A Delphi Method Study on Triggering Transactional Distance to Improve Students' Learning: the Instructor's Rubric 1.1

by Dr. Heidi L. Maston

Abstract

The 21st century ushered in change with the increased use of technology in educational delivery methods and opened doors for a new generation of students. While the debate over pedagogy, content design and overall effectiveness of this delivery format continues, scholars have not attended to the lessons of earlier theorists. This study examined a foundational theory of distance education; transactional distance (TD) and the potential to increase academic learning via sets of parameters instigated by the instructor. These sets of variables are described in the Instructor's Engagement Rubric 1.0, which was created through this study following a three-round investigation of current and anticipated behaviours discovered in this study and accomplished in accordance with the research methodologies of the Delphi Method. The responses to this Delphi study produced the following results: a) The technological tools in the transactional distance classroom are being used in a variety of manners and with little consistency as to a desired outcome; b) There is inconsistency with the identification of the role of the instructor in a TD classroom; c) The data also indicated that there are certain combinations of tools and purposeful interactions that can create an improved learning environment for the student. These data produced the Instructor's Engagement Rubric 1.0 (IER 1.0), which is now available for use.

Keywords: *Transactional distance, self-efficacy, communication, technology, student engagement, distance education, Delphi method*

Introduction

Following several decades in the immediate fields of communication, education, and distance education, I have experience with a variety of populations. Although initially diverse in nature, the teaching and learning similarities of the members of these groups have impressed upon me the need for a concrete rubric of self-efficacy guidelines that can be introduced by the instructor and implemented by the student. This study targeted two distinct levels of learners. First, the study explores the instructor's relationship with the quantifiable measurements of transactional distance (structure, dialogue and learner autonomy) in distance education, their measurable impacts, and potential utilization on the student. Second, this study addressed the needs of learners by ultimately providing directional criteria for the instructor to decisively engage the student in the process of becoming self-effacious in the transactional environment.

This study examined the variables of transactional distance, structure, and dialogue, and how they might affect the self-efficaciousness of the distance-based learner toward higher academic learning. As each population's needs are different, it is necessary that the instructors be fluent both in the technology that is age appropriate as well as the basic needs of the individual student in relation to the instructor.

Prior to beginning this study, several avenues of thought were examined and the core questions were developed to serve as a roadmap for the research outcomes. Due to the nature of The Delphi Method, the questions were not set in stone and each round remained flexible in anticipation of the previous round's results. The predominant theme of the questions created and addressed during the study were as follows:

I. What proportion of transactional distance variables of structure and dialogue are perceived by instructors as being most impactful on academic learning?

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II. What proportion of transactional distance variables are perceived by instructors to influence a learner's increased academic learning self-efficacy?

III. How does the instructor implement structure and dialogue to increase self-efficacious traits in the student?

IV. What purpose does the instructor have for implementing the instructor's rubric?

This study examined a foundational theory of distance education, transactional distance, and its potential ability to trigger the student toward a self-efficacious construction of increased academic learning via a chosen actionable pathway set in motion by the instructor. A tentative set of variables and their relative importance in this process is described in the Instructor's Engagement Rubric (IER 1.0). This rubric was designed following a three-round investigation of current and anticipated expert instructor and student behaviors discovered by this study involving expert instructors and conducted in accordance with the research methodologies of the Delphi Method. This rubric is now available for instructors in the field to use in designing their technology-driven classrooms to develop self-efficacious learning habits.

What is Transactional Distance?

In 1972, Michael Moore proposed a fundamental concept shift that evolved from basic insights regarding independent learning and learner autonomy and transitioned into a multidimensional set of interrelated definitions, propositions and constructs known as the theory of transactional distance. Moore (1972) identified and defined the components of transactional distance as:

"A *dialogue* is purposeful, constructive and valued by each party. Each party in a dialogue is a respectful and active listener; each is a contributor, and builds on the contributions of the other party or parties. The content of dialogue determines the educational relationship and leads toward the improved understanding of the student. Structure expresses the rigidity or flexibility of the program's educational objectives, teaching strategies, and evaluation methods. It describes the extent to which an educational program can accommodate or be responsive to each learner's individual needs. Learner autonomy is the extent to which in the teaching/learning relationship, it is the learner rather than the teacher who determines the goals, the learning experiences, and the evaluation decisions of the learning program" (p. 31).

The general understanding of transactional distance involves the components of structure and dialogue. It is the notion of space and time that distinguishes the instructor and learner relationship and the learning parameters and outcomes in all aspects of the content exchange. This exchange occurs in both synchronous and asynchronous environments and, according to Moore, is present in all transactions involving distance.

In this study I have examined the current literature, past studies, and input from expert instructors to develop a rubric of ways to trigger the components of transactional distance so that the desired outcomes of increased self-efficacious academic learning can be activated by the instructor.

Where Does Self-Efficacy Come In?

In 1997, Cyrs predicted that a change was coming, "A modern view of education suggests different roles for teachers in physical vs. virtual classrooms" (p.16). According to Oliver, Osbourne and Brady (2009), increased academic learning based on predetermined courses of self-efficacious actions of the student may be set in motion by the instructor.

There is strong evidence that self-efficacy is a key motivational belief that influences students' academic task choices (Pajares, 2005) and use of effective self-regulatory learning strategies (Greene et al., 2004). Furthermore, self-efficacy plays an important role in academic performance (Chemers, Hu, & Garcia, 2001; Robbins, 2004).

Kitantas, et al. (2008) summarised the work of Robbins (2004) and Chemers, et al., (2001) by identifying the connection between self-efficacy and academic learning. Kitantas, et al stated, "Self-efficacy plays an important role in academic performance (Chemers, Hu, & Garcia, 2001; Robbins, 2004)" (p. 265) and concluded, "The results revealed that out of…nine constructs, academic self-efficacy was the strongest predictor of GPA" (p. 267).

Although these studies are conclusive that self-efficacy is highly instrumental in the academic learning success of the student, two larger questions seem to be left unaddressed: What is the key (or keys) that trips the trigger within transactional distance to impact self-efficacy and propel the student to increased academic learning, and how do these keys get tripped? The actions of the expert instructor and how they elect to address these issues within their distance education and technology-driven classroom will prove pivotal in the self-efficaciousness of the student and the student's ultimate success.

Student and instructor academic behavior in virtual worlds are both separate and united in their underlying components of execution, perception and outcome, as described by Yee (2007). Bates and Khasawneh (2007) found that Internet self-efficacy predicted students' outcome expectations, mastery perceptions, and hours spent using computer-based learning technology. Internet self-efficacy also seems to predict students' online searching activity (Braten et al., 2005).

How Does The Instructor Fit In?

Although the role of the instructor is evolving in the current era of technology-enhanced distance education, there is a high need for definition of the duties required in the process. Oliver, et al. (2009) identified the multiple roles of the distance education instructor as being "pedagogical, professional, evaluator, social facilitator, technologist, advisor, administrator, and researcher" (p. 59). These roles are typically found in the face to face (f2f) classroom; however, they require a higher level of training so that the instructor can fulfill these in the distance education classroom where lack of interpersonal f2f communication often blurs the exchange.

The creation of the expert IER 1.0 will provide a framework that guides instructors in a direction that promotes self-efficacious learning by the student at varying inception points of their individual learning styles. The IER 1.0, although created by expert instructors and other members of the academic community, will ultimately be available, and useful, to all levels of participants in the academic environment.

It is the goal of the instructor to provide opportunities for the student to bridge the gap as identified by the theory of transactional distance. This suggests that although the instructor and student roles are changing in the classroom based on the technology influx, the instructor still holds the responsibility of teaching with the new materials and incorporating them into the current lesson plan. While this may initially appear to be a horrendous task, it also opens the door for greater depth of materials, knowledge and intellectual collaboration in an enhanced peer- to-peer environment (Ni & Aust, 2008).

Research Questions

In order to successfully address the topic, "A Delphi Method study on triggering

transactional distance to improve student's learning: The instructor's engagement rubric 1.0,"

the following research questions have been addressed during the course of this study:

First Round of the Delphi Method

I. Survey Objective: *What proportion of transactional distance variables of structure and dialogue are perceived by instructors as being most impactful on academic learning?*

II. Analysis and reorganization: Analyse and determine commonalities. Data gathered, summarised, and resubmitted to group for approval.

III. Survey objective: *What proportion of transactional distance variables is perceived by instructors to influence a learner's increased academic learning self-efficacy?*

IV. Analysis and reorganization: Analyse and determine commonalities. Data gathered, summarised, and resubmitted to group for approval.

Second Round of the Delphi Method

I. Survey objective: *How does the instructor implement structure and dialogue to increase self-efficacious traits in the student?*

II. Analysis and reorganization: Analyse and determine commonalities. Data gathered, summarised, and resubmitted to group for approval.

Third Round of the Delphi Method

I. Survey Objective: *What purpose does the instructor have for implementing the instructor's rubric?*

II. Analysis and reorganization: Analyse and determine commonalities. Data gathered, summarised, and resubmitted to group for approval.

What Happened Next?

Summarise data collected for the creation of the IER 1.0 by using data to create IER 1.0. It is important to note that due to the nature of the Delphi Method, the questions of rounds two and three were adjusted based upon participant answers to rounds one and two. While the intent of the questions remained constant, the direction and verbiage was impacted as results indicated the need for a shift.

Findings

Two predominant themes emerged in the raw data: a) The technological tools in the Transactional Distance classroom are being used in a variety of manners and with little consistency as to desired outcomes, and; b) There is an apparent inconsistency with the identification of the role of the instructor in a transactional distance classroom.

The data also indicate that there are certain combinations of tools and purposeful interactions that can create an improved learning environment for the student. These data are compiled into the initial design of the IER 1.0 (Appendix D) and its preceding structural appendices (Appendices A - C).

The initial findings of this study are complex. In addition to answering the original research question which was the focus of this investigation, the unanticipated secondary findings are worthy of their own mention and brief discussion.

The primary findings directly answering the original

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research topic, although in line with the secondary findings, are divergent at best. The primary findings indicate that instructor's experienced different levels of "success" (as they perceived their experience with their individual students) based on which technologies are chosen for each role the instructor inhabits during the interaction. The similarities of replies suggest that there does appear to be a consensus to the implementation of how to align the approach with instructional technologies. However, what seems to be lacking in this consensus is the why and when. This indicates that the technology is not an obstacle in and of itself in the transactional distance classroom, and that there is a fundamental understanding of its potential overall usefulness among the participants surveyed. However, the results show an overwhelming variance of the specifics of why and when the components of implementation and utilization are executed in order to meet a specific and targeted need.

The findings indicate that although LMS and CMS include a variety of options for synchronous and asynchronous communication, there is not full implementation or mandated (whether implied or inferred) usage of these tools by the administrators. Additionally, there is not a mandatory or voluntary implementation of these tools in the classroom by the faculty, nor is there an apparent outcry for usage by the students. What this initially indicates is that although these tools are being purchased at great cost, and there is a wide pool from which to choose the means of communication, their usage is minimal.

The secondary unanticipated findings of this research involve the impact of certain technology utilizations that are dependent solely upon the role of the instructor in the immediate time and space of communication interaction. The technologies that appeared to have the greatest impact in connection with various roles were: the telephone, e-mail, chat, and bulletin boards. As shown in the IER 1.0, the technology shown as most impactful with each role that the instructor inhabits is instrumental in the self-efficaciousness of the student. Although the title of the instructor remains constant in the transactional distance environment, the role that the singular instructor executes is fluid but dependent upon the varying situation at any given time. Each of these roles has been shown to have specific, and varying, impacts on the academic success of the student in direct relation to that instructional delivery methodology.

The Final Implications and Recommendations

The intent of this study was to collect data from highly qualified participants in order to create a rubric to address the original topic. Following a three round series of inquiry, that data were obtained, analysed, and the IER 1.0 was created (Appendix D).

Although the analysis of the literature revealed additional information and exploration of the literature involved with this study (transactional distance, self-efficacy, and identity) there appears to be no other English study that combined the three components of this study. This study also appeared to be among the first of its kind not only by its examination of the potential relationship between the components of its root question, but how it also gives guidance as to how to trigger behaviors in students.

The implications of this combined research are twofold. First, this is the first tool that provides a directional approach for instigating the self-efficacy traits within the framework of transactional distance environments. The IER 1.0 focuses on the needs of the student by providing communication direction starting at the instructor's point of interaction. Second, this is the first English theory combination study that utilises the Delphi Method to merge the multiple points of inquiry into a single product of outcome.

The final recommendations of this study are clear. First, the need for a Student Engagement Rubric (SER 2.0) is clearly evident. Although the IER 1.0 has been created with the intent of mapping a triggering pattern of behavior from the instructor's perspective, the need for a student-activated rubric is also warranted. The placement of the control mechanism into the hands of the student allows for the power of increased self-efficaciousness in the academic realm, increases across the boundaries of a single classroom and into a pattern of life-long success. Second, the introduction and utilization of the IER 1.0 will provide a road map for the successful development of transactional distance classrooms. Although much focus and energy has gone into the creation of the technologies that deliver these classrooms, little focus has been aimed at utilizing these technologies appropriately, with thought and with a strong research protocol. This study has aimed to change that.

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Appendix A

TECHNOLOGY TOOLS MOST BENEFICIAL BY ROLE TO TRIGGER SELF-EFFICACIOUS BEHAVIORS WITHIN LEARNER AUTONONY

	TOP SELF EFFICACY TOOL BY INSTRUCTOR ROLE	PERCENT* IDENTIFIED BY INSTRUCTOR AS MOST IMPACTFUL IN ROLE
PEDAGOGICAL	Bulletin Board	80
PROFESSIONAL	Telephone	70
EVALUATOR	Email	70
SOCIAL FACILITATOR	Tie: Chat & Bulletin Board	90
TECHNOLOGIST	Email	55
ADVISOR	Tie: Email & VOIP	85
ADMINISTRATOR	Email	25
RESEARCHER	Email	25

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Appendix B

TECHNOLOGY TOOLS MOST BENEFICIAL TO DIALOGUE BY PERCENT*

	SINGLE STUDENT ASSIGNMENT	GROUP ASSIGNMENT
INSTANT MESSAGING (IM)	29.2	25
CHAT (private and/or group)	75	87.5
VOICE CHAT (VOIP)	50	45.8
VIDEO CHAT	25	29.2
WHITE BOARDS	37.5	37.5
TELEPHONE	41.7	45.8
BULLETIN BOARDS	58.3	58.3
FILE SHARE TRANSFER (FTP)	25	29.2
EMAIL	87.5	79.2
TELEPHONE MESSAGES	8.3	8.3
FAX or SNAIL MAIL	0	0
OTHER	12.5	25

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Appendix C

TECHNOLOGY TOOLS MOST BENEFICIAL TO DIALOGUE BY PERCENT*

SYNCHRONOUS	%	ASYNCHRONOUS	%
INSTANT MESSAGING	37.8	BULLETIN BOARD	100
CHAT	70.8	FILE TRANSFER PROTOCOL	41.7
VOIP	62.5	EMAIL	100
VIDEO CHAT	33.3	TELEPHONE	12.5
WHITE BOARDS	45.8	FAX	4.2
TELEPHONE	45.8	SNAIL MAIL	0
OTHER	4.2	OTHER	29.2

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*Percentage responses allow for participants to select top three preferences
Derived from: Maston, H. (2011). *A Delphi Method study on triggering transactional distance to improve students' learning: The instructor's rubric*. Fielding Graduate University; Santa Barbara CA. 2011, 87 pp. Proquest: 3482697

Appendix D

THE INSTRUCTOR'S ENGAGEMENT RUBRIC 1.0

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	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Implementing Structure in the Transactional Distance Classroom	Understanding of Transactional Distance and its working component of "Structure".	Identification of tools necessary for "Structure" in Transactional Distance educational environments.	Ability to differentiate, and appropriately utilise, varying synchronous and asynchronous technologies to meet the "Structural" needs of the student.	Student's "Structural" needs are met as evidenced by improved learning in solo or group projects. Technologies used to meet needs include: Phone, email, bulletin boards, chat, VOIP.	
Implementing Dialogue in the Transactional Distance Classroom	Understanding of Transactional Distance and its working component of "Dialogue".	Identification of tools necessary for "Dialogue" in Transactional Distance educational environments.	Ability to differentiate, and appropriately utilise, varying synchronous and asynchronous technologies to meet the "Dialogue" needs of the student.	Student's "Dialogue" needs are met as evidenced by improved learning in solo or group projects. Technologies used to meet needs include: Phone, email, bulletin boards, chat, VOIP.	
Implementing Learner Autonomy in the Transactional Distance Classroom	Understanding of Transactional Distance and its working component of "Learner Autonomy".	Identification of tools necessary for "Learner Autonomy" in Transactional Distance educational environments.	Ability to differentiate, and appropriately utilise, varying synchronous and asynchronous technologies to meet the "Learner Autonomy" needs of the student.	Student's "Learner Autonomy" needs are met as evidenced by improved learning in solo or group projects. Technologies used to meet needs include: Phone, email, bulletin boards, chat, VOIP.	