ ) and engagement ( $\beta = .56$ ,  $p < .001$ ) significantly predicted satisfaction along with presence ( $\beta = .32$ ,  $p < .001$ ). However, both learning community ( $\beta = -.14$ ,  $p = .057$ ) and active learning behaviors ( $\beta = -.04$ ,  $p = .479$ ) did not add significantly to the model. See Figure 6 for the complete model. See Table 3 for regression results for the influence of social processes on predicting student outcomes.

Tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern (Media richness, Tolerance = .42, VIF = 2.36; Social presence, Tolerance = .25, VIF = 4.04; Engagement, Tolerance = .60, VIF = 1.67; Learning community, Tolerance = .33, VIF = 3.21; Active learning behaviors, Tolerance = .72, VIF = 1.38).

It is important to note that media richness and engagement fit significantly and added to the model of each of the three student outcomes of learning effectiveness, including perceptions of learning, perceptions of performance, and satisfaction. Social presence was included in the model for learning and satisfaction, but not performance. Learning community significantly contributed to the model only for student perceptions of learning. Active learning behaviors did not add significantly to any of the models for student outcomes.

### **Discussion**

The purpose of the final chapter is to synthesize and deliberate the results in light of the hypotheses, literature review, and conceptual framework. Research has been conducted for the last couple decades examining differences between mode, online and face-to-face (e.g., Allen et al., 2004). Once again, the results of this study indicate there is no difference in student outcomes between F2F and online courses. Students taking online courses report that they learn and perform as students taking F2F courses. Moreover, students in online courses are just as satisfied as students in F2F courses. This study is one of many studies indicating that online learning is just as good as F2F learning. Mode does not negatively or positively influence student outcomes. Again, there was no significant difference between online courses and F2F courses in examining



learning, performance, and satisfaction. Therefore, the investigation explores other parts of the model presented earlier in the literature review.

One of the primary arguments of this study was to move beyond the study of outcomes between modes and focus more on communication that takes place within courses as well as the instruction and course design that impacts course communication. In comparing F2F and online courses, there is no statistical difference in students' reports of instructional characteristics, including support, course organization and instructional design, and assessment and evaluation. In examining instructional characteristics in course design, mode did not play a factor. Students felt that the instructors in their online and F2F courses both designed and instructed the courses in a similar manner.

Instructional and course design indicating instructional effectiveness in this study is an antecedent variable in the model in order to understand influence upon course communication and student outcomes. Faculty who teach online often have received some sort of faculty development or training assisting them in learning pedagogical practices for teaching effectively in the online mode. Seldom does research or practice show the same requirements for teaching F2F. Many instructors teaching F2F have never learned through a professional development program about pedagogical practices F2F or using technology. Most instructors have learned to teach through their experiences as a student and have modeled their instruction starting in graduate school from that of their graduate school advisor or mentor. Previously, it was rare to see graduate students departing with doctorates having completed training or courses in pedagogy, course design, or instructional design. Many instructors who attend faculty development

programming for blended and online instruction report that this is the first time that they have ever learned about instructional practices (Joosten et al., 2013).

These results may be due to a potential bias in instructor readiness and preparation. Instructors included in the study potentially took part in instructional improvement training. More precisely, the instructors recruited as part of the study were solicited through an email listserv that was created based on instructors attending faculty development and/or professional development programs for pedagogy and technology. Many of those on this email listserv have attended blended and faculty development trainings that help instructors to learn about effective practices in instructional and course design. Therefore, even the instructors teaching F2F courses have had training on pedagogy and course design. Many instructors state that once they participate in these programs, their F2F teaching is never the same. Instructors tend to redesign their F2F courses using some of the practices that they learned in blended and online faculty development programs (Kaleta, Skibba, & Joosten, 2009).

These programs can affect instructional and student outcomes. Joosten et al. (2013) found that courses with instructors who participated in instructional development programs had significantly higher student outcomes in comparison to those courses with instructors that did not participate in the programs. Dziuban, Hartman, and Moskal (2004) discuss that to be successful in initiatives that require technology in instruction there needs to be a theory-based instructional model and high-quality faculty development. Later, Dziuban, Hartman, and Moskal (2007) suggest that redesigning courses for the online and blended formats often demands a rethinking of instructional strategies and a shift in teaching and in instructional behaviors. It is obvious that faculty

development and competence in course redesign plays a key role in instructional effectiveness.

The examination of student reports of course communication between modes led to some interesting results. It is quite clear that there are differences between modes when it comes to course communication and social processes. However, with the advances in technology including Web 2.0 interactivity, greater bandwidth and access to learning materials, and more personalized and mobile devices, this study was exploring a model across modes and was not anticipating that differences in perceptions of course communication between modes would still exist. There were significant differences in perceptions of media richness, social presence, and learning community for F2F courses and online courses.

Researchers have established since the 70s and 80s that there are differences in media characteristics and the richness of mediums that can impact communication (e.g., Short et al., 1976; Daft & Lengel, 1986; Walther, 1996), yet again, the hypotheses of this study were situated in the idea that perceptions of communication and social processes would not be different. The original studies were using technologies that were either asynchronous text based, audio telecommunications, or broadcast video. Also, these technologies were not in the backpacks of students. They were resource intense institutional systems not personal computer systems.

In the past several decades technology has advanced greatly, and technologies are now in the hands and backpacks of students (e.g., laptops, tablets, and mobile devices). The technologies now used in online classes can be far more interactive than the broadcast technologies or lean communication technologies of the 70's and 80's. For

example, now students can participate in asynchronous discussion forums) or synchronous (chat or web meeting applications) interactions with other students or the instructor that can use text, audio, and video to send and receive messages, but also allows student to reference links, images, and videos in their discussions. However, we still see it difficult to manage rich interactions through audio and video in large groups, so the primary interactions in online classes can still mimic recorded broadcast audio and video or text-based interactions of old. There needs to be further exploration into the differences in the perceptions of communication between modes and how these differences affect student outcomes.

Engagement is unique since it was the one social variable that was set apart from the others in the between mode comparison. Engagement is a construct developed from the effective practices in undergraduate education (Chickering and Gamson, 1986) with a focus on decades of research not only time on task (Tyler, Hertel, McCallum, & Ellis, 1979) and quality of effort (Pace, 1980), but more recently a focus is on the social. Since the 1980's, research has started to focus on student involvement (Astin, 1984) and social and academic intergration (Tinto, 1987). Therefore, an amount of the engagement construct focuses on the academic challenge as well as the social, active and collaborative learning and student-instructor interaction.

The instrument used in this study focused heavily on academic challenge and scarcely on the social. This study indicates there was no difference in students' perceptions of engagement between course mode, F2F or online. Although engagement does, in part, measure the social, it may be the portion of the construct that focuses on academic challenge that led to the result of no differences between F2F and online unlike

the significant differences shown in the other social variables. Engagement will be discussed in more detail when the descriptive model is discussed.

The black box model that has been used for years that focuses only on input and outputs clearly indicates that there is no difference between online and F2F courses. Also, there was no difference in engagement between the two modes. The difference lies in the black box, in the social process or throughput. Students in online courses view course communication as significantly less than that of F2F courses. The finding suggest that future studies explore this difference in F2F and online courses with regard to process.

### **Instructional characteristics and social processes**

The first part of the descriptive model explored in this study was the relationship between antecedent variables or input variables of instructional characteristics and social variables. The results indicate that social variables can be predicted based on the instructional characteristics of course design. It is clear that assessment and evaluation in instructional characteristics of course design may be greatly overlooked as having significant impact on predicting course communication, specifically media richness, social presence, and learning community. Additionally, engagement was not predicted by assessment and evaluation in course design, but by the other two components of organization and instructional design of the course as well as support. All of the course design components or instructional characteristics have shown to significantly predict social variables.

The conceptual differences between the three areas of instructional effectiveness and course design examined, theoretically, the findings are logical. Assessment and

evaluation, which impacted several communication and social variables (media richness, social presence, learning community, and active learning behaviors), contains items that primarily capture students' perspectives regarding interaction with the instructors.

Specifically, the items address instructor feedback, instructor's ability to communicate and manage expectations about performance, and learner-centered assessment techniques.

Media richness focuses on students' perceptions of their ability to receive and send rich communication, social presence on the ability to development impressions of others and receive feedback, learning community on the ability to develop relationships and work with other students, and active learning behaviors on learner-centered activities.

Therefore, the relationships seen in the ability of the instructional characteristics of assessment and evaluation to influence these communication and social variables are appropriate.

The other two instructional characteristics that only influenced engagement, included instructional support and instructional design and organization. As mentioned earlier in the discussion, engagement in this study focuses largely on academic challenge and little on the social construct. Therefore, the lack of relationship between assessment and evaluation, which specifically measures instructor's efforts to communicate with students and/or create student-student communication opportunities in relation to engagement is reasonable. Also, instructional support measures a student's perception of their support materials and channels in completing the requirements of the course. Instructional design and organization measured whether the course was organized in a manner that was comprehensive, and there was clear design of activities and materials in the course that aligned with the appropriate learning objective and technology. Neither of

these constructs measures students' perceptions of communication or interactivity in the course, necessarily. Clearly, the relationship found between these two instructional characteristics and only engagement is warranted.

Instructional characteristics are important in predicting process variables in F2F and online courses. Institutions are investing resources into preparing instructors to better teach using technology, including blended and online modes. Many times instructors and programs focus on content, the creation of digital content, giving much attention to the student interaction with content, yet little attention is devoted to strategic planning student-student or instructor-student interactions. Instructors focus on learning the technology and digitizing their content, yet this study indicates that attention should be given primarily to the feedback that students receive on their work from their instructor and other students, the management of student expectations in the performance expected of them, and the incorporation of learner-centered assessment. Also, consideration is deserved in all areas, including course design in supporting students and course organization and instructional design, since this study indicates academic challenge is greatly influenced by these course design characteristics. In particular, the question may lie in how students' perceptions of communication can be enhanced through redesign choices made by instructors.

### **Social influence on student outcomes**

The final portion of this study examined the ability of social variables, process, or throughput variables to predict output or student outcomes. In examining the impact of the throughput variables on student outcomes, results indicated that these variables predict learning, performance, and satisfaction. Media richness and engagement

significantly added to the model of each of the three student outcomes of learning effectiveness, perceptions of learning, perceptions of performance, and satisfaction. Social presence was included in the model for learning and satisfaction, but not performance. Learning communities only significantly contribute to the model for student perceptions of learning. Active learning behaviors did not add significantly to any of the models for student outcomes.

Learning was influenced by the communication variables and engagement, a measure of academic challenge as discussed. This study measured learning through self-reports from students. The items were specific to understanding concepts and materials as well as overall perceptions of learning. Therefore, it is reasonable that variables measuring communication and collaboration greatly impacted by feedback and learner-centered design would influence learning. Also, academic challenge influencing learning is acceptable. Performance, however, was not influenced by engagement and several social variables, and satisfaction was influenced by all of the variables predicting learning, except learning community, which brings us to some interesting questions and areas of future research.

Performance is a measure of how well one does or performs in a class, which more or less is indicated by her/his grade on assessments or the overall grade in the course. In this study, students reported their ability to score higher or get a better grade as a measure of performance. It could be concluded that students do not need to have an impression of or a relationship with their instructors or other students in order to do well in the class. They do need to be able to communicate in rich ways, which is warranted. However, engagement in relationship to performance is very interesting and more



complex to address. As most educators would look to enhance engagement and ensure that the course is rigorous and academically challenging, students may feel that this decreases their chances to perform well or get a good grade. Therefore, although engagement may influence learning, in this study it does not influence performance, which brings to question grades as a measure of learning beyond performance. Although students are reporting that several of the social variables and engagement influences their learning, they did not feel the same about the influence on their grades or scores in the course.

Satisfaction was quite similar to both the findings of learning and performance with the primary difference being social presence and learning community. Unlike performance, students who were satisfied were those who developed impressions and a sense of realness of their instructor and other students. They understood the identities of others in the class. These impressions are often revealed through interactions, including ice-breakers and class discussions. Some have hypothesized for decades it is more difficult to do via CMC because of the lack of cues available (Short et al., 1976). The between mode differences indicated this is still the case, yet social presence is important as we see it enhances the model to influence satisfaction and learning although students do not feel that it impacts their grades in the course. The other difference were in the construct of learning community, which is about connecting, communication, and building relationships. It is surprising that learning community did not influence satisfaction ( $p=.057$ ) since theoretically it can be hypothesized that those who are more connected to others in a course are more satisfied with the course, but potentially with

additional data or examination, there could be significance discovered at  $p < .05$  rather than these findings of  $p < 1.0$ .

The most interesting finding in the descriptive model examining the relationships between social and output variables is the lack of significance between student self-reported active learning behaviors and the outcome variables. According to the results, active learning behaviors were not included in any of the models predicting learning, performance, or satisfaction. With the movement towards active learning pedagogies since the 1980's, it is particularly alarming to see no relationships between active learning and student outcomes. There is no defensible reason for this relationships to not be significant theoretically and based on previous research. Therefore, additional research needs to be examined to better understand the instrumentation and methodology used to measure and test active learning and the influence on student outcomes. It would be against an entire track of research to report active learning behaviors do not necessarily impact student outcomes. Further exploration is needed and advanced methodological tactics considered.

The role of social processes inside a classroom are influenced by the course design demonstrated through instructional characteristics and also impact student outcomes. By providing attention to designing courses to support students, paying attention to the organization and instructional design of courses, instructors and institutions can influence engagement in return impacting all student outcomes of learning, performance and satisfaction. Moreover, giving additional care to planning of assessment and evaluation in course design can impact students' perceptions of richness or their perception that they can richly and effectively communicate with others as part of

the course. Much attention in the last couple decades has been given to social presence in distance education and online courses. This study indicates that it is necessary for instructors to think deliberately about developing their own presence and that of their students in order to influence student perceptions of learning and satisfaction, which as shown, can be more difficult in online environments. Students' ability to connect with one another and build networks as captured in the learning community measure contributes to students' perceptions of learning, and indicate that creating activities that develop this sense of community is important to the primary outcome of a course, learning.

### **Practical implications**

Institutions should not hesitate to move forward with programs that are mediated with technology, including blended and online programs. It is clear that mode does not have an impact on student outcomes, learning, performance, and satisfaction. Students in online courses report that they are learning and performing at the same levels as students in F2F courses. Furthermore, students in online courses are just as satisfied as those in F2F courses potentially indicating that they will be staying in these types of courses and programs at the same rate as F2F programs. In short, there would be no negative impact on student retention.

Institutions should invest resources in faculty development for instructors who teach not only online, but F2F. Although additional research is needed, it appears that faculty development could have an impact on instructional characteristics impacting course communication and student outcomes. Many instructors have learned in their graduate programs how to conduct research and write up this research for publication, but

there may be a gap in opportunities provided to incoming faculty in learning effective practices in pedagogy, course design, and instructional design. Furthermore, institutions should look to not only provide these opportunities to faculty and teaching academic staff, they should ensure graduate programs are provided the necessary training for doctorate students to become competent in instruction.

### **Limitations and future research**

One limitation of the study was that it only used student reports of learning, performance, and satisfaction. In future research, it would be important to gather student performance data to illustrate whether or not they were performing at the expected level based on their academic standing. For instance, student grade point averages (GPA) could be collected as well as their actual grades on assessments, such as quizzes and exams, and overall grades. It would be helpful for an exploration into the integration of student data from student information systems (e.g., grades) and student self-reported data through surveys while maintaining student anonymity in the study. There is a long debate on documenting learning beyond perceptions of student learning or through grades. Standard practices of documenting learning could be developed and this data gathered to better understand the relationships between antecedent and social variables to that of learning. Finally, again, satisfaction was self-reported. Future studies should examine course retention and maybe even program retention in better understanding student satisfaction.

It could be hypothesized that there was no difference between the instructional effectiveness of F2F and online courses since all instructors had participated in faculty development. This brings to light the need for faculty development in pedagogy, course

design, and instructional effectiveness for all modes, including F2F. A potential area of further research could be to gather and analyze data on instructors' participation in instructional improvement programs and workshops, the extent of their participation, and the instructors' competency in pedagogy, instructional design, and course design in relationship to their instructional effectiveness.

Another study could more closely examine the link between course design and course communication. An examination of the levels of instructional characteristics and the impact on social variables could be conducted. For instance, do courses that have lower levels of demonstrated instructional characteristics negatively impact course communication? Another area of future study could examine instructor competency or proficiency in course design or previous experience in professional development and the impact on social variables in F2F, blended, and online courses.

As mentioned, an email list was used to recruit instructors of which contained names of instructors that had previously participated in instructional improvement or faculty development. Also, the sample was predominately online courses and did not have an equal distribution of disciplines. Future studies could recruit more broadly beyond the email list to enlist more faculty or instructors who have not attended or participated in institutional programs for instructional improvement, more courses that are instructed solely in the F2F mode, and a great diversity of courses across the four disciplines. Moreover, this study did not gather sufficient data from blended courses to include in this study. However, blended learning continues to increase and be diffused across higher education. It is important to understand this model across all models of learning, including blended courses.

Assessment and evaluation impacted several social variables. There needs to be additional investigations through instructional practice and research to understand the specific pedagogical strategies in the areas of assessment and evaluation that are influencing these social variables (e.g., richness, learning community, and presence). Furthermore, an important question centers on how can instructional strategies in the area of assessment and evaluation be implemented in other areas of the course design for a greater impact. If these instructional characteristics of assessment and evaluation can be manipulated throughout the course design, there is a great potential to improve student outcomes.

Two variables, social presence and media richness, were used in this study yet date back decades as indicators as objective characteristics of media. In this study student reports of media richness and social presence were modeled as social or throughput variables rather than input variables, objective media characteristics. Media richness research has not been conducted in mediated instruction and learning where social presence is greatly researched. Through the decades the concept of social presence has been transformed greatly. Currently, it is used primarily to understand connections made within a class and its impact on student learning specifically in online contexts. Therefore, social presence has progressed into a measure of social process than one referring to the objective characteristics of the technology.

Media richness has not had the same interest as social presence since most studies are focusing on a specific technology and the objective characteristics of that media can be identified and studied. There is little need for reports of richness. Technology richness can be determined based on the media characteristics observed by researchers

and built into the research design. Some of these characteristics include synchronous and asynchronous as well as the type of media (e.g., text, audio, or video) that is transmitted by the technology. Some studies currently exist that have compared different objective characteristics of media and how it impacts process or outcomes (e.g., synchronous versus asynchronous). Frequently, instructors carefully consider the type of media that is appropriate for an activity. For example, there is no need for an instructor to video record or capture digital video of a 50 minute lecture and upload the video online. Instead, they may write part of it in text and only use video to demonstrate a concept. A new focus on examining media objective characteristics needs to be in the appropriateness of the alignment with the learning activity. Media richness theory could greatly influence this line of research, yet very little is being conducted at this time.

The objective characteristics of media were measured by understanding whether individuals could effectively communicate their points. In examining the instrument used in this study and the theoretical underpinnings of media richness theory, future research should reconsider media richness. Media richness in this study focused on the richness or leanness of the communication. For instance, I was able to receive feedback right away or I was able to use rich and varied language illustrate items from the scale. With the array of social and academic technologies available to students these days, understanding the objective characteristics of the media and the impact on student outcomes is less of a concern. Rather, the focus is on whether or not students are communicating richly or have the ability to send and receive messages that are accurate impacting their learning, performance, and satisfaction.

## **Conclusion**

This study makes a unique and substantial contribution to the field of distance education. It confirms that there is little difference in teaching and learning between mode of delivery, but that more attention needs to be focused on understanding the importance of course design and instructional characteristics on social processes in the classroom that in return predict student outcomes. Assessment and evaluation is something that gets little attention in faculty development and in instructor preparation. This study indicates that assessment and evaluation are far more important in creating interactive communication between instructor and students and among students than previously thought. This has serious and practical implications in the attention that instructors pay to assessment and evaluation in designing their courses. Finally, this study identifies instructional and course design practices that predict engagement in the classroom.

Although, many question the move to more interactive learning in the classroom and the need for attention to creating connection with and among students, this study identifies a clear relationship between social variables and their ability to predict learning, performance, and satisfaction. This study also alludes to the challenges in online classes in enhancing course communication with the significant difference between student reports of course communication in F2F and online courses. Instructors need to implement design strategies that focus on enhancing interactivity in their online courses and pay particular attention to assessment and evaluation over content and technology.



*Figure 1.* Influence of Mode on Antecedent Variables.

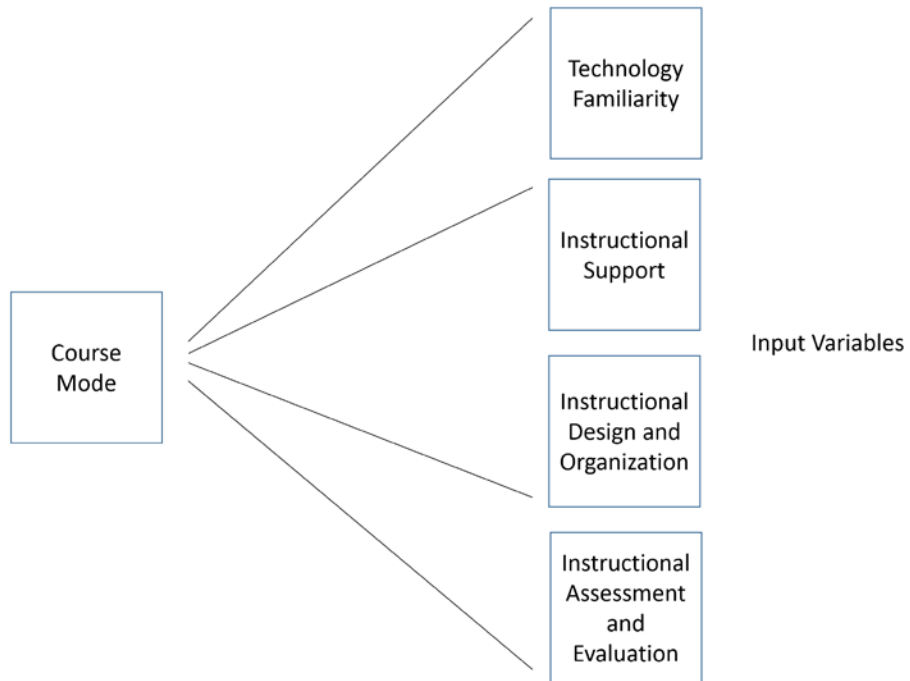


Figure 2. Influence of Mode on Process Variables.

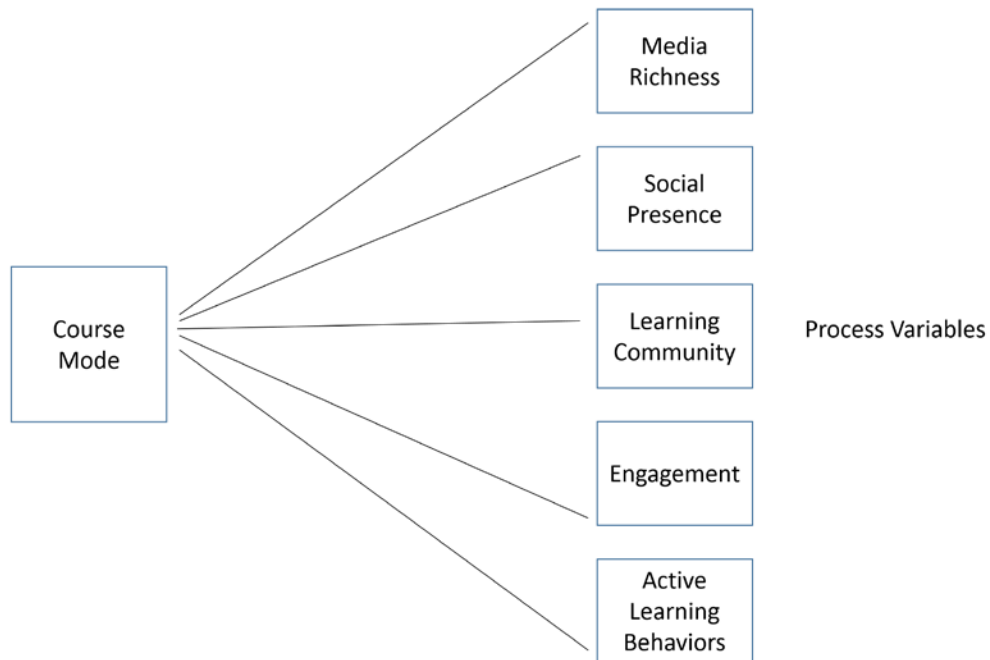


Figure 3. Influence of Mode on Outcome Variables.

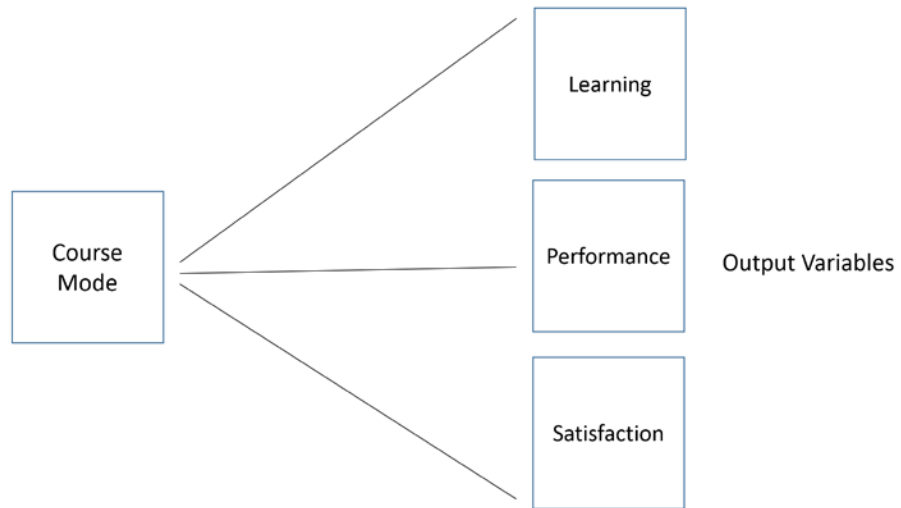


Figure 4. Descriptive Model.

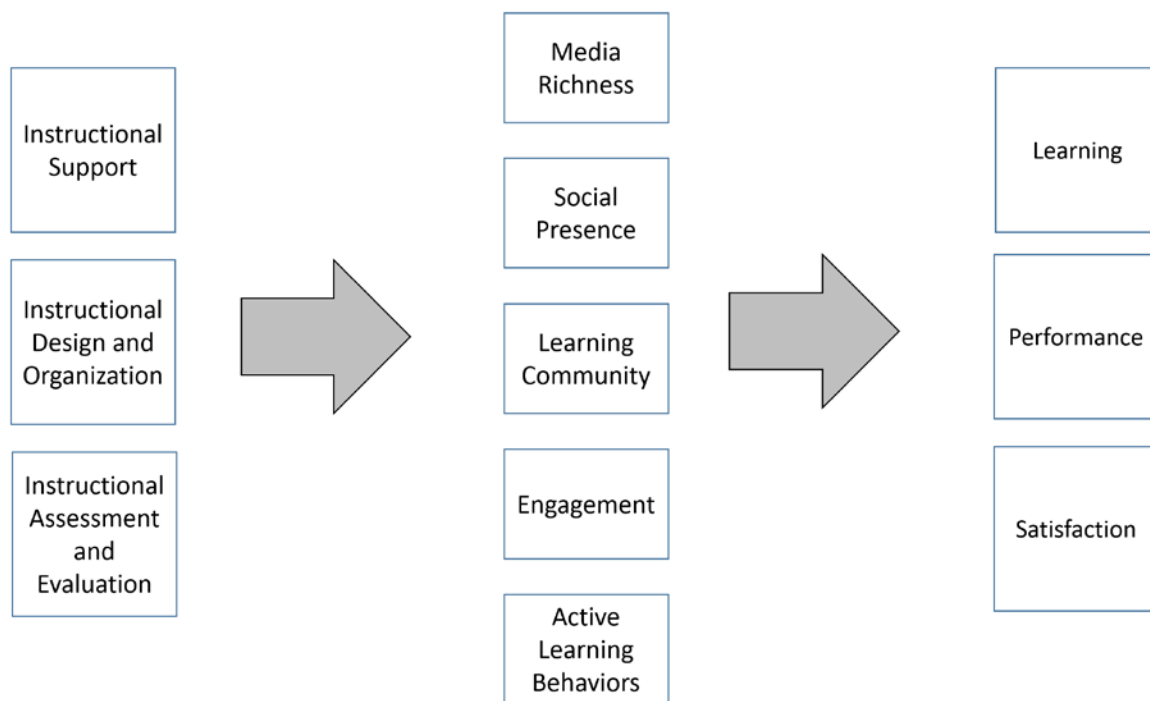


Figure 5. Between Group Differences: Mode and Communication.

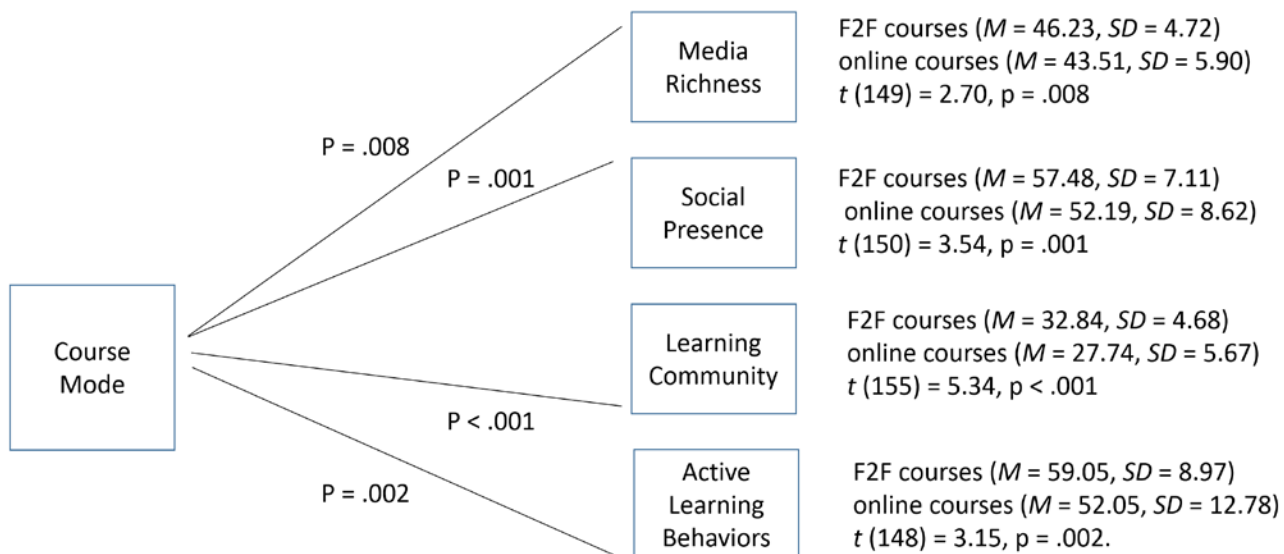


Figure 6. Descriptive Model Findings.

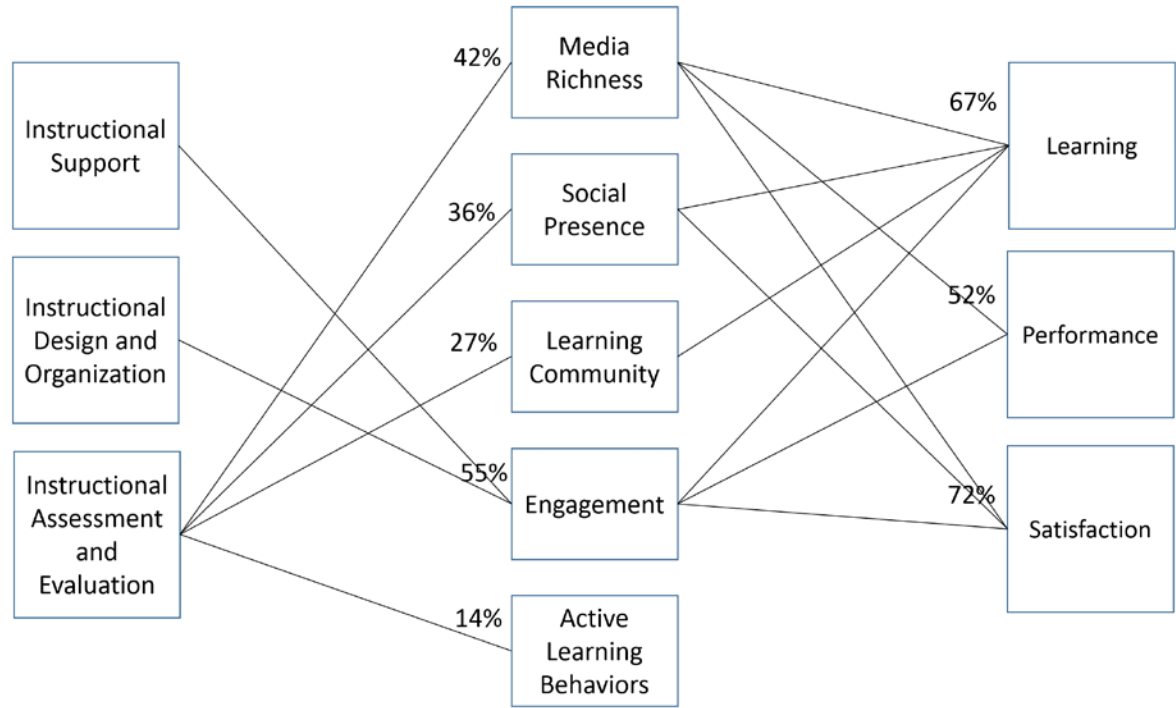


Table 1

*Between Mode Differences*

Variables	F2F Mode		Online Mode		df	t	P
	M	SD	M	SD			
<b>Input</b>							
Technological Familiarity	43.12	6.75	40.97	8.48	150	1.47	.144
Instructional Support	38.43	3.66	36.99	4.81	156	1.80	.074
Instructional Design and Organization	103.98	9.27	101.99	11.88	150	.984	.327
Instructional Assessment and Evaluation	53.55	5.56	50.55	6.39	155	1.820	.713
	M	SD	M	SD	df	t	P
<b>Process</b>							
Media Richness	46.23	4.72	43.51	5.90	149	2.70	.008*
Social Presence	57.48	7.11	52.19	8.62	150	3.54	.001*
Learning Community	32.84	4.68	27.74	5.67	155	5.34	<.001*
Engagement	78.33	8.42	76.43	11.22	146	.35	.346
Active Learning	59.05	8.97	52.05	12.78	148	3.15	.002*
	M	SD	M	SD	df	t	P
<b>Output</b>							
Learning	41.00	5.12	39.05	5.12	155	1.76	.056
Performance	19.62	2.93	18.68	3.39	155	1.64	.392
Satisfaction	32.96	3.90	31.53	4.65	155	1.82	.39

\* significant results at  $p < .05$

Table 2

*Instructional Characteristics Predicting Social Processes*

## Media Richness

	$\beta$	p	adj R <sup>2</sup>	R	Df	F	p
Overall model			.42	.646	3,156	37.14	<.001*
Instructional Support	.16	.202					
Instructional Design and Organization	.14	.247					
Instructional Assessment & Evaluation	.39	<.05*					

## Social Presence

	$\beta$	P	adj R <sup>2</sup>	R	Df	F	p
Overall model			.36	.600	3,156	29.23	<.001*
Instructional Support	.21	.109					
Instructional Design and Organization	.06	.616					
Instructional Assessment & Evaluation	.36	<.05*					

## Learning Community

	$\beta$	P	adj R <sup>2</sup>	R	Df	F	p
Overall model			.27	.578	3,156	19.02	<.001*
Instructional Support	.09	.534					
Instructional Design and Organization	-.07	.581					
Instructional Assessment & Evaluation	.50	<.001*					



Table 2 Continued

Engagement							
	$\beta$	P	adj R <sup>2</sup>	R	Df	F	p
Overall model			.55	.742	3,156	63.54	<.001*
Instructional Support	.22	<.001*					
Instructional Design and Organization	.42	<.05*					
Instructional Assessment & Evaluation	.15	.130					
Active Learning Behaviors							
	$\beta$	P	adj R <sup>2</sup>	R	Df	F	p
Overall model			.14	.373	3,156	8.45	<.001*
Instructional Support	-.13	.388					
Instructional Design and Organization	-.17	.227					
Instructional Assessment & Evaluation	.58	<.001*					

\* significant results at  $p < .05$

Table 3

*Social Processes Predicting Student Outcomes*

## Learning

	$\beta$	p	adj R <sup>2</sup>	R	Df	F	P
Overall model			.67	.817	5,155	62.32	<.001*
Media Richness	.17	<.05*					
Social Presence	.24	<.05*					
Learning Community	-.17	<.05*					
Engagement	.64	<.001*					
Active Learning	-.06	.258					

## Performance

	$\beta$	P	adj R <sup>2</sup>	R	Df	F	P
Overall model			.52	.722	3,155	33.79	<.001*
Media Richness	.24	<.01*					
Social Presence	.03	.978					
Learning Community	-.06	.556					
Engagement	.58	<.001*					
Active Learning	.04	.565					

*Table 3 Continued*

Satisfaction							
	$\beta$	p	adj R <sup>2</sup>	R	Df	F	P
Overall model			.72	.848	3,155	79.27	<.001*
Media Richness	.20	<.01*					
Social Presence	.32	<.001*					
Learning Community	-.14	.057					
Engagement	.56	<.001*					
Active Learning	-.04	.479					

\* significant results at p < .05

Table 4

*Correlation Matrix, All Variables*

		CD_Support	CD_OrgIDD	CD_AsE	Richness	SP
CD_Support	Pearson Correlation	1	.852**	.817**	.613**	.563**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	158	151	155	149	151
CD_OrgIDD	Pearson Correlation	.852**	1	.803**	.610**	.538**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	151	152	151	148	149
CD_AsE	Pearson Correlation	.817**	.803**	1	.654**	.601**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	155	151	157	149	150
Richness	Pearson Correlation	.613**	.610**	.654**	1	.782**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	149	148	149	151	147
SP	Pearson Correlation	.563**	.538**	.601**	.782**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	151	149	150	147	152
EGMNT	Pearson Correlation	.698**	.748**	.672**	.589**	.632**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	147	145	147	142	144
LC	Pearson Correlation	.433**	.401**	.517**	.632**	.802**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	156	152	155	149	151
ALB	Pearson Correlation	.209*	.183*	.366**	.322**	.361**
	Sig. (2-tailed)	.011	.030	.000	.000	.000
	N	147	142	146	141	143
SAT	Pearson Correlation	.783**	.819**	.760**	.700**	.701**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	156	151	154	149	151
LRN	Pearson Correlation	.686**	.709**	.596**	.608**	.625**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	156	152	155	149	151
PERF	Pearson Correlation	.646**	.667**	.647**	.562**	.531**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	155	150	154	150	150

Table 4 Continued

		EGMNT	LC	ALB	SAT	LRN	PERF
CD_Support	Pearson Correlation	.698**	.433**	.209*	.783**	.686**	.646**
	Sig. (2-tailed)	.000	.000	.011	.000	.000	.000
	N	147	156	147	156	156	155
CD_OrgIDD	Pearson Correlation	.748**	.401**	.183*	.819**	.709**	.667**
	Sig. (2-tailed)	.000	.000	.030	.000	.000	.000
	N	145	152	142	151	152	150
CD_AsE	Pearson Correlation	.672**	.517**	.366**	.760**	.596**	.647**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	147	155	146	154	155	154
Richness	Pearson Correlation	.589**	.632**	.322**	.700**	.608**	.562**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	142	149	141	149	149	150
SP	Pearson Correlation	.632**	.802**	.361**	.701**	.625**	.531**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	144	151	143	151	151	150
EGMNT	Pearson Correlation	1	.516**	.352**	.820**	.808**	.733**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	148	147	138	147	147	146
LC	Pearson Correlation	.516**	1	.518**	.494**	.413**	.399**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	147	157	147	155	157	154
ALB	Pearson Correlation	.352**	.518**	1	.267**	.217**	.290**
	Sig. (2-tailed)	.000	.000		.001	.008	.000
	N	138	147	150	146	147	147
SAT	Pearson Correlation	.820**	.494**	.267**	1	.792**	.730**
	Sig. (2-tailed)	.000	.000	.001		.000	.000
	N	147	155	146	157	155	155
LRN	Pearson Correlation	.808**	.413**	.217**	.792**	1	.776**
	Sig. (2-tailed)	.000	.000	.008	.000		.000
	N	147	157	147	155	157	154
PERF	Pearson Correlation	.733**	.399**	.290**	.730**	.776**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	146	154	147	155	154	157

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

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

Table 5

*Correlation Matrix, F2F Courses*

		CD_Support	CD_OrgIDD	CD_AsE	Richness	SP
CD_Support	Pearson Correlation	1	.750**	.747**	.522**	.455**
	Sig. (2-tailed)		.000	.000	.000	.003
	N	44	42	43	42	41
CD_OrgIDD	Pearson Correlation	.750**	1	.769**	.565**	.497**
	Sig. (2-tailed)	.000		.000	.000	.001
	N	42	43	43	43	42
CD_AsE	Pearson Correlation	.747**	.769**	1	.488**	.426**
	Sig. (2-tailed)	.000	.000		.001	.005
	N	43	43	44	43	42
Richness	Pearson Correlation	.522**	.565**	.488**	1	.772**
	Sig. (2-tailed)	.000	.000	.001		.000
	N	42	43	43	43	42
SP	Pearson Correlation	.455**	.497**	.426**	.772**	1
	Sig. (2-tailed)	.003	.001	.005	.000	
	N	41	42	42	42	42
EGMNT	Pearson Correlation	.419**	.620**	.454**	.273	.411*
	Sig. (2-tailed)	.009	.000	.004	.093	.010
	N	38	39	39	39	38
LC	Pearson Correlation	.544**	.740**	.668**	.642**	.765**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	44	43	44	43	42
ALB	Pearson Correlation	.158	.206	.304	.116	.098
	Sig. (2-tailed)	.345	.221	.064	.492	.565
	N	38	37	38	37	37
SAT	Pearson Correlation	.631**	.730**	.630**	.674**	.727**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	44	43	44	43	42
LRN	Pearson Correlation	.410**	.561**	.289	.446**	.577**
	Sig. (2-tailed)	.006	.000	.057	.003	.000
	N	44	43	44	43	42
PERF	Pearson Correlation	.463**	.530**	.554**	.304*	.367*
	Sig. (2-tailed)	.002	.000	.000	.047	.017
	N	44	43	44	43	42

Table 5 Continued

		EGMNT	LC	ALB	SAT	LRN	PERF
CD_Support	Pearson Correlation	.419**	.544**	.158	.631**	.410**	.463**
	Sig. (2-tailed)	.009	.000	.345	.000	.006	.002
	N	38	44	38	44	44	44
CD_OrgIDD	Pearson Correlation	.620**	.740**	.206	.730**	.561**	.530**
	Sig. (2-tailed)	.000	.000	.221	.000	.000	.000
	N	39	43	37	43	43	43
CD_AsE	Pearson Correlation	.454**	.668**	.304	.630**	.289	.554**
	Sig. (2-tailed)	.004	.000	.064	.000	.057	.000
	N	39	44	38	44	44	44
Richness	Pearson Correlation	.273	.642**	.116	.674**	.446**	.304*
	Sig. (2-tailed)	.093	.000	.492	.000	.003	.047
	N	39	43	37	43	43	43
SP	Pearson Correlation	.411*	.765**	.098	.727**	.577**	.367*
	Sig. (2-tailed)	.010	.000	.565	.000	.000	.017
	N	38	42	37	42	42	42
EGMNT	Pearson Correlation	1	.661**	.326	.537**	.590**	.551**
	Sig. (2-tailed)		.000	.060	.000	.000	.000
	N	39	39	34	39	39	39
LC	Pearson Correlation	.661**	1	.219	.684**	.529**	.469**
	Sig. (2-tailed)	.000		.181	.000	.000	.001
	N	39	45	39	45	45	45
ALB	Pearson Correlation	.326	.219	1	.082	.107	.303
	Sig. (2-tailed)	.060	.181		.619	.517	.061
	N	34	39	39	39	39	39
SAT	Pearson Correlation	.537**	.684**	.082	1	.639**	.587**
	Sig. (2-tailed)	.000	.000	.619		.000	.000
	N	39	45	39	45	45	45
LRN	Pearson Correlation	.590**	.529**	.107	.639**	1	.575**
	Sig. (2-tailed)	.000	.000	.517	.000		.000
	N	39	45	39	45	45	45
PERF	Pearson Correlation	.551**	.469**	.303	.587**	.575**	1
	Sig. (2-tailed)	.000	.001	.061	.000	.000	
	N	39	45	39	45	45	45

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

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

Table 6

*Correlation Matrix, Online Courses*

		CD_Support	CD_OrgIDD	CD_AsE	Richness	SP
CD_Support	Pearson Correlation	1	.874**	.831**	.621**	.576**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	114	109	112	107	110
CD_OrgIDD	Pearson Correlation	.874**	1	.810**	.620**	.550**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	109	109	108	105	107
CD_AsE	Pearson Correlation	.831**	.810**	1	.690**	.640**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	112	108	113	106	108
Richness	Pearson Correlation	.621**	.620**	.690**	1	.772**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	107	105	106	108	105
SP	Pearson Correlation	.576**	.550**	.640**	.772**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	110	107	108	105	110
EGMNT	Pearson Correlation	.752**	.773**	.718**	.656**	.680**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	109	106	108	103	106
LC	Pearson Correlation	.387**	.321**	.462**	.604**	.790**
	Sig. (2-tailed)	.000	.001	.000	.000	.000
	N	112	109	111	106	109
ALB	Pearson Correlation	.190*	.159	.351**	.319**	.355**
	Sig. (2-tailed)	.048	.106	.000	.001	.000
	N	109	105	108	104	106
SAT	Pearson Correlation	.814**	.842**	.791**	.698**	.691**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	112	108	110	106	109
LRN	Pearson Correlation	.741**	.741**	.666**	.638**	.630**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	112	109	111	106	109
PERF	Pearson Correlation	.686**	.700**	.665**	.623**	.567**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	111	107	110	107	108



Table 6 Continued

		EGMNT	LC	ALB	SAT	LRN	PERF
CD_Support	Pearson Correlation	.752**	.387**	.190*	.814**	.741**	.686**
	Sig. (2-tailed)	.000	.000	.048	.000	.000	.000
	N	109	112	109	112	112	111
CD_OrgIDD	Pearson Correlation	.773**	.321**	.159	.842**	.741**	.700**
	Sig. (2-tailed)	.000	.001	.106	.000	.000	.000
	N	106	109	105	108	109	107
CD_AsE	Pearson Correlation	.718**	.462**	.351**	.791**	.666**	.665**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	108	111	108	110	111	110
Richness	Pearson Correlation	.656**	.604**	.319**	.698**	.638**	.623**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000
	N	103	106	104	106	106	107
SP	Pearson Correlation	.680**	.790**	.355**	.691**	.630**	.567**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	106	109	106	109	109	108
EGMNT	Pearson Correlation	1	.502**	.345**	.878**	.850**	.774**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	109	108	104	108	108	107
LC	Pearson Correlation	.502**	1	.523**	.428**	.360**	.360**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	108	112	108	110	112	109
ALB	Pearson Correlation	.345**	.523**	1	.278**	.212*	.260**
	Sig. (2-tailed)	.000	.000		.004	.028	.007
	N	104	108	111	107	108	108
SAT	Pearson Correlation	.878**	.428**	.278**	1	.827**	.765**
	Sig. (2-tailed)	.000	.000	.004		.000	.000
	N	108	110	107	112	110	110
LRN	Pearson Correlation	.850**	.360**	.212*	.827**	1	.826**
	Sig. (2-tailed)	.000	.000	.028	.000		.000
	N	108	112	108	110	112	109
PERF	Pearson Correlation	.774**	.360**	.260**	.765**	.826**	1
	Sig. (2-tailed)	.000	.000	.007	.000	.000	
	N	107	109	108	110	109	112

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

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

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## Appendix A: Survey and communications

### *Instructor recruitment e-mail communication*

Hello, all!

Thank you for agreeing to have your course and your students contribute to the study on F2F, blended, and online classes. Below is a link to the survey to share with your students including required consent. Please consider offering an incentive (e.g., extra credit) for the students who complete the survey. Below is a brief description of the survey in case you want to include it in an email/on D2L to your students:

**Study Description:** The purpose of this research study is to conduct a study of the differences and similarities between F2F, online, and blended courses at UW-Milwaukee. Students enrolled in a course at UWM are eligible for this study. If you agree to participate, you will be asked to complete a survey that will take approximately 15 minutes to complete. The questions will ask you about your experiences in your course.

Finally, upon request, I can send out a list of your students who have completed the survey to give those students extra credit OR you can set up an extra credit quiz in D2L, which would 1.) give provide access for students to the survey and 2.) automatically put the bonus point(s) in the gradebook for students taking the survey.

The instructions concerning how to make an extra credit quiz are below:

1. Create a new quiz.
  2. Create one multiple-choice question.
  3. That question can be something like "What web page were you directed to when you completed the survey?"
  4. Give a few different answers (qualtrics, d2l, google, etc.). The answer for the above question would be "UWM".
  5. Restrict the quiz in regards to due date (by when do you want the students to take the survey - the sooner the better).
  6. Hit [Save].
- Be sure to create a grade item for the extra credit quiz and link the quiz to that grade item. To create such an item in the gradebook follow the directions at the bottom of this blog post: <http://uwmltc.org/?p=4797>

Here is the link to the survey: <http://XXX>

Please let me know if you have any further questions.

Recruitment email for students delivered via D2L and/or email:

I am Tanya Joosten at the University of Wisconsin-Milwaukee. I am conducting a study of teaching and learning in F2F, blended, and online classes. I would appreciate your

participation in this study, as it will assist us in making recommendations for effective practices in the classroom.

If you agree to be in this study, you will be asked to fill out an online survey about your experience with your F2F, blended, or online course that will take 15 minutes to complete. There are no known risks associated with your being in the study. Possible benefits are that you will have a voice in helping shape the information faculty receive when preparing to teach courses.

The survey you fill out will be treated confidentially. Data from this study may be published in professional journals. Only grouped data will be presented or published. As an online participant in this research, there is always the risk of intrusion by outside agents, i.e., hacking, and therefore the possibility of being identified.

By completing the survey at the attached link, you are stating that you are at least of 18 years of age and understand that any information about you will be treated in a confidential manner and that the data collected and the results obtained will be used for research purposes only. Your personal information will never be used to report any results of the projects. You understand that the records and data files related to this research project will be maintained in the UWM Research Center for Distance Education and Technological Advancement for a period no longer than ten years and that only personnel directly associated with this project will have access to them.

You understand that you may refuse to participate in this study or withdraw at any time without penalty. You understand that you may be withdrawn from this study by the investigators if you do not meet the screening criteria. You understand that, should you withdraw or be withdrawn from the study, any information that you have provided will be destroyed.

Identifying information, such as your email address which includes your ePanther ID will be collected. This information is gathered and provided separately from your responses to your instructor for the awarding of extra credit.

Extra credit is not guaranteed and you should contact their instructor for more information.

Your decision to participate will not impact your grade in the course, your relationship with instructor or your class standing. Your responses will not be shared with their instructor.

Once the study is completed, we would be glad to give the results to you. In the meantime, if you have any questions, please contact me:

Tanya Joosten  
Academic Affairs  
University of Wisconsin-Milwaukee

tjoosten@uwm.edu  
414.229.2490

### ***Informed consent***

University of Wisconsin – Milwaukee  
Consent to Participate in Online Survey Research

Study Title: Online, blended, and F2F teaching and learning

Person Responsible for Research: Tanya Joosten (PI), Academic Affairs

Study Description: The purpose of this research study is to evaluate teaching and learning practices in F2F, blended, and online classes. Approximately 500 subjects will participate in this study. If you agree to participate, you will be asked to complete an online survey that will take approximately 15 minutes to complete. The questions will ask you about your experiences in your class.

Risks / Benefits: Risks to participants are considered minimal. Collection of data and survey responses using the Internet involves the same risks that a person would encounter in everyday use of the Internet, such as breach of confidentiality. While the researchers have taken every reasonable step to protect your confidentiality, there is always the possibility of interception or hacking of the data by third parties that is not under the control of the research team.

There will be no costs for participating. There are no benefits to you other than to further research on teaching and learning.

Data will be retained on the Qualtrics website server for two years and will be deleted after this time. However, data may exist on backups or server logs beyond the timeframe of this research project. Data transferred from the survey site will be saved in an encrypted format for two years. Only the PI and study staff will have access to the data collected by this study. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records. The research team will remove your identifying information prior to analyzing the data and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses.

Identifying information, such as your email address which includes your ePanther ID will be collected. This information is gathered and provided separately from your responses to your instructor for the awarding of extra credit.

Extra credit is not guaranteed and you should contact their instructor for more information.

**Voluntary Participation:** Your participation in this study is voluntary. You may choose to not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin Milwaukee.

Your decision to participate will not impact your grade in the course, your relationship with instructor or your class standing. Your responses will not be shared with their instructor.

**Who do I contact for questions about the study:** For more information about the study or study procedures, contact Tanya Joosten at [tjoosten@uwm.edu](mailto:tjoosten@uwm.edu)

**Who do I contact for questions about my rights or complaints towards my treatment as a research subject?** Contact the UWM IRB at 414-229-3173 or [irbinfo@uwm.edu](mailto:irbinfo@uwm.edu)

**Research Subject's Consent to Participate in Research:**

By entering this survey, you are indicating that you have read the consent form, you are age 18 or older and that you voluntarily agree to participate in this research study.

Thank you!

### ***Survey***

#### **Demographics**

What year are you?

Freshman

Sophomore

Junior

Senior

Graduate Student

Other

Which restroom do you choose?

Women

Men

Which department is this course?

What is your instructor's name?

What course level is this course?

100

200

300

400

500  
600+

What final grade do you expect to receive in this class?

A  
A-/B+  
B  
B-/C+  
C  
C-/D+  
D  
D-/F+  
F

What is your student enrollment status?

Less than part time  
Part time  
Full time  
Overload

What is your employment status?

Part time  
Full time  
Other

What is your race? Select all that apply.

African American  
Latino  
Asian  
European American/Caucasian  
Other: Please identify

Do you have a disability or require special accommodations in class?

Yes  
No

Have you been diagnosed by a professional as having a mental health concern or mental health disorder?

Yes  
No

Current Academic Performance

How would you classify your performance in this course (i.e., grades)?

What is your Current Overall GPA?

What is your GPA in your major?

What was your GPA least semester?

Technology Familiarity

When you use a computer/laptop, tablet, or phone with Internet access, how often do you:

*5-point scale from very often to never*

Send or receive email (1)

Chat using instant messenger (iMessage, Google Hangouts+, AIM) (2)

Play games (3)

View videos or pictures (4)

Access D2L (Desire2Learn) (5)

Use Social Media (Instagram, SnapChat, Facebook, Twitter) (6)

Use Video Conferencing (Skype, FaceTime, Blackboard Collaborate) (7)

Read or watch the news (8)

Read eBooks (Kindle, iPad) (9)

Take pictures (10)

Take videos (11)

Access Desire2Learn (12)

Media Richness

*Likert 5-point scale from strongly disagree to strongly agree*

I was able to receive feedback from others right away.

I was able to transmit a variety of different cues beyond the explicit message (e.g., nonverbal cues, environmental cues).

I was able to tailor messages to my own personal circumstances.

I was able to use rich and varied language.

I was able to convey multiple types of information (verbal and nonverbal).

I was able to transmit varied symbols (e.g., words, gestures, images).

I was able to design messages to meet my own requirements.

It was difficult to get my point across when communicating.

I could only to communicate basic messages.

I couldn't understand what other people were trying to communicate to me.

I was unable to communicate nonverbally.

Social Presence (immediacy and intimacy)

*Likert 5-point scale from strongly disagree to strongly agree*

I felt as if I was communicating with a real person.

I felt as if I was communicating with another human being.

I was able to be expressive.

I was able to develop a closeness with others.

I had immediate responses to my comments and questions.

I was comfortable interacting with other participants.

I was able to form distinct individual impressions of others.

I was unable to express myself.

It was difficult to receive feedback from others.

I did not feel connected to others.

I was not able to develop a closeness with others

I didn't receive responses to my comments or questions right away.



I was not comfortable interacting.  
 I was not able to form impressions of others.  
 I didn't feel like I was communicating with a real person.

### Engagement

*Likert 5-point scale from strongly disagree to strongly agree*

The learning activities were academically challenging.  
 The learning activities required me to think critically.  
 I was engaged in the learning experiences.  
 I was captivated.  
 I felt wrapped up in the experience.  
 I was absorbed in the experience.  
 I was attracted to the learning activities.  
 The class was an enriching experience.  
 The learning experiences were active and collaborative.  
 Class was fun and exciting.  
 I was willing to put in the effort needed to complete the learning activities.  
 The class kept me totally absorbed in the activity.  
 The class held my attention.  
 The class excited my curiosity.  
 The class aroused my imagination.  
 The class activities were not challenging.  
 The class activities required little thought.  
 The class was boring.  
 I was not engaged in the learning activities.  
 The activities were not active.  
 The class was a waste of time.

### Learning Community

*Likert 5-point scale from strongly disagree to strongly agree*

I created social networks.  
 I developed personal relationships with my classmates.  
 I developed personal relationship with my instructor.  
 I was able to communicate sufficiently with others.  
 The learning activities encouraged contact between myself and my classmates.  
 My classmates and I cooperated in completing assignments.  
 I did not develop relationships with my classmates.  
 There was little opportunity for me to communicate with my classmates.  
 There was little cooperation in completing assignments with my classmates.

### Satisfaction

*Likert 5-point scale from strongly disagree to strongly agree*

I would recommend that the instructor continue teaching this course.  
 I liked the course.  
 I would not recommend this course to a friend.  
 Participating was a useful experience.

Technical support was available when I needed it.  
I needed better technical support.

### Learning

*Likert 5-point scale from strongly disagree to strongly agree*

The class allowed me to better understand concepts.  
The class did not help me to understand concepts better.  
The class helped me understand the course material.  
The class made it easy to connect ideas together.  
The class helped me think more deeply about course material.  
The class did not help my learning.  
The class did not make it easier for me to understand the course material.  
I was not able to better understand course concepts.  
The class was beneficial to my learning.  
The class had little impact on my learning.

### Performance

*Likert 5-point scale from strongly disagree to strongly agree*

The class activities helped me get a better grade.  
My experience helped me do better on my exams and other assignments.  
The class activities did not help me score higher on the exams.  
I got higher scores on my assignments because of my experience.  
The class activities did not improve my assignment grades.

### Instructional Characteristics

*Likert 5-point scale from strongly disagree to strongly agree*

#### Support

I had adequate support in completing my activities.  
I received support materials prior to starting the class activities.  
I had information for whom to contact if I needed support.  
The syllabus was easily located and included course objectives and completion requirements.  
Expectations of students' participation were included in the syllabus or in D2L.  
A clear timeline or schedule for face-to-face and online activities was shared.  
I received information on the availability of and turnaround time for contact with instructor.  
The introductory explanations on the class were clear.

#### Organization

The course was well-organized.  
Course content is "chunked" for more manageable learning  
Course content is organized in a logical format  
Topics are clearly identified and subtopics are related to topics  
I understood all components of the activities.  
The instructions for the class were clear.

Course schedule is available in a printer-friendly format for student convenience  
 I understood the layout of course.  
 Language of written material is friendly and supportive.  
 The goals of the course were clearly defined.  
 The goals of the activities were clearly defined.  
 The method of grading my performance was clear.  
 I understood what was expected of me.  
 Sentences and paragraphs were brief and easy to understand.

#### Instructional design and delivery

I had the opportunity to introduce myself to others.  
 I completed an “Ice-breaker” activity or other orientation session to get acquainted  
 I was prompted by my instructor to expand on relevant points  
 Each reading assignment and each activity matches a learning objective  
 Activities have an assessment piece that links to a learning objective  
 Tasks and activities are designated as synchronous or asynchronous  
 Summary provided frequently, particularly at the end of topics, to reinforce learning expectations for that module

#### Assessment and evaluation

The instructor shared the criteria used to assess participation discussions  
 I was not assessed solely on tests/quizzes  
 I was provided ample opportunity to demonstrate proficiency in different ways  
 I received rich and rapid feedback  
 I received frequent and substantial feedback from the instructor  
 The instructor provided samples of assignments illustrate instructor’s expectations  
 I received detailed instructions and tips for completing assignments  
 The instructor provided due dates for all assignments  
 Rubrics for all assignments identify assessment guidelines were provided  
 A grading scale was shared by the instructor  
 Peer review opportunities were available  
 I had an opportunity to apply rubric to my own work  
 My input on the class was sought by the instructor

#### Active Learning Behaviors

How frequently did you (5 point scale from very frequent not at all)...

- Generate questions from readings or lecture.
- Reflect on readings or online materials (e.g., videos).
- Ask the instructor questions.
- Share information from completed readings or assignments.
- Discuss ideas from the readings with other students in class.
- Help explain course ideas or concepts to other students.
- Conduct web or Internet research in class.
- Work with other students on projects in class.
- Ask a classmate a question.
- Interact in pairs or threes.

- Interact in small groups.
- Take pictures of class work or projects.
- Make a class presentation.
- Discussion something without a single correct answer
- Complete case studies
- Critique classmates' assignments
- Use a variety of digital media, e.g., video, audio, images
- Play games or interactive activities
- Complete simulations

How frequently did your instructor,

- Require students to solve a real-world problem.
- Require students to analyze scenarios or case studies.
- Require students to complete a simulation or role-play.
- Require students to use special software or applications relevant to the course.

## Vita

Tanya Joosten

### SUMMARY OF QUALIFICATIONS

I bring over 17 years of experience working in education, including over 15 years of experience in instruction and 14 years of experience teaching online courses. I have 9 years of experience in leading faculty development programming, 8 years of experience in developing blended and online programs in collaboration with unit heads, 6 years of experience in administration, including instructional services. Efforts have resulted in over 40 blended and online degree programs, a national ranking for undergraduate and graduate programs by U.S. News World and Report, a 97% satisfaction rate among instructors for instructional services, and receive of the Sloan-C Fellow award in 2013 for “creativity in for exceptionally creative work in advancing blended and online learning in the K-12 and higher education environments.”

### POSITIONS HELD

University of Wisconsin-Milwaukee (UWM), Milwaukee, WI  
 Co-Director, National Research Center for Distance Education and Technological Advancements (DETA), since 2014  
 Director, eLearning Research and Development, Academic Affairs, since 2014  
 Lecturer, Department of Communication, since 2006

#### Previous positions

Director (Interim), Learning Technology Center, Academic Affairs, 2012-2014  
 Associate Director (Interim), Learning Technology Center, Academic Affairs, 2009-2011  
 Teaching Academic Staff (TAS) indefinite status granted, tenure equivalent, 2010  
 Consultant (TAS), Learning Technology Center, Academic Affairs, 2005-2009  
 Associate Lecturer, Department of Communication 2004-2006

#### Current Advisory Positions

Eduventures, Senior Advisor, Online Education, since 2012  
 Amplify, Senior Advisor, Online Education, since 2013  
 Ginkgotree, Advisory Board Member, since 2014

Measurement Research Associates, Chicago, IL  
 Research Associate, 2003-2005  
 Computer-based Testing Manager, 2003-2004

Arizona State University, Tempe, AZ  
 Graduate Teaching Associate, 2000-2002

University of Wisconsin-Milwaukee, Milwaukee WI

Graduate Project Assistant, 1999-2000

New Horizons Un-Limited, Milwaukee, WI

Research Associate and Online Community Developer, 1997-2000

## EXPERIENCES

### Management and leadership

Provided vision to the campus and system-wide committees to investigate and deploy emerging technologies, instructional practices, and innovative programs based on national trends, campus goals, faculty and student needs, and resources on the direction of learning technologies, mediated communication, and social technologies.

Exceeded institution's national and international reputation for an emphasis on needs-based implementation of technology enhance learning through research efforts, intended to provide vision to the campus on the direction of learning technologies and facilitate innovative teaching and learning methods with the UWM teaching community, and disseminate this research at national and international conferences and in publications.

Enhance future development of online across the institution, including the degree array, use of new technologies in online degree programs, and external funding opportunities for curricular development.

Ensured quality of blended and online programs through leading the ongoing development and offering of the faculty development program for online and blended teaching, the certificate in online and blended learning, the innovative use of technology award, evaluation planning for online and blended, the online program council, and the online and blended teaching users group.

Provided strategic planning and oversight of the day to day functions of the staff in their mission to provide reliable administration of learning technologies, including tools such as the learning management system, student response systems, ePortfolios, digital media, eTexts, social media, and virtual worlds, and provide timely consultation to faculty and instructors seeking to use these technologies in pedagogically effective ways to improve student outcomes.

Delivered guidance to the staff, teachers, and researchers with advanced degrees in their respective disciplines and with many years of experience teaching and supporting technology-enhanced, blended, and online courses, in their efforts to support to instructors in their use of an array of learning technologies, in their managing of their technology projects, and in their research efforts to evaluate emerging technologies.

Led and conducted research with viable agendas for external funding and provide oversight of research staff. Lead design of research studies studying applied problems,

including the integration of quantitative and qualitative methods, instrumentation development and administration, data collection and mining, data analysis, and reporting.

Engaged in data and learning analytics, web data, data visualization, big data methodology, social network analysis, and other evolving methodologies in applied and theoretical applications fostering transdisciplinary research collaborations across units and institutions to establish a competitively-funded program and propel data-driven decision making.

Secured funding, including grants, and built vendor partnerships to explore innovation in teaching and research, including emerging practices and technologies, allowing UWM to be responsive to future trends.

### Teaching

University of Wisconsin-Milwaukee, Department of Communication, Milwaukee, WI  
Lecturer, 2006-present

Associate Lecturer, 2004-2006

Taught Organizational Communication (online in 1/04) and Human Communication and Technology (online 1/05).

Carroll University, Department of Communication and Sociology, Milwaukee, WI  
Adjunct Faculty, 2005-2008

Taught Organizational Communication (blended) and Communication Technology (blended).

Arizona State University, Hugh Downs School of Human Communication, Tempe, AZ  
Graduate Teaching Associate, 2000-2002

Taught Human Communication, Public Speaking, Conflict and Negotiation, Organizational Change, Technological Implementation, Communication Technology in Everyday Life (first online course, 8/01), and Organizational Communication.

Paradise Valley Community College, Paradise Valley, AZ

Adjunct Faculty, 2001-2002

Taught Human Communication

University of Wisconsin-Milwaukee, Department of Communication, Milwaukee WI  
Graduate Project Assistant, 1998-2000

Assisted in designing online course sites and materials for Business and Professional Communication and Interpersonal Communication, and participated in Faculty/TA grant project on technology-enhanced learning using a CMS and in campus-wide CMS evaluation.

## Innovation projects

Led several innovation projects including planning, implementation, evaluation, dissemination, and diffusion. Many projects were grant or private funded. Most projects resulted in presentation and/or publication.

- Steelcase Innovation Hub Active Learning Classroom grant, University of Wisconsin-Milwaukee, 2014 (PI)
- Ginkgotree, eText, OER, and Open Textbook Publishing pilot, University of Wisconsin-Milwaukee, 2013-2014 (PI)
- Internet2/EDUCAUSE eText pilot, University of Wisconsin-Milwaukee, 2012 (PI)
- UWM Mobile Learning Curricular Redesign grant, University of Wisconsin-Milwaukee, 2011-2012 (co-PI)
- UW System Virtual Worlds Curricular Redesign grant, University of Wisconsin-Milwaukee, 2011-2012 (co-PI)
- UWM Social Media Emerging Technology grant, University of Wisconsin-Milwaukee, 2010 (PI)
- UWM ePortfolio pilot, University of Wisconsin-Milwaukee, 2009-2010 (PI, research only)
- UWM Second Life Emerging Technology grant, University of Wisconsin-Milwaukee, 2008-2009 (PI)
- UWM Blending Life and Learning Initiative, Sloan-C Localness grant, University of Wisconsin-Milwaukee, 2005-2010 (co-PI)
- UW System Podcasting Curricular Redesign grant, University of Wisconsin-Milwaukee, 2006-2007 (PI, research only)
- UW System Student Response System (SRS) Curricular Redesign grant, University of Wisconsin-Milwaukee, 2005-2007 (PI)
- MRA Computer-based Testing Program Implementation, Measurement Research Associates, 2002-2004
- NHU Web Site and Online Community Development, New-Horizons Unlimited, 1997-2000

## Faculty development

Designed and delivered faculty development programming for blended and online over a period of time for UWM, Sloan-C, and Carroll University as well as for several innovation projects listed above.

- UWM Faculty Development Program for Online and Blended Teaching, University of Wisconsin-Milwaukee, 2005-date
- UWM Certificate in Online and Blended Teaching, University of Wisconsin-Milwaukee, 2009-date
- Textbook alternatives and OER with Ginkgotree, 2013-2014
- Active Learning Classrooms, University of Wisconsin-Milwaukee, 2014
- Sloan-C Blended Teaching Certificate Program, Sloan-Consortium, 2008-2012



- Social Media, University of Wisconsin-Milwaukee, 2010-2011
- Second Life, Virtual Worlds, University Wisconsin-Milwaukee, 2008-2011
- Learning Management System, Desire2Learn, University of Wisconsin-Milwaukee, 2004-2009
- Learning Management System, Blackboard, Carroll University, 2005-2008
- Student Response Systems (SRS) or Clickers, University Wisconsin-Milwaukee, 2005-2008

## EDUCATION

PhD Communication, University of Wisconsin-Milwaukee, 2015

Specialty in Communication and Technology

Dissertation: "Thinking systemically: A study of course communication and social processes in face-to-face and online courses," Nancy Burrell, Chair

PhD ABD, Interdisciplinary Candidate, Arizona State University, 2002

Specialty in Organizational Communication, Management, and Public Administration.

MA Communication, University of Wisconsin-Milwaukee, 2000

Specialty in Applied Communication with a Graduate Certificate in Mediation and Negotiation.

BA Communication, University of Wisconsin-Milwaukee, 1998

MOR Leadership Institute, 2011-2012

## PUBLICATIONS AND PRESENTATIONS

### Publications

In progress

Joosten, T., Weber, N., & Barth, D. (2015, in progress). Ensuring quality in blended and online programs: Faculty motivation, faculty development, effective practices, and evaluation.

Joosten, T. (2015, in progress). Engaging students and increasing access: Open Education Resources (OER) with Ginkgotree

Joosten, T. (2015, in progress). Active learning classrooms for teaching and learning: Findings and recommendations for pedagogical practice.

Released

Joosten, T. (2015, in press). Ensuring quality and access through research. EDUCAUSE Review.

Joosten, T. (March, 2015). The secret is the blend. Inside Higher Education. Beta Blog.

Joosten, T., Barth, D., Harness, L., & Weber, N. (2013) Impact of blended instructional development. In *Research perspectives in blended learning* (Eds . Anthony G. Picciano, Charles D. Dziuban, and Charles R. Graham). Taylor and Francis.

Joosten, T., Pasquini, L., & Harness, L. (2013). Guiding institutions use of social media. *Planning for Higher Education*, 41, 2.

Joosten, T. (2012). *Social media for educators*. Wiley/Jossey-Bass, San Francisco.

Joosten, T., Allen, M., Al-Budaiwi, D. England, N., Hawkins, J., McNallie, J., Stache, L. (2012). *Student Response Systems: Impact on Learning*. Communication Education.

Grajek, S., Pirani, J.A., and the 2011–2012 EDUCAUSE IT Issues Panel (May/June, 2012). Top-Ten IT Issues for 2012. *EDUCAUSE Review*, 47, 3.

Tamarak, M., Rodrigo, R., and the 2011 EDUCAUSE Evolving Technologies Committee (November/December, 2011). The future of higher education. *EDUCAUSE Review*, 46, 6.

Bixler, B., Cady, D., Ohmberger, M., Huang, W., Joosten, T., & Karakus, T. [alphabetical ] (2010). All I Really Needed to Know I Learned by Playing Games. In *Real Time Research: Experiments in Improvisational Game Scholarship* (Eds. Seann Dikkers, Eric Zimmerman, Kurt Squire, Constance Steinkuehler, et al.). ETC Press, Carnegie Mellon University, Pittsburgh, PA.

Little, J., Page, C., Betts, K., Boone, S., Faverty, P., Joosten, T., et al. (May/June, 2009). *Charting the Course and Tapping the Community: The EDUCAUSE Top Teaching and Learning Challenges 2009*. EDUCAUSE Review.

Aycock, A., Mangrich, A., Joosten, T., Russell, M., & Bergtrom, G. (2008). *Faculty development for blended teaching and learning: A Sloan-C certificate program*. Sloan Consortium, Needham, MA.

Kaletka, R., & Joosten, T. (2007). Clickers in the classroom. *ECAR Bulletin*. EDUCAUSE.

Kaletka, R., Skibba, K., & Joosten, T. (2006). Hybrid teaching experiences and faculty development. In *Blended learning: Research perspectives* (Eds . Anthony G. Picciano and Charles D. Dziuban). Sloan Consortium: Needham, MA.

#### Invited Presentations

Presentation slides are available at: <http://slideshare.net/tjoosten>.

Keynote and plenary addresses

Upcoming 2015, October 17th, Trends in flexible learning: Decision in increasing success. Keynote. Flexible Learning Conference. Madison Community College. Madison, WI.

Upcoming 2015, April 10th, Emerging effective practices: The pathway to student success. OIT Symposium. Delta State. Cleveland, MS.

2015, March 23rd, Ensuring access and success through research. Keynote. Quality Matters Annual Conference. Drexel University. Philadelphia, PA.

2014, December 8th, Social media: Transforming the digital future. Keynote. SACS COC President's event. Nashville, TN.

2014, August 14th, Social media for educators. Keynote interviewer. Distance Teaching and Learning annual conference. Madison, WI.

2014, April 2nd, Understanding Online Students and Learning, Keynote presentation. 2014 eColloquium. Troy University. Retrieved from: <http://trojan.troy.edu/etroy/colloquium/sessions.html>.

2014, April 1st, Ensuring Quality and Determining Effectiveness. Plenary/opening presentation. EDUCAUSE Learning Initiative Spring Focus Session. Online. Retrieved from: <http://www.educause.edu/events/online-spring-focus-session-faculty-engagement-and-development>

2013, December, 6th, What Happens Next? Post-MOOC Hype. Keynote Panel with Bonnie Stewart, University of Prince Edward Island, and Amy Collier, Stanford. MOOC Research Conference. Arlington, TX. Recording Retrieved from: <http://compass.uta.edu:8080/ess/portal/section/ec5e4a97-5396-4bf6-a398-5815a8d46e18>.

2013, November 2nd, Thriving in a Connected World. 22nd Annual Teaching Effectiveness Conference. Keynote presentation. Associated Colleges. Canton, NY.

2013, October 18th, Social Media for Educators. Social Media for Teaching and Learning. Keynote presentation. Pearson. Boston, NY.

2013, May 25th, Social media for educators. Keynote. BEAC Annual Conference. Banff, Alberta. Retrieved from: <http://beac.ca/>.

2013, March 20th, The digital future: Who is driving the bus? Keynote. Teaching & Learning with Technology Symposium, GVSU, Grand Rapids, MI. Retrieved from: <http://www.gvsu.edu/it/idel/tanya-joosten-2012-2013-symposium-keynote-presentation-23.htm>.

2013, February 17th, Transforming Higher Education: Using Social Media to Ignite Students. Keynote. Presented at eLearning 2013. San Antonio, TX. Retrieved from: <http://www.itcnetwork.org/elearning-conference/general-session-speakers.html>.

2012, May 7th, Social Media for Educators. Keynote presentation. Presented at Ed Tech Academy at Roane State Community College, Harriman, TN.

2011, June 8th, Social Media for Teaching and Learning. Keynote presentation. Presented at eLearning Asia in Singapore.

2011, March 28th, Plenary panel with Stephen Laster, Harvard, Anthony Picciano, CUNY, and Joel Hartman, UCF. Blended Learning: Past, Present, and Future. Presented at the Sloan-C Blended conference in Oak Brook, IL.

2010, April 6th, A Connected Future: What Does It Look Like. Keynote presentation. Presented at the Joint Council of Extension Professionals in Green Bay, WI. Featured presentations

Upcoming 2015, April 23rd, Teacher Tank (Shark Tank), Online Learning Consortium Emerging Technology Conference. Dallas, TX.

2014, October 30th, Innovation and Iteration: Celebrating 20 Years of the International Conference on Online Learning. Featured panel with Joel Hartman, UCF, Peter Shea, University of Albany, Karen Vignare, UMUC, and Lawrence Ragan, Penn State. Sloan-C/OLN International Conference on Online Learning.

2014, April 10th, Emerging Social Trends: Decisions, Decisions. Featured presentation. Sloan Consortium Emerging Technologies for Online Learning. Dallas, TX.

2014, April 7th, Social Media for Educators. Invited presentation. Rochester Community and Technical College. Online. Retrieved from: <http://sloanconsortium.org/conference/2014/et4online/emerging-social-trends-decisions-decisions>.

2013, October 16th, Prepare for Lift-Off: Becoming a Successful IT Pilot Site. Featured Panel with Amy Collier, Stanford, and George Veletsianos, Royal Roads. EDUCAUSE, Anaheim, CA.

2013, July 9th, Using MOOCs for Blended Learning. Featured Session. Sloan Consortium Blended Workshop and Conference. Milwaukee, WI.

2013, May 10th, Social media: Instructional and institutional issues, University of Nebraska Online Worldwide Distance Education Symposium. Retrieved from: <http://unit.nebraska.edu/symposium-guest-speakers.html>.

2013, May 10th, Introduction to social media for instruction, University of Nebraska Online Worldwide Distance Education Symposium. Retrieved from:  
<http://unit.nebraska.edu/symposium-guest-speakers.html>.

2012, October 15th, Social media to enhance online learning. Featured Presentation. Sloan-C International Conference for Online Learning. Retrieved from:  
<http://sloanconsortium.org/conference/2012/aln/social-media-enhance-online-learning>.

2012, April 24th, Blending with social media. Sloan-C Blended Learning Conference and Workshop. Milwaukee, WI.

#### Other invited presentations

Upcoming 2015, May 14th, Promoting success and access through research, University of Nebraska, Lincoln, NE.

Upcoming 2015, April 24th, The National Distance Education and Technological Advancement (DETA) Research Center information session, Online Learning Consortium Emerging Technology Conference. Dallas, TX.

Upcoming 2015, April 8th, Measuring the effectiveness of online and blended programs, EDUCAUSE Learning Initiative focus session.

2015, February 17th, The digital future: Who is driving the bus? University of Tampa. Tampa, FL.

2015, February 10th, National Research Center for Distance Education and Technological Advancements. EDUCAUSE Learning Initiative Annual meeting. Anaheim, CA.

2014, November 21st, National Research Center for Distance Education and Technological Advancements. WCET Annual conference. Portland, OR.

2014, December 3rd, Active learning classrooms for teaching and learning. Harvard School of Public Health. Cambridge, MA.

2013, November 8th, Exploring Ginkgotree: Increasing Access, Engagement, and Learning with OER. Presentation with Dylan Barth. EDUCAUSE Annual conference. Anaheim, CA.

2013, May 30th, Designing and delivering blended courses. Congreso de Preparatoria. Monterrey, Mexico. Retrieved from:  
[http://sitios.itesm.mx/va/congresoprepatec/2013/conferencias\\_magistrales.htm](http://sitios.itesm.mx/va/congresoprepatec/2013/conferencias_magistrales.htm)

2012, February 14th, Experience IT: Mobile Social Media for Educators. EDUCAUSE Learning Initiative (ELI) Annual conference. Austin, TX.

2012, February 14th, Social media for educators (w/Shannon Ritter). EDUCAUSE Learning Initiative (ELI) Annual conference. Austin, TX.

2012, February 1st, Pedagogical strategies for the future. State of Wisconsin Department of Instruction Digital Learning Day. Virtual.

2011, October 13th, Social media for educators (w/Shannon Ritter). EDUCAUSE Annual conference. Philadelphia, PA.

2011, October 14th, Mobile learning (part of Evolving Technologies lightning round). EDUCAUSE Annual conference. Philadelphia, PA.

2011, March 14th, Exploring Mobile Technologies. Presented at the EDUCAUSE Midwest Regional Conference in Chicago, IL.

2011, March 8th, Social Media—Transforming our Digital Future. Presented at IT's 4 U! at the University of Wisconsin - Milwaukee in Milwaukee, WI.

2010, May 19th, Being Mobile in an Open World" Social Media to Engage. Presented at the Enhancing the Teaching of Psychology Conference in Green Bay, WI.

2010, March 4th, Being Mobile in an Open World: Social Media to Engage. Presented at the OPID Council meeting, Madison, WI.

2009, November 6th, Student Perceptions of Second Life. Presented at EDUCAUSE 2009 Online.

2009, November 5th, Harnessing Social Networking Tools to Build Connectivity and Learning Community in Online Courses. Presented at the 2009 EDUCAUSE Annual conference.

2009, November 4th, The Top-10 Questions You Should Consider When Implementing Second Life. Presented at the 2009 EDUCAUSE Annual conference.

2009, October 30th, Using Second Life to Meet Your Pedagogical Needs More Effectively. Presented at the First UW-System's LTDC Technology Conference.

2009, September 21st, Supporting Blended Learning. EDUCAUSE ELI Solutions in Action Webcast.

2009, April 17th, Meeting Your Pedagogical Needs using Second Life. Presented at the OPID Spring Conference.

2009, March 13th -14th, Blended Learning. Presented at the First International Conference of E- Learning and Distance Learning, eLi 2009. Riyadh, Saudi Arabia.

2009, January 12th, Transforming Your Course for Blended Learning. Presented online for the University of Wisconsin – Whitewater.

2008, October 17th, Transformation for Online Learning. Presented at Youngstown State University Annual Distance Learning conference.

#### Conference presentations

Upcoming Joosten, T., (August, 2015). Author spotlight talk: Social media for educators. Annual Distance and Teaching Learning conference. Madison, WI.

Upcoming Joosten, T. (June, 2015). Promoting access and success through research. New Media Consortium Summer Conference. Washington, DC.

Blumenstyk, G., Craig, R., & Joosten, T. (March, 2015). The Future of Higher Ed— Without the "D" Word. SXSWedu. [Competitive Panel]

Joosten, T., Barth, D., and Weber, N. (October, 2014). Driving down costs and increasing student engagement with a textbook alternative. Sloan-C/OLC International Conference of Online Learning. Orlando, FL.

Joosten, T., Barth, D., and Weber, N. (July, 2014). Using textbook alternatives to decrease cost and increase student engagement. Distance Teaching and Learning annual conference. Madison, WI.

Joosten, T., Barth, D., and Weber, N. (July, 2014). Increasing student engagement while reducing textbook costs using Ginkgotree. Sloan-C Blended conference. Denver, CO.

Joosten, T., Barth, D., and Weber, N. (July, 2014). Evaluating the effectiveness of faculty development programs for blended instruction. Sloan-C Blended conference. Denver, CO.

Collier, A. Watters, W., Velestianos, G., and Joosten, T. (March, 2014). Startups Should Talk with Researchers and Educators. Competitive Panel. SXSWedu. Austin TX.

Mangrich, A., Joosten, T., and Weber, N. (August, 2013). Survey says! Uncovering faculty support needs and instructional technology preferences. Annual Distance Teaching and Learning Conference. Madison, WI.

Joosten, T., Pasquini, L., Croke, B., and Popiolek, B. (March, 2013). Social Media in Higher Ed - Where are We Going? Competitive Panel. Presented at SXSWedu in Austin, TX. Retrieved from: [http://schedule.sxswedu.com/events/event\\_EDUP15497](http://schedule.sxswedu.com/events/event_EDUP15497).

Pedrick, L., & Joosten, T. (January, 2012). Planning for a digital future. Presented at the Technology, Knowledge, and Society conference. UCLA, Los Angeles, CA.

- Joosten, T. (July, 2011). Social media for teaching and learning. Presented at the Desire2Learn Fusion conference in Denver, CO.
- Pedrick, L., Britz, J.J., Du Plessis, J., Maas, B., Joosten, T & King, P. (April, 2011). Planning a digital future. Presented at the 116th Annual Conference: Higher Learning Commission, Chicago, USA,
- Joosten, T. (March, 2011). Mobile learning. Presented at EDUCAUSE Midwest Regional Conference in Chicago, IL.
- Joosten, T. (October, 2010). Top 10 questions to consider when implementing social media: Perspectives of four campuses. Presented at the EDUCAUSE Annual conference, Anaheim, CA.
- Joosten, T. (July, 2010). Does social media (Twitter, Facebook) actually increase student learning and satisfaction? Presented at the Sloan-C Emerging Technology conference, San Jose, CA.
- Joosten, T. (July, 2010). Student Perceptions of the Desire2Learn ePortfolio. Presented at the Desire2Learn Annual conference, Chicago, IL.
- Joosten, T. (June, 2010). Mobile Learning and Social Media: Increasing Engagement and Interactivity. Presented at the New Media Consortium Summer conference, Anaheim, CA.
- Joosten, T. (March, 2010). Being Mobile in an Open World: Social Media to Engage. Presented at the 2010 EDUCAUSE Midwest Regional conference, Chicago, IL.
- Joosten, T. (November, 2009). Best Practices for Using Second Life for Teaching and Learning. Presented at the 2009 EDUCAUSE Annual conference.
- Joosten, T. (November, 2009). Student Perceptions of Second Life. Presented at the 2009 EDUCAUSE Annual conference.
- Joosten, T. (July, 2009). Using Second Life and Desire2Learn to Best Meet Your Learning Objectives. Presented at the Desire2Learn Fusion annual conference in Minneapolis, MN.
- Joosten, T. (June, 2009). Meeting Your Pedagogical Needs More Effectively: How to Best Use Second Life. Presented at the Sloan-C International Symposium on Emerging Technology Application for Online Learning in San Francisco, CA.
- Joosten, T. (March, 2009). Virtual Worlds (Second Life) Constituent Group Discussion. Facilitated at the EDUCAUSE Midwest conference in Chicago, IL.



Joosten, T. (October, 2008). Second Life in Education, Panel Presentation. Presented at the EDUCAUSE Annual conference in Orlando, FL.

Joosten, T. (August, 2008). Evaluating Second Life as mediated communication to facilitate learning. Presented at the Distance Teaching and Learning Annual conference in Madison, WI.

Joosten, T. (August, 2008). Going Online or Hybrid? Presented at the Distance Teaching and Learning Annual conference in Madison, WI.

Joosten, T. (June, 2008). An Example of Second Life in a Communication Course: Human Communication and Technology. Presented at the Games, Learning, and Society Annual conference in Madison, WI.

Joosten, T. (April, 2008). Practical Considerations for Evaluating Blended Learning. Presented at the Sloan-C Workshop in Chicago, IL.

Joosten, T. (October, 2007). Communication technologies in the online class: Second Life as a form of mediated communication to facilitate learning. Presented at the National Communication Association Annual conference.

Joosten, T., Kaleta, R. (October, 2006). Clickers in the classroom. Presented at the EDUCAUSE Annual conference.

Joosten, T., McCallister, M., Stone, T., & Zvacek, S. (October, 2006). Managing the adoption of clickers: Experiences of several universities. Poster session presented at EDUCAUSE Annual conference.

Joosten, T. (2004, November). Computer familiarity, perceived communication, and student performance in online education. Paper presented at the National Communication Association, Chicago, IL.

Suanthong, S., & Joosten, T. (2004, May). Computer familiarity and test performance on computer based tests. Paper presented at the Midwest Objective Measurement Seminar, Chicago, IL.

Joosten, T. (2003, November). Intercultural conflict training. Paper presented at the annual meeting of the National Communication Association, Miami, FL.

Joosten, T., Chen, H., & Shen, T. (2002, November). Reconceptualizing conflict for an integrative approach. Paper presented at the annual meeting of the National Communication Association, New Orleans, LA.

Joosten, T., & Chen, H. (2001, November). Experiential learning for cultural diversity and intercultural competence in business contexts. Paper presented at the National Communication

Association Annual Convention, Atlanta, Georgia.

Joosten, T. (2001, November). The effect of individual conflict style on member satisfaction and quality of decision in small group decision making. Paper presented at the National Communication Association Annual Convention, Atlanta, Georgia.

Joosten, T. (2001, November). Conflict management in cross-cultural interactions within the workplace: Increasing awareness, empowerment and recognition. Paper presented at the National Communication Association Annual Convention, Atlanta, Georgia.

Joosten, T. (2001, February). Deterministic paradigms and perspectives to common ground: Actions speak louder than words, or do they? Paper presented at the Western States Communication Association Annual Convention, Coeur d'Alene Resort, Idaho.

Allen, M., Bick, T., Davis, K., Hsu, S., Jaeger, N., Joosten, T., Korus, J., Malin, M., McGrath, M., McKellips, S., Oswald, J., Seuer, T., Skeris, L., & Ulrich, T. (2000, November). The process of ambiguous information in advertising: Filling the gaps. Paper presented at the National Communication Association Convention, Seattle, WA.

Invited workshops or discussions, conference workshops, and other presentations

Upcoming, 2015, July 8th, Promoting student access and success through research, Workshop, Online Learning Consortium Blended Conference and Workshop, Denver, CO.

Upcoming 2015, May 14th, Taking advantage of social media in your courses, Workshop, University of Nebraska, Lincoln, NE.

2015, February 17th, Hybrid learning workshop: Next steps in perfecting the blend. University of Tampa. Tampa, FL. Retrieved: <http://ut2015.wikispaces.com>.

2015, February 17th, Hybrid learning workshop: Getting started. University of Tampa. Tampa, FL. Retrieved: <http://ut2015.wikispaces.com>.

2014, September 25th, Social Media Constituent Group with Shannon Ritter, Penn State. Discussion Facilitator. EDUCAUSE Annual conference. Orlando, FL.

2014, September 24th, Social Media Constituent Group Unconference with Shannon Ritter, Penn State. Accepted Workshop. EDUCAUSE Annual conference. Orlando, FL.

2014, September 24th, The State of Social Media Guidance: Implications of Guidelines, Policies, and Practice in Higher Education with Laura Pasquini, University of North Texas. Accepted Workshop. EDUCAUSE Annual conference. Orlando, FL.

2014, November 14th, Ensuring quality and determining effectiveness. Invited Workshop. New Mexico State University. Las Cruces, NM.

2014, November 14th, Designing blended courses: Getting started. Invited Workshop. New Mexico State University. Las Cruces, NM.

2014, October 29th, Evaluating online and blended faculty development programs. Invited workshop. Sloan-C/OLC International Conference on Online Learning. Orlando, FL.

2014, July 8th, Evaluating online and blended faculty development programs. Accepted workshop. Distance Teaching and Learning annual conference. Madison, WI.

2014, March 17th, Determining the effectiveness of your faculty development program. Invited Workshop. EDUCAUSE Learning Initiative (ELI) Online Seminar. Retrieved from: <http://www.educause.edu/events/eli-online-seminar-determining-effectiveness-your-faculty-development-program>.

2014, February 3rd, Ensuring quality in online and blended programs. Workshop. EDUCAUSE Learning Initiative (ELI) Annual Conference. Virtual. New Orleans, LA. Retrieved from: <http://www.educause.edu/events/eli-virtual-annual-meeting-2014/2014/sem01-ensuring-quality-online-and-blended-programs-separate-registration-required>.

2014, February 3rd, How Do You Know If Your Faculty Development Program Is Effective. Learning Circle with Edward Bowen. Presented at EDUCAUSE Learning Initiative Annual conference. New Orleans, LA.

2014, February 3rd, Social media constituent Group. Presented at EDUCAUSE Learning Initiative Annual conference. New Orleans, LA.

2013, November 24th, Social media constituent group. Presented with Shannon Ritter at EDUCAUSE Annual conference. Anaheim, CA.

2013, November 22nd, Ensuring quality in online and blended programs. Workshop. Sloan Consortium International Conference for Online Learning. Orlando, FL.

2013, November 22nd, The flipped classroom: Taking advantage of renewed opportunities. Workshop. Sloan Consortium International Conference for Online Learning. Orlando, FL.

2013, October 15th, Social media for teaching and learning. Workshop. EDUCAUSE Annual Online Conference, Boston, MA.

2013, October 15th, Ensuring quality in online and blended programs. Workshop. EDUCAUSE Annual Conference, Boston, MA.

2013, August 7th, Strategies to ensure quality in online and blended courses. Workshop. Annual Distance Teaching and Learning Conference. Madison, WI.

2013, July 8th, Strategies to ensure quality in online and blended courses. Workshop. Sloan Consortium Blended Workshop and Conference. Milwaukee, WI.

2013, February 14th, Social media constituent group. Presented at EDUCAUSE Learning Initiative Annual conference. Denver, CO.

2012, November 9th, Social media constituent group. Presented at EDUCAUSE Annual conference. Denver, CO.

2012, October 20th, How to use Social Media to Engage Learners. Milwaukee Area Academic Alliance in English.

2012, June 19th, Blended Learning. Presented at the Summer Institute on Mentoring, Teaching and Learning. Empire State College. Saratoga Springs, NY.

2012, May 4th, Social Media for Educators. Wiley Learning Institute. Online.

2012, April 24th, Blended Learning: Next Steps. Sloan-C Blended Learning Conference and Workshop. Milwaukee, WI.

2012, April 24th, Social Media: Getting Started with Facebook, Twitter, and YouTube. Sloan-C Blended Learning Conference and Workshop. Milwaukee, WI.

2012, May 21st-22nd, Technology Enhanced Learning Workshop: Social Media for Educators. Salem, OR.

2012, May 7th, Social Media for Educators Workshop. Ed Tech Academy at Roane State Community College. Harriman, TN.

2012, February 13th, Pre-conference workshop: Facebook, Twitter, and Youtube: Social Media for Educators. EDUCAUSE Learning Initiative (ELI) Annual conference. Austin, TX.

2011, November 10th, Pre-conference workshop: Access and Opportunity: A Comprehensive Strategy for a Blended Learning Initiative. Sloan-C International Conference on Online Learning. Orlando, FL.

2011, October 14th, Social media constituent group. EDUCAUSE Annual conference. Philadelphia, PA.

2011, October 14th, Mobile learning constituent group. EDUCAUSE Annual conference. Philadelphia, PA.

2011, October 12th, Pre-conference workshop: "Social Mobile" Learning for Educators. EDUCAUSE Annual conference. Philadelphia, PA.

2011, October 12th, Pre-conference workshop: Teaching and Learning with Social and Digital Media in Higher Education. EDUCAUSE Annual conference. Philadelphia, PA.

2011, August 3rd, Pre-conference workshop: Facebook, Twitter, and Youtube: Social Media for Educators. Distance Teaching and Learning conference. Madison, WI. Retrievable from: <http://professorjoosten.blogspot.com/2011/09/facebook-twitter-and-youtube-social.html>

2011, June 15th, Pre-conference workshop: Social Media for Teaching and Learning. New Media Consortium Summer conference. Madison, WI. Retrievable from: <http://professorjoosten.blogspot.com/2011/06/social-media-workshop-presented-at.html>

2011, June 10th, Post-conference workshop: Social Media for Teaching and Learning. eLearning Asia. Singapore. Retrievable from: <http://professorjoosten.blogspot.com/2011/06/elearning-asia-socialmedia-resources.html>

2011, March 28th, Pre-conference workshop: Faculty development for blended. Sloan-C Blended conference. Oak Brook, IL

2011, March 28th, Pre-conference workshop: Big issues in blended. Sloan-C Blended conference. Oak Brook, IL

2011, March 16th, Learning spaces roundtable. EDUCAUSE Midwest Regional Conference in Chicago, IL.

2011, March 14th, Technology boot camp. EDUCAUSE Midwest Regional Conference in Chicago, IL.

2011, March 14th, Social media roundtable. EDUCAUSE Midwest Regional Conference in Chicago, IL.

2011, February 14th, Social media constituent group. EDUCAUSE Learning Initiative (ELI) Annual conference. Washington, DC.

2011, February 13th, Virtual world constituent group. EDUCAUSE Learning Initiative (ELI) Annual conference. Washington, DC.

2010, November 3rd, Pre-conference workshop: Blended Learning. Sloan-C International Annual conference. Orlando, FL.

2010, November 3 rd, Pre-conference workshop: Social Media. Sloan-C International Annual conference. Orlando, FL.

2010, October 14th, Social media constituent group. EDUCAUSE Annual conference. Anaheim, CA.

2010, October 12th, Pre-conference workshop: Pedagogical Consideration in Implementing Social Media: Twitter, Facebook, YouTube, and More. EDUCAUSE Annual conference. Anaheim, CA.

2010, August 31st, Offline to Online: Transforming Traditional Curriculum & Emerging Technologies. University of Wisconsin - Eau Claire. Eau Claire, WI.

2010, August 16th, 26th, and 30th, Blended Learning. Milwaukee School of Engineering. Milwaukee WI.

2009, June 24th, Second Life for Teaching and Learning. CUNY, York College.

2009, June 3 th, Transforming Your Course for Blended and Online. CUNY, York College.

2009, January 6th -7th, Faculty Development for Hybrid Learning. Mount St. Joseph, Cincinnati, OH.

2008, November 13th-14th, Exam Development and Item Writing: Fetal Echocardiography Specialty Exam Development Task Force. American Registry of Diagnostic Medicine, Rockville, MD.

2008, August 13th-14th, Exam Development and Item Writing: Sonography Principles and Instrumentation (SPI) Specialty Exam Development Task Force. American Registry of Diagnostic Medicine, Rockville, MD.

2008, July 25th-26th, Exam Development and Item Writing: Sonography Principles and Instrumentation (SPI) Specialty Exam Development Task Force. American Registry of Diagnostic Medicine, Rockville, MD.

2008, April 25th-25th, Exam Development and Item Writing: BR Speciality. American Registry of Diagnostic Medicine, Rockville, MD.

2008, April 11th-12th. Faculty Development for Hybrid Learning. Maryville University, St. Louis, MO.

2008, January 9th, Faculty Development for Hybrid Learning. Northern Illinois University, DeKalb, IL.

2007, December 8th, Hybrid Teaching and Learning. University of Wisconsin-Parkside, Kenosha, WI.

- 2007, September 12th-14th. Exam Development and Job Task Analysis. American Registry of Diagnostic Medicine, Rockville, MD.
- 2007, August 2nd and 28th. Effective Uses of Blackboard. Carroll College, Waukesha, WI.
- 2007, June 12th-14th. Faculty Development for Hybrid Learning. Simmons College, Boston, MA.
- 2007, January 18th-22nd. Item Development and Standard Setting Workshops. American Registry of Diagnostic Medicine, Rockville, MD.
- 2006, December 4th-6th. Faculty Development for Hybrid Learning. Coastal Bend College and University of Houston, Victoria, San Antonio, TX.
- 2006, September, 8th. Effective Communication Strategies. American Association of Medical Assistants (AAMA) Annual Convention. Hilton, Milwaukee, WI.
- 2006, August 29th. Effective Uses of Blackboard. Carroll College, Waukesha, WI.
- 2006, July. Writing for the Web. International Foundation of Executive Benefits Professionals. IFEBP, Brookfield, WI.
- 2005, April 15th and 16th. Item Development and Standard Setting Workshop. American Registry of Diagnostic Medicine, Rockville, MD.
- 2005, January 13th. Item and Exam Development Workshop. American Board of Nuclear Medicine.
- 2004, July 24th and 25th. Task Analysis Development Guidelines. American Registry of Diagnostic Medical Sonography.
- 2004, June 28th and 29th. Item Development and Exam Development Seminar and Workshop. American Board of Nuclear Medicine
- 2004, June 17th and 18th. Item Development Seminar and Workshop. American Board of Endodontics. 2004, June 12th. Task Analysis and Survey Development for Examination Blueprint. American Registry of Diagnostic Medical Sonography, Vascular Interpretation Exam Development Task Force.
- 2004, June 10th. Standard Setting Seminar. American Board of Thoracic Surgery.
- 2004, March 20th and 21st. Item Development and Standard Setting Workshop. American Registry of Diagnostic Medical Sonography, Abdomen Exam Development Task Force.

2004, March 17th. Standard Setting Seminar. American Board of Preventive Medicine, Aerospace Medicine Exam Committee.

2004, March 6th. Standard Setting Seminar. American Board of Preventive Medicine, Occupation Medicine Exam Committee.

2004, March 4th. Item Development Seminar. American Board of Preventive Medicine, Occupation Medicine Exam Committee.

2004, January 29th. Standard Setting Seminar. International Association of Administrative Professionals.

2003, November 14th and 15th. Item Development and Standard Setting Seminar. American Registry of Diagnostic Medical Sonography, Fetal Echo Exam Development Task Force.

2003, November 7th and 8th. Item Development and Standard Setting Seminar. American Registry of Diagnostic Medical Sonography, OB-GYN Exam Development Task Force.

2003, June 26th. Standard Setting Seminar. American Registry of Diagnostic Medical Sonography, Breast Exam Development Task Force.

Web 2.0 publications  
My Learning Technology Blog  
<http://professorjoosten.blogspot.com>

UWM emerging technology project wikis  
<http://UWMSocialMedia.wikispaces.com>  
<http://UWMTwitters.wikispaces.com>  
<http://UWMSocialNetworking.wikispaces.com>  
<http://UWMMobileLearning.wikispaces.com>  
<http://UWMetext.wikispaces.com>  
<http://UWMeportfolios.wikispaces.com>  
<http://UWsecondlife.wikispaces.com>

UWM Online Programming web site  
<http://online.uwm.edu>

UWM Second Life Emerging Technology grant wiki and course blog  
<http://UWMSecondLife.wikispaces.com>  
<http://UWMSSecondLife.blogspot.com>

UWM Learning Technology Center central resources  
<http://uwmltc.org>  
<http://LTC.uwm.edu>



<http://UWM-LTC.wikispaces.com>

UWM Blending Life and Learning Initiative, Sloan-C Localness grant sites  
<http://blended.uwm.edu>

UW System Student Response System (SRS) Curricular Redesign grant web repository  
<http://clickers.uwm.edu>

## NEWS AND MEDIA

Graham, S., & Terry, J. (February 1st, 2013). Companies making money from online students--by doing their work for them. WTMJ. Retrieved from <http://www.620wtmj.com/news/local/189437201.html>. [quoted]

Doyle, M. (January 17th, 2013). Manti Te'o dating debacle sparks local reaction. CBS 58 Local News. Retrieved from: <http://www.cbs58.com/news/local-news/Manti-Teo-dating-debacle-sparks-local-reaction-187374001.html>. [quoted]

Parry, M. (March, 30, 2011). Think You'll Make Big Bucks in Online Ed? Not So Fast, Experts Say. Wired Campus: The Chronicle of Higher Education. Retrieved from: <http://chronicle.com/blogs/wiredcampus/think-youll-make-big-bucks-in-online-ed-not-so-fast-experts-say/30663> [quoted]

Fusch, D. (January, 2011). Higher Ed Impact Monthly Diagnostic, Academic Impressions. Retrieved from: [http://www.academicimpressions.com/hei\\_resources/0211-diagnostic.php?&q=7504v274891yT](http://www.academicimpressions.com/hei_resources/0211-diagnostic.php?&q=7504v274891yT) [quoted]

Mallet, G. (October 19th, 2010). UWM Students Use Tweetup To Connect, WTMJ Channel 4. Retrieved from: <http://www.todaystmj4.com/news/local/105249668.html> [quoted]

Garwood, B. (October 18th, 2010). Three Takeaways from EDUCAUSE 2010, Ed Tech Magazine. Retrieved from <http://www.edtechmag.com/higher/conferences/educause-2010-three-takeaways-from-educause-2010.html> [quoted]

Jones, J. (October 15th, 2010). Weekend Reading: Travel Edition. The Chronicle of Higher Education. Retrieved from: <http://chronicle.com/blogs/profhacker/weekend-reading-travel-edition/27782>

Carter, D. (October 15th, 2010). How to use higher education's 'new toy': Social media, Using popular online platforms to communicate with students takes center stage at annual EDUCAUSE conference. eCampus News. Retrieved from <http://www.ecampusnews.com/technologies/how-to-use-higher-educations-new-toy-social-media/2/?> [quoted]

Garwood, B. (October 15th, 2010). EDUCAUSE 2010: From the floor (video series). Ed Tech Magazine. Retrieved from <http://www.edtechmag.com/higher/conferences/educause-2010-video.html>. [video interview]

Young, J. (July 22nd, 2010). How Social Networking Helps Teaching (and Worries Some Professors). Chronicle of Higher Education. Retrieved from <http://chronicle.com/article/How-Social-Networking-Helps/123654/>. [quoted]

Ziff, D. (June 20th, 2010). UW System learning how to best use virtual world. Wisconsin State Journal. [http://host.madison.com/wsj/news/local/education/university/article\\_ef7c1c82-7ce2-11df-b4ee-001cc4c002e0.html](http://host.madison.com/wsj/news/local/education/university/article_ef7c1c82-7ce2-11df-b4ee-001cc4c002e0.html). [quoted]

Young, J. (February 2nd, 2010). After Frustrations in Second Life, Colleges Look to New Virtual Worlds. Chronicle of Higher Education. Retrieved from <http://chronicle.com/article/After-Frustrations-in-Secon/64137/>. [not quoted]

Jayson, S. (September 17th, 2009). 'Flocking' behavior lands on social networking sites. Retrieved from [http://www.usatoday.com/news/health/2009-09-27-social-networking\\_N.htm](http://www.usatoday.com/news/health/2009-09-27-social-networking_N.htm). [not quoted]

Parry, M. (August 11th, 2009). Teens Don't Tweet. Wired Campus, Chronicle of Higher Education. Retrieved from <http://wiredcampus.chronicle.com/blogPost/Teens-Dont-Tweet/7646/>. [quoted]

Toner, E. (January 22nd, 2007). UWM students use clickers. WUWM Radio. Retrieved from [http://wuwm.com/programs/news/view\\_news.php?articleid=235](http://wuwm.com/programs/news/view_news.php?articleid=235). [quoted]

Shurk, N. (May 10th, 2006) Technology 'clicks' with UWM students. The Leader. Retrieved from [http://www.uwmleader.com/home/index.cfm?event=displayArticle&ustory\\_id=e7fb5617-f64a-486f-9700-74598609adb0](http://www.uwmleader.com/home/index.cfm?event=displayArticle&ustory_id=e7fb5617-f64a-486f-9700-74598609adb0). [quoted]

#### EDUCAUSE podcasts

Bayne, G. (April 19, 2010). Online and Blended Learning 101. EDUCAUSE. Retrieved from <http://www.educause.edu/blog/gbayne/InterviewPodcastTanyaJoostenwi/203355>.

Lawrence, E. (May 26th, 2009). Assessing the Student Experience in 2nd Life. EDUCAUSE. Retrieved from <http://www.educause.edu/blog/emilyclawrence/E08PodcastAssessingtheStudentE/172511>

Page, C. (April 13th, 2007). "Clickers" in the Classroom. EDUCAUSE. Retrieved from <http://www.educause.edu/blog/Carie417/EDUCAUSE2006PodcastClickersint/166858>.

## PROFESSIONAL SERVICES

### Current:

UW System, Learn@UW Executive Committee, 2012-2015  
 Sloan-C/OLC Blended Workshop and Conference Steering Committee, 2010-2015  
 Sloan-C/OLC Emerging Technologies Conference Steering Committee, Keynote and plenary speakers sub-committee, 2014-2015

International Journal of Research & Method in Education, Reviewer, 2015

### Previous:

State of Wisconsin Superintendent's digital learning advisory council member, 2011-2014  
 EDUCAUSE Learning Initiative, Spring Focus Session Committee, 2014  
 Sloan-C Emerging Technology Conference Steering Committee, 2014  
 Sloan-C Blended Workshop and Conference Chair, 2011-2013  
 NMC Horizon Project Higher Ed Advisory Board, 2012-2013  
 EDUCAUSE IT Issues Panel, 2011-2012  
 Sage Publications digital media advisory board member, 2011-2012  
 Sloan-C Journal of Asynchronous Learning Networks Advisory Panel for Access, 2011-2012  
 EDUCAUSE Evolving Technologies Committee, 2010-2012  
 EDUCAUSE Quarterly (EQ) Reviewer, 2010-2012  
 EDUCAUSE Learning Initiative Focus Session Advisory Council, 2010  
 Desire2Learn Conference Planning Committee, 2010-2011  
 EDUCAUSE Learning Initiative, Second Life Guide, 2010  
 EDUCAUSE Annual Conference Adjunct Reader, 2009-2010  
 Editorial Board, Rocky Mountain Communication Review, 2002-2004

## UNIVERSITY SERVICE

### Current:

UWM Category B (Teaching and/or Research) Academic Staff Review Committee  
 UWM Distance Education Seed Funding Committee  
 UWM Online and Flex Degree Task Force Committee

### Previous:

#### UWM Committees

Campus Strategic Planning Committee, IT Group  
 Campus Strategic Planning Sub-committee of the Enrollment Management Group, Online and Flex Task Force  
 Flex Degree Operations Committee  
 Education Effectiveness Committee  
 Online Program Council, co-chair

Northwest Quadrant Space Planning Committee  
 Assessment Sub-committee  
 Digital Future Conference planning committee, Teaching and Learning co-chair  
 Learning Technology Center Space Redesign lead  
 UITS Content Management System team, Training team  
 UITS Pantherlink Calendar, Campus Events team  
 UITS Survey Instrument, Qualtrics team  
 UITS Computer Purchasing team  
 Copyright Committee  
 Open Access Committee

UWM Blended and Online Program service  
 UWM Guide to Online Programming committee  
 UWM Certificate for Online and Blended Teaching committee  
 UWM Faculty Development Program for Online and Blended Learning  
 UWM Course Evaluator for online or blended courses

UWM Search and Screen Committees  
 Learning Technology Center, Instrumentation Innovator, member 2008, chair,  
 2010  
 College of Health Sciences, Director of eLearning, member 2008

Guest speaker  
 Department of Communication, Health Communication and Technology, Hayeon Song  
 Department of Communication, Careers in Communication, Renee Meyers  
 School of Information Sciences, Evaluating Online, Jacques Du Plessis

## GRANTS AND AWARDS

US Department of Education, Fund for the Improvement of Postsecondary Education Grant, 2014-2017, \$1.483 million. Grant writer for project design and evaluation. Co-Principal Investigator.

Sloan Consortium Fellow, 2013, “Tanya Joosten, University of Wisconsin Milwaukee, for exceptionally creative work in advancing blended and online learning in the K-12 and higher education environments.”

Steelcase Innovation Hub Active Learning Classroom Grant, 2013, \$35,000. Principal Investigator.

University of Wisconsin Milwaukee, Digital Futures Research Grant, 2012, \$5,000. Principal Investigator.

University of Wisconsin System, Office of Technology, Curricular Redesign Grant, Mobile Learning, 2011-2012, \$15,000. Principal Investigator.

University of Wisconsin System, Office of Technology, Curricular Redesign Grant, Intensive Faculty Development and Virtual Worlds, 2011-2012, \$15000. Principal Investigator.

University of Wisconsin System, Office of Technology, Emerging Technology Grant, Social Media, January, 2010, \$4,200. Principal Investigator.

University of Wisconsin-Milwaukee, Educational Technology Fee, Second Life for Learning, April, 2009, \$2,500. Principal Investigator.

University of Wisconsin System, Office of Technology, Emerging Technology Grant, Virtual Worlds, January, 2008, \$5,000. Principal Investigator.

Sloan Consortium, Blended and Hybrid Learning Initiative, December 2007-2010, \$500,000. Awarded to UWM. Coordinated and conducted research and reports.

University of Wisconsin System, Office of Technology, Curriculum Redesign Grant, Student Response Systems, June, 2005-2006, \$98,000. Co-Principal Investigator.

Regent's Scholarship Award/Graduate Academic Scholarship, Arizona State University, Graduate College, 2000-2001; TA/RA Out-of-State Tuition Scholarships, Arizona State University, Graduate College, 2000-2002.

ASASU Conference Travel Grant recipient, Arizona State University, Associated Students of ASU (ASASU), November 2001 and November 2002.

Graduate College Travel Grant recipient, Arizona State University, Graduate College, February 2001, November 2001, and November 2002.

Graduate Research Grant recipient, Arizona State University, Office of the Vice-Provost for Research and the Graduate College, November 2001.

Outstanding GPA, University of Wisconsin-Milwaukee, Department of Communication, 2000

John Paul Jones Award, University Wisconsin-Milwaukee, Department of Communication, 2000.

Dean's Honor List, University of Wisconsin-Milwaukee, College of Letters and Science, 1998.

[end]