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A Study of Barriers to Acceptance of Distance Learning Courses in a Corporate Setting

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A STUDY OF BARRIERS TO ACCEPTANCE OF DISTANCE LEARNING
COURSES IN A CORPORATE SETTING

A Thesis

Submitted to the Faculty

of

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by

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ABSTRACT

Rhodes, Holly A., Purdue University, May 2010. A Study of Integration and acceptance of Distance Learning Courses in a Corporate Setting. Major Professor: William Krug.

The purpose of this study was to further understand how the integration of distance learning courses in a corporate setting may encounter barriers or resistance to acceptance. These barriers expereinced by corporate based course developer, facilitator and adult learner may be similar to those experienced by the educational counterparts. This was achieved in this study through a survey of several audiences related to distance learning in a corporate environment. The survey comprised of five questionnaires which measured the experiences of each of these groups. Findings determined the learner group, although cautious about distance learning, were interested in continuing this learning practice and felt it was an effective method for learning. Issues related to time management were also explored in the learner group. The facilitator group had a high level of anxiety prior to the courses and a very low level of it afterward. This suggested a need for increased practice or support for the facilitator group was needed. Course developers indicated they were highly confident in their ability to develop an effective distance learning course. However, some lack in self-identified proficiency surrounding distance learning technologies was shown.

CHAPTER 1. INTRODUCTION

This chapter will cover the background, significance, research questions, assumptions, limitations, delimitations and key definitions for this study.

1.1. <u>Background</u>

In recent years an influx of technologies has become available for the purpose of communicating with others at a distance. Some of these include web camera internet applications, videoconferences, web conferences, collaborative online spaces, social networking websites and many more. These distance communication tools are not only used interaction with another party, but also for the communication of knowledge in a learning environment where the learner and facilitator are separated by time or location. These technologies have not only become more prevalent in primary, secondary and higher educational settings but they are also being integrated into a corporate environment as well. Some of these technologies are specifically designed and introduced for the purpose of distance learning while others may be distance communication tools used in a learning context.

This study focused on examining the experiences and perceptions related to distance learning of course developers, facilitators and adult learners who were employed by the same corporation. The location of the study was the Midwest headquarters for this healthcare based corporation. At the time of the study this corporation had not fully adopted the use of distance learning based courses as a part of their learning system for employees. Five pilot courses were developed and delivered as a means for the corporation to test the use of

distance learning. The reactions to these pilot courses determined the viability of full adoption of distance learning for the corporation. The main concerns of the corporation were centered around the effectiveness and adoption of this learning method by the employees who either developed, facilitated or learned from this format. The technologies which were used by this corporation can be classified as a Course Management System (CMS), Virtual Classroom tools, and Electronic Performance Support Systems (EPSS). Each course developer was responsible for determining the use of a combination of these tools to successfully administer their pilot course.

Due to the availability of the technology some businesses are integrating distance learning courses as a part of their training regimen. It is with no doubt some of these businesses are integrating this instructional method not only because the technology is available, but also because of the assumed opportunity to save money compared to conducting in-person instructor-led training sessions. "With technological advancement, Internet-based teaching and learning tools have become more versatile, user friendly, and cost effective" (Zhao, Alexander, Perreault, Waldman, & Truell, 2009, p. 206). The bottom line of a business can particularly be affected by those corporations who have large-scale global operations with several offices across many continents. These corporations may be sending specialized facilitators across the globe to conduct single day training sessions in which the facilitator attempts to train employees in a matter of a few hours. In this situation the expense of travel as well as the question of whether learners will transfer training presented in this context could negatively affect a bottom line. According to Arthur, Bennett, Edens and Bell (2003), organizations with 100 or more employees budgeted to spend over 54 billion dollars on formal training in the year 2000.Considering the current economic climate it has become more important than ever to maintain the balance between training efficiency and effectiveness which is why distance training technologies and methods have been brought to the forefront for some companies. "Training initiatives must prove their worth and are often among the

first functions to be sacrificed during economic slowdowns," (Wagonhurst, 2002, p. 77). Other companies may shy away from these new methods due to the lurking expenditure for new technology implementation.

1.2. <u>Statement of the Problem</u>

This study examined the integration and acceptance of distance learning technologies by facilitators, course designers and learners in a corporate setting. The problems related to distance learning integration in a corporate setting are the barriers to acceptance and integration which may be experienced by employees regardless of their role. Most literature on this topic focuses on three main barriers to integration and acceptance: support systems (company or peer based), motivation of the instructor and availability of technology. The gaining knowledge in this area was pertinent because the base of corporate instructors and course designers may come and go from a company, but those companies using virtual or blended learning methodology need to be able to serve their employees (facilitators and course designers) who serve and impact a broader base of employees (adult learners). If the corporate facilitator, course designer and adult learner are not prepared to recognize and overcome these barriers and accept the technology, then the money spent on making the technology available would be a waste. Also, it is a part of corporate responsibility to provide employees with all of the training and means necessary to be successful in their position whether they are filling the role of facilitator, course designer or adult learner in a distance learning environment.

1.3. <u>Significance</u>

There is a significant amount of research available regarding the integration and acceptance of technology in education by primary, secondary and higher education professionals, however, it appears this subject as it pertains to corporate training professionals and the corporate-based adult learner has not

been thoroughly examined. Berge (2002) agrees that most studies regarding technology acceptance by educators is focused on the academic setting rather than a corporate-based setting. Implications, use, design and acceptance should vary from the pedagogical level to an adult-focused training program. A statement by Arthur, Bennett, Edens and Bell reinforces the importance of expenditure on training programs and their development.

> Given the importance and potential impact of training on organizations and the costs associated with the development and implementation of training, it is important that both researchers and practitioners have a better understanding of the relationship between design and evaluation features and the effectiveness of training and development efforts. (2003, p. 234)

This study exposed the relevance of technology acceptance by corporate instructors, course designers and their learners when interacting with varied distance learning platforms. It also revealed the level to which a company-based support and training system impacts the level of acceptance by facilitators, course designers and adult learners versus motivational and availability factors.

1.4. <u>Statement of Purpose</u>

This study examined the distance learning programs presented to participants by the corporation studied. The end goal of this study was further understanding of current factors or barriers affecting the acceptance and integration of distance learning technologies in this corporate training program. Participants in this study were asked to complete surveys prior to and after completing a selected distance learning course. Several of the courses used multiple combinations of distance learning technologies; therefore it is apparent through the results that the responses can be generalized across the population studied and not specific to a single technology.

1.5. Research Question

The central questions of this research are:

1. What identified barriers to technology acceptance are perceived as inhibitors by the facilitators, course developers and adult learners in this study?
2. What perceptions do facilitators and adult learners in a corporate setting have of distance learning?

1.6. Assumptions

The assumptions of this project are:

- There is a need to understand the barriers to acceptance and success in integrating distance learning platforms in a corporate setting.
- The participants will complete the survey provided to the best of their ability and knowledge.
- Restrictions on the release of information which is proprietary to the participating corporation will not negatively impact the study.

1.7. Limitations

The limitations for this project are:

- Access to information and cooperation from the corporation being studied regarding subjects available and content of pilot courses.
- Availability of participants to complete an online survey.
- Responses received from staff participating in the distance learning pilot course program.

- The quantitative study approach and accuracy of the use of the selected statistical functions conducted by the researcher.

1.8. Delimitations

The delimitations for this project are:

- The corporation staff enrolled in the selected courses from November, 2009 through February 2010.
- The participants were unpaid volunteers.
- The location for this study was Indianapolis, Indiana.
- This study was limited to five pilot distance learning courses provided to select employees at the corporation being studied in Indianapolis, Indiana from November, 2009 through February, 2010.
- The extent to which the study is generalizable to others is limited to those corporations who plan to implement distance learning courses as a part of their training program.

1.9. Definition of Key Terms

Authentic Experiences- opportunities for learners to practice new skills and knowledge (Dobrovolny, 2006).

Blended Learning- refers to a mixed use of virtual and non-virtual methods for facilitation of learning.

Course Management System- a software program containing a number of integrated functions... enables access to lecture materials, discussions, and knowledge checks. (Ko & Rossen, 2008).

Delivery Systems- computer and communication systems as well as infrastructure (Berge, 2004).

Design Functions- concerns methods and techniques used in teaching and
learning(Berge, 2004).

Distance Education- characterized by the student being separated from the
instructor or classmates for all or a substantial portion of the formal,
organized training or educational events (Berge, 2002).

Effective Learning- involves the acquisition of information and requires that the
information is appropriately applied (Robotham, 2003).

Electronic Performance Support System- A system that provides electronic task
guidance and support to the user at the moment of need... combine
various technologies to present the desired information. The information
can be in the form of text, graphical displays, sound, and video
presentations. (Gery, 1995)

Technology Acceptance Model (TAM) – suggests that two specific beliefs-
perceived ease of use and perceived usefulness- determine one's
behavioral intention to use a technology which has been linked to
subsequent behavior (Venkatesh, 2000).

Virtual Classroom - Virtual Classrooms are defined as the learning environment
where instructor and learner are separated by time or space, or both.
Virtual classrooms require synchronous or asynchronous communication
between the learner and instructor.

Virtual Learning- the delivery of learning through electronic mediation which
bridges the gap caused when the instructor and student are separated in
either time or place (Stonebraker & Hazeltine, 2004).

1.10. <u>Summary</u>

This chapter provided an introduction to this study by reviewing the
significance, research question, assumptions, limitations, delimitations and an
overview of the study. The next chapter will examine previous literature and
research. It will also provide additional significance for the study described. The

literature reviewed focused on the adult learner, identifying barriers to integration, and evaluation methods for the study of distance learning courses.

CHAPTER 2. REVIEW OF RELEVANT LITERATURE

This chapter will present a summary of the literature reviewed in relation to the study including information on the adult learner, barriers to integration, technology acceptance and suggested research methods.

2.1. Introduction to Review

Review of previous literature is essential to understanding the groundwork which has previously been researched and presented by other authors on areas related to this study. Specifically these publications provide support and a foundation for further research on the subject area of technology acceptance and integration by corporate instructors, designers and learners. The main subject areas researched and discussed include the evaluation and research methods related to distance training, the adult learner, barriers to integration and technology acceptance. Of the literature searched and reviewed, the majority in regards to barriers to integration and technology acceptance refer primarily to primary level (Kindergarten through 12th grade) and collegiate level educators. Research on corporate integration of distance training was found to be minimal. Therefore the goal of this research is to provide more information on this select group.

2.2. The Adult Learner

Adult learners need to be led through the learning process in a different manner than non-adult learners. Not only do they need different guidance, but considerations must be made which are specific to accommodating the adult

learner. Stewart & Waight note that professionals involved in developing distance learning for adults, "...must be aware of the processes and activities that they can use to help adults discern, reflect, and create new learning experiences", (2008, p. 295). Distance learning permits learners to discover knowledge for themselves as well as communicate their knowledge in various forms to others (Robotham, 2003).

Adult training efforts are the most effective when aligned with adult learning principles. Some of these principles that have proved most effective in previous studies include metacognition, reflection and connection to prior experiences. In addition to these experiences, interactive contact with other learners has also been shown to increase retention of knowledge and satisfaction with education programs (Menchaca & Bekele, 2008; Dobrovolny,2006; Ali, Hodson-Carlton, & Ryan, 2004; Stonebraker & Hazeltine 2002; Cartwright & Menkens, 2002). The adult learner's opportunity to interact with others in the learning process is key to the success of distance learning because often adult learners may feel isolated in this environment (Menchaca & Bekele, 2008; Stonebraker & Hazeltine, 2002). Others also note an effective adult learner as one who is able to identify and select information within a training program based upon their needs (Robotham, 2003).

One theory which has been developed to further understand the adult learner is called Andragogy. Andragogy is a model of assumptions surrounding adult learning which were developed by Malcolm Knowles. This model was not developed in a single effort but has evolved over time. Merriam, Caffarella and Baumgartner (2002) cite the six assumptions of adult learning Knowles had created and published from 1980 to 1984:

1. As a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being. (Knowles, 1980, pp. 44-45)

2. An adult accumulates a growing reservoir of experience, which is a rich resource for learning, (Knowles, 1980, pp. 44-45)

3. The readiness of an adult to learn is closely related to the developmental tasks of his or her social role. (Knowles, 1980, pp. 44-45)

4. There is a change in time perspective as people mature- from future applications of knowledge to immediacy of application. Thus, an adult is more problem centered than subject centered in learning. (Knowles, 1980, pp. 44-45)

5. The most potent motivators are internal rather than external (Knowles & Associates, 1984, p. 12)

6. Adults need to know why they need to learn something (Knowles, 1984).

It is with this model of assumptions in mind that many who design and develop various types of adult education base their work. Key points which make Knowles' assumptions applicable to a corporate setting are that adult learners are self-directed, problem-centered, and need to know how they can immediately use the information provided to them. Pedagogy which is a theory based on pre-adult learning focuses on the learning event being teacher-directed; whereas andragogy emphasizes that the learning process is student-directed (Merriam, Caffarella & Baumgartner, 2002, p. 87). It is this directive shift which makes understanding of adult learning essential in developing effective corporate based education

In addition to the adult learning process being based on Knowles' assumptions of the adult learner there are also several needs which have been identified as unique to this group and their education. In an article exploring the education of teachers in a professional development setting Beavers notes, "The same practices that work in a traditional educational setting do not always work for a group of adults, especially a group of well educated, independent teachers", (2009, p. 26). The traditional educational setting Beavers is referring to here is pedagogical in nature and the domain which many of these teaching professionals supervise each work day. This reinforces the idea that using pedagogical processes for training adults may not be the best practice to follow.

In their review of distance education of nursing students, Cartwright and Menkens (2002) note that distress and frustration are commonly experienced by students who use instructional technologies. This frustration could be due to the fact that many of the students studied were believed to have overestimated their computer based abilities and literacy. This could be true not only for nursing students but also adult learners who use computers in the workplace on a daily basis.

Another source of frustration related to technology may come from the generation in which the adult learner would be classified. Due to the increased age to which many employees are continuing to work there may be up to four generations present in the workplace (Patterson, 2007). Generations have been identified as those born in the same 20 or 10 year timeframe and are categorized by titles such as: The Silent Generation, Baby Boomers, Generation X, Generation Y/ Millennials (Laff, 2009, Patterson, 2007, Lancaster 2004). Understanding the background of experiences related to each generation is important when designing distance learning for adults because there is currently only one generation in the workforce which has grown up having regular access to computers, Generation Y/Millenials (Patterson, 2007). In an attempt to serve each of these generations it has been suggested that companies should provide ample opportunities for all generations to increase their technological skills (Patterson, 2007). Despite this difference in experience with technology one author suggests that classifying behaviors of those in the workplace based on when they were born is no longer applicable or acceptable (Laff, 2009).

There are many assumptions and factors relating to adult learners which should be considered vital when developing a learning environment for them. In discussing the overall goal of those developing distance learning for adults, Stewart and Waight (2008, p.297) note, "it is imperative they align their decisions with learning theories while keeping the constraints and opportunities of their environment and learners at hand".

2.3. <u>Barriers to Integration</u>

An early study by Fauley (1983), noted inhibiting factors to the success of computer and technology based programs for training which included poor quality of courseware, violation of humanistic principles, and costliness of high-tech systems. As the inclusion of technology in training has progressed these factors which Fauley described are now commonly known as barriers to integration. Distance learning methods for training have become more widely accepted in corporations over the last decade, but the need to justify the use of these technology platforms over traditional methods is still necessary. One study noted, "For mature corporate learners, and for materials that relate to their jobs, the virtual-learning format provides an equivalent learning opportunity as the "live" format" (Stonebraker & Hazeltine, 2004, p.219). The authors continued to say that while their findings do not support the notion that virtual learning is better than the "live" format, it performs equivocally and provides significant cost savings. The cost savings aspect of distance training may be attractive to corporations, but many facilitators are resistant to integrating technology because the cost savings may also mean the elimination of their job (Berge, 2002; Surry & Land, 2000; Fauley, 1983). Other instructors simply view inclusion of technology as a philosophical issue that interrupts the traditional educational hierarchy (Ertmer, 1999). These findings show that some may welcome the integration of technology in training, others may resist it. This resistance may be due to several barriers to integration which have been identified in previous literature.

In relation to the introduction of technology in corporate training, Berge (2002) identified the barriers that are perceived are dependent upon the organization's level of ability and experience in distance training. Regardless of the organization's level of competence in distance training, the two most commonly identified barriers to success included lack of technical expertise and organizational change (Berge, 2002). This evidence supported the premise that the facilitator alone is not solely responsible for the acceptance and use of the

technology provided. If the support systems and change agents are not in place integration will be much more difficult.

Research suggested there are two levels of barriers to success in integrating technology in instruction (Ertmer, 1999). The first level of barrier included items that were extrinsic to the teacher (i.e., equipment unavailable, no time to train or use equipment, lack of proper training and support). Early models of incorporation of technology assumed if teachers had access to the technology it would automatically be integrated into the classroom (Ertmer, 1999). The more difficult barriers the second level barriers because these are based on the beliefs of the teacher and may not immediately be recognizable. These beliefs may have included convictions regarding the traditional role of the teachers in the classroom, or on a more personal level, their own belief in their ability to utilize the technology provided. The increased availability of technologies to corporations indicates the second level of barriers may be the most applicable to corporate training programs.

The training practices of those attempting to guide facilitators on the use and integration of technology also hold a significant level of responsibility in the success of the integration as well. These training sessions must result in a clear vision of direct application, practicality and motivation of its learners to value the technology tools provided. Although technology may be available to the instructors it does not mean it will instinctively be used (Surry & Land, 2000). Often teachers are sent to training sessions as a front by administration for showing support of a particular program. However, the format of the session may not address the usage issues of the trainees or provide practical application examples that enhance the transfer of this knowledge to classroom use (Okojie, Olinzock, Adams & Okojie-Boulder, 2008).

One barrier to the integration of technology in instruction may be due to facilitators and designers compounding problems encountered with the delivery system with instructional design functions. Delivery system issues are the result of the actual hardware or technology tools used and design functions refer to the

methods used by the instructor for learning (Berge, 2004). In the same article, Berge notes that integration of technology is difficult for facilitators because they must not only be adept in their subject area but also in "Adult learning theories, educational technology, faculty development…knowledge management, …. psychology, student support, strategic planning, and technical training" (2004, p.3). What Berge is noting here is that with distance education of adults, facilitators not only need to be experts in a subject area and adult learning, but also experts in technology. With instructors needing to be well rounded and with a broad range of expertise in order to be successful, it is not difficult to comprehend why most resist integrating such technology.

2.4. Technology Acceptance

It is vital to understand the concept of technology acceptance when evaluating an adult's interactions with distance learning technologies whether the adult studied is involved in the facilitation, design or learning of the information conveyed through distance learning technologies. If an element of technology is implemented in the workplace but not accepted by the intended users it only results in dissatisfaction and financial losses (Venkatesh, 2000). The level to which new technology is accepted may depend on many factors.

Several models and theories which have been developed attempt to explain what factors affect acceptance of technology. One well known theory, the Technology Acceptance Model, proposes two factors which impact the intention and use of a technology: perceived ease of use and perceived usefulness (Venkatesh, 2000). This model indicates that the user must believe they are able to successfully use the technology for it's intended purpose and that the use of it will enhance their workplace in some manner. Other research suggests that technology acceptance starts with the user self-perceived ability to use a computer, known as computer self-efficacy (Scott & Walczak, 2009). Upon further research these same authors concluded that computer self-efficacy may

be preceded by prior experience, computer anxiety, organizational support and engagement (Scott & Walczak, 2009). Beasley and Sutton (1993, as cited by Christensen, 2002), found that in order to reduce the amount of anxiety experienced by facilitators using a new technology a minimum of 30 hours of exposure, including instruction and practice, were required.

Use of distance learning technologies by higher education faculty did not depend on the availability of the technology, but rather the amount of faculty buy-in and motivation to use the technology according to Surry and Land (2000). When exploring why there is resistance toward technology integration by instructors it was stated the research available was inadequate in convincing teachers of the advantages in using technology in the classroom (Okojie, Olinzock, Adams, Okojie-Boulder, 2008, p.261). Although a majority of the research on facilitator acceptance is focused on the primary, secondary or higher education professional it is reasonable to assume similar principles of acceptance would be experienced by those in corporate setting. Therefore, if the corporate based facilitator or course designer is not convinced of the benefits of integrating this technology, it will affect the level of effectiveness of the training they are providing.

Motivating facilitators to utilize technology has been a challenge studied in depth and several sources agree that both intrinsic and extrinsic motivation of this group is necessary (Surry & Land, 2000; Venkatesh, 2000). The type of motivation used may be dependent upon the level of technology acceptance indicated by the learner (Surry & Land, 2000). However, regardless of the level of readiness of the learner or facilitator to accept the technology, two factors that have been shown to significantly increase successful transfer are institutional support systems and peer support systems (Nicolle & Lou, 2008). The introduction of the role of peer support and knowledge is unique because there is recognition of the informal adaptation methods taking place outside of formal training. This type of information dispersal could also be linked to Dobrovolny's (2006) identification of user interactions as a success factor as well.

An additional factor which may inhibit the acceptance of technology is the related issue of the amount of time required to participate in a course when using technology. According to Filipczak (1995), the most expensive component of training can be a learner's time. In addition the anytime and anywhere availability distance learning provides the opportunity to access the program from a laptop, desktop or even a satellite location away from day-to-day distractions (Stewart & Waight, 2008). Learners may not be the only group concerned with the amount of time needed for a course but their supervisors maybe concerned about this as well. However, according to Marquardt and Kearsley (1999) distance training has been shown to reduce actual training time by up to 50%.

2.5. Evaluation and Research Methods

A widely accepted framework for evaluation of training was developed by Kirkpatrick (1997), which divides evaluation in to four different levels:

1. Reaction
2. Learning
3. Behavior
4. Results

The first level refers to the measurement of the reaction of participants in the training. More specifically, are they satisfied with what they gained from the training? The second level refers to measuring whether or not the participants actually learned the material. Level three involves measuring how much the participant's behavior has been modified since beginning the training and the fourth level is concerned with whether the training has had a positive impact on the organization as a whole (Kirkpatrick, 1977). The third and fourth levels are frequently ignored by those conducting training because they are not only difficult to measure but they may also provide some ugly truths about the actual results of their training efforts. The basis for Kirkpatrick's model is to eliminate bias in

result measurement in training by providing trainers and outline to measure their efforts more effectively.

The question now facing corporate trainers is whether Kirkpatrick's traditional model of training evaluation is still effective for the measurement of technology based training. In one article relating the Kirkpatrick model to e-learning, the author indicated,

> While the model continues to be the most popular framework for categorizing training criteria and provides a simplicity that is quite appealing, it contains a number of assumptions that can lead to overgeneralizations and misunderstandings that compromise the evaluation of e-learning. (Galloway, 2005, p.25).

The conclusion of Galloway's investigation suggests an effective means for evaluating e-learning programs would be a hybrid of the Kirkpatrick and ROI models (2005). However due to the fact distance training is a new program at the corporation studied, this study will focus on gaining feedback related to Kirkpatrick's first level- reaction-for all three audiences studied.

When evaluating an appropriate method on which to base research regarding technology integration in corporate training, a journal article by Dobrovolny and Fuentes (2008) provides a roadmap for those engaging in Human Performance Technology (HPT) or systems which approach "organizational and individual performance improvement." The proposed study will examine individual improvement in technology integration, therefore this information assists in the defense of a mixed method approach. The author indicates, "Combining both methods can often improve the interpretation of results and be more meaningful to decision makers" (Dobrovolny & Fuentes, 2008, p.10). Considering the suggestion of implementing a mixed methodology for studying this topic as well as the need to capture quick responses through surveys, the surveys used for this study include not only scale-based answers

but also questions with free-response options. This design should help capture not only quantitative data from the audiences, but also provide qualitative responses which will aide in communicating additional information the respondent is motivated to share.

2.6. Summary

This chapter reviewed current literature regarding barriers to acceptance and integration of technology by instructors working with either the primary level or the collegiate level student. None of the literature available seemed to fully examine or answer how integration and acceptance of technology may differ for corporations who are attempting to instruct and guide adult learners from a distance.

The next chapter will define the methodology, data sources, data evaluation and procedures used in examining acceptance and integration of technology in a corporate setting that were used for this study.

CHAPTER 3. METHODOLOGY

The purpose of this research is to evaluate the integration and acceptance of distance learning technologies in a corporate setting. The following pages outline the framework, methodology, procedures, and data analysis used in this research. Theoretical framework is established and related to the research design, procedures, and data collection. A detailed outline of the population sampled along with internal and external threats to validity are addressed as applicable to the research. The chapter concludes with a summary of the information provided.

3.1. Overview

This study was conducted in the Midwest area of the United States of America at the global headquarters of healthcare product corporation. The instruction evaluated for the purposes of this study was conducted during the same time period for all participants. This study has been evaluated using a quantitative methodology which employed a survey comprised of multiple questionnaires. Pilot courses and the survey were all initiated and completed in four months. The quantitative analysis of the results served as an aid for the decision makers within this company to base future decisions regarding utilization of distance learning as a part of a their overall learning strategy.

The employees of the corporation studied are provided individualized training plans to complete based on the division, department and role they served. The individualized training plans were established and set out for each employee of the corporation prior to the inception of this study. It was the

responsibility of each individual employee to schedule their own participation in the assigned training programs. The pilot distance learning courses studied were offered to employees as an alternative to the instructor-led classroom based courses which had previously been offered for similar course content. Three of the pilot courses were developed solely for distance based delivery without previous classroom based design.

The content of the pilot courses was as varied as the audience they served. The courses titled Introduction to Statistics and SPC focused on educating the learners on basic statistical functions and how to use a specific statistical software feature to create items necessary for communicating information to other employees. Courses titled Developing in Element and Element workshops focused on training course and content developers to use a learning content management system for the purposes of computer based training functions. The computer based training courses designed by this audience differed from the distance learning pilots because the computer based courses are asynchronous in nature and did not require the learner to interact with a facilitator or other learners during this type of training. The Medical Onboarding and Medical Mini-Pilot were designed to serve as an onboarding and orientation function for new employees in the medical division of the corporation who serve a broad geographical spread.

3.2. Theoretical Framework

The framework of this study was designed to measure the perceptions held by course designers, facilitators and adult learners in a corporate setting. In consideration of the setting for this study, a corporate environment, time required to participate in the study was intended to not significantly interfere with the ability to complete work assignments. It was determined the use of a quantitative approach that utilized a survey would be an appropriate approach to this study. The survey consisted of several questionnaires which were designed for each

segment of the population studied. Qualitative free response questions were included in relation to specific scale based items on the questionnaires to support the quantitative information provided by respondents.

The framework of this study was also guided by the work of Cartwright and Menkens' (2002) study of student and instructor perspectives of the implementation of new technologies for distance learning. The guiding study was influenced by Billings' five areas for comprehensive evaluation in distance education. These areas included:

1. Use of Technologies
2. Educational Practices
3. Faculty Support
4. Student Support
5. Outcomes

For the purposes of the current study these areas were modified and addressed in terms of the corporate setting to be more applicable to the audience. The study by Cartwright and Menkens (2002) was also chosen because the research questions reflected interests similar to the researcher and technologies used by Cartwright and Menkens were similar to those used by the pilot courses for the current study (web conferencing, online course management system and videoconferencing).

3.3. <u>Research Design</u>

In order to measure adult learner and facilitator perceptions toward distance learning and abilities related to distance learning technology a pre-course survey was developed and administered prior to both groups starting their pilot course experience. A post-course survey was also developed to measure the perceptions of the adult learners and facilitators after their designated pilot course was complete. This post-course survey was also designed to measure any changes in the perceptions and self-identified abilities related to distance

learning of these two segments of the population and were compared to the pre-course surveys. (See Appendix A through Appendix D for pre and post-course learner questionnaires.)

Another questionnaire was developed to measure the perceptions of the course developers related to distance learning. (See Appendix E.) All of the pilot courses had begun development prior to the finalization of this study. Therefore, the course developers could only respond based on their post-development perceptions and self-identified abilities. Due to the small number of potential respondents for this questionnaire, several items provided opportunities for the course developers to openly reflect and respond to survey items not using a scale-based answer system. The items for this questionnaire were also intended to measure the course developers perceptions of distance learning in terms of their self-identified abilities and skills related to this type of course.

The overall intent of the survey to measure the perceptions of these three groups was supported by the review of Mechaca and Bekele (2008) who indicated research and literature available regarding learner perceptions of the e-learning environment and the potential impact of these perceptions on learning was either unavailable or unclear. It is important to note that Menchaca and Bekele's study and research related to the higher education based student. This same study reinforced the importance and lack of frequency in which free response questions have been used to support quantitative data collected related to distance learning. The current study attempted to provide not only more research on the learner perceptions but also the viewpoints and experiences of the facilitator and course developer groups which are vital to the success of distance learning in a corporate setting.

3.4. Validity

An initial draft of each of the surveys was developed and tested by a small test group (n=10) of the corporation's employees. This test group consisted of

course developers, instructors and learners who were familiar with the distance learning pilot course project. Feedback from this group was then used to correct and redesign specific survey items which elicited responses of confusion or double meaning from the test group. Surveys were also validated by the corporation's evaluation and distance learning design experts as well as individuals with experience in instructing distance learning based courses in a higher education setting.

3.4.1.1. Internal Validity

Potential threats to internal validity of research include, "history, maturation, testing, instrumentation, selection, statistical regression, and mortality" (Sekaran, 2003, p. 151). Given these threats to internal validity, the areas which had the potential to affect this study include testing effects, instrumentation effects and selection bias effects.

Testing effects refer to the idea that the sample who is given a pretest and posttest which elicits their feelings and attitudes toward a given experience. "The very fact that respondents were exposed to the pretest might influence their responses on the posttest" (Sekaran, 2003, p. 153). According to Sekaran's warning regarding the testing effect, this was a difficult validity concern to address with the study design. In order to avoid this concern, the posttest for this study consisted of several new questions on the posttest which the participants were not presented during the pretest.

The instrumentation effect is a concern when the behaviors or scale measured change from the pretest to the posttest. In order to avoid this threat the pre-course and post-course questionnaires were developed simultaneously and were completed prior to the start of the test group of pilot courses.

Selection bias effects the validity of research when the sample surveyed are not selected in the same manner for the pretest and posttest (Sekaran, 2003, p. 154). This bias was evaded by presenting the opportunity to participate in the

pre-course and post-course surveys to all potential participants in the same manner; an e-mail announcement containing a link to the appropriate survey. Each of the potential respondents were also made aware that response or lack of response to the questionnaires would not impact their employability with the corporation.

3.4.1.2. <u>External Validity</u>

External validity is defined by Sekaran (2003, p. 150) as, "the extent of generalizability of the results of a causal study to other settings, people, or events". In terms of achieving external validity this study is not intended for generalization to a larger population beyond the context of the corporation. Threats which would keep the information from being generalizable to the larger population within the corporation would include:

- Population segments which do not regularly have access to a computer or the internet at work.
- Population segments which are not provided the opportunity to participate in distance learning courses.

These threats would need to be taken into consideration if the corporation studied determines they will be expanding the current distance learning opportunities available to their employees.

3.5. <u>Population</u>

The potential respondents for this survey were derived from a group of 100 learners, six instructors and six course designers who participated in one of five distance learning pilot courses. The subject matter for the training was related to familiarizing participants with information required to complete their individualized training plan. Survey responses were collected on a voluntary

basis from each audience. All respondents were over the age of 18 and employed by the corporation studied. These audiences from the overall corporate population were chosen due to their direct interaction with the pilot courses. It was also determined that acquiring feedback from each of these segments was key to understanding the overall corporate experience with distance learning integration and acceptance because of the varied level and type of interaction with the pilot courses.

3.6. <u>Procedures</u>

Survey questions regarding the facilitator, course developer and adult learner experience with and use of the online instructional platforms were developed and tested by the researcher for bias. The individuals who assisted in testing the survey for bias are described in detail in section 3.4 of this chapter. The survey was created and administered using the company's electronic performance support system and the survey tool available through this system. The researcher elected to use this program because it was directly accessible to all potential respondents and the audience was familiar with the EPSS and this survey tool. Responses were collected between November 2009 and February 2010.

Questionnaires for specific groups (course developers, facilitators and learners) were released to those individuals who qualified as a part of each of these audiences. Potential respondents were contacted via an introductory e-mail stating they are being asked to participate in an online survey regarding their experience with the distance learning pilot course in which they were enrolled. This email contained further information describing the intent of the study and information on how the results would be used. Embedded in each email was a hyperlink to the appropriate questionnaire to be completed. (See Appendix A.) This e-mail was distributed again to those who had not responded within two weeks after the initial distribution. After each of the individual pilots have

completed, facilitators and learners were sent another email asking for their response to a post-pilot questionnaire and link to a post-course survey which will measure reactions to the pilot courses after interacting with each course. A second copy of this e-mail was sent to non-respondents again two weeks after the initial post-pilot questionnaire distribution.

The questionnaire developed for the course developer segment of the population was designed as a post-course survey only. This was due to the fact that course development had already commenced prior to the finalization of the study procedures and survey instruments. Course developers were also notified of their questionnaire via e-mail which was identical to the e-mail sent to the facilitators and learners. A reminder e-mail was also sent to this group two weeks after initial distribution to re-engage those who had not responded.

3.7. <u>Data Collection</u>

The overall response rate for the learner group was 41%. Response rates for each course ranged from 25% to 100% dependent upon the pilot course the learner participated in. The facilitator group responded at a rate of 66% for the pre-course survey and 83% for the post-course survey.

The course developer group responded at a rate of 100% of the eligible group. This audience segment was smaller than the learner and instructor groups but likely responded at the highest rate because of their interest and potential gain from the results of the study. This group also had the highest participation rate during the survey validation testing as well and likely developed an increased interest in the study during this time.

3.8. <u>Data Analysis</u>

The end goal of the quantitative analysis was to identify and evaluate consensus and differentiation among participants through the survey conducted. This was attempted by conducting several statistical analysis functions.

Once the surveys were closed to further responses, data was transferred to a database program. In this program survey variables and responses were coded and organized according to the themes and scales determined by the researcher during the research design stage. Once the data coding was complete the results were then transferred to the SPSS™ statistical software program. Within the SPSS™ program additional coding was identified as needed for the program to analyze and label data from participant responses.

Results were exported from corporate electronic performance support system to a database program for coding by the researcher. Once coded the program results were then uploaded to the SPSS statistical program. Codes were transferred into SPSS for the coordinating questions. Once complete statistics were then calculated using frequency, descriptive, and cross tabulation functions available through SPSS. A summary of the results from this analysis are presented in Chapter 4 and discussed in Chapter 5 of this report.

3.9. <u>Summary</u>

Detailed information regarding the framework, development and execution of this study were provided in this chapter. Two audiences were addressed in this study using a pretest and posttest method and the third audience was only provided a posttest. Overall these audiences responded to the questionnaires at a high rate. Once the survey was closed statistics were calculated using a statistical software program.

The next chapter will provide a summary of the data collected from each of the three participating audiences and results of the statistical functions performed.

CHAPTER 4. FINDINGS

This chapter will outline the results of the data collected for the purpose of this study. Data will be presented according to the three audiences surveyed; course developers, facilitators and adult learners. A summary of the results will be presented in terms of the three samples and unique characteristics of these groups.

4.1. <u>Adult Learner Sample</u>

Learners from five of the six pilot courses responded to the pre-course and post-course survey. Learners from the Element Workshop course did not respond to the pre-course survey because the course had already started prior to the pre-learner survey being developed.

Fifty percent of the respondents to the pre-course survey were from the Introduction to Statistics course and another 27.3% of respondents were from the SPC course as shown in Table 4.1. Smaller percentages responded from the other courses which had corresponding lower enrollments (Medical New Hire Onboarding- 9.1%; Medical Onboarding Mini-Pilot- 9.1%; Developing in Element- 4.5%).

The age ranges for the learner group was derived from the pre-course survey. Participants were asked to select their age range from one of the following categories: 18-28, 29-40, 41-50, 51-60 and >60 years old. Responses indicated the larges majority to be in the 41-50 year age range, accounting for 43.2 %, while the 29-40 year age range accounted for another 38.6%. Only 13.6% of learners were in the 51-60 year range. In terms of gender, 65.9% of

learner respondents to the pre-course questionnaire were male and 34.1% were female.

Table 4.1.

Pre-Course Participation by Course.

Pilot Course	Frequency	Percent (%)
Introduction to Statistics	22	50.0
SPC Course	12	27.3
Medical New Hire Onboarding	4	9.1
Medical Onboarding Mini-Pilot	4	9.1
Developing in Element	2	4.5
Total	44	100.0

As shown in Table 4.2., the Introduction to Statistics course had the highest percentage of the overall response rate to the post-course survey (27.3%), but was closely followed by the SPC course and Element Workshops with 25% and 22.7% respectively. Additionally, 56.1% of responses were from males and 43.9% from females for this questionnaire.

Table 4.2.
Post-Course Participation by Course.

Pilot Course	Frequency	Percent (%)
Introduction to Statistics	12	27.3
SPC Course	11	25.0
Element Workshops	10	22.7
Medical Onboarding Mini-Pilot	6	13.6
Medical New Hire Onboarding	5	11.4
Total	44	100.0

4.1.1. Prior and Future Contact

Several items on the learner questionnaires attempted to identify the learner group level of experience and impression of distance learning. Learners identified their previous experience with distance learning and comfort level with distance learning prior to their pilot course. In the post-course questionnaire items that measured their willingness to participate in future courses as well as willingness to recommend it to others were also noted.

Development and implementation of distance learning courses was a relatively new method of instruction approached by the corporation but it was not a new experience for some learners. The surveys revealed that 25% of the learners had some previous experience with distance learning. The majority (65.9%) of learners responding had no previous experience with distance learning. Of the learners with previous experience with distance learning several indicated, in the free response area provided, they had received this experience by participating in distance based masters courses.

Learners were also asked to rate on a scale of 1 to 5 (1=Very Uncomfortable, 5=Very Comfortable) their current level of comfort in participating in a distance learning course. In this group 9.1% indicated they were uncomfortable or very uncomfortable with participating in a distance learning course prior to the pilots while over 54% indicated they were comfortable or very comfortable with participating in distance learning (M=3.59, S.D.=0.99).

 After the pilots were complete the learner group was asked to identify whether or not they like to participate in a distance learning course again and whether they would recommend distance learning to others. Both of these items were rated on a five point scale (1= Strongly Disagree, 5=Strongly Agree). As shown in Table 4.3., 75.6% of learners agreed or strongly agreed they would recommend distance learning to others (M=3.78, S.D.=1.12) and 80.5% agreed or strongly agreed they would participate in another distance learning course if offered the opportunity (M=4.12, S.D.=1.02). These items were included in the

questionnaire to measure the potential repeated use by learners and whether these courses would be recommended to other potential learners.

Table 4.3.

Future Participation and Recommendation to Others

Item	Mean	S.D.	N
Participate in DL Again	4.12	1.03	41
Recommend DL	3.78	1.13	41

4.1.2. Effective Learning Method

Three items on the learner surveys were aimed at determining whether the design of the distance learning pilot courses was viewed as an effective method of learning by these adult learners. The ratings were again identified on a five point scale (1=Strongly Disagree, 5= Strongly Agree). As shown in Figure 4.1., over 85% of learners indicated that they agreed or strongly agreed this format was an effective method for them to learn the material provided (M=3.95; S.D=0.95). As discussed in the literature review perceived ease of use is an element of the Technology Acceptance Model. Over 85% of learners also agreed or strongly agreed (M=4.10; S.D.= 0.70) that the course technology was easy to navigate. Additionally, 82% of the learner audience responded they agreed or strongly agreed when asked if accessing the course materials from a single location made their learning more efficient (M=4.12; S.D.=0.678). The combination of these three items clearly present the adult learner perceived effectiveness of this type of course delivery.

4.1.3. Interactions in Distance Learning

It is undeniable that the interaction between a learner and a facilitator or a learner and other learners will differ from the potential interactions these groups may have in a traditional instructor-led classroom based course. A study of a higher education setting outlined in the literature review indicated lack of
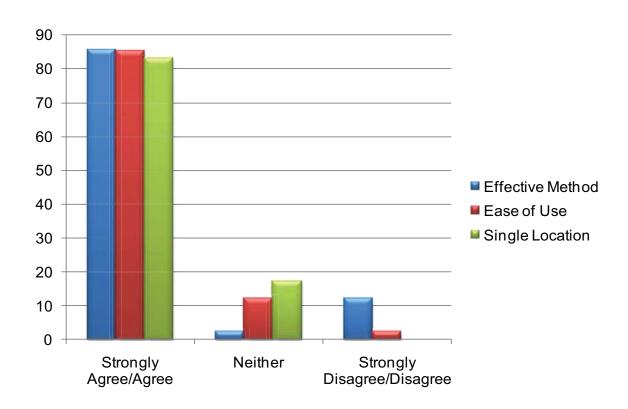

Figure 4.1. Effectiveness of Course Delivery

interaction and feelings of isolation may lead learners to have a negative attitude toward distance learning (Menchaca & Bekele, 2008).

The post-course questionnaire asked learners to specify on a five point scale (1=Strongly Disagree, 5= Strongly Agree) as to whether they felt there were enough opportunities provided to interact with the facilitator and other learners during the course. Responses indicated 82.9% either agreed or strongly agreed with this statement (M=4.10; S.D.=0.86) as shown in Table 4.4.

In addition to measuring the opportunity to interact with others learners, they also responded to items on the pre-course and post-course questionnaires which related to the quality of their interactions with others as compared to a traditional classroom based course. The pre-course questionnaire measures what the learners anticipate to be true about the quality of their interactions. A five point scale was used on these items (1= Strongly Disagree, 5=Strongly Agree).

Table 4.4.

Interaction Opportunities

Response	Frequency	Percent (%)
Agree	20	48.8
Strongly Agree	14	34.1
Neither	4	9.8
Disagree	3	7.3
Total	41	100.0

Two categories of interactions were also addressed with these items; interactions with other learners and interactions with the facilitator. The perceived quality of interactions with other learners resulted in a mean response of 2.56 (S.D.=0.92) and the post-course quality received a similar mean of 2.54 (S.D.=1.20). Interactions with the facilitator resulted in a slightly higher mean=3.15 (S.D.=1.13) for the post-course questionnaire than the anticipated quality which resulted in a mean of 2.63 (S.D.=.94). A summary of these results can be seen in Table 4.5.

Measurement of learner networking was included to gauge the quality and level of learner to learner interactions as well. On the post-course survey learners identified the extent to which they were able to develop contacts outside of their

area using a six point scale where 0= did not experience, 1=small extent, and 5=large extent. In response 48.8% indicated either they did not experience this or only experienced this to a small extent (M=1.93, S.D.=1.54). A summary of all Table 4.5.

Interaction Quality

	Learner Interactions	Learner Interactions-Post	Facilitator Interactions	Facilitator Interactions-Post
Mean	2.56	2.54	2.63	3.15
S.D.	.92	1.20	.94	1.13

responses are provided in Table 4.6. In addition to measuring the networking which occurred during these pilot courses the learners rated the level to which they felt a part of an online community during this experience. As noted in the literature review learner feelings of isolation can lead to dissatisfaction with the course and inhibit learning transfer.

4.2. Facilitator Sample

Facilitators for the distance learning pilot courses were invited to participate in a survey prior to the start of their pilot course. This survey consisted of basic demographic questions as well as questions which measured their experience and comfort level with distance learning and various technologies used for distance learning. After the pilot course was complete facilitators were invited to participate in another survey measuring their reactions to the pilot as well as their level of agreement with basic assumptions surrounding the facilitation of distance learning courses.

The corporation studied conducted only a small number of pilot courses as a test of distance learning integration; therefore the facilitator audience was small. However, the facilitator surveys did result in a high response rate from this group. For the pre-pilot survey four of a possible six facilitators responded (66%)

and for the post-pilot survey five of a possible six responded (83%). This audience was comprised of five male and two female facilitators.

Table 4.6.

Contact Development

Response	Frequency	Percent (%)
Small extent	11	26.8
Moderate	10	24.4
N/A=Did not experience	9	22.0
Moderate/Large	5	12.2
Small/Moderate	4	9.8
Large Extent	2	4.9
Total	41	100.0

Facilitators were asked to identify their age range on the pre-course questionnaire. The responses were equally divided among the 29-40 (n=1), 41-50 (n=1) and 51-60 (n=2) age ranges. Half of the responses in the pre-course questionnaire were from male facilitators and half were from female facilitators. Of the five facilitator responses to the post-course survey, 80% were male and only 20% were female.

4.2.1. Pre-Course Preparation

Each of the course facilitators had previous experience in facilitating a traditional classroom based training session; however experiences with facilitating in a distance learning environment were mixed. Three of the responding facilitators did not have prior experience facilitating distance learning courses, but one facilitator did have prior experience.

The surveys asked participating facilitators to identify their level of comfort in facilitating a distance learning pilot course. The pre-course survey showed

that 75% of facilitators identified as being uncomfortable with facilitating a distance learning course. The results of the post-course survey showed that 100% of facilitators identified as being either comfortable or very comfortable with facilitating a distance learning course.

Facilitators were also asked to rate the effectiveness of training they were provided by the corporation in preparation on the pre-course and post-course surveys. According to the pre-course survey, 50% of responses indicated disagreement with the statement that the training they were provided prior to facilitating a distance learning course was adequate. Only 25% of the facilitators agreed with this statement and another 25% were not provided training on distance learning facilitation prior to their pilot course (n=4; M=2.75; S.D.=0.96). After the pilot courses were complete, facilitators were again asked to rate the adequacy of the training they were provided prior to the course. One-hundred percent of respondents (n=5) indicated they agreed the training they were provided by the corporation was adequate for them to be able to conduct a distance learning pilot course (M=4.00, S.D.=0.00).

Areas of support sought by the facilitators were also assessed on the pre-course survey. Facilitators ranked the support they received on a five-point scale where 1= low level of support and 5=high level of support. Facilitators who selected the option of 0 indicated they did not seek support in preparation for their course from this area. The support categories were: Other Experienced Distance Learning Facilitators, Course Developer, Course Owner, Internal Technical Support Staff, and their Manager. Course developers received the highest rating of support with a Mean ranking of 4.00 (S.D.=0.82). Responding facilitators indicated at a rate of 75% they did not seek support from Internal Technical Support Staff (M=0.75). Managers were only sought for support by 50% of respondents and received either a moderate (3) or low (1) ranking from this group (M=1.25).

4.3. <u>Course Developer Sample</u>

Course developers were those individuals who guided the development and transfer of selected course materials into a distance learning format. These individuals are primarily responsible for developing the materials and facilitation techniques to be used during a given course. There were four course developers which were directly employed by the corporation studied. All four of the potential respondents replied to the questionnaire. Courses represented by this group included the Element Workshops, Developing in Element and Introduction to Statistics. There were three male and one female respondent in this group and ages were distributed across the 29-40 (n=1), 41-50 (n=2), 51-60 (n=1) year age ranges.

Several divisions of the corporation selected to contract with external development sources for the production of their distance learning pilots. These external contractors were not contacted to respond to the survey because the survey measured the developers comfort level and feeling of adequacy toward distance learning course development and technologies. It was assumed these external contractors viewed their services as adept and were comfortable with the process.

4.3.1. Self-Identified Proficiency

The acceptance and proficiency with the distance learning technologies used was especially important for this group. They not only served as the developers of the course content and delivery but also some served as an initial point of contact for learners and facilitators for technology related issues during the course. This audience was asked to self-identify their level of proficiency with each of the technologies available for distance learning course design which included Blackboard Prosites, SharePoint, WebEx and Adobe Connect Pro. Three of the four respondents indicated a non-use or low proficiency with Adobe Connect Pro, while the group was evenly split between low proficiency and

moderate/high proficiency with Prosites. Three out of four also indicated they were highly proficient with WebEx and SharePoint technologies. Although the group was varied in their self-indicated proficiency with the individual technologies, three of four did respond they were confident in their abilities to design an effective distance learning course.

4.4. <u>Acceptance of Technology</u>

The presence of several known issues related to acceptance of distance learning was measured in this study. These issues included the facilitator and learner perceptions of: technology interfering with the learning process, self-identified technology confidence, and time required compared to a traditional classroom setting. Concerns over an additional acceptance factor related to time investment by the three audiences was indicated by the corporation. It was also indicated this was a factor in their decision related to continued use of distance learning. Literature related to corporate distance learning is limited and no information related to time investment could be identified. Therefore items on the questionnaires related to time investment were intended to measure this factor of acceptance.

4.4.1. Perceived Technology Interference

The learner group was asked to identify their opinion of whether or not the technology used for the course would interfere with them learning the materials presented. Measured on a five point scale where 1= strongly disagree and 5= strongly agree, 45.5% (n=41) of this group agreed or strongly agreed on the pre-course questionnaire that the technology would interfere while another 43.2% did not have a strong opinion of agreement or disagreement with this statement and selected 3=Neither disagree nor agree, on the scale provided (M=3.55; S.D.=1.02). Learners were asked if the technology interfered with their learning after the course was completed, 66% (M=3.81; S.D.= 0.99) indicated the

technology did not interfere with their learning experience. Another 11.6% of this group indicated the technology did interfere with their learning.

Facilitators were presented with items and scales identical to those presented to the learner group regarding perceived technology interference. In response 40% of facilitators felt the technology used did not interfere with their facilitation of the course, while 20% reported the technology did interfere and another 40% did not feel strongly enough to agree or disagree with this statement (M=3.20; S.D.=0.84). Facilitator and Learner post-course reactions to technology interference are shown in Figure 4.2.
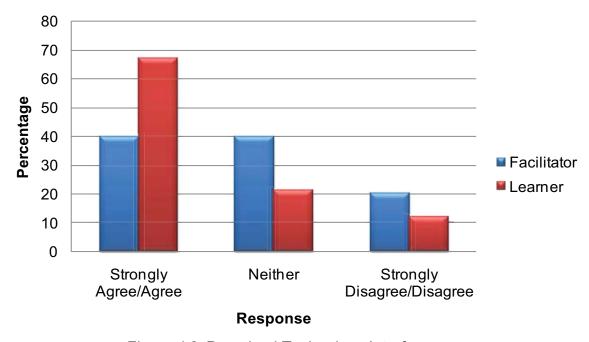

Figure 4.2. Perceived Technology Interference

In addition to identifying their perceptions of technology interference with their experience, learners were also presented the opportunity to indicate the level of frustration they experienced with the course technology after the course was complete. This item used a six point scale based on the extent this was experienced (0=Did not experience, 1= Small Extent, 5=Large Extent).

Responses to this item are summarized in Table 4.7. Over 51% of learners indicated they experienced either a small or small to moderate extent of frustration with the technology whereas another 26.8% indicated they did not experience any frustration at all (M=1.61; S.D.=1.32).

4.4.2. Perceived Time Investment

Concerns over the potential time investment difference between distance learning courses and a traditional classroom based courses was also addressed in the survey. Learners and facilitators were asked to identify their perceptions of

Table 4.7.

Learner Frustration with Technology

Response	Frequency	Percent (%)
Small/Moderate	13	31.7
N/A=Did not experience	11	26.8
Small extent	8	19.5
Moderate/Large	5	12.2
Moderate	4	9.8
Total	41	100.0

whether a distance learning course would (pre-course) and did (post-course) take the same amount of time to complete as a traditional classroom based course. In addition to qualifying whether they anticipated and experienced a difference in time investment the learner group was also asked about workplace based time investment issues.

Learner perceptions of the time required to participate in a distance learning course are outlined in Table 4.8. These items were rated on a six point scale where 0=No Opinion, 1=Strongly Disagree and 5=Strongly Agree. The results indicated a mean of 2.98 and standard deviation of 1.11 for the pre-

course survey and a mean of 2.61 and standard deviation of 1.07 for the post-course survey.

Facilitators were also provided the opportunity to indicate their perceptions of time required to facilitate a distance learning course prior to and after the pilot courses. The facilitator group collectively disagreeing with the notion the distance learning course would take the same amount of time as a traditional classroom based course. After the courses were complete, 60% either disagreed or strongly disagreed with this statement, but 40% agreed (M= 2.40, S.D.=1.52). Complete results are outlined in Table 4.9.

Several learners indicated concerns related to the time management when asked to provide sources of discomfort or concerns related to participating in a

Table 4.8.

Time Requirement- Learner Group

Time Required (Pre-Course)		
	Frequency	Percent (%)
Neither	17	41.5
Agree	13	31.7
Disagree	6	14.6
N/A (no opinion)	2	4.9
Strongly Disagree	2	4.9
Strongly Agree	1	2.4
Total	41	100.0
Time Required (Post-Course)		
Response	Frequency	Percent (%)
Neither	13	31.7
Disagree	12	29.3
Agree	8	19.5
Strongly Disagree	7	17.1
Strongly Agree	1	2.4
Total	41	100.0

distance learning course in the pre-course questionnaire. One learner noted, "I need to know exactly how much time this will take...Time is precious!" . Another

indicated they were concerned with "being able to follow along without interruptions from my normal job". A similar concern was shared by another learner, "My only concern is work emergencies interrupting the course time". These concerns related to time management were also measured in the post-course questionnaire where learners identified the extent to which they experienced several issues related to time management on a five point scale (1=small extent, 5= large extent). A summary of the responses are outlined in Figure 4.2. The item regarding conflicting priorities had the highest mean (M=2.63) and the item related to difficulty in participating in multi-day sessions had the lowest mean (M=1.63).

Table 4.9.

Time Requirement- Facilitator Group

Facilitation Time (Pre-Course)		
Item	Frequency	Percent (%)
Disagree	4	100.0
Total	4	
Facilitation Time (Post-Course)		
Item	Frequency	Percent (%)
Strongly Disagree	2	40.0
Agree	2	40.0
Disagree	1	20.0
Total	5	100.0

4.5. Summary

In summary the results presented above outlined the information provided by the adult learners, facilitators and course developers through the questionnaires they were provided. The adult learner group accounted for the
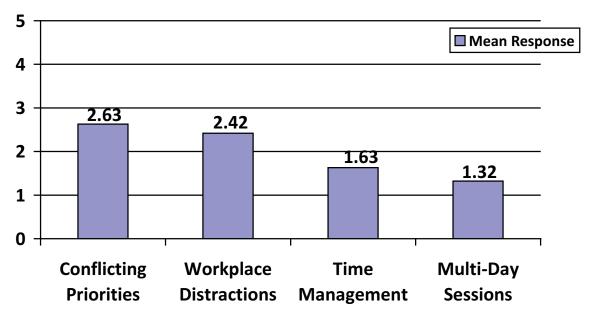
Figure 4.2. Issues in Time Management

largest portion of responses to the overall survey. The courses which were most highly represented in the learner and facilitator surveys were the Introduction to Statistics and SPC course.

Results related to potential barriers to acceptance in a distance learning environment were outlined in terms of perceived technology interference with learning, self-identified abilities with technology and time investment as compared to a traditional classroom setting.

The next chapter will discuss conclusions regarding the study based on the data provided. It will also cover implications and suggestions for future research.

CHAPTER 5. CONCLUSIONS

Conclusions drawn from data collected are outlined and discussed in this chapter. Relation to or differences from current literature studied will be drawn upon to support these conclusions. After the conclusions a brief discussion regarding the procedures of the study as well as suggestions for future research will be discussed in detail as well.

5.1. Discussion

The research questions for this study were not only intended to guide the process of this study, but also address key issues related to distance learning courses in a corporate setting. Two research questions were developed for this study.

RQ1: What identified barriers to technology acceptance are perceived as inhibitors by the facilitators, course developers and adult learners in this study?

RQ2: What perceptions do facilitators and adult learners in a corporate setting have of distance learning?

Perception of distance learning technologies interfering with the learning process instead of enhancing it is a common concern noted by facilitators and adult learners. Course developer may also be concerned with this which leads to the attempt to integrate best practices for distance facilitation in their course design. Although the majority of the learners (66%) indicated a strong perception

that the technology would interfere with their learning prior to completing a course; after the course was complete only 11.6% agreed that the technology did interfere with their ability to learn the content. These results show that although this interference may be a fear or perception of the learners, it most often does not materialize as a factor.

The facilitator group was more divided in their response to whether the technology interfered post-course (40%=Strongly Agree/Agree, 40%=Neither, 20%=Disagree). This division among the facilitators may be linked to the fact that facilitating a distance learning course was new for all of them with one exception. Many may also view the use of these technologies as a threat to their job security or a violation of the classroom hierarchy (Berge, 2002; Surry & Land, 2000; Ertmer, 1999; Fauley, 1983). Therefore this split in the response may be linked to an effort of self-preservation rather than actual interference.

Literature related to technology acceptance noted that self-efficacy ratings may be linked to the level to which technology is accepted (Scott & Walczak, 2009). The course developer group responded to items on their questionnaire which linked their self-identified proficiency to the various technology tools which were available for their use in developing the pilot courses. Overall they identified higher levels of proficiency with the tools which had been integrated in the business prior to the use of distance learning. Only one course developer indicated a high proficiency with a distance learning specific program. Despite this all of the course developers indicated they felt they had the knowledge, skills, and abilities needed to create and effective distance learning course. Additionally they all strongly agreed that the technology provided for distance learning allowed for effective course design. Therefore we can conclude that, although they may not self-identify as highly proficient with all of the technologies available to them, they still feel confident and able to develop these courses.

A concern of businesses is the amount of time training courses require an employee to be away from their typical duties. This is not only a concern of the employer but also a concern of the employee. If the employee is distracted from

the training environment by other work duties which the employee deems as more urgent, the learning process is interrupted for the employee. Several items on the learner and facilitator questionnaires were related to the perceived time invested by these individuals. The results from both groups indicate a stronger disagreement with the statement that the distance learning course took the same amount of time to participate in as a traditional classroom based course. This indicates that there is a difference in the amount of time required by learners and facilitators. Therefore those who are facilitating or participating in a distance learning course should be presented with a set of expectations prior to the course which specifically address the difference in time requirements.

Although there was a difference in the amount of time required by learners to participate in the distance learning format, there did not seem to be a strong indication this difference significantly impeded their ability to manage their time when participating in the course. This is shown through the low mean scores when learners identified the extent to which they experienced potential time management issues: conflicting priorities (M=2.63), workplace distractions (M=2.41), time management (M=1.63), difficulty participating in multiple day sessions (M=1.32). These results speak to the flexibility that distance learning provides the learner in relation to time management.

Based on the results it can be concluded these distance learning pilots were an overall positive experience for the adult learner group. Their high agreement rate related to the effectiveness of the method, ease of use, future participation and recommendation indicate this. As shown in the results, over 85% of learners agreed or strongly agreed the distance learning format was an effective method for them to learn. Prior to the start of the course 54% of learners indicated they were comfortable or very comfortable in participating in the distance learning pilot courses. Therefore it can be concluded that although a few adult learners may have apprehensions using this format prior to experiencing it, the majority find afterwards that this format is effective. The fact these positive responses were indicated by a group which was largely inexperienced with

distance learning appears to indicate prior experience is not always necessary for learners to receive the maximum benefit from distance learning courses.

One faucet of distance learning which seemed to be an issue for the learner group related to interactions during the course. When asked if the quality of interactions with other learners was similar to that of a classroom based course group's mean response was in the middle of the rating scale (M=2.54) after the course. In contrast to their experience with other learners, when asked about the quality of their interactions with the facilitators, this group indicated a stronger disagreement after the course (M=3.15). The quality of the interactions between learner and facilitator may be related to the facilitator's own comfort level and experience related to distance learning. Relation between peer interactions and course satisfaction and efficiency were supported by the findings of several studies (Menchaca & Bekele, 2008; Dobrovolny,2006; Ali, Hodson-Carlton, & Ryan, 2004; Stonebraker & Hazeltine 2002; Cartwright & Menkens, 2002). Overall, more planned interactions between learners and between learner and facilitator would increase benefits received by the learner.

Although the learners did not generally indicate a negative experience, the facilitator group seemed to note a different mindset prior to the facilitation of their first course. 75% of facilitators indicated they were uncomfortable with distance learning prior to the course and 100% indicating a level of very comfortable or comfortable after the pilot course These responses show that with even a single experience the facilitator comfort level can increase related to distance learning. This shows that additional support and or training should be implemented for the facilitator group prior to their initial facilitation of this format. Additionally, continuing education and support related to best practices could increase the effectiveness of the facilitators as well

5.2. <u>Conclusions</u>

The barriers identified as being inhibitors to the acceptance and use of distance learning in this setting were less present than expected based on information gathered from previous literature. In terms of the adult learner group there seemed to be very few barriers to their acceptance and potential future use of distance learning courses. This group also indicated a low response as to whether the technology interfered with their learning. Two barriers which were present for this group included time management issues and interaction quality. The barrier of interaction quality affecting the acceptance of distance learning was supported by the work of several studies (Menchaca & Bekele, 2008; Dobrovolny,2006; Ali, Hodson-Carlton, & Ryan, 2004; Stonebraker & Hazeltine 2002; Cartwright & Menkens, 2002). Despite these barriers the learner audience responded well to the experience provided and the majority indicated they would participate in a similar occurrence in the future.

The facilitator audience experienced a stronger barrier in terms of the level to which the technology interfered with their instruction. The presence of this barrier for the facilitator group was also found in research by Berge (2002), Surry and Land (2000), Ertmer (1999) and Fauley, (1983). An additional barrier which was strongly identified by the facilitator group was their perceived level of training received prior to facilitating their first course which appeared to be related to their perceived comfort level pre-course as well. This barrier may be attributed to the lack of experience with distance learning facilitation in this group.

In summary this study provided additional information which was absent from current literature related to the distance learning experiences of course facilitators, developers and adult learners in a corporate setting. Distance learning is an educational technology which is continually evolving and reflects an art rather than a science. Not only are the methods and practices become more evolved but the capabilities which are possible through the technology platforms are evolving as well. These platforms which are perceived to be the best available today may be obsolete tomorrow. Those attempting the

implementation of distance learning in a corporate environment must take this into account and create a vision for their program which keeps a future based perspective.

5.3. <u>Implications</u>

There are several implications which can be drawn from this study and used to improve future research and future practice of distance learning in a corporate setting. This study did not only provide answers to the research questions posed, but it also provided insights on improvements which should be considered in the future in terms of research and practice. The suggestions for future research reflect potential improvements which could be made in replication of this study and topic which should be considered for future research. The implications for future practice relate to improvements and best practices which should be considered in distance learning.

5.3.1. Future Research

The content of the course materials for the pilot courses studied related to information which could be practiced on an individual basis with out the assistance of specific equipment other than computer programs which were provided. Additional research on the viability of using distance training for processes such as manufacturing or safety procedures would assist in determining the limitations to what content can be effectively provided through distance learning. Current literature does not seem to provide specific information on subjects which cannot effectively use this learning platform.

When examining the implementation of distance learning on a corporate level further exploration on the experience learners outside the United States have compared to their U.S. counterparts if the training is provided by a U.S. based corporation. Variances may be seen in the learners perceptions related to time investment, course interactions and learning outcomes. This information will

become vital as corporations integrate distance learning as means for cost-savings related to global travel for facilitators.

As more and more corporations and education providers are harnessing the capabilities of distance learning, the technologies used for this are advancing as well. Future studies related to barriers of integration and acceptance should address the practice of upgrading or changing technology provided. For example, if a platform that has been used for several years by developers, facilitators and learners is updated or changed to another product, are the barriers and acceptance process the same as what the learning provider experienced initially?

In reflection upon the current study presented if it were to be repeated in the future, examination of a larger population across several corporations would be key. Being able to gain knowledge from a larger sample with various business needs is essential in making the knowledge gained generalizable to others in the business sector.

5.3.2. Future Practice

Several points of improvement were discovered related to the implementation and use of distance learning which may enhance this experience for all of the audiences surveyed. Additionally, these points may also increase the efficiency and effectiveness of the learning achieved.

In the literature review several higher educational settings noted the use of a learner orientation prior to the start of a distance learning course. This orientation provided the learners to become familiar with the tools and features of the technology which would be used during the upcoming course. During these orientations learners were also instructed on the intended use and outcomes for these features. A pre-course orientation did not occur prior to the pilot courses but should be considered for future corporate practice. This would aid in reducing the anxiety some learners and facilitators may experience prior to a course. Additionally this orientation would be a prime opportunity to set out learner

participation expectations related to individual assignments, course discussions, etc.

Another implication for future practice which was uncovered during this study is related to the organizational and peer support sought by the facilitator group. This group mostly sought out the course developer group for assistance related to technical issues, content issues and facilitation best practices. If more and more distance learning classes are provided, if all facilitators sought out their course developer for these needs the course developer group may quickly become overwhelmed. In order to subside this potential issue corporations could adopt a set of sound standards in relation to distance learning facilitation. These standards would serve as an additional support tool or job aid which may help the facilitators in solving common issues.

5.4. Closing

The discussion and conclusions in this chapter provided a summary of the new insights gained through the process of this study. The suggestions for future practice and future research were outlined and intended to improve both future studies and implementation of distance learning in a corporate setting.
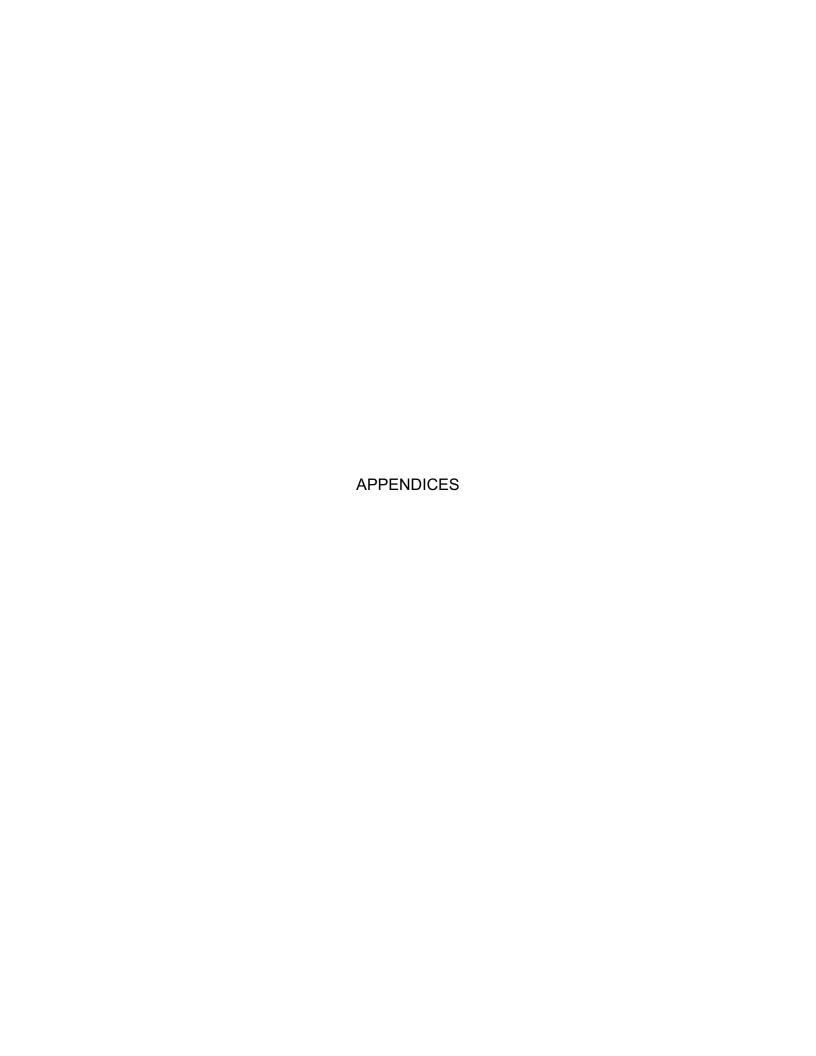
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APPENDICES

Appendix A: E-mail Invitation to Questionnaires

To: (Each learner, facilitator and developer)

Subject: Distance Learning Pilot Survey

Hello-

Thank you for participating in our distance learning pilot. We are attempting to collect information and feedback from everyone who is participating in a distance learning pilot. Below is a link to a survey which will give you the opportunity to provide this information.

This survey will require 5-10 MINUTES to complete. Participation in this survey is voluntary and your employment status will not be affected by participation or non-participation. Participants must be at least 18 years old.

This survey contains questions regarding your experience with distance learning and the distance learning program you are participating in. We will be surveying varying employees, facilitators and designers within the organization. The data provided will help to identify the learner, facilitator and developer point-of-view and potential challenges experienced with distance learning.

Specific organizational information that you provide will not be published or mentioned in the final results of this study. The confidentiality of your responses will be maintained by only providing visibility of individual responses to the researcher (Holly Rhodes). The results of this survey will be presented to the organization in aggregate form and will not show a specific individual's responses.

Please click on this link to begin the survey:

FACILITATOR PRE-PILOT SURVEY

Thank you,

Holly Rhodes
Graduate Student
Purdue University
rhodesh@purdue.edu

Appendix B: Learner Pre-Course Questionnaire

1. What distance learning pilot are you participating in?
- Medical Liaison New Hire Onboarding
- Medical Liaison Onboarding Mini-Pilot (December)
- Introduction to Statistics
- Developing in Element
- Element Workshops
- SPC Course

2. Please identify the range in which your age appears.
18-28
29-40
41-50
51-60
60+

3. I have prior experience taking formal training courses for credit using an online virtual classroom.
Yes
No
I'm not sure

4. Using the scale provided, rate your CURRENT level of confidence using each of the following tools (Note: N/A = Not familiar with/do not use tool.):

	LOW		MODERATE		HIGH	
	1	2	3	4	5	N/A

*Web Conferencing (WebEx)
*Instant messaging (Microsoft Communicator)
*Discussion boards
*Blogs
*Web Camera
*Desktop Virtual Classrooms (Adobe Connect Pro)
*Online Course Management (Blackboard, Moodle, etc.)
*SharePoint

5. Describe your current level of comfort related to participating in this Distance Learning pilot.

Very Comfortable
Comfortable
Neither
Uncomfortable
Very Uncomfortable

5a. To what do you attribute your level of comfort in participating in this distance learning pilot?

Page Separator 2

5b. To what do you attribute your level of discomfort in participating in this distance learning pilot?

Page Separator 3

6. Please rate your level of agreement with the following statements. (Note: selecting N/A indicates you do not have an opinion related to this statement.)

Strongly Agree   Agree   Neither Agree nor Disagree   Disagree   Strongly Disagree   N/A

*This pilot will take the same amount of time to complete as a traditional classroom course.
*The quality of my interactions with the FACILITATOR will be the same as traditional classroom.
*The quality of my interactions with the other LEARNERS will be the same as traditional classroom
*I will learn the same amount as in a traditional classroom setting.
*The technology used for this pilot will not interfere with my learning.

7. What concerns or questions do you have about participating in a Distance Learning pilot? (If you do not have any concerns or questions, click "Finish")

Appendix C: Facilitator Pre-Course Questionnaire

1. What distance learning pilot will you be facilitating?
- Medical New Hire Onboarding
- Medical Onboarding Mini-Pilot (December)
- Introduction to Statistics
- Developing in Element
- Element Workshops
- SPC Course

2. Identify the range in which your age appears.
18-28
29-40
41-50
51-60
60+

3. I have prior experience FACILITATING formal training for credit using an online virtual classroom.
Yes

No
I'm not sure

4. Using the scale provided, rate your CURRENT level of confidence using each of the following tools (Note: N/A = Not familiar with/do not use tool.):

	LOW		MODERATE		HIGH	
	1	2	3	4	5	N/A

*Web Conferencing (WebEx)
*Desktop Virtual Classroom (Adobe Connect Pro)
*Online Classroom Management (Moodle, Blackboard)
*Instant Messaging (Microsoft Communicator)
*SharePoint
*Blogs
*Discussion Boards
*Web Camera

5. Describe your current level of comfort related to participating in this distance learning pilot.
Very Comfortable
Comfortable
Neither
Uncomfortable
Very Uncomfortable

5b. To what do you attribute your level of comfort/discomfort related to participating in this distance learning pilot?

6. Please rate your level of agreement with the following statements.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

*Facilitating this pilot will take the same amount of time as a traditional classroom.
*The quality of my interactions with the LEARNERS will be the same as traditional classroom.
*The learning outcomes will be the same as a traditional classroom.
*The technology tools being used for this pilot will interfere with my facilitation.
*I will spend the same amount of time providing learner feedback as a traditional classroom.
*I have had adequate MATERIALS provided to facilitate this course.
*I have had adequate TRAINING provided to facilitate this course.

7. Please rate the support you received from the following areas in preparing you to facilitate this pilot.

*Manager
*Technical Support Systems
*Course Owner
*Course Developer
*Experienced Distance Learning Facilitator

8. What concerns or questions do you have about FACILITATING a Distance Learning pilot? (If you do not have any comments please click "Finish")
Free Response Text Box

Appendix D: Learner Post-course Questionnaire

1. In which distance learning pilot did you participate?

    * Developing in Element

    * Element Workshops

    * Distance Learning Facilitator Qualification

    * Introduction to Statistics

    * Medical Onboarding Mini-Pilot

    * Medical New Hire Onboarding

      SPC Course

2. 2. This distance learning experience was an effective way for me to learn.

    Strongly Disagree

    Disagree

    Neither disagree nor agree

    Agree

    Strongly Agree

3. 3. The online interface was easy to navigate.

    Strongly Disagree

    Disagree

    Neither agree nor disagree

    Agree

    Strongly Agree

4. 4. Accessing materials and other needed resources from a single location made my learning more efficient.

    Strongly Disagree

    Disagree

    Neither agree nor disagree

    Agree

    Strongly Agree

5. 5. During this experience I felt part of an online community.

    Strongly Disagree

    Disagree

    Neither agree nor disagree

    Agree

    Strongly Agree

6. 6. As a learner in this distance learning pilot, I received clear expectations regarding my participation.

    Stongly Disagree

    Disagree

Neither agree nor disagree
Agree
Strongly Agree

7. 7. The facilitator had sufficient CONTENT expertise to deliver this pilot.
Strongly Disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

8. 8. The facilitator had sufficient TECHNOLOGY expertise to deliver this pilot.
Strongly Disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

9. 9. This course provided appropriate opportunities for interaction between the facilitator and the learners.
Strongly Disagree
Disagree
Neither agree nor disagree
Agree
Strongly Agree

10. 10. What (if anything) was different about the quality of your interactions with the FACILITATOR compared to a traditional classroom?
(If nothing was different proceed to question 11)

11. 11. What (if anything) was different about the quality of your interactions with other LEARNERS compared to a traditional classroom? (If nothing was different, click "Next")

12. 12. Using the scale provided rate the extent to which you experienced each of the following BENEFITS during this pilot. (Note: Selecting N/A indicates you did not experience this benefit)

	Small extent	Moderate extent	Great extent			

* Practiced, reviewed and reflected between sessions

        1   2   3   4   5   N/A = Did not experience

* Developed contacts outside my site/area

        1   2   3   4   5   N/A = Did not experience

* Discussed real (vs. theoretical) workplace problems

        1   2   3   4   5   N/A = Did not experience

* Received help solving problems

        1   2   3   4   5   N/A = Did not experience

* Felt comfortable asking questions

        1   2   3   4   5   N/A = Did not experience

* Shared knowledge with facilitator
or other learners

         1   2   3   4   5   N/A = Did not experience

* Improved collaboration/dialogue
among peers

         1   2   3   4   5   N/A = Did not experience

* Greater flexibility completing
course components

         1   2   3   4   5   N/A = Did not experience

* Developed deeper, richer
understanding of the topic

         1   2   3   4   5   N/A = Did not experience

* Learned about company
products/processes

         1   2   3   4   5   N/A = Did not experience

13. 13. Using the scale provided, rate the extent to which you experienced each of the following DISADVANTAGES during this pilot. (Note: Selecting N/A indicates you did not experience this disadvantage)

	Small extent	Moderate extent	Great extent			

* Workplace distractions

          1   2   3   4   5   N/A = Did not experience

* Conflicting priorities

          1   2   3   4   5   N/A = Did not experience

* Frustration using technology

          1   2   3   4   5   N/A = Did not experience

* Longer than agreed upon response time for technology or course-related issues

          1   2   3   4   5   N/A = Did not experience

* Difficulty participating in multiple day sessions

          1   2   3   4   5   N/A = Did not experience

* Difficulty managing my time

          1   2   3   4   5   N/A = Did not experience

14. 14. Given the opportunity, I would participate in another distance learning experience.
    Strongly Disagree
    Disagree
    Neither agree nor disagree
    Agree
    Strongly Agree

15. 15. I would recommend this distance learning experience to others.
    Strongly Disagree

Disagree
Neither agree nor disagree
Agree
Strongly Agree

16. 16. Please rate your level of agreement with the following statements.

	Strongly Disagree		Neither agree nor disagree	Strongly Agree	
*This pilot took the same amount of time to complete as a traditional classroom course.					
	1	2	3	4	5
*The quality of my interactions with the FACILITATOR was similar to a traditional classroom.					
	1	2	3	4	5
*The quality of my interactions with other LEARNERS was similar to a traditional classroom.					
	1	2	3	4	5
*The quality of my learning was the same as in a traditional classroom course.					
	1	2	3	4	5
*The technology used for this pilot did not interfere with my learning.					
	1	2	3	4	5

17. 17. The number of live sessions for this pilot was appropriate. (Note: N/A= There were no live sessions for the pilot)

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

N/A

18. 18. The length of time scheduled for each live session was appropriate. (Note: N/A= There were no live sessions for the pilot)

Strongly Disagree

Disagree

Neither agree no disagree

Agree

Strongly Agree

N/A

19. 19. Generally speaking, I would prefer viewing pre-recorded lectures on my own time rather than attending scheduled live lectures.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

20. 20. Select the top three (3) features which were effective in aiding your understanding of the material:

*Individual Assignments

*Discussion Threads

*Discussion during live sessions

*Instant Messaging

*Polling

*Whiteboard interaction

*Instructor presentation

*Simulations

*Self-Guided Practice

*Videos

21. 21. As a distance learner, what other tools, resources or support (if any) would you like to see provided? (If you have not comments, click "Next")

22. 22. What other feedback (if any) would you like to provide regarding your experience with this distance learning pilot? (If you do not have any further feedback please click FINISH.)

Appendix E: Facilitator Post-Course Questionnaire

1. What distance learning pilot did you facilitate?
- Medical Liaison New Hire Onboarding
- Medical Liaison Onboarding Mini-Pilot (December)
- Introduction to Statistics
- Developing in Element
- Element Workshops
- SPC Course

2. Describe your current level of comfort related to facilitating distance learning programs.
Very Uncomfortable -Uncomfortable –Neither-Comfortable- Very Comfortable

2a. To what do you attribute your level of comfort in facilitating distance learning?
Free Response

2b. To what do you attribute your level of discomfort in facilitating distance learning?
Free Response

3. The pilot interface was easy to navigate.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

4. Accessing the materials and other resources from the interface made it easier to facilitate this course.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

5. All the resources I needed were accessible from the pilot's interface.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

5a. What did you need that you did not have available from the interface? (If you do not have any comments, click "Next")
Free Response

6. Using the scale provided, describe your level of improvement (if any) using each of the following tools. (Note: N/A = No change.)
*Web Conferencing (WebEx)
*Desktop Virtual Classroom (Adobe Connect Pro)
*Online Classroom Management (Moodle, Blackboard)
*Instant Messaging (Microsoft Communicator)
*SharePoint
*Blogs
*Discussion Boards
*Web Camera

7. Any technology-related issues I experienced were resolved in a timely manner.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

8. Any content-related issues I experienced were resolved within a timely manner.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

9. The training I completed was effective in preparing me to facilitate in this distance learning environment.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

10. During the pilot I received feedback that will help me further improve my distance learning environment facilitation in the future.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

11. Please rate your level of agreement with the following statements. (Note: Selecting N/A indicates you do not have an opinion related to this statement)

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	N/A
1	2	3	4	5	

*This course required the same amount of time to facilitate as a traditional classroom.
*The quality of my interactions with the LEARNERS was the same as a traditional classroom.
*The learners were able to learn the same amount as in a traditional classroom.
*I had a difficult time interacting with the technology for this course.
*I had the time needed to assess the learners work and provide feedback.
*I had adequate MATERIALS provided to facilitate this course.
*I had adequate TRAINING provided to facilitate this course.

11a. What was different about your interactions with learners compared to a traditional classroom?
Free Response

12. Using the scale provided, describe the extent to which you experienced each distance learning BENEFIT during this pilot. (Note: N/A=did not experience this benefit)

Small Extent		Moderate		Large Extent	N/A
1	2	3	4	5	

* Practiced, reviewed and reflected between sessions
* Developed contacts outside my site/area
* Discussed real (vs. theoretical) workplace problems
* Received help solving problems
* Felt comfortable asking questions
* Shared knowledge with other learners

* Improved collaboration/dialogue
* Able to respond more effectively to individual learner's needs
* Developed deeper, richer understanding of the topic
* Learned about Lilly products/processes
Rating Scale

13. Using the scale provided, describe the extent to which you experienced any of the following distance learning DISADVANTAGES during this pilot. (Note: N/A= Did not experience this disadvantage)

Small Extent		Moderate		Large Extent	N/A
1	2	3	4	5	

* Workplace distractions
* Conflicting priorities
* Frustration using technology
* Longer than agreed upon response time for technology or course-related issues
* Difficulty participating in multiple day sessions
* Difficulty managing my time
Rating Scale

14. Given the opportunity, I would facilitate another distance learning experience.
Strongly Disagree- Disagree- Neither- Agree-Strongly Agree

15. As a distance learning facilitator, what other resources or support would you like to see provided? (If you have no comments, click "Next")
Free Response

16. What (if anything) would you change about this pilot? (If you have no additional comments, click "FINISH")
Free Response

Appendix F: Course Developer Questionnaire

1. What distance learning pilot did you develop?

2. The content for this pilot was originally designed for classroom delivery.

3. Which of the following applications were incorporated in this pilot? (Select all that apply)

*Blackboard Prosites
*Sharepoint
*Adobe Connect Pro
*WebEx
*Other
*Other

3b. What were the instructional design strategies implemented by using the technologies selected in the previous question?	Multiple lines of text
4. The pilot you developed included which of the following features? (Check all that apply) *Discussion Threads *Blogs *Live Video *Pre-Recorded Video	Choice
5. The technology tools used to deliver this course allowed me to design an effective distance learning experience.	Choice
6. Please describe what you needed but did not have from these applications. (If you have no comments, please click "Next")	Multiple lines of text
7. I have the knowledge and skills needed to develop effective distance learning experiences	Choice
8. Estimate the amount of revision this pilot would require before running again. 0-20% 21-40% 41-60% 61-80% 81-100%	Choice

9. As a distance learning designer, what other tools, resources or support would you like to see provided?

10. What other feedback would you like to provide regarding your experience with this distance learning pilot? (If you have no further comments please click "Finish")

Appendix G: Internal Review Board Approval Form

PURDUE
UNIVERSITY

HUMAN RESEARCH PROTECTION PROGRAM
INSTITUTIONAL REVIEW BOARDS

To:	WILLIAM KRUG YONG 445
From:	RICHARD MATTES, Chair Social Science IRB
Date:	12/09/2009
Committee Action:	**Exemption Granted**
IRB Action Date:	12/08/2009
IRB Protocol #:	0911008690
Study Title:	Evaluation of Integration and Acceptance of Distance Learning Technologies in a Corporate Setting

The Institutional Review Board (IRB) has reviewed the above-referenced protocol and has determined that it qualifies for exemption pursuant to Federal regulations 45 CFR 46.101(b) exempt category(2) .

If you wish to revise or amend the protocol, please submit a revision request to the IRB for consideration. Please contact our office if you have any questions.

We wish you good luck with your work. Please retain copy of this letter for your records.