

# Faculty Perceptions of Technology Distance Education Transactions: Qualitative Outcomes to Inform Teaching Practices

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## Abstract

Understanding instructors' perceptions of distance education transactions is becoming increasingly important as the mode of distance learning has become not only accepted, but preferred by many students. A need for more empirical qualitative data was evident as anecdotal information still dominates the research literature. The study focused on the faculty of an established distance learning program at a small Midwestern university. Qualitative interviews were gathered, coded and analyzed. Faculty who used technology in their distance education courses were targeted. Faculty perceptions on course context, students, interpersonal and procedural transactions, learning and teaching transactions, and assessment transactions were gathered. The qualitative analysis provided rich data to further inform distance education programs' administrative, technological, and andragogical needs. Recommendations for future study, including a model for transactional hierarchy, were proffered.

## Introduction

Distance education is a very popular and intriguing area in the present realm of education. Institutions of higher learning throughout the United States and around the world are quickly embracing distance education to serve thousands of students. These schools share a desire to reach more students and to serve their education needs using the most recent technology commercially available. These new education environments stress learning outcomes rather than the old gauge of physical presence in a classroom (Munro, 1998; Phipps & Merisotis, 1999).

Although the physical environment of education is changing, the learning aspect remains the same. Education does not exist unless learning has commenced in some way. Therefore, distance education, while being innovative and trendy, must bow to the perennial issue of learning transactions. The best computer programs, multimedia presentations, and finest educational materials in the world do not guarantee that learning has taken place. So, distance educators must conduct learning transactions mindful of the burden of physical separation and technological requirements, as well as the perennial challenge of presenting content to stimulate learning.

Studying the learning transactions used by distance education instructors is a worthy and somewhat neglected field of educational research (Berge & Collins, 1995; Hara & Kling, 1999; Osika et.al, 2009). Learning transactions are defined for this research study as the communication conducted between instructor and student, or perhaps between students. For learning to commence, learning transactions must be conducted. Transactional distance theory was first introduced in 1972 at the World Conference of the International Council for Correspondence Education (ICCE) (Moore, 2007). As defined by Moore (2007), “transactions in distance education is the interplay of teachers and learners in environments that have the special characteristic of their being spatially separate from one another” (p. 91). Moore and Kearsley (2005) stated that the nature and extent of distance learning transactions varies according to the subject matter, course design, student maturity, and technology supporting the transactions.

A complete understanding of the factors that contributed to these learning transactions seems to elude the distance education research community. As the field of distance education grows exponentially, it is paramount that proper research accompany these programs. Understanding the factors effecting distance education transactions is one area that deserves additional and continual research. Furthermore, examination of the technology used by faculty in distance education is needed. Research in technology distance education (TDE) and faculty perceptions of the transactions used in this mode is a worthy area of research.

### **Literature Review**

Once a poor and often unwelcome stepchild within the academic community, distance education is becoming increasingly more visible as a part of the higher education family (Phipps & Merisotis, 1999). Distance education was scrutinized by educators across curriculums and levels for over seventy years when the first studies were conducted comparing traditional classroom instruction and correspondence course instruction (Russell, 1999). A great amount of study has been conducted on distance education in recent decades. However, a statement released by the counsel of the American Association of University Professors cautioned, “Distance education raises a host of educational quality and integrity issues that have yet to be answered in this rapidly changing environment” (Euben, 2000, para. 27).

Distance education proponents have had to surmount many obstacles in the past. The biggest argument against distance education was that it was not as good as traditional education. This argument assumed that traditional education was the preferred, or even an adequate method to educate students. Traditional versus distance education arguments filled research journals (Bernard et.al, 2004; Kuriloff, 2001). Also prevalent in the literature were online “how to” and instructor resource materials (Conrad & Donaldson, 2004; Finkelstein, 2006; Palloff & Pratt, 2005; Palloff & Pratt, 2009). The majority of early research studies attempted to justify distance education as a viable means of teaching and learning by comparing a distance education course with a face-to-face course of the same content. Conclusions were based primarily by comparing student performance on content assessments (Moore & Thompson, 1997). In fact, a great amount of early research on the effect of distance education focused on student outcomes (Souder, 1993; Hara & Kling, 1999; Ahern & Repman, 1994).

Less attention was given to the issues of specific transactions in distance education (Phipps & Merisotis, 1999; Munro, 1998). This was unfortunate because instructor/student transactions should be given the utmost attention in distance education debates (Hara & Kling, 1999; Berge & Collins, 1995; Osika et.al, 2009). A teacher could only claim success if they knew that a student comprehended the material in question. Assessment methods were one way to gauge the level and extent of these learning transactions. Indeed, assessment methods were one of the most important aspects of distance education (May, 2000).

There were early efforts to design online courses in the same way as traditional courses. However, this led to a focus on reproducing what practitioners already knew how to do rather than improving current practices during the transition to distance education (Kuriloff, 2001). Needed was research designed to teach the appropriate use of technology and andragogy beneficial for distance education students (Hara & Kling, 1999). Transactions may be better defined through qualitative research rather than the oft used quantitative research design. Qualitative studies allowed the distance learner to pause, reflect, and create an informed opinion of their experiences with distance education (Yakimovicz & Murphy, 1995; Hara & Kling, 1999; Windschitl, 1998).

Several researchers rightly stressed the role of faculty in distance education (Berge & Collins, 1995; Hara & Kling, 1999; Moore & Thompson, 1997; Wedemeyer, 1973). However, while examining the existing literature, it became evident there was a need for additional research designed to understand faculty use and perceptions of technology distance education (TDE). Such research for faculty would be greatly beneficial to distance education students, administrators, technology experts, and distance education as a whole. Technology advancements brought academic institutions many new opportunities, but responsibility for instructional quality and control still rested with the faculty. Pertinent research and literature suggested that higher education had a lot to learn regarding the ways technology could enhance learning, particularly at a distance (Berge & Collins, 1995; Fletcher et.al., 2007; Keegan, 1986; Phipps & Merisotis, 1999; Windschitl & Sahl, 2002). As such, distance education research

should include study of distance education transactions. Transactions link teacher and student and stimulate learning, so an understanding of transactions is paramount.

In analyzing the literature, it was found that research in distance education transactions was somewhat limited to the specific area of assessment transactions. Research in other distance education transactions, such as course context, student/teacher communication and course procedures, was needed to increase distance education's credibility and also to expand the existing, paltry ranks of reliable distance education research. In short, the majority of research in distance education assumed far too much. Assumptions abounded on the comparability of the courses, the learning transactions that occurred on the part of the student, the technology methods used by the instructors, and the level in which these factors combined to create a course deemed worthy of the standards of higher education.

The existing research in distance education did not adequately articulate the specific factors that influenced student/faculty learning transactions. As a remedy, faculty, rather than students, should be the focus of research. Faculty are often the designers, implementers, and assessors of distance education courses and, as a consequence, distance education transactions. Perception categories of instructor course and context, students, interpersonal and procedural transactions, learning and teaching transactions, and assessment transactions were needed to bring clarity to existing research and to provide a framework for future, functional research in distance education.

Intellectually digesting the vast literature of distance education was no easy task. One multifaceted area of distance education seemed to beget another multifaceted area of distance education. Much of the literature addressed distance education in general or assessment specifically without acknowledging the basic transactions that embody distance education relationships between instructors and students. Case studies and anecdotal information were also prevalent. Many of the research models on this topic were simplistic or seriously flawed.

Therefore, this research study sought a research design that focused on faculty; the designers and facilitators of most distance education courses. Next, faculty perceptions on distance education

transactions were gathered in qualitative data forms. Finally, an analysis of the resulting data provided the realm of distance education research some tangible examples of transaction perceptions. The literature enlightened the breadth and depth of distance education research, and also highlighted where additional research was warranted. Thus resulted the methods for the research study.

## Methodology

Using a grounded theory approach, qualitative interviews were utilized to gather rich, explanatory data from a purposive sample of technology distance education (TDE) faculty. Ground theory was the preferred method as a grounded theory design is systematic. This method seeks to generate a broad conceptual theory that explains a process, action or interaction about a substantive topic. Comparison of data from emerging categories was sought, which is a hallmark of grounded theory (Creswell, 2008). As the research literature lacked robust explanation for the types of transactions faculty perceived in their TDE courses, grounded theory was the proper method of inquiry for the research study.

The overarching question for the qualitative research study was: What were university instructors' perceptions of factors in distance education transactions? Interviewee elaboration about their specific distance education practices was guided by two qualitative subquestions: What course designs did technology distance education faculty use in their courses? What type of student/instructor transactions did the faculty prefer in their distance education courses? These subquestions relied upon instructors' self-disclosed perceptions via the qualitative interviews. The qualitative method was a desired aspect of the overall research as it gathered rich explanatory data about instructors' perceptions of TDE transactions.

**Setting.** The research was conducted at a small university in the midwestern United States (approximately 6500 students). Geographically isolated from a major population base, the chosen university has an established tradition (over 40 years) of using distance education to reach dispersed populations. Distance education is used at this institution to maintain enrollment numbers, but also to provide current, relevant curriculum to students in many locations and of

various ages. As such, the chosen institution was representative of many midwestern higher learning universities: geographically isolated from major population centers, obligated to meet the learning needs of existing populations in the region, eager to increase enrollments, and willing to use technology to enhance/sustain student learning. Students at this university are taught through distance education, locally as well as globally, and are able to obtain a baccalaureate degree and/or a masters degree. There was a keen interest among the leadership on this campus in using distance education to enhance and expand both student enrollment numbers and educational opportunities in the surrounding region.

**Population and Sample.** Using the informed opinions of two university staff members (the distance education faculty services coordinator and instructional design media services coordinator) who worked extensively with the university distance education faculty at the research site, a list of thirteen faculty members who used technology distance education (TDE) was created. The faculty members on this list were asked to participate in qualitative interviews. These thirteen faculty were representatives of all four of the university's colleges: Arts and Sciences, Health and Life Sciences, Business and Leadership, and Education. The thirteen faculty represented different departments. It should be noted that gender equity was considered. Five women and eight men were chosen for interviews. Of the thirteen interviewees, eleven held a doctoral degree in their chosen field while two held a master's degree in their field. Furthermore, each interview subject was known to have a high level of technology distance education (TDE) experience and expertise. The faculty chosen successfully used a wide variety of TDE media: postal mailings, videos, CD-ROMs/DVDs, internet, and interactive television (ITV). These media included low-technology (postal mailings, stock videos) and high-technology (self-produced CD-ROMs/DVDs, internet, ITV), synchronous or asynchronous communication modes, or a mixture of many of these components. As such, the interview choices reflected the distance education faculty's teaching experience, TDE expertise, different modes of TDE, all colleges, various departments, and gender.

**Interview Design.** The audio recorded interviews began by gathering basic demographic information about the faculty member. The standard questions posed focused on course design and transaction techniques in distance education. Interviewees were asked to discuss the

teaching and learning, interpersonal and procedural, and assessment methods they used, their success with these methods and their rationale for using such methods. These perceptions varied, but emergent categories developed. At the end of each interview, the interviewee was encouraged to mention anything they wished about distance education in general. It was this final question that prompted many interviewees to speak passionately about various topics in distance education. Some vamped about assessment topics. Others vamped about joys or irritations they experienced teaching TDE courses.

**Coding.** Coding began after all transcriptions were completed and the interview transcripts were read several times by the interviewer. Interrater reliability was captured through an external auditor. The external auditor coded a random sample of 50 percent of the interview transcripts. Coding categories and analysis by the external auditor sample closely aligned with the researcher's coding categories and analysis. Five coding categories were chosen due to several factors. The categories were a predominant theme in all interviews or were a theme found across several interviews. The categories which evolved were: 1) course context (instructor), 2) students, 3) interpersonal and procedural transactions, 4) teaching and learning transactions and 5) assessment transactions.

## Findings

The grounded theory qualitative interviews revealed a wealth of information pertaining to faculty perceptions of technology distance education transactions. Dominant coding categories included course context and assessment transactions. Secondary prominence was claimed by the category of teaching and learning transactions. Double and triple codes added to the rich data gleaned from the interview transcripts.

**Course context (instructor).** In this category, interviewees often gave lavish explanations of the specific TDE courses they taught for the university. The structure of the courses was often internet or video based with email and/or *Blackboard* facilitating course communication and the delivery of course assignments. Many of the faculty had witnessed the evolution of the university's distance education program through the years.

*Context versus technology.* Overwhelmingly, the faculty interviewed did not let the available distance education technology dictate the way they taught their courses. According to Professor P3, “I choose the technology that is appropriate for the course. I don’t let the technology decide what I can and cannot do.” Distance education was not endorsed for the sake of staying technologically current. Rather, the technology was a means to the end of providing quality courses to physically removed students.

*Group projects and group interactions.* Professor P2 made a statement that was echoed many times when s/he stated,

P2: One of the things that I have struggled with in distance education is group interaction. Collaboration, things of this nature. That is a little more difficult. I haven’t solved that problem. Even though we talk about, you know, the online discussions and setting up things and so on, the immensity of managing that becomes overwhelming.

Several other instructors mentioned the difficulty of designing group projects for distance education students. Still, the faculty interviewed devised methods to create group activities for their distance education courses. One of those methods was through internet discussion boards and online chat.

*Discussion boards and chat.* The academic worth of students communicating through discussion boards and chat was an issue of contention for some TDE faculty. Professor P4 believed greatly in the value of discussion boards, internet chat and ITV audio discussions. “These students are having a decent, intelligent conversation about what they’re doing and they understand what they’re doing.” In contrast, Professor P6 believed,

P6: I have to say I’m one of those people, there aren’t many of us, that at the undergraduate level, I don’t think students learn a hell of a lot talking to one another. It’s very much analogous to the cancer patients curing one another by talking to one another. You learn by your interaction with the content expert. And obviously that changes as one moves higher up the food chain into advanced undergraduates and graduate students...I find these discussions more business. Just inefficient to say the least.

*Remaining current.* With the changes in technology occurring so rapidly, TDE faculty strove to keep their course content and instruction methods current.

P7: We have changed our off-campus [course content] every year and a half to every two years. [We are c]onstantly looking for a better way, a new way, a different way of delivering it, [and] assessing students. You know, it's a constant learning cycle. Of course, you change with the time; you change with the technology....

P8: In the beginning, things had about a three year shelf life. So the deal was that we'd run it for three years and then either scrap it or redesign. We're just getting to that point this semester.

Remaining current in distance education course content was an ongoing endeavor. Nevertheless, the need to adapt for present and future changes allowed for a simultaneous check of course quality.

*Quality.* Quality must be constantly addressed and maintained in any successful distance education program. Professor P12 echoed this idea by stating, "There has to be a quality check in all this stuff too. And assessment is definitely one of those aspects.... You have to have quality content; you have to have quality assessment." Tweaking quality increased the value of TDE for the student, instructor, and society as a whole.

*Worth of distance compared to traditional education context.* Several TDE faculty questioned whether a distance education course was truly equal to a traditional education course of similar context. First, some traditional content courses were not easily converted to another mode of learning such as distance education.

P12: Putting an on-campus class over to an off-campus class is not as simple as some would lead you to believe. There's a lot of changes that you need to make.... It's not as simple as, well, I'll just make a videotape of what I do and, you know, students can still do the same old stuff.

Then, there was the debate of whether the distance learning mode successfully duplicated traditional classroom experiences and learning.

P6: ...the distance education courses are not comparable to the on-campus courses. Period. Because I happen to think that you cannot duplicate the same effect of 45 hours, or 45, 45 or 50 minute contact segments in 30 half-hour videotape segments. ...[T]here's something to be said about the classroom experience. Particularly over time and, let's be real honest, most of the folks out there in the distance education world aren't as credentialed as the population that is out there, generally, in 4 year institutions, teaching in, you know, departments.... You can get close to it. You can approximate it. That's the verb I'd use. Distance education courses do a pretty good job of approximating the in-class experience.

Professor P7 agreed with the previous quote. "In my opinion, what happens here on campus is hard to replace through distance learning.... It's an alternative. It's not a great alternative, but it's an alternative for those that can't be here."

*Variety of course design.* All TDE instructors could choose between several course designs. Video, ITV and internet were the most popular TDE modes, with the option of mixing modes readily available. In fact mixed-modal courses, or "hybrids" were quite prevalent. The variety of "hybrid" courses was vast and murky. Furthermore, some departments classified these "hybrid" courses as distance education and other departments classified them as traditional education. Defining a distance education hybrid, Professor P2 stated,

P2: ...our department has no completely stand-alone courses [exclusively internet mode]. There are other platforms or other types of methodology used, either through ITV or through chatrooms, or whatever it might happen to be. To combine something so that they're not just, you know, they're not just internet by themselves, I guess you might say. There is some face-to-face. So there's various combinations.

Interviewer: So, you would refer to those as mixed-modal courses?

P2: Yes, and we have found that to be, by far, the best delivery system to maintain quality in what we want to do in our program.

By contrast, Professor P6 viewed internet usage as an integral part of present traditional education.

P6: My [name of course] that I teach on campus now is a hybrid course. That meets Mondays and Wednesdays in class, on campus. And Friday we don't meet but the lecture has been videotaped or there is an internet exercise.... I consider traditional now to be the use of *Blackboard*. I mean, to me using *Blackboard* or the internet is in the same category now as handing out in-class handouts or syllabi. I don't see that as a distance education thing. I really don't.

Professor P6 then continued with her/his definition of distance education. "Obviously, the distance education realm is different in that there is no physical contact. It is all out there in videotape, internet, email, surface mail, audiotape forms."

*Delivery mode.* TDE is burdened to meet another criterion; the mode preference of certain contract facilities. The university researched met such obstacles with their existing military education contracts which were being negotiated during the interviewing.

P13: I don't know if you're aware of this, but it's not just that there's tremendous interest in putting on distance learning courses, but each entity that we offer to seems to want a different mode of delivery. Navy prefers videotapes [CD-ROM/DVD]. Out of state students prefer videotape. Some of my commuters really like an audiotape class.... Army won't accept videotapes; wants only internet classes.... It's really kind of difficult.

*Content submissions.* Several interviewees liked the fact that internet courses decreased the amount of papers or hardcopy materials that were transferred from teacher to student and back again. For example, Professor P3 used the internet for regular homework submissions and intended to use the internet for testing in the following semester. Such "paperwork" submissions and communication improved the course design and allowed the course to progress faster than it would if the postal system were used exclusively.

*Class size.* "If you get many more than 20 students in an online classroom [and] you're in there by yourself, you're going to die. Either that, or you're going to start taking an awful lot of

shortcuts.” These cautionary words by Professor P4 served as a reminder that TDE classes were very time consuming and class size should always be considered. In some disciplines, TDE courses have rather small class sizes. For example, Professor P9, who taught predominantly TDE graduate courses, enjoyed class sizes of four or five students. This small size ensured personal attention despite the physical separation of teacher and student.

*Commitment to distance education.* Professor P10 did not mince words when stating, “You obviously know that [name of university] has invested a lot of money into distance ed[ucation]. And it’s one of three ways departments are going to succeed now, in the future.” P10 then continued by explaining the three avenues to department success were research, credit hour production, and/or distance education. Therefore, if a particular department was not research oriented or had difficulty producing sufficient credit hours, their only viable alternative appeared to be the distance education unit. Therefore, designing and offering distance education courses was important at the university, regardless of department.

Technology was acknowledged as a modern boon for distance education. It was also an ever present problem. While advances in communication and course delivery helped ease the physical gap between instructor and student, successfully using this technology caused frustrations for all involved. Therefore, many TDE faculty needed to be technology advisors as well as the content expert for their TDE courses. Still, certain distance education software programs, such as *Blackboard*, made learning and communication much easier.

*Blackboard and existing technology.* Blackboard was the software package used by most TDE faculty. The software provided email communication, discussion group postings, class announcements, assignment submissions, and online examination options. The benefits of *Blackboard* were touted by many faculty members. Professor P5 stated, “...when you’re using tools such as *Blackboard*, it’s [a TDE course is] not that cumbersome to put together.” Furthermore, this webcourse management tool was fast becoming synonymous with distance education in general. “Because of the success of the *Blackboard* system, there’s now a *Blackboard* culture out there,” decreed Professor P6.

Even with all the advances being made in online communication, some education materials and concepts just could not be easily converted into digital forms. Streaming video could replace videotapes, but only if the university supported a large internet bandwidth. Related was the student's need for a fast modem to easily receive the streaming video. In science courses, complex math symbols suffered when transmitted over the internet. Also, MP3 audio technology could not duplicate the clarity of a live music performance. Professor P12 summed up these concerns by stating, "So there are still some issues, you know, it's still not a natural connection between a student and a computer. Operating systems are still cumbersome, our interface with the computer is still cumbersome. It's not a seamless integration."

*Instructor computer literacy.* Some faculty were often self-taught on computer usage and distance communication programs. Professor P2 had mixed feelings about the labor intensity of TDE courses.

P2: I've already said, you know, the labor intensity [is an issue], but I put it on myself. And I think that's one of the pluses and minuses of technology today. It allows you to do more, but the more you do, the more time intensive it becomes for you to manage.... And you find the happy medium so that you say, "I'm getting good quality, people are happy...."

Another interviewee praised the university for their commitment to technology.

P4: I look at what [the university] has given me and I've never had a job that I've worked so hard at in my life. But I look at what I have learned technology wise here and I know that I am a much more marketable person because of what I know and what I've done.

*Students.* It was an obvious conclusion that distance education in general and TDE specifically would not exist were it not for the presence of students. Therefore, those people interviewed expressed many separate issues concerning students.

*Communication.* Despite the physical separation of instructor and student, distance education provided many opportunities for communication on course content or other academic concerns.

Email was the main mode of communication. Faculty spent many hours conversing with their TDE students through asynchronous email or through *Blackboard* discussion groups.

“Sometimes my emails are longer than the tests. You know, that takes a tremendous amount of time, but I really think that there is a lot of payoff for the class,” claimed Professor P13.

*Delays.* However noble the intentions were, many faculty found themselves far behind in their email or posting responses to students. Email responses could be delayed by two days to one week. Discussion group posting responses were as many as two weeks behind the initial posting. Despite the communication delays, in the context of learning transactions and assessment, quick responses were paramount to the instructors.

P12: There’s got to be feedback...not necessarily immediate, but the longer you wait to give the student feedback, the less utility it’s going to have. So the interactivity should be, you know, as reasonably close to whenever the student posts or whenever the student takes the exam, or when the student submits their paper.

One problem with TDE communication was the possible time lag. Email was asynchronous, faculty were burdened with other duties, and by the time the student received instructor comments to an assignment or an inquiry, the impact of learning might have greatly diminished. Nevertheless, Professor P1 believed that there was more student contact through email than there was in previous postal or phone messages.

*Online chat.* Online chats benefited the students regardless of the interaction of the instructor and some interviewees utilized this synchronous communication. However, they did so as a communication alternative, not as a course requirement. Chat allowed quick responses, but if too many students were online at one time, the session became confusing and cumbersome. Professor P5’s students often chatted as a means of problem solving to complete course projects. “You see, that’s learning. Passing around information about the answers to multiple choice questions is not learning. I want to use creative energies that they are communicating and problem solving on how to do things and how to create content.”

*Evaluations.* To supplement communication, some faculty asked their TDE students to complete formative course evaluations. These were often short inquiries that allowed students the opportunity to voice concerns about the course before the end of the semester. By addressing problems early, these evaluations helped both the instructor and the student.

*Characteristics.* Technology distance education was not for everyone, but some students seemed to thrive in such an environment. For example, an introverted personality may be dwarfed in the face-to-face classroom, “but I think it probably opens up some students and they communicate their feelings more and their opinions more because they’re not face-to-face with you,” observed Professor P1.

Another characteristic was that distance education students often had schedules that were greatly different than the traditional student.

P4: I’m working with students that have very unusual timelines. They might be working 7A to 7P. They might be working 7P to 7A. They might be working midnight to 6am. They have really, really varied schedules and there’s no way I could say on such and such a day, take the quiz, because they might have worked a 12 hour shift that day and they’re dead. And it might have been nights. You know, they can’t take a test.

According to Professor P7, “...off-campus students are much more high maintenance.... No comparison.” Professor P4 agreed, “I know that those people who are online need, it’s not more handholding, it’s just more assistance in knowing what you require.” Stated a little more eloquently by Professor P13,

P13: [I want to] Get the anxiety level down. You know, trying to make them feel more at home.... You know, because that on-campus student you meet in the hall and smile at. You don’t have a chance to do that with [TDE]. You’ve got to make sure they feel as welcomed and as capable as the on-campus students.

Either way, these instructors believed that distance education students needed extra communication and reassurance than their on-campus counterparts.

*Student computer literacy and access.* “I’ve had to give a lot of instruction on computer use,” admitted Professor P1. This sentiment was repeated by several faculty and acknowledged that some TDE students did not possess enough computer skills to successfully complete distance education courses. Furthermore, some students were eliminated from taking TDE courses when the technology advanced.

P13: You realize that if I go to doing the exam on the computer, you know with the timed thing and all, that I’m going to eliminate some students because [Navy] students out on the ship in the middle of the sea don’t have access to a computer.... I really would like to think that everyone has access to education.

As idealistic as this sentiment may be, it was just not practical. While technology brought access to many students, other potential students were excluded due to the technology requirements.

*Problems with unlimited access.* The availability of email and chat options increased student/instructor communication, but it also hatched a potential problem.

P4: I started having students that thought they could contact me 24/7 [24 hours a day, 7 days a week]. And I know why they think they have one-on-one contact, because they do! And I tell them that I have virtual office hours and they can contact [me] whenever they happen to be online and occasionally I won’t sleep well and it will be three in the morning and I’ll be, “Oh well, can’t sleep. Might as well get up and answer some emails.” And I do. It’s probably not a good idea because then they really think that I’m available 24/7.

Professor P7 agreed that this practice was a poor idea.

P7: There is an expectation among many distance learners that you should be accessible 24/7. On-campus students don’t feel that way. Off-campus students call you at home all the time. Nights, weekends, they email you. I’ve had people email on Saturday and if I didn’t respond by Sunday they were calling the dean, and they did. And that is becoming much more the trend with a lot of us. We’re noticing. Some are putting in the syllabus, “don’t expect a response within 72 hours.” There is this belief, and some people do live

in front of their computers. They email all the time. I'm not one of them...I don't live in front of that box [the computer]. It doesn't run my life.

Finding a median between too much and too little student contact seemed to be an important issue to many interviewees. Also, faculty wanted to remain cognizant of the needs of their TDE students based on their characteristics.

### **Interpersonal and procedural transactions**

Building an understanding of course procedures and developing instructor/student communication is a normal concern in distance education. Quickly establishing course guidelines, revealing instructor expectations of the students, and deciphering student expectations of the TDE course was important to most interviewees.

*Course rigor.* One of the prevailing criticisms of distance education modes was that the curriculum was not as challenging as that found in traditional education modalities. One interviewee agreed that this was a viable issue. Professor P1 stated,

P1: Well, it is a concern because there are several things that are happening in education today that are referred to as “dumbing down” college education. And the distance learning is a problem. I do my best to make it a worthwhile course. Yet, I've thought at times, ‘Gee, am I just falling into what they want me to do? Churn them out as fast as I can?’

In fact, that misconception has permeated distance education lore.

In the context of academic rigor, traditional education served as a gauge. For Professor P13, there was little differentiation between traditional and distance education rigor. “And when I grade them, I assess what they've learned. It doesn't matter if they're [distance education] or on-campus students. I have in mind the certain structure that I'm looking for and I've been very explicit about it. And that's the basis on which I base the grade.”

*Course grading.* Examinations, written papers, and projects often bore more weight in a student's final grade than discussion group points or regular assignments. Internet discussion groups, if they carried weight in the final grade calculation, often did not bear substantial weight.

For most faculty that used the discussion groups, they used the groups to stimulate student communication rather than to gauge learning transactions. However, when students enrolled in a distance education course and found it rather challenging, they became upset with the instructor. “We do have quite a bit of people who get hacked off if they don’t get the ‘A’. They really think that this is going to be [easy]. They also think that since it’s [TDE], it should be a snap,” declared Professor P11. Professor P4 chimed in similarly.

P4: Every semester, I have students say, “I thought this was going to be easy. I thought it was online, there wasn’t going to be much work to it.” And it’s the rare student that says, “I kind of had a sneaking suspicion that something online was going to be a whole lot more work.” And that’s the rare student.

Course procedure and interpersonal communication must be championed by the instructor to be effective.

P4: I’m very cognizant that I do not want this to be a fluff course. I don’t want it to be so hard that it’s impossible, but I want it to be interesting enough that the student wants to sit down in front of their computer to work on the course. And I don’t want it to be piddlely little things that they have to do every day.... Emailing about this or that or the other.... I think they should be active, but I think they should be meaningful activities.

Professor P12 agreed. “...we can put anything out there on the web, but, is it good? There has to be a quality check in all this stuff too.”

### **Teaching and learning transactions**

In the category of teaching and learning transactions, interviewees discussed the specific joys and difficulties they experienced in conducting their TDE courses. Comparing distance education courses with traditional, on-campus courses was the prevalent theme in the interviews. Analyzing the two modes of learning (distance and traditional), interviewees mentioned as many similarities as they did differences. Professor P2 observed, “Distance delivery, the way that we have [it] designed, it is a lot more intense and time consuming than the traditional mode of delivery. And that’s one of the plusses and minuses.” As an example, the professor continued

by stating that s/he now received more data by way of homework submissions, graded projects, and asynchronous contact than would be collected under traditional delivery forms.

*Teaching and learning comparisons – distance and traditional.* Professors P3, P6 and P12 used *Blackboard* technology as a teaching tool in their traditional classrooms. Whether it was used for communication or assessment, these instructors required their on-campus students use *Blackboard* for their on-campus classes. The trappings of TDE were a benefit to the traditional classroom.

Flexibility and greater student participation were attributes of TDE. Professor P2 illustrated this by summarizing comments s/he received from students.

P2: “I would never speak up in class, but the ability now to, just me in my room and my computer, I feel free to say whatever I want to say.” And so there are some things that are taking place here that do not take place in a structured classroom.

Several interviewees mentioned the difficulty or futility of attempting group collaboration or group discussion in their TDE classrooms. Making the group interactions meaningful was one hurdle, with proper instructor management of the groups being another hurdle.

P7: And maybe using the internet for distance learning may not be a good thing, from the faculty’s perspective. We want our students to interact just like they would in the classroom here [on campus], but not to the point that we do it [email] seven days a week. If the faculty member has time, great. But if they don’t, you know, that becomes a real problem.

Professor P3 believed that assessing TDE students was a challenge.

P3: I think it’s difficult in part because it’s harder for me to know where students have put their attention and where they’ve focused on. Within the context of the face-to-face classroom, I know what we’ve talked about, and I know more of where they stand and what they do and they don’t understand.

Another detriment of TDE was in a curriculum that required practicum or clinical work. “Hands-on” training with equipment or interacting with clients cannot be convincingly duplicated over distance education. One solution to this problem was offered by Professor P9: “If they can take all these [distance education] courses and then come on campus for like a short period of time, or maybe just a semester, you know, just to do all the hands on stuff.”

*Administrative comparisons – distance and traditional.* TDE faculty were quick to mention that distance education was not a “shortcut” method of teaching. Great planning was required. Not only was planning required to create the distance education course, but constant maintenance was demanded throughout the semester.

A benefit of TDE was that it provided an opportunity for professors to change, advance, and better their existing teaching practices. Professor P4 iterated this thought.

P4: ...in a traditional classroom, you tend to stick to what you know. Even if you tend to see yourself as creative...you have a set of repertoire that you tend to depend on.

Because it’s always worked for you.... But when you start moving it to a whole different way of producing the class...[you ask yourself] how can I get at that same thing and do it online?

The interviewee continued:

P4: I think, and this is personal opinion, that the poor student will stick out quicker in an online class than in the on-campus class. By the same token, the poor teacher will stick out quicker online because if you don’t enjoy what you do, if you don’t know your topic...and you can’t be flexible enough or creative enough to make it a good class, nothing screams more than distance ed[ucation].

### **Assessment transactions**

Questions pertaining to assessment transactions produced a myriad of responses from the interviewees. Some faculty spoke in great detail about the specific assessments they used in their TDE courses. Other faculty spoke in more fluid, theoretic terms about the assessments they used, did not use, or wished they used in distance education.

*Examinations.* Professor P1 seemed to be in the minority by offering all her/his distance education assessments online through an examination method. *Blackboard* was the delivery mode used for these exams. No other method of assessment was used by this instructor. The examinations consisted of multiple choice and short answer essay and were delivered exclusively through *Blackboard*. In contrast, Professor P3 used examinations that were delivered entirely through the postal service. Some other instructors used *Blackboard* for online quizzes but preferred to administer open book, take-home exams. The technical limitations of online exams (e.g. limited space for an essay response) convinced a few interviewees to choose other assessment techniques such as projects or written papers.

Not surprisingly, the debate over the value of multiple choice, completion, matching, and alternate choice question forms was found in the interview transcripts. Some interviewees saw little worth in multiple choice, et.al. questions due to the belief that they measured only lower level, comprehension level thinking. Difficulties in assessing through TDE made things even more difficult.

P1: I do feel somewhat restricted in how I can write the exams. Giving multiple choice questions, to my mind, and to many other faculties minds', is not the best way to test someone. It tests them very limitedly on facts they've memorized or learned. It doesn't really test them on understanding. And that has been one problem I've felt with using the online [testing option]. It's either multiple choice or, you know, definition, completion. I haven't been able to use the methods I'm more comfortable with, which is a lot more writing.

Therefore, these faculty tended to rely on essay questions to capture the higher level, application and evaluation level thinking. In some cases, essay examinations were used almost exclusively by the interviewed faculty to assess student comprehension.

In contrast, at least one faculty member was very vocal in her/his belief that any level of thinking could be captured through multiple choice questioning.

P6: I don't agree that multiple choice questions are only cognitive. I mean, it takes more time and the students really hate them, but you can get the higher order thinking in a

multiple choice question. You absolutely can...there are also ways of writing questions where you can go into application and you can actually get at, in some cases, synthesis and analysis.

The obstacle in utilizing online assessments appeared to be instructor reluctance to use multiple choice and related question forms, not in using online assessment delivery methods in general.

*Written papers.* The variety of written papers used as assessment mechanisms in TDE seemed limitless. The rationale and worth of using written assessments was emphasized by Professor P8.

P8: ...I'm a big fan of writing. And I make them write, write, write. I'm much more a fan of that than tests. You know. I make them write a ton...because people write horribly.... If you don't write concisely and write well, you're going to look like a moron, basically. You know, so if nothing else, writing skills are what our people need.

Some faculty used "reflection papers" similar to the traditional book reports, but encouraging more student opinion. Other faculty turned toward the perennial research paper, although concerns about security and plagiarism abounded.

*Projects and portfolios.* Student projects were another assessment method used with success by the university's distance education faculty for learning transactions. Fortunately, the faculty using such learning mechanisms never mentioned any severe drawbacks to using such methods in TDE.

*Internet discussion groups.* A "love-hate" relationship seemed to exist between the faculty and their opinion of discussion groups, also known as postings and asynchronous communication. Some faculty relied greatly on discussion groups to promote student interaction while other faculty tolerated the discussion groups but did not see real value in online discussions as a learning transaction. Professor P6 was blunt in stating, "...for all it's [a discussion group's] alleged fruitfulness, I see just tremendous limitations and inefficiencies...." Professor P5 iterated the worth of discussion groups as follows: "I use discussion groups where I pose a question to the class and where, in a face-to-face setting, you would discuss this orally." The median position was posed by Professor P8 in stating,

P8: ...the one rap on distance ed...it's a valid rap, is that you can't replace the in-class banter. Just that talking, interaction, this and that. And I guess this is one way that you address that lack of any kind of interaction with other people and their thoughts.

There were instructors who used the discussion groups as an assessment mechanism in which the quantity and quality of the student responses bore weight in the final course grade. "I don't give them more points just for talking more and I do look at the depth of what their comments are," responded Professor P12. Other instructors assessed the discussion groups in a limited fashion, such as they would an attendance grade. Professor P12 stated, "I use a lot of discussion postings. Just as a means to make sure that the students have contact with me...it's participation."

Internet chats, or synchronous communication, occurred in real time and were found to be rather cumbersome by the TDE faculty and their students. Still, accommodations were made.

P3: The first time we did it [online chat] we had 15 [students] on, which was too many.... But we decided that that was the first meeting in the fall. Everybody's on and we're going to put it up and then they broke up into subgroups of three, four, five. And then the groups have projects that they work on. They coordinate and share with each other. So that allows fruitful discussion with the group members.

The thought and preparation placed on TDE assessments was obvious. Poignant words were expressed by Professor P12. "I think we need to be more mindful in our assessments.... We have to be very mindful of our assessments when it comes to off-campus classes.... You know, if you don't have quality assessment, how the hell do you know that you're teaching the student anything or not?" Succinct, yet cautionary. These distance education faculty constantly strove to better their assessments for the good of their students. However, they also had to be cautious of student duplicity.

*Assessment security.* A perennial problem for education, security and assessment seemed to be constant companions. In the past, and in some cases presently, distance education examinations were secured through the use of proctors. Professor P1 questioned the honesty of proctors in the past. Therefore, s/he offered and preferred offering all exams online. Placing a time restriction

on the online exams further safeguarded the assessment. Other instructors devised their TDE examinations so that it would not matter if the student used a textbook or other supplemental class materials. These faculty created exams in which the student assimilated, analyzed, or produced original information based on their comprehension of the course material. Each interviewee mentioned practical ways to promote exam security.

The internet has increased the possibility of academic plagiarism. In response, TDE faculty attempted to catch, or curb plagiarizers. One practice was to narrow a paper topic to specific course material, textbook themes, or instructor approved topics. “I make them pick something very specific to the course so you’re relatively sure that they’re writing a fresh paper.... Things specific to a reading or an assignment,” mentioned Professor P8. Technology even aided instructors in detecting plagiarism. Professor P12 required that TDE students submit a hardcopy and a softcopy of their papers.

P12: And I’ll use the digital copy to do a plagiarism check, basically. I’ll type it into a search engine and into a plagiarism site to see if that paper’s been posted somewhere else.... And I make sure that students understand that I’m going to be doing just exactly that...just so they know that they are going to be checked I think is absolutely a deterrent.

### **Culminating thoughts**

Professor P7 mentioned what can be interpreted as a humbling comment. As good as TDE seemed, as advanced as the technology progressed, and as carefully as the instructor prepared their courses, there would still be an all-encompassing difference. Distance education was not traditional education.

P7: So there are things in the way that we offer courses, in the methodology of the courses, that don’t tailor themselves well to distance learning. We try to adapt the things that we can. In my opinion, what happens here on campus is hard to replace through distance learning.... It’s an alternative. It’s not a great alternative, but it’s an alternative for those that can’t be here.

In summation, Professor P6 adamantly stated, “...the distance education courses are not comparable to the on-campus courses. Period. ...the best that one can hope for in distance

education is that it will approximate what goes on in a traditional, on-campus environment....  
The best that you can hope for is an approximation. That's it.”

This statement, while forceful and dismissive, was paraphrased throughout the interviews. Several interviewees echoed this sentiment without entering the wider debate of whether distance education was superior to traditional education. The faculty simply addressed the differences in distance education and the benefits and detriments of each form instead of choosing a superior entity.

## **Conclusions**

The instructors interviewed for this qualitative study were experienced in their subject area and had high expertise with TDE. Each instructor was able to speak intelligently and at length on the topic of TDE transactions, their effects on course content, students, and faculty. Furthermore, each interviewee voiced concern in maintaining education quality and student collaboration in TDE. The faculty used a wide variety of TDE media: postal mailings, videos, CD-ROMs/DVDs, internet, and interactive television. These media included synchronous or asynchronous communication modes, or a mixture of both.

### **Course context (instructor)**

Although the TDE faculty were experienced with TDE use, they did not let technology dictate course design. The integrity of the course content was of utmost importance. Technology served to enhance the course. However, the rapid advances in technology were an issue as TDE courses required timely modifications to remain current. There was the perception that use of sophisticated technology could eliminate students due to the limitations of their personal computers.

### **Students**

TDE students were quite varied, according to the perceptions of the TDE interviewees. Some students required large amounts of individualized instruction. Other students were happily autonomous. Conflicting schedules made synchronous student collaboration (internet chat, interactive television) challenging. In some cases, faculty perceived that asynchronous modes

allowed students to proceed through the course at their own pace; on their own time schedule. As students continued to enroll in TDE courses, their familiarity with procedure and technology greatly increased.

### **Interpersonal and procedural transactions**

Creating and maintaining an atmosphere of communication and collaboration was the ultimate perceived challenge for TDE instructors. TDE students had to establish some level of virtual contact with the TDE instructor and other students to have the best education experience.

Technology both aided and hindered this process. Technological factors which aided student contact with the TDE instructor included student proficiency with computers and other modes of technology. Small class sizes were important in TDE. Furthermore, email contact bridged the physical distance gap and provided a forum for students to discuss course content and technology issues. Technological factors which hindered student contact with the instructor were assignment submissions and an overabundance of emails. Despite the aids and hindrances of TDE, the faculty perceptions were clear and unwavering in one area: course rigor. Distance education students and course submissions were graded under the same standards as traditional education.

### **Teaching and learning transactions**

Creating and maintaining meaningful student transactions was an ever-present challenge for the TDE instructors, according to their perceptions. Some TDE students were eager to learn and to be taught through technology modes while others required coaxing and assistance to enhance the technology learning experience. The interviewees were cognizant of the delicate balance among course context, technology usage, student preferences, and quality of transactions. In addition, all the instructors were insistent that TDE could only approximate the traditional classroom experience. However, the interviewees were careful to not venture into the controversial realm of whether distance education is superior or inferior to traditional education.

### **Assessment transactions**

TDE instructors discussed several problems in the area of assessment. Academic honesty, technology problems, and security were perceived areas of concern. Many of the instructors

avored written examinations and projects as their main assessment mode. Writing was the most frequently used student TDE assessment transaction. This is obvious due to the physical separation of instructor and student and the need to bridge the gap through writing (e.g. chatrooms, discussion board postings, written papers, or email correspondence.) The interviewees shared several innovative and manipulative practices they used to ensure the security of their assessments.

### **Concept of transactivity**

The TDE instructors interviewed for this research were experienced in their subject area and had high expertise with technology. Their perceptions of TDE were informed, clear and categorizable. However, the researcher discovered from the interviews that these TDE instructors do not think along the lines of a transaction hierarchy which could allow them and their students to organize and prioritize TDE transactions into a more productive teaching-learning environment.

The TDE interviewees understood the value of maintaining transactions with students. They perceived that they expended great effort in maintaining connections with the students. However, they did not do so with an agreed upon conceptual framework for transactivity. This is not a failure of the technology and it is not a failure of these TDE instructors. It very well could be a failure of research and development efforts in TDE. In other words, apart from the subject matter being taught and apart from the technology used to transmit the subject, it is possible that TDE would benefit from additional research and development measures in developing a transactional hierarchy or taxonomy that would be of mutual benefit to both instructors and students. A transactional hierarchy for TDE is needed and will aid TDE instructors in conducting their courses to the ultimate educational benefit of their students.

### **Model for transactional hierarchy**

The creation of a model for transactional hierarchy in TDE is recommended. Through the qualitative research, it became evident that TDE instructors perceive difficulty in connecting their TDE transactions and the measure of these transactions through assessment. Assessments are conducted and quantified, but they do not seem to compliment the transactions that TDE

instructors desire. Transactions must be prioritized into a hierarchy to aid analysis and to better understand the perceived outcomes of instructor-student interactions in TDE. As such, a framework for future research and the development of a transactional hierarchy for TDE is proffered.

The following recommended TDE transactional hierarchy places the transactions from simple to complex:

1. The student states presence in the TDE classroom.
2. Through technology modes, the student asks the instructor and/or other students questions to clarify facts.
3. The student participates in a virtual class discussion about new, relevant content information which has myriad solutions.
4. The student synthesizes and evaluates the myriad solutions into their own educated opinion, striving for a workable solution.
5. The student, using technology modes, formally introduces their educated opinion which formulates a workable solution or resolution to the TDE class.
6. The student collaborates with other students through TDE on a shared project in which a workable solution or resolution is required.

Organization through a transactional hierarchy such as this could greatly aid TDE instructors in producing, administrating, and quantifying their technology distance education courses.

Future qualitative research should strive to create and implement a TDE transactional hierarchy. A hierarchy would aid TDE instructors in their organization and analysis of TDE transactions. Such a modification would then nicely compliment the refined quantitative survey instrument. A final recommendation would be to properly combine usage of the refined quantitative survey instrument with qualitative research utilizing the TDE transactional hierarchy. Tandem research in quantitative and qualitative methods would produce greatly needed insight into university instructors' perceptions of factors in distance education transactions.

### **Continuation of TDE research**

Future research upon university instructors' perceptions of factors in distance education transactions is greatly encouraged. As such, the existing research can suggest areas in which continued research is needed and would be appreciated. Therefore, longitudinal research on the long term effects of TDE teaching and course context would be productive. A five year longitudinal study which can analyze the TDE instructors as they advance from the level of low TDE experience to the level of high TDE experience is suggested.

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## APPENDIX: Qualitative interview questions

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- How long have you been a faculty member at this university?
  - Throughout your academic career, how long have you taught distance education courses?
  - How long have you taught distance education courses at this university?
  - Please discuss the basic design of your most prominent distance education courses?
  - How do you interact with students in your distance education courses? (course content, assignments, basic communication)
  - Do you use one type of assessment more than others? Please describe this assessment method.
  - Is there an assessment method that works quite well in a traditional classroom, but does not work well in distance education? Please describe this method. Why doesn't this method work well in both traditional (face-to-face) and distance education courses?
  - Is there anything else you would like to mention about distance education?
-