The Corporate Adult Learner: A Study of the Effectiveness of
Asynchronous Learning in a Corporate Workspace

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Abstract

This study examines the effectiveness of asynchronous learning in a corporate workspace. Education is the basis for success both in a corporate environment and the personal lives of the employees. The challenge is that today’s skills in the corporate environment are not always available through higher education. Educating workers is a success factor for the individual and the company. Interviews with a diverse group of adult learners about their challenges and experiences when learning asynchronously towards understanding what improves the transfer of knowledge in that context. Using Interpretive Phenomenological Analysis (IPA) several themes emerged, and conclusions were drawn: Meeting the Adult Learner Need, Effective use of Technology, Changes to Instructional Design, and Impact to the Organization.

There were four key findings, resulting in recommendations for practice in online learning. When using asynchronous learning for adults in a corporate environment be sure to connect learners during the learning event. Leveraging technology can intelligently replicate the human interaction seen in traditional classroom experiences. It was also clear that instructional design must adapt to the new methods of learning and gain the organization’s support when considering the learner’s needs.

*Keywords*: adult education, corporate training, asynchronous learning, distance learning, training and development, technology
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Chapter 1: Introduction

This chapter presents the statement of the problem of practice along with the rationale and significance it poses. An introduction of the implications and purpose of this research is given, showing the research questions the study addresses. The chapter concludes with a review of the theoretical framework and how its historical foundations apply to this study.

Statement of the Problem

The growth of business is forcing a change in the educational model for many companies disrupting the training models in place (Catalano, 2014). The shift from classroom to online learning has impacted adult learners as the use of asynchronous technology presents a new way to learn (Dobrovolny, 2006). Adopting an asynchronous educational model can introduce a problem for adult learners as they must change the way they learn, use tools to gain knowledge, and adapt to additional communication and social models (Ong, Lai, & Wang, 2004). This study investigates the effectiveness of asynchronous learning by adults and seeks to discover the methods used to improve the learning experience through the effective use of technology.

As corporate training transforms from classroom to distance learning methods (Caldwell, Fedor, Herold, & Liu., 2008); the adult learners have to adopt asynchronous learning techniques, such as web-based and video training, to maintain current knowledge. The traditional classroom learning experience can be costly and time prohibitive, making it difficult to train employees who are not centrally located (Dobrovolny, 2006). Business pressures, including meeting product release dates and sales requirements, have also reduced the ability for classroom training (Zornada, 2005). These challenges within the organization have affected the methodology for delivering training to the workforce.

There is a trend in corporate education moving to various forms of distance learning
Corporate training trends demonstrate how asynchronous learning prepares the workforce for their roles (Dobrovolny, 2006; Marsick & Meyer, 2003; Masalimova & Nigmatov, 2015). Corporations can reduce educational cost through the effective use of technology and distance learning (de Albuquerque, Vellasco, Mun, & Housel, 2012). Distance learning allows for changes in the creation of learning assets and greater flexibility in the consumption of those assets by the learners (Marsick & Meyer, 2003).

Corporations recognize the need for training employees, but traditional classroom training is costly (de Albuquerque et al., 2012). Video and online learning formats are used to address the cost and timeliness of classroom training (Y. S. Wang, 2003). Multimedia technologies can introduce disruptive changes to currently offered training modalities.

By shifting towards online modalities, it is possible to address both the time and focus on the audience; they will enjoy the learning and become more involved in their education (Ravitch & Riggan, 2011). In the end, the education department has achieved something that includes the interests of the employees and the company, a blended model that benefits both entities (Masalimova & Nigmatov, 2015).

**Rationale and Significance**

A benefit to the learner revolves around the use of distance learning technologies to deliver the training assets. Each employee has limited time to consume new material in a specific period, and some employees cannot attend face-to-face classes offered in a location which requires travel – the model is cost and time prohibitive (Dobrovolny, 2006). An additional consideration is the generational break-down of the company today. The current educational model was defined as a classroom experience more than fifty years ago, and that generation of learners is now the minority worker (Clapper, 2010). As the employee profile continues to shift
towards those who are more familiar with digital learning, digital native learners (Northey, Bucic, Chylinski, & Govind, 2015), the need for asynchronous learning will expand.

The purpose of this research is to understand the effectiveness of asynchronous learning for adults in corporate vocational education. The primary audiences for this research are those corporations striving to transition from the traditional training model towards a 21st-century learning system. The method used in this qualitative research is to listen to the experiences of the adult learner and drive the learning model in the direction the learners require.

Implications of this Research

The significance of the subject is essential to both the company and the individual. For the company creating a cutting edge educational department can mean better-skilled workers, improved efficiency, and a more productive workforce (Čonková, 2013). As both the company and the employee look for ways to strengthen their position in the market space, it is clear that education is an essential pathway to securing the skills and knowledge to be successful (Drago-Severson, 2009).

Implications to the individual. The introduction of successful training at work can lead to an awareness of the value of learning, increased skills and knowledge, and the potential for promotion within the company. Adult learners need targeted training on subjects which are relevant and timely to them (Offir, Lev, & Bezalel, 2008). Learners may prefer self-paced training that they can complete on their own and engage with the instructor as they need (Németh, 2014). The method of learning may be very different and confusing, especially to those who have not used this form of education before (McGrath, 2009).

Implications for the use of technology. Asynchronous learning can challenge learners who require human interaction. However, technology can help resolve some of these challenges
The addition of Asynchronous learning offers the opportunity to the learner to be at the center of the educational process by allowing them to take ownership of their learning (Bidin & Ziden, 2013). The use of social engagement allows the learners to form a community to enhance their learning and engage with each other in peer learning (Lucardie, 2014). Technology can be used to mitigate the transactional distance, the remoteness between learner and teacher (Offir et al., 2008). New technology or uses for existing tools may be required when adapting to an asynchronous learning model (Rovai, 2002).

**Implications for the organization.** Within a corporate environment, there are several training types required. The business requires specific technical skills training for the various tasks performed by workers within the company, and any training types can meet this need. Time to market pressure on the business requires the workforce to be trained quickly (Zhang, Yin, David, Xiong, & Niu, 2016). A traditional classroom model cannot meet the timelines required by the business (Čonková, 2013). Compliance training supports human resource and regulatory requirements. This method of education often requires certification and follows strict legal or governmental guidelines. In each case, distance learning can meet the need on the business especially when there is a need to retrain the workforce in new or changed procedures (Burke, 2013). The limiting cost and time factors of classroom learning are no longer a supportable model for companies (Masalimova & Nigmatov, 2015).

**Purpose and Research Questions**

The problem of practice involves researching the effectiveness of asynchronous learning for adults. Transforming a corporate educational program to an asynchronous educational model can affect the learners and the organization. The changes in corporate education mirror many of the transitions in public education including a shift to a more self-aware learner and a need for
various methods of delivery (Marsick & Meyer, 2003). As corporations exist in a global market space with a multinational workforce, the educational department must follow and support the corporate goals and direction (Dobrovolný, 2006). It is possible to address the overall question of how to transition a corporate education department into a distance learning model and benefit both the company and the employee by examining these aspects (Čonková, 2013).

**Research Questions**

This study addresses the following research question: How do corporate adult learners perceive the value of using asynchronous learning courses to acquire and maintain new skills?

**Clarifying research questions.** Additional questions may help to refine or redirect the research in explaining the effects asynchronous learning had on them.

- How does asynchronous learning improve learning and expertise in the classroom so that adult learners can master vocational skills?
- How do adult learners describe their experiences, benefits, and disadvantages with eLearning and asynchronous training courses?
- How do mobile devices enable a more effective asynchronous learning experience of adults?
- How does technology impact the ability for adult learners to gain knowledge and experience in vocational learning?
- What are the potential business impacts on the organization when engaging in an asynchronous learning modality?
- How does asynchronous learning technology and methods impact the educational goals of the corporate organization?
Definition of Key Terminology

This section presents and defines the terms used in this study.

**Adult learner.** An adult learner is someone who is generally considered to be an adult by social or cultural definition, who takes part in the learning process (Knowles, 1998). In the United States, the National Center for Education Statistics (NCES) defines several criteria which help identify an adult learner (Kalamas, 1987). These criteria include self-direction in their learning; results-driven by attaching value to the outcome of learning; and motivation about their need to learn a particular subject (Kalamas, 1987). Adult learners typically have more life experience and their brains are more fully developed. When confronted with new knowledge or experiences, adult learners incorporate meaning based on their life experiences and their more developed brains process these experiences differently than someone with a less developed brain (Dobrovolny, 2006). An adult can be traditional classroom-based or a digital-native learner, the method of learning is less the differentiator than the reliance on experience.

**Digital native learner.** Learners who were born into learning alongside technology are referred to as “digital natives” (Ellis, Weyers, & Hughes, 2013). These learners represent a generation who use technology not just to interact with others but also to consume and co-create information. The introduction of the internet and mobile technologies have expanded the definition to be inclusive of those who learn using digital technologies such as video, blogs, vlogs, and other tools (Northey et al., 2015). As with global trends, these learners are reliant on connectivity supported by web-based tools (Northey et al., 2015). This reliance on technology is central to how they learn, absorb, and distribute information.

**Andragogy.** Malcolm Knowles’(1998) identified adult learners as distinct from adolescent and child learners in his principle of andragogy. The term andragogy focuses on the
specific considerations and educational aspects of how adults learn, and the tools and methods used to facilitate that learning experience. With this principle, he defined six assumptions about the adult learner:

Need to know: Adults need to know and agree with the reason for learning a subject or set of knowledge.

Foundation: Experience are the foundation for learning activities.

Self-concept: Adults are responsible for their decisions on education. They must be involved in the planning and evaluation of their learning.

Readiness: Adults will be most engaged in learning topics which have an immediate relevance to their professional or personal lives.

Orientation: Adult learning is problem-centered, rather than content-oriented.

Motivation: Adults respond better to internal versus external motivators to learning and behavior.

**Pedagogy.** Pedagogy is the educational discipline that defines teaching strategies, teacher actions, and teacher judgments and decisions using learning theories to understand the needs, backgrounds, and interests of individual learners. Pedagogy includes how the teacher interacts with learners and the social and intellectual environment the teacher seeks to establish.

**Synchronous learning.** Synchronous learning refers to a knowledge-sharing event in which a group of people learns simultaneously (Hrastinski, 2008). Traditional classroom learning is naturally synchronous, however technology today allows for same-time learning while using online tools.

**Asynchronous learning.** Asynchronous learning is a learner-centered teaching method using online resources to share information and knowledge (Hrastinski, 2008). The asynchronous
component uses online tools to ease the learner’s time and location challenges. Asynchronous
learning is based on constructivist theory, a learner-centered approach which emphasizes peer-to-
peer interactions and information exchange (Siemens, 2005).

**eLearning.** eLearning (or Distance Learning) is where learners are not physically present
on-site but facilitated via online technology. The American Society for Training and
Development (ASTD) defines eLearning as a broad set of applications and processes which
include web-based learning, computer-based learning, virtual classrooms, and digital activities.
This set of standards involves electronic means of communication, education, and training.
eLearning. These standards include instructional design principles and elements that consider
learning theories.

**Blended learning.** Blended learning is an educational modality in which a learner learns
in part through the delivery of content and instruction using digital and online media. Blended
learning allows some learner control over time, place, path, or pace of the learning. This method
of knowledge delivery can be combined with traditional classroom experiences.

**Mobile learning (M-learning).** Mobile Learning spans multiple contexts using social
and content interactions leveraging personal electronic devices. This form of distance learning
specifically employs mobile educational technology to deliver content at the learner’s
convenience. Mobile Learning technology includes: handheld computers, MP4 players,
notebooks, mobile phones, tablets, and other portable technologies. Mobile tools create engaging
learning assets and deliver them in a convenient and accessible form available virtually
anywhere.

**Instructor-Led Training (ILT).** Instructor-led training is the use of training and learning
material between an instructor and learners in a classroom environment. Instructors, also referred
to as facilitators, who may be knowledgeable and experienced in the material. In this model, instructors use their facilitation skills and ability to deliver content to learners.

**Massive Open Online Course (MOOC).** A massive open online course (MOOC) is a learning event which uses internet access for large audiences. The MOOC is often built using video lectures, readings, and engaging activities or labs. Many MOOCs also provide forums or discussion boards to support community building and learner interactions.

**Small Private Online Course (SPOC).** Like a MOOC, the SPOC is an online course targeted at a smaller audience, often less than 100 people. Synchronous online sessions and discussion boards provide social interaction to the MOOC. SPOCs are often associated with a fee, making the smaller size and revenue potential attractive in a for-profit environment.

**Theoretical Framework**

This study applies Adult Learning Theory (Knowles, 1975, 1979, 1980, 1998; Knowles, Holton, & Swanson, 2011) as the lens to view adult learners’ perceptions of the effectiveness of computer-based learning at a distance. Adult Learning Theory takes special consideration of older learners and considers the constraints on their time due to work and life commitments (Knowles, 1998). An adult learner makes decisions about their education based on perceived need and benefit. There is an order to how and what an adult chooses to learn. In many cases, the subject has a direct relation to a task or set of knowledge required to be successful on the job (Knowles, 1998). This theory focuses on adult learners and considers their awareness and needs to learn effectively.

Educational theories for youth have been a focus of teaching. However, the population of adult learners continues to grow as reported by the Department of Education (Eyre, 2013). Early attempts at defining specific learning theories for adults can be traced to 1926 with the formation
of the American Association for Adult Education (Knowles et al., 2011). Since that time the research into adult learning has expanded to include methods used in the classroom and course structure for adult learners (Andersson, Köpsén, Larson, & Milana, 2013; Galbraith, 1998).

Adult Learning Theory accepted that learners in different stages of life are motivated to learn differently (Miller, Vandome, & Mcbrewster, 2009). As adult learners are a growing population of learners (Hess, 2011), the specific needs of these adult learners should be explored. Adult Learning Theory contains connections to the method of learning and motivation of the learner and is appropriate as a lens for research into the effectiveness of adult learning (Lorge, 2017).

When comparing adult to youth learning theories, there are several distinct aspects which enforce the use of Adult Learning Theory in this study. Among the key differentiators which Knowles (1998) identified in Adult Learning Theory, there is a foundational level of experience which tempers an adult’s ability to learn. Adults have a broader set of experiences which provide a basis for learning where they can contrast previous knowledge with the new information (Knowles et al., 2011). Adult learners process information in reference to previously acquired knowledge. This foundational learning method requires a different set of tools and procedures when teaching adults.

Another comparative aspect between youth and adult learning is the motivation and self-concept tenant of Adult Learning Theory. Adults need to be involved in the planning and evaluation of their instruction (Knowles et al., 2011; McGrath, 2009). The adult learner responds better to internal versus external motivators; they can identify the things they need to know (Bhowmick, Khasawneh, Bowling, Gramopadhye, & Melloy, 2007). For a youth learner, there is a need for foundational knowledge, with an adult learner that base information is already in place.
through previous learning and experience (Knowles, 1979). For the adult, motivation is self-derived based on their assessment of need (Hsia, Chang, & Tseng, 2014). It is where the adult learner wants to engage in the planning and design of their education that they can craft the learning to address specific needs. Adult Learning Theory tries to consider all of the needs and motivators of the learner and offers guidance in educating this audience (Knowles, 1980).

Knowles (2011) suggests that adults are most interested in learning which delivers immediate relevance to their work and personal lives, he calls this readiness. Readiness infers that the adult learner will retain only those subjects which have a direct meaning, ancillary information is discarded (McGrath, 2009). One of the keys to designing relevant learning for adults is to create education that is problem-centered rather than content-oriented (Knowles, 1980). For adults, there is a need to connect the content to the tasks that they selected the training course to learn (Knowles, 1998). When reviewing the use of relevance and orientation Adult Learning Theory addresses the specific needs of this audience.

**Historical Foundations**

Knowles (1979) Adult Learning Theory states that adults are motivated to learn when they can connect educational opportunities to their previous experiences. Working within an adult’s frame of reference includes understanding how each learner has learned in the past and how they and retain information. Because adult learners learn and react to information differently, using more than one methodological approach enhances the learner’s learning experience and the instructors’ teaching abilities (Kang, 2007).

**John Dewey.** Dewey, an educational philosopher, started a progressive movement in education by studying how children were motivated to solve problems in the classroom (Knowles et al., 2011). He maintained that education is not only meant to gain content
knowledge but also as a place to learn how to live. For Dewey, knowledge is not relayed solely from the expert to the learner. He felt that shared learning had a focal place in the classroom which enhances individual autonomy. Dewey believed that when a person solved a problem, they formed meaning from that experience (Watras, 2012). Educators could, therefore, advance learner’s knowledge by building on these experiences within the classroom by providing an experiential learning opportunity (Dewey, 1938; Watras, 2012). Dewey also felt that organizing knowledge, using textbooks as a reference point to guide questions from learners as they solved problems, allowed learners to enhance their understanding of the subject in a pragmatic manner (Dewey, 1916; Watras, 2012).

**Eduard Lindeman.** Lindeman defined education as unbounded by classrooms and curricula. He felt that there were educational possibilities within everyday life and proposed that the academic system was backward, subjects and teachers forming the starting point and placing learners as secondary stakeholders. He was clear that in adult education, the curriculum revolves around the learner’s needs and interests, not formed from a set of pre-defined objectives. Lindeman did not separate adult versus youth education; he reviewed adult versus conventional education of his time. While he felt that adults required this separation of learning, he also noted that youths might gain from training which addresses their needs and interests, experiences, self-concepts, and individual differences. Lindeman’s assertions gave support for future theorists to develop new learning theories and constituted a foundation for Adult Learning Theory (Knowles et al., 2011).

**Malcolm Knowles.** Building on the work of Eduard Lindeman (1926) and John Dewey (1938), Malcolm Knowles was inspired to advance andragogy – teaching strategies aimed at adult learners. Lindeman’s *Meaning of Adult Education* (1926) laid the foundation for systems
theory, which Knowles used to define his approach to an adult learning theory that centers on a learner’s life experiences (Knowles et al., 2011). Lindeman (1926) believed that adult education is a process in which learners become aware of their experience and background. Knowles monitored the andragogy process through the administration and distribution of course materials. He formulated four assumptions that are foundational to the adult learner: self-concept, experience, readiness, and orientation to learn. Later, he added a fifth assumption – motivation to learn (Knowles, 1998).

**Applying Adult Learning Theory to the Current Study**

Adult Learning Theory supports this study. There are three aspects within this study that align closely with the theories defined in Adult Learning Theory: alignment to the individual; alignment with technology; and alignment within the organization.

**Alignment to the individual.** This study incorporates Adult Learning Theory to find meaning in the individual participants’ perceptions of asynchronous learning and how education enhances an adult learners’ life (Knowles, 1998). Adult Learning Theory assumes that adult learners who are engaged in education use their accumulated experiences to bring meaning and understanding to their learning (Tennant & Pogson, 1995).

The generation of learner affects the need to have a reason to learn. Adult learners must understand that the need exists before fully engaging (Lucardie, 2014). Consideration of the adult learner’s specific needs and motivations for education are shown in the foundational concepts of Adult Learning Theory (Knowles, 1998; Knowles et al., 2011).
Figure 1.1. Concept interdependencies of ALT (Knowles et al., 2011).

Adults bring unique life experiences to the classroom from careers, families, relationships, and other responsibilities which create a need for why they are learning (Knowles et al., 2011). Adult learners use their experience as a foundation and build on previous knowledge when learning (Knowles, 1980). Adults become more self-directing as they grow and mature, creating a sense of independence when approaching education (Knowles, 1975, 1980, 1998). In the Knowles, Holton, and Swanson’s book entitled *The Adult Learner* (2011), the authors maintain that part of understanding adult learner’s motivation to learn when engaged in asynchronous instruction is to distinguish how they approach course assignments. The authors discovered that there are two types of adults engaged in asynchronous learning: self-directed and those who need more support. Self-directed learners are highly motivated and possess an internal locus of control (Knowles et al., 2011). Less-motivated learners need more encouragement, feedback, and constant interaction. The lower the motivation to succeed, the more dependent these learners are in their environments.
When adults understand the reasons for learning a new concept, McGrath (2009) argued they are more motivated to take in knowledge. McGrath (2009) also noted that some adult learners might not be ready for andragogy-type learning. For example, younger learners may not possess the same breadth of experiences that older counterparts might have to offer during interactive discussions. Generational inclusion helps all learners to participate, no matter what the level of previous experience. McGrath (2009) also discussed the essence of the organization needed for adult learners. If learners provide objectives or participate in designing the course, they tend to be more motivated towards the subject matter. If adult learners have the opportunity to share both personal and professional experiences, they have a sense of belonging which speeds their developing knowledge (McGrath, 2009).

Adult Learning Theory grounds the expectation that adults enjoy and succeed in the education process when they realize their strengths and capitalize on their life experiences (Parker, 2010). Adult learners appreciate the additional knowledge and skills they are acquiring and encouraging further learning (Parker, 2010). Enhancement of required skills serves to motivate adult learners (Parker, 2010). Using Adult Learning Theory to ground this research creates a framework for analyzing the perceptions of the learners’ use of asynchronous learning methods and tools in adult education.

**Alignment with technology.** Technology is commonly leveraged for learning, especially in the corporate training space (Dobrovolny, 2006). The addition of projectors began the move but was quickly followed by Smartboards and other presentation tools (Bedrule-Grigorută & Rusu, 2014). On the backend, the use of Content Management Systems (CMS) to automate the format and creation of learning assets (Cavus, 2015) These CMS systems speed the development and delivery of educational assets. Mobile and tablets are now commonplace and are often
preferred by learners as ways to distribute knowledge (Cavus, 2015).

Mobile learning is an important tool used to enhance the engagement of the learner (Bidin & Ziden, 2013). The use of mobile apps supporting community-building is a method of collaborative learning (Rovai, 2000). Adults are more motivated and engaged in their learning, and teachers conduct more learner-centered learning activities when mobile devices are used (Sung, Chang, & Liu, 2016). An important consideration in mobile learning is the saturation of these devices within the chosen learning group. Studies show there are nations more prone to possess both the mobile device and the supporting infrastructure and network to deliver a better experience with these tools (“MobileSTAT report,” 2013; Tabuenca, Kalz, Drachsler, & Specht, 2015; Wu et al., 2012). Leveraging these infrastructures permit communities to form.

The use of podcasts, video, online tests, an online glossary, and forums are all tools that can enhance adult learning and may be new to the learner and organization (Pinto-Llorente, Sánchez-Gómez, García-Peñalvo, & Casillas-Martín, 2017). Key among these technologies is the use of video. Video as a learning tool has grown greatly and studies by Pang (2009) shows it continues to be an important aspect of asynchronous learning. The self-selection aspect of Adult Learning Theory applies well to video-based learning. The learner can choose which learning tool to use and the visual and auditory aspects of video align with Adult Learning Theory in both the perceived need and forming a connection to previous experience.

**Alignment with the organization.** Researchers interested in adult learning have studied how adult learners interact with the learning environment. For example, Taylor, Abasi, Pinsent-Johnson, and Evans (2007) studied learners enrolled in an adult literacy program. This program offered both formal and informal learning environments and allowed research on how adult learners collaborated within face-to-face and distance learning. The study reviewed the
curriculum, the number of learners, and the instructors’ teaching styles. The research considered learner to learner and learner to instructor interactions that apply to the traditional classroom and distance learning environments.

Within the Taylor (2007) study, there were several factors which increased collaboration among learners including: instructor teaching style, type of assignments, and learner’s abilities to learn independently. The findings showed that collaborative efforts among adult learners were important for developing a community of practice and that such a community provided support for adult learners no matter the size of the group (Taylor et al., 2007). An organization can either leverage an existing community or build one specifically to enhance the learning experience.

Conclusion

The goal of this study is to examine the perceived value of asynchronous learning among adults. Adult Learning Theory is the guiding framework and helps to relate four primary areas of this research: the learner’s perception of the benefits of asynchronous learning modalities, success in using technology for remote learners, a guide to effective adult learning; and creating and delivering effective training to a corporate learner. The importance of these aspects of adult learning is clearly defined by the Adult Learning Theory framework (Knowles et al., 2011).

Adult learners must perceive value in education to gain from it (McGrath, 2009). Adult Learning Theory compares youth learners and their adult counterparts by their ability to grasp additional meaning through the lived experience. Adult Learning Theory takes into account the experiences of the learner in reference to the andragogical approach defined by Knowles (1998). For example, engineers reference teaching methods which were successful for them previously and use those experiences as a framework to learn within (Singh et al., 2004). This study seeks to identify how adult learners perceive value and how it affects their learning experience.
As Adult Learning Theory offers guides in effective adult learning, this study seeks to identify some best practices when designing and teaching adult education. An example of defining a best practice is determining how to show adults that specific knowledge can benefit them (McGrath, 2009). This study examines specific motivational factors across training delivery models and identifies those methods which stimulate learner motivation best. Another motivator for adult learners is the social aspect of education. Adults tend towards interaction with the teacher and other students to enjoy and validate their learning experience (Wlodkowski, 2008). Using Adult Learning Theory as a guide, those social interactions are noted and scored for effectiveness within this study.

The use of technology also influences the learning experience and community building of the adult learner. Positive experiences and familiarization of technology provide a comfortable learning environment for adults (Barak & Levenberg, 2016). Within a corporate environment, there can be a wide divergence of technology available which compounds the identification of successful methods (Ellis et al., 2013). This study examines methods in use today and identifies areas for improvement.

Technology can be used to extend connections between diverse groups and eliminate local time constraints (Engel, Coll, & Bustos, 2013). For adults who may need to compare knowledge with a geographically-dispersed group, asynchronous enabling technology can assist the learning process. This study discovers additional criteria on how adults successfully learn, especially within an asynchronous model.

Finally, there may be varying degrees of impact on business when preparing and presenting asynchronous learning to the workforce. Global work teams can learn together as a unit and form personal connections more easily when proper technology is enabled (Engel et al.,
2013). This study illustrates additional benefits to the organization through asynchronous learning techniques. The use of asynchronous learning can inject change into an organization. A company which uses in-classroom training today might experience resistance to online learning methods (Mao & Brown, 2005). Exploring the changes to the processes of corporate education can show potential areas of resistance or failure as well as success in adult learning.
Chapter II: Literature Review

This chapter presents an exploration of the existing literature and research into the subject of asynchronous learning for adults. Key areas of the existing literature are presented including, how adults learn, the vocational learner, technology in education, educational trends affecting the organization.

Literature Review Introduction

There is a business need to shift from in classroom, instructor-led lecture towards other forms of asynchronous learning (Goodlad, 1984). Classroom learning relates to the corporate training model as much of this work revolves around task-based learning (Bedrule-Grigorută & Rusu, 2014). Classroom training in business tries to deliver large amounts of information in short periods. A common method of delivering knowledge is to use a lecture model (Barak & Levenberg, 2016). With adult learners, lecture only training does not deliver the experience of performing those tasks. A lecture only course does not engage the adult learner who may withdraw from the class if they feel their time is not well spent (Lucardie, 2014). This literature review analyzes research on asynchronous learning for adult learners, the tools, and technology used in the development and delivery of this modality of learning, and the effects that take place within a corporate workspace (Henrie Curtis, Lisa R. Halverson Lisa, & Graham Charles, 2015).

The significance of effective asynchronous learning for adults is important to both the company and the individual. For a company, a cutting-edge educational department can help produce skilled workers, improve efficiency, and build a more productive workforce (Čonková, 2013). For the individual, there is a clear benefit in possessing the skills for work and also in maintaining or gaining new skills (Schied, 2014). New information and technological changes in the marketplace place a strain on both company and individual to constantly refine and add
knowledge (Niemiec, 1992). The specific business can add even more pressure, depending on the rate of change in that market. As both the company and the employee look for ways to improve their position in the market space, it is clear that education is an important pathway to securing the skills and knowledge to be successful (Drago-Severson, 2009).

Many companies also may want to decrease development time for learning assets and deliver content to the learner in modalities that they prefer (Zhang et al., 2016). Decreasing the development time has a connection to the speed of the business and time to market pressures a company faces (Čonková, 2013). The importance of using asynchronous learning links to an understanding of the learning preferences of the audience (Park, Kim, & Yu, 2011). As the corporate workforce changes to a younger and more digitally aware group of learners (Litz, 2011), the use of older technology and learning models fail to meet their needs (Park et al., 2011). Distance learning offers several ways to combat the expense and time constraints of traditional corporate education.

The organization of this review begins with an analysis of existing understanding of the adult learner and defining some of the challenges for this student-type. The next section considers the tools and technology used in creating and delivering asynchronous education. This section includes an exploration of the use of mobile devices and their use in both asynchronous and synchronous tools. The review concludes with the asynchronous learning within corporate environments and the importance of distance education when building a modern workforce.

**Adult Learners**

Working with adult learners requires a different set of parameters than primary or secondary educators face (Knowles, 1979). The adult learner understands their needs better and is often more engaged in their learning (Knowles, 1998). For example, the adult learner who is
searching for vocational training has the additional requirement that the learning is specific to their role and the tasks they perform in their job (Kalamas, 1987). This specificity in learning is a driving force when teaching adults in a corporate setting (Zornada, 2005).

**How Adults Learn**

Iucu & Marin, (2014) demonstrated that the extent to which a company embraces the idea that the adult learner who oversees their education can determine the success of the learner. One of the cornerstones of asynchronous online learning is that the learner determines when they will learn, how long they will spend learning, and what they will learn (Marsick & Meyer, 2003). Adult learners understand what they need to know and when they must learn it. Validation of learning must be included and instructional designers must develop methods for the learning to assist adults in assessing their skill and correcting as necessary (Dobrovolny, 2006).

Additionally, the adult learner understands their time availability and can consume learning material and apply it to their daily role (Allen & Seaman, 2013). These reasons make the adult learner a primary candidate for an online learning environment, which often includes self-paced learning (Northey et al., 2015).

The training environment that an adult perceives today is rooted in their childhood experience in school (Knowles et al., 2011). Learner perception of education is either good or bad. For example, if their most vivid memory from school is negative they may interpret new learning opportunities to be negative as well (Gorges & Kandler, 2012). Adult learners might consider this memory when deciding whether to take a course today. Unlike their childhood experiences, where they took courses from a prescribed curriculum, as adults they are free to select only those assets which have an immediate benefit to them. It is clear that past educational experiences may also affect motivation (Gorges & Kandler, 2012).
Important for adults is the ability to select a time and a place to learn. Traditional education models all prepared a curriculum which led the student through the learning in a metered and steady manner (Rovai, 2000). Adult learners want to control their educational path. These learners can select what to learn and also choose the time and device to take the training they need (Marsick & Meyer, 2003). Technological and asynchronous educational assets are a change to the normal operating mode but it has great benefits for the adult learner (E. E. Wang, 2011).

Baby Boomer generational learners prefer the human contact of synchronous learning (Dobrovolny, 2006). Adults see a benefit in being able to question and discuss their concerns and understanding of the learning content they are trying to consume (Cação, 2014). Generational learners before Generation X may have technical deficiencies making it difficult for them to take part in online learning as presented in today’s models (Strother, 2002). Considering the preferences of the learner, it becomes important to vary the format of learning. Blended learning and the use of synchronous and asynchronous learning features is often a way to mitigate the concerns of the older generational learners as there is a human to facilitate the information (Drago-Severson, 2012). Blended learning can be used as a transitional stage for older learners or as a learning modality by itself (Zurita, Hasbun, Baloian, & Jerez, 2015).

When considering how adults learn, the previous classroom experience is a prime consideration. With classroom learning, the teacher often contributes to an improvement in learning and understanding (Offir et al., 2008). Using a human factor in training allows instructional designers to continue developing, and integrating different learning environments to facilitate learner learning styles and situations (Singh et al., 2004). A classroom community can be defined in four components: spirit, trust, interaction, and learning (Rovai, 2000). A program
which includes a community component is an important factor for adult learners when considering distance learning modalities (Sun, Tsai, Finger, Chen, & Yeh, 2008). Figure 2.1 shows how training incorporates a sense of community by including elements of collaborative and self-directed learning.

Figure 2.1. Learning communities (Rovai, 2000).

**Social learning.** The use of social learning can help with maintaining the engagement of adult learners. The classroom no longer must remain within a physical space as the use of these technologies can support around-the-clock learning opportunities and connections (Németh, 2014). Extending the group also addresses the global needs of many companies. Németh and Lee found that travel costs of the past were a financial impact and social interaction can help reduce that issue by making information available without the need to be in the same physical location as the instructor (Lee, Ang, & Sing, 2013; Németh, 2014).

The use of social learning can be used to add communication and interaction between students, resulting in a more enjoyable experience when teaching adults (Németh, 2014). Rovai notes that the community is a central pillar for effective learning and can help to improve
information transfer to adults (Rovai, 2000). Lucardie (2014) found that adult learners reported that they liked to socialize and retained more information when they could interact with other students.

A benefit from increased social interaction between the students is improved retention of higher-order skills. The use of other frameworks such as Experiential learning allows the student to gain more knowledge than traditional rote facts (E. E. Wang, 2011). Asking discovery-styled questions, the learners can extract and synthesize new ideas and theories in their studies which lead to more lasting and meaningful knowledge processing (Offir et al., 2008). In the study by Lee, Ang, and Sing (2013), the participants reported an increase in their application and analytical skills through social learning. Immersing an adult in these engaging skills such as critical thinking and problem-solving connects the theory to the practical application of those skills (Park et al., 2011).

Neagu (2014) found that social interaction was a primary factor for adults choosing their education. When forming adult learning communities, it must be understood that there are also demands on its members. These demands pull the group together and build a bond of trust within the community (Weber, 2005). The members now should respond to each other and assure them that they are needed and valued by the community (Rovai, 2000). When building these feelings of community there is a better chance for information to flow (Rovai, 2002). One aspect of this form of community learning is that groups of learners enroll together, often friends or coworkers before they become classmates. Community increases the likelihood that they will engage more with course materials (Barak, Watted, & Haick, 2016). The importance of social connections facilitates a genuine experience (Dobrovolny, 2006) where each member learns and encourages other community members to learn (Barak et al., 2016).
The motivation for adult learners is an important success consideration (Gorges & Kandler, 2012). For example, using games to make learning an enjoyable experience can be a key motivator for adult learners (Drago-Severson, 2009). Lucardie (2014) found that collaborative activities, such as games, became an event that the students anticipated. The use of activities and games offer the learners a large variety of exercises and interesting problems that stimulate the participants and challenge them in an engaging way (Catalano, 2014). Digital game-based learning (DGBL) brings learning and player engagement together to improve learner motivation (Dadarlat, 2005). Learning games are especially effective with adults as there is an opportunity to disassociate learning from work.

Learner engagement was identified in several studies, (Henrie Curtis et al., 2015; Soflano, Connolly, & Hainey, 2015), as a preference when learning online. Those studies made a general reference to gamification and Game-based Learning (GBL). The specifics of what those activities were, or which portions of a GBL experience were most attractive to adult learners, were not clear. Some information was available on beneficial learner-centered learning activities when mobile devices are used (Sung et al., 2016). There was no learner profile given, which can be a gating factor in determining success for which adult benefited most. There was no information about whether it was the device or the asynchronous activity which performed better. Podcasts, videocast, online tests, an online glossary, and forums are all tools that can enhance adult learning. Adding fun to the educational experience allows the adult learner to both learn and enjoy at the same time and develop a mental link about how best to learn (Pinto-Llorente et al., 2017).

**The Vocational Learner**

Training adults for their role at work add additional considerations when defining the
adult learner. A review of the current labor market might show skills that are in demand and therefore are of interest to the learner (Neagu, 2014). The motivation for the learner to gain new skills also must consider the life of the knowledge. For example, the high technology industry has a very fast change rate to knowledge; the worker in this space must constantly update their knowledge and values training at a higher rate than some other industries. Neagu (2014) demonstrated results that more than half of adult vocational learners had an interest in learning that increased employment opportunities. The second factor Neagu found was the link to financial benefit from vocational training. Those adults who choose vocational training have a clearer goal for the use of that knowledge and its relation to their occupation.

Vocational learners have an additional need for flexible training. Flexibility in learning means that adult learners can join and participate when they have a need and the time to learn (Herring, 2013). Learners can use any computer system, including mobile devices which are nearing saturation point (MobiThinking, 2013), and participate from anywhere. The removal of travel means less time away from friends and family and the negative feelings often expressed when traveling for the company. Distance learning also grants access to education to distant locations or cultures that may not have the economic resources to send their staff to training and motivates them to achieve more (Wlodkowski, 2008).

Acquiring new human resources can be very costly and limited by a skill shortage. Universities cannot produce the level of desired competencies to support the job market (Németh, 2014). Learning processes gather momentum as a tool to increase and create corporate knowledge and enhance a learning organization (Drago-Severson, 2009). That is why training is becoming more important: Organizations need to upgrade their workers’ skills constantly, and training is a part of the company’s responsibility. Crocetti (2002) found that the key to success is
to bring together training and knowledge management.

The traditional classroom approach in corporate training revolves around the student-teacher ratio. The cost comes into consideration and there is a push to increase the number of students in the classroom (Nichols, 2004). The high student to teacher ratios can bring economic savings it can also bring a decrease in quality of learning. The adult learner wants more human interaction, that is exactly the opposite of what they receive when diluting the student-teacher ratio (Rovai, 2000). The use of distance learning allows for better mitigation of the student-teacher ratio by using technology effectively (Sung et al., 2016). While organizations become more adaptive and to morph into learning organizations, extracting information from the learners and then developing appropriate learning for the discovered issues (Crocetti, 2002).

While learners differ from each other in many ways, how they receive, and process information determines their way of learning. A Learning Management System (LMS) offers these functions and helps relieve some of the challenges for vocational learners (Ramírez-Correa, Rondan-Cataluña, Arenas-Gaitán, & Alfaro-Perez, 2017). The various functions and modalities of learning within an LMS platform create a relationship between the system, learning quality, and learner satisfaction (Ramírez-Correa et al., 2017). The results of the Ramírez-Correa (2017) study show that an LMS helps to customize aspects of the training to adapt to different learning styles (Ramírez-Correa et al., 2017). Within an LMS, the learners can determine which segments of the learning asset they want to use, selecting those items which follow their goals and interests (Barak et al., 2016).

**Adult learner preferences.** As shown in the review, adults have strong preferences for a collaborative, and communicative learning environment. Older adults tend to look for a personal connection to the teacher and other students, while younger adults lean more heavily on
technology for those same things (Lee et al., 2013; Németh, 2014). The use of technology to replace human interaction uses technology as a tool to support learners (Siemens, 2014b) but there is no direct connection to learner preference.

There were also gaps in the literature about whether asynchronous learning improved learning for adults looking to master vocational skills. It was shown that adults participate more when they need to learn (Herring, 2013) and preferential learning helps motivate them. Adult learner motivation stems from a desire to improve on the job or change to a more profitable position (Kalamas, 1987). However, as Hubackova’s (2014) study shows, there should be more than just simple job-related needs for an adult learner to develop a preference for distance learning. The strongest motivation for an adult is gaining a qualification or applicable set of skills from their education (Hubackova & Semradova, 2014).

The study participants for this research must consider their current preference for learning and what methods of asynchronous they have used previously. The research questions focused on learner experience and how asynchronous learning improves their expertise are focal areas for study. Attention must detect the benefits and disadvantages of eLearning and asynchronous training courses.

**Technology in Education**

Technology is prevalent in the classroom, especially in the corporate training space (Ion, Vespan, & Uţă, 2013). The addition of projectors began the move and followed by the addition of Smartboards and other presentation tools. On the back-end, the use of Content Management Systems (CMS) to automate the format and creation of learning assets has helped address the speed concerns of the older educational development methods (Ion et al., 2013; Zornada, 2005). The use of a Learning Management System (LMS) allows for the delivery of learning assets and
the collection of usage and performance data for evaluation purposes (Cuéllar, Delgado, & Pegalajar, 2011). Mobile devices are commonplace and are often preferred by learners as ways to consume knowledge and are automatically formatted by these learning systems (Al-Emran, Elsherif, & Shaalan, 2016).

**A learning platform.** In online learning, there are two basic methods of delivery; synchronous and asynchronous (Singh et al., 2004). Asynchronous learning is often delivered via a technological platform and uses various components such as video, audio, and animation to deliver knowledge content (Bhowmick et al., 2007).

The Learning Management System (LMS) allows reuse and information sharing and uses a common framework to link entities within the relational database to their meaning (Cuéllar et al., 2011). Cuéllar found that the structure of the LMS had the potential to impact both performance of the platform and engagement of the learner. The better the relation to the data with the LMS, the easier the interface was to navigate and the learner became more engaged (Cuéllar et al., 2011). Chisanu, Sumalee, Issara, & Charuni (2012) suggested using a constructivist framework for content within the LMS to take advantage of structure better aligned to adult learners.

A Content Management System (CMS) presents the material in an online format and can automatically adjust the content to the viewer that the learner chooses (Cavus, 2015). The format means that a laptop course will look different from that same course on a smartphone, but the content will be the same and the experience will be similar, limited only by the constructs of the viewer itself. A similarity in how the content is presented helps adult learners to focus on the learning, not the technology, an important issue for those already concerned about their technical aptitude (Cavus & Zabadi, 2014).
While the challenges of synchronous education have long existed, the advent of new technologies has introduced new methods to combat these issues (Singh et al., 2004). A tailored educational path is easiest to offer with an online format using a CMS (Bedrule-Grigorüță & Rusu, 2014). Through the use of asynchronous learning, an adult learner can take ownership of their education (Briz-Ponce, Pereira, Carvalho, Juanes-Méndez, & García-Peñalvo, 2016). The responsibility to learn allows the learner to select the most relevant material and assumes that they understand their own needs. Cerezo (2016) found that the amount of time spent learning through an LMS resulted in increased test scores and grades.

Most traditional learning is synchronous and takes place in the classroom. Learning occurs in real time and is reliant upon human interaction and experience (Ion et al., 2013). This form of synchronous education is a business challenge in today’s world due to time constraints and geographic locations (Siemens, 2014a). In other words, it can be slow for the business to deliver, and costly for the individual to travel to the teacher’s location. A strong asset of asynchronous learning is that it can take place anywhere and anytime, particularly if enabled through current cloud technologies (Čonková, 2013). Asynchronous learning uses technology to make information available at the learner’s demand (Singh et al., 2004). In the study on how required training events can be facilitated, it was found that training can be delivered using internet chat or video links, or it can be completely self-consumed eLearning (Coll, Engel, & Bustos, 2009). Self-paced asynchronous learning using technology grants a learner the ability to learn at a time and place of their choosing (Lucardie, 2014).

A challenge with asynchronous learning often revolves around the technological aspects of the platform and learning modality (E. E. Wang, 2011). Initial attempts at online learning relied upon the internet as a method of conveyance of the educational content. However, system
outages and software conflicts often arose and interfered with the learning process and impacted learner engagement (Cavus, 2015). Compatibility between various platforms and the documents and images used within the educational system could become frustrating for the learner (Strother, 2002). Almarashdeh (Almarashdeh, 2016) discovered that an LMS which provides quality service and was reliable increased learner engagement with the content provided.

The use of the Cloud today removes many of these issues by providing a highly redundant infrastructure to support the learning platform (Shri & Subha, 2012). Cloud is also mobile native, meaning that it supports smartphones, tablets, and laptops and removes the compatibility issues so often seen before (Lee et al., 2013). By leveraging the current set of technology that diversifies connection and content availability, there can be a more robust learning experience. Cloud technologies also mitigate system downtime, increasing learner satisfaction with the platform (Bedrule-Grigoruta & Rusu, 2014).

**Technology for Learning**

The use of technology to support training and match new methods of teaching to the correct learners is a difficult task. The drive to add technology to the classroom is seen often, but misuse, lack of training of the teacher, and the cost of these devices and software are difficult hurdles (Caçao, 2014). Choosing stable and useful tools is a good beginning, but engaging with the teacher to use those tools will be the best way to ensure success when adding technology to the classroom (Siemens, 2014b).

Technology, as shown in Figure 2.2, can also influence the learner’s satisfaction with education. When considering the various factors in learner satisfaction, technology must deliver quality along with the selected method of delivery for the learning assets (Sung et al., 2016). Figure 2.2 shows that other dimensions rely on technology for their success. For example, in the
Course dimension, eLearning relies on technology. The selection of specific tools, the adoption rate of technology, and ease of use are all considerations when building asynchronous learning assets (Henrie Curtis et al., 2015).

![Diagram of Dimensions of Perceived eLearner Satisfaction](image)

*Figure 2.2. Dimensions of perceived eLearner satisfaction (Sung et al., 2016).*

When deploying asynchronous learning modalities there is a need to consider the transactional distance – the remoteness between learner and teacher (Offir et al., 2008). Learners with high ability are better able to overcome the transactional distance both in synchronous and asynchronous learning (Offir et al., 2008). The elimination of physical barriers enables more dynamic interaction that fosters the establishment of constructive learning and opportunities for cooperative learning (Sun et al., 2008). Sun (2016) found that using asynchronous learning tools, including mobile devices, learners can more efficiently use their spare time to take small “bites” out of the material. The study also found that the flexibility of these technologies was a determining factor in adult learner satisfaction (Sung et al., 2016).

Technology can also augment more traditional methods of delivering educational content.
Sarica (2016) researched how digital storytelling, a method of using technology for the more traditional approach, helps with knowledge retention. The results of the study reveal that technology can improve on the older model. Sarica found that the addition of technology to storytelling aided the development of visual memory, increasing the impact on the retention of information and skills gained during the learning process.

**Learning anywhere.** Mobile Learning is seen as a set of tools which can enhance interest for adults to learn (Bidin & Ziden, 2013) and supports community-building, collaborative learning events (Rovai, 2000). Since Mobile Learning is available almost anywhere, sharing of the learning experience is almost instantaneous among the students. The availability of collaborative interaction between the adult learners grants instant feedback and tips during the learning (Almaiah, Jalil, & Man, 2016). The maturation of the adult learner facilitates the recognition of their own educational needs (Németh, 2014). The use of mobile devices in presenting simulations to teach procedural skill acquisition in a variety of areas is especially important (E. E. Wang, 2011).

Mobile learning opens up the opportunity for the learners to be at the center of the educational process. These types of activities bring a sense of accomplishment as well as the ability to test new-found skills (Bidin & Ziden, 2013). A debriefing is a critical exercise in the simulation experience but the most important goal for instructors is to create an atmosphere that is learner-centered (E. E. Wang, 2011). Using mobile devices allows for a learner to review content or refresh their memory when they have an immediate need for that knowledge (Pang, 2009). This function allows for a general training model with updates as the subject matter changes (Sung et al., 2016), an important consideration in technology companies.

Changes in mobile device use in education mimic the use of these devices in life. Fast
and on-the-go information allows the user to work when they have the time or inclination
(Dobrovolny, 2006). External priorities can be addressed while still taking part in the learning
experience. Scheduling time to participate in required training for work can be difficult when
delivering that education in the classroom. As Teodorescu (2015) found, distance learning using
an asynchronous model allows for the learner to arrange their schedule and work around personal
time conflicts. Teodorescu’s findings also show that technical platforms open the way for wide-
scale adoption of mobile devices include MOOCs and tools such as Edmodo.com (Kahane &
Greene Manning-Chapman, Maria, 2013). Access from anywhere on the globe is now available
on these platforms.

Today, there are many nations with some form of mobile device support and access to
mobile technology is growing even in the poorest of nations. The global availability of mobile
internet access was at 38% in 2013 and adding 3% every year (“MobileSTAT report,” 2013).
When bringing multiple demographic learners together, there can be challenges in
communication for the variety of learners engaged. When using mobile devices in distance
learning, many communication practices are normalized through the device itself (Reagan, 2005)
which lends to short comments and anagrams. The result is that many language issues mask the
members of the conversation and removes any potential prejudices from the discussion.

Within corporate learning spaces, the Bring Your Own Device (BYOD) model allows
learners to use their personal device for learning (Köffer, Ortbach, Junglas, Niehaves, & Harris,
2015). According to Köffer, a learner is more familiar with their device which makes the
transition to mobile learning easier for them. BYOD therefore, makes it easier to access learning
materials which they can study anywhere (Fojtik, 2015). With Mobile learning, companies no
longer need to focus on classroom training models only, which are expensive and time-
consuming (Cavus, 2015). Fojtik’s (2015) study on the use of the mobile device among students of bachelor’s degree study program is shown in Figure 2.3. The results showed that adult learners preferred these devices for e-books and mobile training application as they removed the physical constraints of their current education system (Briz-Ponce et al., 2016).

![Figure 2.3. The growth of mobile device use in education (Fojtika, 2015).](image)

Immediate response to queries or engaging activities such as surveys or polling questions is possible when using mobile technology (Bhowmick et al., 2007). For example, Bhowmick (2007) found that designing interactive events into a training asset leads to a higher level of learning and engagement for the learner. Evaluating the current skill set and availability of mobile devices allows the inclusion of these activities in adult learning. The technology now is directly linked to learning asset design and learner success (Bhowmick et al., 2007).

Innovators used mobiles for educational learning and interaction and although it took some time, the technology is now widely accepted. Websites with mobile interfaces such as Dictionary.com, Google Earth, and Facebook all hasten the move towards digital productivity in education and ease of use returns us to the mobile device. Phoenix University created a frog dissection app that they charge a minimal fee to purchase but it relieves the student of the cost to
purchase the traditional dissection kit and frog (Marklein, 2011). The mobile App has already exceeded its own tipping point, and estimates show a 1600% rise in app downloads by 2015.

Embracing technologies such as mobile devices allow the learners who need to maintain their job and go to school at night are now able to attend courses and work towards improving their knowledge (Christensen & Eyring, 2011). Remote learners would not be able to attend without the technology provided by the mobile device infrastructure and the Education Services department needs to transition to new technologies to survive.

**Organization Change**

Changes face the organization with the advent of asynchronous learning. Adding mobile device support can be costly and inject process and skill changes into the existing power structure of the department (Bedrule-Grigoruţă & Rusu, 2014). Through the integration of people, technology, and design, a corporate education department can be successful and support the business (Bedrule-Grigoruţă & Rusu, 2014). Each of these factors must support the other, and each of these factors must support the direction of the company (Barak et al., 2016). The more traditional business concerns, such as finance and human resources, can be addressed by using online education, self-paced learning, and a 21st-century approach to education (Nichols, 2004). Finally, the competitive nature of business today means that the organization must apply changes to how it trains and maintains the workforce (Chu & Chen, 2016). Availability of information is at the forefront as a business expands to new markets, new concerns such as language, cultural sensitivity. Asynchronous learning can help with reducing cost and increasing the speed of information transfer to the internal workforce and the customer base (Nichols, 2004).

The literature showed that organizations that shift towards mobile and remote learners
and away from classrooms are following the technology trend (Bidin & Ziden, 2013). However, the use of mobile as a learning platform is a change which can be difficult for an organization with a defined set of processes (Crocetti, 2002). The research discussed how the Bring Your Own Device (BYOD) model introduced a financial benefit in that the company no longer provides the actual devices to employees (Tabuenca et al., 2015). However, it did not delve into the organizational changes required to support that model for learning.

Another organizational change is within the education department for the business. With asynchronous learning, the design of educational assets can be a major challenge. Shifting traditional educational assets and moving them to an online format requires a creation of content that may require new skills and tools to develop. Ophir (2008) identified the need for new skills but was not clear in specifying what those skills and tools might be. This study should explore what the changes might be for the organization along with the specifics of those changes.

The study participants should all come from a corporate workspace. Some of the group should also be from the management space. These participants can speak about the potential business impacts on the organization when engaging in asynchronous learning. Research questions need to gather information about how asynchronous learning technology and methods impact the educational goals of the corporate organization. The participants can relate specific examples of benefits and detractors of asynchronous learning within the business.

**Educational Trends Affecting the Organization**

Maintaining an awareness of technology and educational trends is an important thing for the corporation (Litz, 2011). When there is an awareness of technology and educational trends, the company’s finance and learning models can be anticipated and planned for if there is an understanding of changes taking place in education (Cação, 2014). There are lessons to be
learned from the experiences of organizations reviewed, for the successful deployment of eLearning strategies (Zornada, 2005).

Zornada’s (2005) case studies on Motorola and Cisco point to clear benefits to the company. Reduction in the cost of training by embracing eLearning technologies over classroom learning was evident, an important consideration for businesses. Implementing eLearning can be complicated and identifying required changes can also help a company transition its learning model (Dobrovolny, 2006). In both case studies, the method of implementing eLearning was altered based on the knowledge of industry trends and circumstances.

The use of social learning, predicted by Dewey, gained a renewed interest as supporting technology became widely available (Litz, 2011). The use of learning platforms, networks, and email support the social learning requirements of adult learners (Singh et al., 2004). Content and learning management systems are converging into a single platform to enhance information and ease of access for learners (Cavus & Zabadi, 2014). The collected information in an LCMS can be analyzed to determine learning trends and help set a direction for the education department (Cuéllar et al., 2011).

A trend, especially with asynchronous learning, is the use of games, or gamification, which includes points, badges, and leaderboards (Hew, Huang, Chu, & Chiu, 2016). With distance learning, there can be problems retaining the interest of the learner due to a lack of personal interaction (Hamari et al., 2016). Game use in learning stimulates the learner, increasing engagement and retention (Soflano et al., 2015). Using gamification is an emerging trend, gaining popularity quickly for asynchronous learning (Hew et al., 2016).

**Financial considerations.** Finance and Return on Investment is a strong factor for corporate training programs (Masalimova & Nigmatov, 2015). In the case study reviewed by de
Albuquerque (2012), a correlation was found between employee training and return on investment (ROI). The case studied how a construction company’s Business Unit methodology was evaluated for efficiency in producing job proposals. The study used a K-Weight model to evaluate the critical and strategic variables used in the proposal creation process. Through a comparison of direct and indirect cost for education, it became clear that an increase in process investment resulted in an ROI increase of 19% in the Editing Proposal process (de Albuquerque et al., 2012).

Although there can be a significant capital investment when adopting asynchronous learning, there is a long-term benefit to the company (Nichols, 2004). With distance learning, the cost of the facility and travel costs to the business can be reduced. There is no need for a large classroom building or pay the cost of airline travel, hotels, and food for students and instructors (Čonková, 2013). The company no longer needs to pay the taxes, service personnel, rent or mortgage, or utility charges which further reduce the ongoing operating costs (Doll, 1980).

In the Herring (2013) example, the physical limitation of the subject facility of 180 seats disappears. The training becomes an online course, servicing thousands of users in the same virtual space (Herring, 2013). The ratio of instructor to learner moves from a 1:12 to a 1:50 or higher model. As higher ratios are designed and implemented, a reduction in personnel costs should be seen (de Albuquerque et al., 2012). The cost per student reduces as more students can participate and more courses become available within the same technological space.

**The speed of business.** In the study presented by Alfiya, Masalimova, & Nigmatov (2015), the authors introduce a framework to implement mentorship in the workplace, especially where time to prepare the learner is a key consideration. The period of the study took place when Russia was in the beginning stages of a transition to an open market economy. Their need for a
retrained workforce was further agitated by the need to train those workers quickly to compete in the global market. Among the recommendations derived from the study, Alfiya suggests that the use of technology can be used to increase the adaptation of new employees into the company. Several specific methods of reducing the training time are suggested including the use of e-mentoring and the use of electronic (digital) learning.

The fast pace of change in educational technology (Sokolova, 2011) also has an impact on the way content is developed and delivered to the learner. Čonková (2013) reviewed the various modalities of eLearning and primary consideration is the speed of development in each. It is clear that the speed of development is a major factor in delivering technical content quickly and is a key requirement for today’s adult learner (Čonková, 2013). When a corporate training environment is searching for ways to improve the education of the workforce, the use of speed is of primary concern. In most corporate models, the education department is a cost center; it is not expected to produce revenue for the company (Masalimova & Nigmatov, 2015). Reducing the cost of training in both travel outlays and in delays of the employees away from revenue-generating activities becomes more important.

The use of a Content Management System is the platform that allows learning anywhere. If it is agreed that adult learners want to control the time and method of knowledge consumption, there must also be recognition of the need for technology to drive that decision (Ramírez-Correa et al., 2017). Often the use of a CMS or LMS can also introduce gamification to the educational platform (Cavus, 2015). Support for leaderboards, interactive games, and badging are all tied at the platform level. The use of these activities allows adults to complete their learning without realizing that the fun they are having is also education (Barak et al., 2016).
Literature Review Summary

The current state of education in business is varied. Many companies use a classroom delivery model, which requires an instructor and transportation of the learners to a physical facility. However, there has been an ongoing transition towards using technology to deliver training in blended and purely on-demand models (Shattuck & Anderson, 2013). There are major changes to be made in the current training environment including defining the gaps in the desired future state of the business (Allen & Seaman, 2013). People, technology, and organizational change are all identified as areas affected using asynchronous learning.

Adult learners have a specific set of requirements to be effective at consuming knowledge, including the use of humans in teaching (Offir et al., 2008). Older generations remember their teachers in school and are looking for a similar method of learning today; using human interaction in eLearning can ease their transition to self-paced education (Drago-Severson, 2009). Another factor in adult education is that adults need social connections to learn (Zornada, 2005). Asynchronous learning meets a financial need of the business (Nichols, 2004) but also helps to break societal barriers and promotes equality in the workplace (Marsick & Meyer, 2003). The use of human teachers is useful, but student interaction using technology has a more prominent place with distance learning.

The use of technology in the classroom and through the development of learning assets using an LMS is an area for review. Expansion from the original tool into a context-aware system is taking place now (Zhang et al., 2016). The LMS also allows large data sets and big data analytics to be used in education. Evaluation and measurements of the content and the learner allow for a more formative approach to developing and maintaining training assets (Cuéllar et al., 2011).
The use of technology in education is an important change in how and when the student will learn. With adult learners, there may be a desire to transition towards the increased use of technology in the classroom, there could be resistance due to previous failed attempts (Gorges & Kandler, 2012). Mobile devices are used in all facets of life including education (Fojtik, 2015). By embracing the use of mobile devices in the classroom it is possible to allow the student to use the tools they are already comfortable with (Barak et al., 2016). Mobile devices also allow the learner to review and refresh their knowledge at a time and place of their choosing, effectively extending the classroom (Briz-Ponce et al., 2016). Teachers can use these devices to communicate with and direct their students regardless of distance or time.

There are many benefits to using asynchronous learning technology in corporate education for adults (Singh et al., 2004). Educating a workforce is a costly endeavor and time consuming which might impact the ability to meet business deadlines. The use of asynchronous learning allows the company to offer training as an on-demand service and can integrate learning with mentoring or job coaches (Masalimova & Nigmatov, 2015). Asynchronous learning can reduce the costs of travel currently used for classroom learning (Nichols, 2004). Technology offers solutions to the problems of traditional learning methods.

There is an increased importance of education to maintain skills in the workplace (Zornada, 2005). Moore’s law, which stated that the performance of a microprocessor doubles every 18 months, set a tone of increasing speed of technological change which carries through to educational aspects in the workplace (Németh, 2014). Moore’s Law reflects the change in business learning. It is no longer possible to bring new hires into a company who already possess the skill set needed (Masalimova & Nigmatov, 2015). Educating them on these new skills becomes a paramount goal of the Human Resources departments. The education department
must meet this business need for the company and the specific training needs of the learner.

Corporate demands for reduced time to develop and deliver training; most of this pressure comes from the product sales portion of the business (Nichols, 2004). The education department also needs to deliver content to the learner in modalities and timelines that they prefer. This problem has grown in importance over the past few years. The importance of resolving this issue is linked to the shift in the breakdown of the learning audience (Allen & Seaman, 2013). As the business now caters to a younger and more digitally aware group of learners, the use of older technology and learning models fail to meet their needs (Park et al., 2011). Asynchronous learning offers several ways to combat the expense and time constraints of traditional corporate education. Maintaining an awareness of trends in both technology and education allows the organization to adapt quickly.
Chapter III: Research Design

This chapter presents the context and design of the research study, inclusive of the research questions, the research methodology, the identification and recruitment of participants, data collection and data analysis. The credibility, transferability, and limitations of the study and the protection of the human subjects in this study are also addressed. The guiding research question was: How do corporate adult learners perceive the value of using asynchronous learning courses to acquire and maintain new skills?

Qualitative Research Approach

Perception is the reality which people experience and is represented through diverse perspectives (Butin, 2010). The use of IPA allowed for a logical flow of exploration when interviewing the high-tech engineers about their asynchronous learning experiences.

IPA Methodology

This study used interpretative phenomenological analysis (IPA) as a methodology in analyzing the data to uncover meaning-making practices of the research subjects as they experience adult learning (Larkin & Thompson, 2011). IPA affects the formation of the interview protocol and analysis function presented in this paper.

IPA places the understanding and experiences of the learner alongside the interpretation of the researcher (Larkin, Eatough, & Osborn, 2011). IPA can demonstrate how the data collected in a study can be used to relate the user experience in context and bring in a personal perspective, an interpretation to make salient points. When using a qualitative methodology in a study, the addition of the IPA framework allows the research to move away from the rather sterile model (Baxter & Jack, 2008). Using IPA allowed for a narrow use of the qualitative information to show how the experience of others adds meaning to the data within that
Several factors helped to determine that interpretative phenomenological analysis (IPA) was the most suitable choice for this study. Similar to a phenomenology approach, IPA looks at how people make sense of their lived experiences. IPA delves into a more detailed examination of the participants’ life and experience in the world and how they change and alter their perceptions. IPA concerns itself with the human experience and the engagement and perception of that predicament. IPA is often used when studying psychology, but recently this method of research design has crossed over to social science disciplines (Smith, Flowers, & Larkin, 2009).

IPA shares a discipline-specific relationship with cognitive psychology and the study of social cognition (Breakwell, Smith, & Wright, 2012). Fade (2004) identified IPA as theoretically rooted in critical realism and the social cognition paradigm. Critical realism accepts the fact that stable and enduring features of reality exist independently of human conceptualization. The social cognition paradigm views differences in individual meanings as attached to experiences because they are involved with different parts of reality (Brocki & Wearden, 2006). These paradigms grant a foundation for the methodology.

**Historical foundations.** IPA research design follows phenomenological inquiry in that it concerns itself with the individual’s subjective reports of events rather than a formulation of objective accounts. Usually, these phenomena relate to experiences of some personal significance, such as a major life event, or the development of an important relationship. It has its theoretical origins in two areas. The first is phenomenology which is descriptive and based on the work of Edmund Husserl. The second is hermeneutics; using interpretive concepts and follows the ideas of Martin Heidegger. There is an overlap between both inquiry types (Fade, 2004; Shosha, 2012).
**Critique of IPA.** Chief issues among scholars for IPA include: objectification, introspection, and data collection. Many of these issues are due to a misunderstanding of the concepts behind the framework. There are also what appear to be conflicts within the framework but are more accurately described as areas of focus. As the framework is explored more deeply, the conflicts become places to contrast the data and findings. In this section, there are several areas of potential weakness within IPA and each will be explored in depth. This action will help define the methodology of the analysis and locate areas to remediate.

**The objectification argument.** The phenomenological reduction can be misrepresented as if it were a form of closure or objectification bracketing the researcher’s bias is a foundational concept in IPA. The Dutch School felt that it was disingenuous to try to remove the preconceptions of the researcher. Some perceived the IPA work as “elitist” and subjective (Larkin et al., 2011). It was not possible to remove the bias without affecting the data itself. This process is not meant to remove that bias but to allow the researcher to suspend them, allowing them to be examined (Larkin et al., 2011).

**The introspective argument.** Husserl has been accused of having established the idea that phenomenology is simply an introspective study of the personal experience. However, Husserl places intentionality at the center of his analyses which mitigates the internalization mentioned. This is a key concept in phenomenology, where it does not refer to a person’s intentions but rather the broader sense of intention (Larkin et al., 2011). In his work, Heidegger maintained that intentional focus is an essential part of human activity. He denied, however, that intentionality is a mental activity. He rejects the focus of “private thought,” and instead searches for its location. Finally, Larkin (2011) remarks that Heidegger’s view of the person was always a “person-in-context”.
Data collection considerations. When selecting the participants for research using IPA, a small group of 6 to 15 is the recommended number. Smith (2009) advised the researchers to locate and focus on a homogenous sample. IPA seeks to perform an extrapolation of the collected information and examination the data in a broader context. Pulling the themes from a larger and more diverse data set might be difficult to achieve if the sample group is too specific or unique. However, if the research is rich and sufficiently related to current literature, the reader should be able to assess and evaluate (Pringle, Drummond, McLafferty, & Hendry, 2011).

In examining data collection limitations, Brocki and Wearden (2006) examined the pros and cons of several data collection methods across a range of IPA studies. These studies examined interviews, written narrative accounts, diaries, email discussions, and focus groups. The conclusion was that IPA benefits from using a diversity of data collection methods. However, they also noted that these were not always reported in sufficient detail and caution researchers to acknowledge and discuss the advantages and disadvantages of their chosen collection methods (Pringle et al., 2011).

Alignment to this research. IPA was leveraged for each of the defined threads within this research. As shown in the literature review, there were three overarching themes which emerged as key points to pursue in the discovery phase. The review shows that each of these themes influenced others. Each of these themes had a potential influence on the use of asynchronous learning techniques. IPA allows for the formation of a set of questions to further explore the participant’s responses and how this data influences the lives of the respondents.

The adult learner. There are definite differences in how adults are stimulated and engaged in education from younger learners (McGrath, 2009). There is evidence that the use of technology to provide a community of learning might help an adult learn more effectively using
distance learning (Rovai, 2000). Delving into this theory with the experiences of the student may show ways to leverage today’s technology more effectively for an adult learner. In general, exploring the experiences of adult learners and inquiring what methods and tools were most successful for them might point to a methodology to use in the future.

**Use of technology.** The changes brought by technology to learning are marked and diverse. The internet offers a path for using both synchronous and asynchronous learning modalities. Mobile devices and tablets, web browsers and an array of content creation tools exist to allow for an engaging learning experience. Social media and interaction have emerged as an important piece of adult learning as it brings a sense of community to the students (Lee et al., 2013). As technology advances, asynchronous offerings can now present many of the more traditional experiences which adults are looking for due to their remembrance of early schooling (Pinto-Llorente et al., 2017).

**Effects on the organization.** One of the expected challenges in this research is identifying how to transfer current teaching methodologies and strategies from the traditional classroom to the online environments (Caruthers & Friend, 2014). Changes in learning could inflict organizational changes which can be costly in time and resources. While implementing the technology has a financial impact on a company; it also can challenge security considerations (de Albuquerque et al., 2012). Corporate trainers will need time to acquire knowledge and skills related to the delivery of asynchronous and blended learning (Caruthers & Friend, 2014).

**Participants**

This section presents the site and participant consideration used in this study.

**The research site.** This study took place at a large technology corporation based in the United States. It is exemplary of many global organizations in both human makeup and
organizational structure. The company has an education department which delivers technical “how to” training, higher level technical and soft skills courses focused on multi-disciplined solution operations, and industry certifications to over 140,000 employees and many more customers. The company is global; having office locations in over 150 countries and the workforce is diverse. They face similar challenges to other companies concerning revenue and worker skill requirements.

As with many technology companies, the research site is constantly re-inventing their education services department and exploring new modalities of learning (Tripathi, 2012). Distance learning is a primary direction for the team which faces a global audience and has pressure to decrease the time to create new courses. Exploring new methods of delivery, including asynchronous learning, confronts several challenges present in other educational settings.

**Training courses.** The education offered at this site include multiple modalities. For this study, the participants were asked to consider asynchronous learning in which they had participated. The courses discussed with participants included:

- Compliance Human Resource training. These courses are single-user, self-guided eLearning with a voice-over narrating the critical points of the content. There are multiple knowledge checks used to record understanding and compliance with the subject matter.
- Technical training. These courses are single-user, self-guided eLearning. There are simulations and videos to allow the learner to perform specific tasks they must do as part of their daily job. A short quiz is used to validate learning.
- Soft-skill training. These courses are either single or multiple-user Blended
Learning training. The facilitator guides the learners using recorded video. There are discussion boards to allow the learners to communicate with other students about the subject matter. A short quiz is used to validate learning.

Each course type is primarily or exclusively asynchronous. The learning cohort may include learners from multiple geographic locations and time zones. Connection to the course is made using a computer or mobile device.

**Recruitment and access.** The participants were students who have taken asynchronous and other forms of online learning courses offered by the company. All participants were vetted to have taken distance learning courses.

Eight participants were recruited from a pool of students who have completed at least one company offered an online course within the past two years. Although the participants were self-selected, they were from several departments and specialty areas of knowledge; they perform similar functions and comparably apply knowledge. They were selected from the various functional teams within the company profile and represent both age and experience. The researcher sent an email (see Appendix B Recruitment Email) to the pool from the researcher, explained the research and invited them to schedule an audio interview. The recruitment email asked people to volunteer, as they have characteristics or experiences that were different from non-volunteers. The IPA framework used in this study made recruitment biases less critical.

While everyone in this study had taken a corporate online course within the past two years, the preferred profile was for those participants who had taken asynchronous learning courses within the past six months. There was no offer of financial compensation.

**Protection of human subjects.** All study subjects granted informed consent to participate in this study. Each participant was emailed an unsigned consent form (see Appendix
D Informed Consent Form) with the recruitment email (see Appendix B Recruitment Email) to participate in the research. The unsigned informed consent was also read to each participant at the beginning of each interview and participant agreement was verbally confirmed. The recruitment email and consent forms contain information about the purpose of the research, the methods used, and the risks and benefits involved. Participants were informed that their participation is confidential and completely voluntary and could be terminated at any time that they desire. Every precaution was taken to protect participant confidentiality.

**Procedures**

Using IPA as a theoretical framework allows for a logical flow in the data collection and analysis phases. The IPA framework also permits the research to move away from a purely numerical and statistical model (Baxter & Jack, 2008). IPA gives voice to the experiences of the participants and adds meaning to the data.

**Data Collection**

The data for this research was collected by responsive interviews conducted by Skype or telephone, depending on the participant’s preference and was digitally recorded. Responsive interviewing was a good fit for this study because the research looks for nuance and subtlety (Rubin & Rubin, 2012). Skype interviews allow for a visual connection and those indicators will be noted in the interview. Telephone interviews are more difficult to establish a relationship with the person being interviewed (Rubin & Rubin, 2012).

All participants were informed of data management and privacy procedures. The researcher included an unsigned consent script (see Appendix D Informed Consent Form) and read to each participant individually before the interview began. After the initial introduction, they were informed that the recording was beginning. To keep identifiable information out of the
recordings the audio capture was started after the introduction. The interview used a framework of open-ended questions (see Appendix C Introductory Script). Recordings were marked with coded identifiers and transcribed by commercial transcription service. At the end of each interview, the subjects were informed that the recording has ended and thanked for their participation.

**Interview approach.** A semi-structured interviewing practice was used to allow for the addition of an authentic voice in the study. A rigid interview with mapped questions focuses dialog and permits easier data intake but jeopardizes catching a genuine participant voice (Merriam & Tisdell, 2015). The research intention for semi-structured interviews is to gain understanding through active reflection and advance dialog around the subject (Seidman, 2006).

Seidman (2006) discusses the challenges to access the study participant’s inner voice. The inner voice is distinguished from the public voice as being unguarded and therefore more authentic. Discovery of the beliefs of the subject enhances a qualitative interview; therefore, the objective was to draw that genuine inner voice forward through an honest, safe and respectful conversation.

**Collection procedures.** Any data collection which was extracted video-conference allowed for nonverbal responses which could be observed and cataloged as field notes (Driskill & Brenton, 2011). These interviews were performed both face-to-face and using Skype for the virtual connection. The objective during collection was to capture of authentic voice while noting researcher bias and preconceptions.

In this study, this researcher collected data as a participant-observer (Driskill & Brenton, 2011). The use of an explicit data collection checklist helped to maintain ethical rigor and data collection best practice for all phases of the scheduled collection as shown in Table 3.1.
<table>
<thead>
<tr>
<th>Phase</th>
<th>Timeline</th>
<th>Event</th>
</tr>
</thead>
</table>
| Recruitment         | Week 1   | Purposeful selection  
Obtain consent forms                                                   |
| Interview Pilot     | Week 1   | Validate the interview protocol  
Update procedures as required                                              |
| Primary Data Collection | Week 2-4 | Schedule and conduct interviews  
Transcribe and perform first cycle coding  
Perform member check using email                                          |
| Data Consolidation  | Week 5-6 | Review primary collection for saturation  
Add additional data to the database                                        |

*Table 3.1. Data collection schedule.*

**Voice recording.** The interviews from this research were recorded digitally and transcribed by the REV commercial transcription service. The researcher reviewed the transcripts for transcription problems but did not make corrections for grammatical errors or broken speech. This process intended to have the transcripts maintain the best reflection of what the participants say. The transcript kept the feeling and thought-process of the participant through the inclusion of audio hesitations and interjections.

Baker’s (2015) use of semi-automated voice recording and transcription describes an efficient and ethical handling of participant data. Rev https://www.rev.com/voicerecorder is a web-based service company that offers transcription, captions, subtitles, and translation services on a per minute fee structure. In pre-study field testing, transcripts took 12 to 24 hours to transcribe and validate against original test recordings and field notes.

Figure 2.4 shows the three steps involved in interview recording and transcription. Note that unless speaker names are explicitly added, the transcription is produced with “speaker 1” and “speaker 2” as the default assignments. This process aligns with the intent to guarantee participant confidentiality.
Figure 2.4. Rev transcription procedure.

**Recording redundancy.** Interviews were recorded simultaneously with a secondary digital recorder to protect the participant’s investment of time. The intention was to have two completely similar recordings made at the same time as the interview in case one of the recording devices failed. The Rev web service accepted interview recordings as mp4 files and was able to be uploaded from either digital recording source.

**Data collection and curation tracking.** Table 3.2 describes data collection and curation tracking for each participant. The intent was to ensure consistent attention to ethical handling of the data and as a means of keeping essential validity checks such as member checking on track within the study. The schedule provided an auditable trail of data curation.
Table 3.2. Tracking data collection and curation by the participant.

Encryption and archival. Handling of the recorded interviews consisted of transferring them from the recording device into a password-protected device as both backup and secure storage. Archive of the curated data was on a secure NAS device that is encrypted using an established AES algorithm. AES is in use by the US government to protect digital information at the file level up to top-secret classification. The removal or wipe of unprotected files from both recording devices will be performed on completion of that archival process.

Field notes. Field notes helped identify bias, distortion, and preconception. Maintaining a separate record of the interview eliminated the need to remember specific incidents. It allowed for a snapshot of the interviewer’s impressions as a written or audio note (Miles, Huberman, & Saldana, 2014; Seidman, 2006). A research journal is a natural extension of this practice and encouraged additional reflection and reflexive adaptation to the study’s needs (Lincoln & Guba, 1985; Seidman, 2006).

Data Analysis

The initial analysis of data and first cycle coding took place on ingestion. Summary synthesis and analysis of the interview transcripts followed the six steps for Interpretive
Phenomenological Analysis recommended by Smith, Flowers, and Larkin (2009):

1. A transcript will be examined line by line.
2. Initial comments will be made on the transcript.
3. Emerging themes will be developed.
4. Connections between themes will be identified.
5. The transcript will be set aside for the next interview, starting each with a clear mind.
6. Patterns across interviews will be identified.

Each of these steps took place after the transcribed content was received from the vendor.

The patterns and coding were applied to the data and the documents were stored on the encrypted and secure storage device.

**Data condensation.** The condensation of data requires categorically grouping on intake and searching for preliminary patterns which can be expressed as enumerative induction (Miles et al., 2014). The transformation of the raw study data through codification, summarization, and discovery of emergent themes was in alignment with Seidman’s (2006) data immersion practices. Table 3.3 shows that designed condensation and coding took place the moment data collection began.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analysis upon intake</strong></td>
<td>First cycle coding and labeling</td>
</tr>
<tr>
<td></td>
<td>Heuristic review of data as pattern and themes</td>
</tr>
<tr>
<td><strong>Summary synthesis</strong></td>
<td>Assertions based on the discovery</td>
</tr>
<tr>
<td></td>
<td>Categorization of phenomena</td>
</tr>
<tr>
<td></td>
<td>Proposition foundation</td>
</tr>
<tr>
<td><strong>Analyze for understanding</strong></td>
<td>Within and cross-case analysis</td>
</tr>
<tr>
<td></td>
<td>Transféral</td>
</tr>
<tr>
<td></td>
<td>External validity</td>
</tr>
</tbody>
</table>

*Table 3.3. Data condensation process.*
The organization of the raw data was inclusive. The goal was to reduce the text by reading and marking with brackets, the passages that were interesting and relevant (Seidman, 2006). While marking these interesting passages, it was possible to identify bias and bracket out those sections to avoid drowning out authentic voice. Analytic memos, annotation of field notes, and reflexive journaling were actively practiced throughout the entire process from design and planning through to data presentation (Miles et al., 2014; Seidman, 2006).

The first and second cycle coding events aligned with Seidman’s (2006) data methods. They present opportunities for the discovery of themes and outliers through the participants’ inner voices (Miles et al., 2014; Seidman, 2006). Performing an initial analysis during the data intake is at the heart of first cycle coding. First cycle codes were evaluated and assigned in the context of what the live study data revealed within the lens of the IPA framework. Coding was a deductive component to the analysis and summary data display would enhance that connection.

**Presentation of findings.** Current software utilities can enable visual summaries and graphical representations of emergent themes through coding cycles. By mapping research questions against the interview protocol links, emerging findings produced a clear alignment to themes. Visual display of data findings also helps to identify interpretation bias while reducing manual effort, resulting in an authentic reflection of the data as themes and patterns.

The interview data were coded into themes to identify patterns across interviews. The coding created connections between the data and the different interviews. When using a qualitative research method, it is important to identify key evidence and bring the data together in themes (Creswell, 2013). Coding data allowed for analysis and relational construction of the data across multiple sources, to validate the findings. The goal of using the qualitative method was to provide a thick, rich description (Creswell, 2014) to give voice to the participant’s
Presentation of the coded data was broken into structures based on the discovered themes. The effects on the learner and the organization provide two sections while the importance of technology and instructional design linked these together. A cross-section of participants also presented as learner age, experience, and other metrics provided ways to contrast experience across varied groups of learners. References to specific feedback and comments added depth to the collected data and allowed for additional context to be considered in the future.

Criteria for Quality Qualitative Research

A study should be consistent, reliable, and auditable for aspects of design, planning, and execution. This concept is a pillar of rigorous practice in research; the capacity to easily identify evidence of that practice in the study. Trust in a study is earned through the practice of trustworthy methods.

Self-reflexivity and Transparency

My life experiences and beliefs have formed me into the being I am today. There is no way to completely separate our research from our personality and understanding of the world we live in (Freire, 2005). The things that comprise us affect, both positively and negatively, and add depth and flavor to our work. Awareness of our positionality allows us to detail and mitigate our bias within the research.

Where I came from. I grew up in a mix of cultures. On the surface, I was a Caucasian kid from the suburbs, but I also followed my Native American beliefs and traditions. I know the taste of being an outsider in my own world and early on I hid my “other” from people (Banks, 2007). As I grew older I embraced that aspect of who I am even more. Today I teach people about our culture and how to be proud of who we are (Banks, 2007).
Although certified as a public-school Art teacher, my options became limited due to policy changes and funding in the state. The result of these policies was that art education was removed from most public schools and this pushed me towards adult education. Through this change in my career, I saw a marked difference when teaching adults. There were wide variances in skills; even experts in their field may have been novices in the things I taught. In a single class, people were attending to try something different or to meet new people. This was something unexpected for me. I had always assumed that learning fit a specific need or purpose, and here I found adults have a different view about what they learn and why. Many of my previous teaching methods had to shift for this new audience and it taught me the concept that change must occur (Ravitch & Riggan, 2011).

**Where I work.** I have had the opportunity to work for several major corporations and institutions during my career. I returned to the educational aspects and mixed my deep technical knowledge with the educational aspects by entering the educational department at a major technology company. Many of my colleagues were very technical people who had a deep understanding of the computer science subjects they taught. As the principle Fibre Channel network instructor I was able to maintain a level of respect with my contemporaries, however, I also became a requested instructor for difficult or high-profile customers. My skills as an instructional designer and teacher grant me the ability to bridge the gap that many of my co-workers find difficult and become an educational resource within the entire company (Ravitch & Riggan, 2011). This led me to global travel opportunities and an opportunity to further expand my abilities and exposure to other cultures. In the end, this has helped to refine my personal beliefs and form a positionality that defines my role as a scholar-practitioner.

**Positionality within this research.** To gain the best understanding of the situation I am
researching, I need to define my positionality for the interview process. First, there are some cultural influences that I have identified which colors my view of the dialog (Banks, 2007). Coming from an oral tradition culture, I tend to listen intently, and each word carries meaning to me. Selection of the narrative voice and specific words may be less important to the interview subject than in relating the idea or concept they are focused on. I need to be aware of marginalizing one group over another and trivializing their perspective (Creswell, 2012).

In an interview, it may be difficult to see outside our own experiences (Takacs, 2002). We often try to connect the information we gather to common concepts we have already assimilated. This speeds our understanding but also could result in not collecting all the data. We may believe we are viewing the data fairly and without bias, but in truth, we cannot completely disregard how our own lives have shaped our understanding. Franklin discusses Martin’s idea of “the illusion of neutrality” (Franklin, 2014, p. 69) and how you can believe you are objective but in reality, we are always biased through our life experiences. My educational background and personal interest in asynchronous learning and online education can easily flavor my interpretation of the interview data. I must remain vigilant to report what the participant says, including their hidden meaning. The use of IPA as a framework will also help to retain the voice of the participant in this study and reduce my own bias.

A final consideration in working with the interview process and resulting data is that there needs to be an acceptance of change (Ravitch & Riggan, 2011). When performing an interview for research, we have preconceived ideas about what the data will prove. Most often the expectation is that this information will support our thesis. My technological experience is often very true/false oriented. A component works, or it does not, a process directs action in a specific way. The qualitative data may give variants and subtle nuance which could challenge
my normally Boolean method of interpreting data. This is something which I can resist if I remember that this is a discovery process and that variance occurs, often opening new areas of research or new outcomes from that data (Masalimova & Nigmatov, 2015). All of these aspects are recognized as good things in my work as a Scholar-Practitioner (Ravitch & Riggan, 2011).

**Ethical Considerations and Credibility**

Interviews for this research were stored as digital audio files on an encrypted drive of a password-protected computer. An electronic document file stored coded identifiers for all interviews and matches them with information about the person being interviewed. The coding file was stored with the digital audio files. The interview audio files, without personal identifiers, were sent to a commercial service to be transcribed. Upon completion of the transcription, the electronic transcripts were kept in the same manner as the digital audio files. Encrypted backups of all files were kept off-site.

Recruitment emails contained written information about the research, echoed with an oral unsigned consent script during phone interviews, were stored on the encrypted drive. The time and date of the subject’s consent were recorded electronically for each phone interview. A follow-up email was sent to each participant after the interview offering thanks and repeating the information about the use of the interviews for research, emphasizing that no personally identifiable information would be published and included contact information for any questions about the research or the use of the interviews. All emails and responses were extracted from the email server and stored on the encrypted drive. Any paper generated during the work will be shredded. All digital files and artifacts from the interviews are set to be destroyed three years after the conclusion of the research.
All electronic and printed artifacts of primary and secondary data collection were transferred to encrypted archive on ingestion and completion of professional transcription by REV. Following industry best practices of secure data handling, no loose materials, whether they were physical or digital were left behind. All data collection elements were encrypted during data collection and destroyed on completion of the study.

Credibility

The credibility of the study is an important aspect of qualitative research. Ordinarily, the researcher is both the data collector and data analyst. The dual role of the researcher presents the potential for researcher bias to impact the study (Miles & Huberman, 1994). An awareness of the researcher’s bias is one step to reducing this potential for tainting the data.

Another way to reduce researcher bias is to use methods such as member-checking and sustained engagement. Member checking allows the participant to check and confirm the collected data as reported by the researcher. As the participant reviews the transcript of their interview, they could enhance the accuracy of the data (Seidman, 2006). This process allowed for a final validation that what was said, was also recorded accurately.

This study used the Three-interview Series as defined by Seidman (2006) to address the question of the credibility of this study. The method used three separate interviews to be held with each participant. The multiple interview sections allowed the participant’s behavior to become meaningful and understandable when placed in the context of the study subject.

In the first part of the interview, there was a goal of extracting the participant’s experience. By exploring the participant’s past, it is possible to place that information in context to the study subject. As this interview study was their experience as students, questions focus on experiences in school and training which they might have taken up to this time.
The second interview section was used to examine the participants’ present lived experience in the topic area of the study. In this study of adult learners using asynchronous learning, the interview focuses on the experience the participant has had in learning asynchronously. Additional questions followed up with their reaction and feelings about various technologies and activities used and which they found most beneficial. The responses were meant to place their experience within the context of the social setting, asking about interactions with other students and key experiences from their learning.

The third part of the interview asked participants to reflect on what their experiences mean to them. This series of questions sought to find meaning and benefit to the adult learner. Comparison of their asynchronous learning experiences with current benefits and success were made. Through the compilation of responses from all three phases in the interview, there was a way to validate meaning and importance to the participant which adds credibility to the study.

**Transferability**

Information discovered in this study can be applied, or transferred, to other contexts. When studying a subject, it is possible to evaluate the extent to which the conclusions drawn are transferable to other subjects. Providing the information at a deep level of detail allows these conclusions to be made. This level of detail is called thick description. Thick description refers to the detailed account of field experiences in which the researcher defines explicit relationships and puts them in context (Holloway, 1997). Lincoln and Guba (1985) add that thick description can also be used as a method of adding validity to the information. The use of thick description information can be used in contexts beyond this study.

An interpretative phenomenological analysis uses idiographic focus as a method to add insight into how the participant interprets a specific phenomenon within a clear context (Larkin
The idiographic approach focuses on the experiences of individual and aligns well with a thick description. IPA investigates the experiences of people and gathers quantitative data which focuses on the individual. Using an idiographic focus gathers the deeper meaning which allows for additional research and connection to other contexts and studies.

**Limitations**

This research took place over two months with a small sampling of participants. The study generated data that answered the guiding research questions. However, as with all research, there were also limitations.

The participants were all from the same company. This aspect may influence the results with the corporate policy and culture of that single organization. The similarity in the role and responsibilities of the participants may also shift the collected data to a smaller section of online learning students than desired. Future research would do well to engage a larger sampling of participants from a variety of roles to see if the findings are like those found in this research.

This study used in-depth interviews and Interpretive Phenomenological Analysis (IPA), which provides a thick, rich description (Murray & Holmes, 2014). This approach is both descriptive and interpretive (Pietkiewicz & Smith, 2014). The description is important to give a voice to the participants’ experiences, but the analysis must not be overlooked because IPA is intrinsically interpretive. Using member-checking allowed the participants and the researcher to interpret the meaning of experiences (Smith et al., 2009). However, the participants themselves were interpreting their experiences as they described them. Future studies may use other theoretical frameworks to reduce the focus on the interpretation of the raw data and examine cause and effect in a more agnostic manner.
Summary

This study used IPA to focus the qualitative data on showing how the experience of others adds meaning to the data within that context. Like a phenomenology approach, IPA looks at how people make sense of their lived experiences. However, IPA explores the participants’ experiences as well as their perceptions. IPA is theoretically rooted in critical realism which accepts that stable features of reality exist independently of human perception.

The participants were adults who use asynchronous learning to gain skills and knowledge to be successful in their profession. An interpretive-constructivist paradigm was employed to bring the experiences of the participant into the data. Procedures were employed to protect the participants’ privacy including pseudonyms and data protection.

Descriptive codes were used to identify themes and categories from interviews and all data was stored on encrypted storage devices. The coded data was broken into structures based on the research question. These sections include the learner, the organization, the technology, and the instructional design. The inclusion of participant comments was used to add depth to the collected data and allow for connecting context. Declaring personal bias is an important step to separate the research from the researcher. The information discovered in this study can be applied to other contexts.
Chapter IV: Presentation of Data and Analysis

This chapter presents the participant profile, an explanation of the discovery of themes within the data, and an analysis of the interview transcripts.

Restatement of Research Question

The purpose of this study is to explore the perceptions of asynchronous learning for adults. Transforming a corporate educational program to an asynchronous educational model can affect the learners and the organization (Marsick & Meyer, 2003). For the learner, this can be disruptive and introduces a new method of learning. The company has changed to face in preparing its workforce (Dobrovolny, 2006). The research goal was to examine how to transition a corporate education into a distance learning model which benefits both the company and the employee (Čonková, 2013). The guiding research question was: How do corporate adult learners perceive the value of using asynchronous learning courses to acquire and maintain new skills?

Data Collection Methodology

During the data collection process, the analysis was conducted using the Smith (2014) methodology. The initial coding identified emerging themes and subthemes. The entire process took just over two months. Table 4.1 provides a synopsis of the data collection and analysis of practical procedures.
<table>
<thead>
<tr>
<th>Phase</th>
<th>Timeline</th>
<th>Event</th>
</tr>
</thead>
</table>
| Recruitment                | Week 1         | Purposeful selection  
                              | Obtain consent forms  |
| Interview Pilot            | Week 1         | Validate the interview protocol  
                              | Update procedures as required  |
| Primary Data Collection    | Weeks 2-4      | Schedule and conduct interviews  
                              | Transcribe and perform first cycle coding  
                              | Perform member check using email  |
| Data Consolidation         | Week 5         | Review primary collection for saturation  
                              | Add additional data to the database  |
| Coding and Horizontalization| Week 6         | Analyze transcripts treating each statement as significant  |
| Emergent Themes            | Weeks 6-7      | Highlight significant statements, compare statements made by all participants to find similarities; begin the process of looking for emergent themes that appear in the database on the information provided by the research participants.  |
| Textual-Structural Descriptions | Weeks 8-9     | Document the emergent themes discovered and support them with verbatim examples from the research participants.  |

*Table 4.1. Data collection and analysis procedure synopsis.*

**Interview Procedures**

The process used to collect the data for this study included several steps. After the creation of the interview protocol, the IRB reviewed and approved the procedure. The researcher solicited 240 potential participants, who met the selection criteria, to take part in a one-hour interview. Members of the self-selected group of 15 potential participants were next contacted via email to arrange a convenient time to conduct the interview. Due to schedule conflicts, the final sample consists of eight participants.

Each interview session took place at a time and date selected by the participant. The researcher made meeting logistics via email by the researcher. As this is an IPA study, the goal
was to collect experiences of the phenomenon during the interviews. The interview provided narrative data for this study. At the beginning of each session, the researcher verbally reviewed the interview procedures, including the rights of the research participant, protection of the subject using pseudonyms, and protection of the interview information. The researcher provided the participant with a completed copy of the consent form upon the conclusion of the interview.

To help provide a relaxed environment conducive to disclosure of information, the researcher and participant spoke before each interview commenced. This conversation took place using a series of demographic and ice breaker questions. This introduction helped to build rapport and increased the comfort level for each participant. Moustakas (1994) noted that researchers should speak with study participants in an informal, friendly manner to create a social dialogue before the interview.

After the initial questions, the researcher then asked open-ended questions, guided by the primary research question for this study. After the conclusion of each interview, the researcher thanked the participant for their time and outlined the transcription and review process for member-checking purposes. Member-checking encouraged participants to revise or add information, as well as give a further explanation of information as necessary. They gave a final confirmation of accuracy, allowing the researcher to complete each session and store the files to a secured location.

**Transcription**

The researcher orchestrated the transcription for this research study. The participant granted permission to record the session as an audio file. The researcher securely transferred each recording file to REV, the transcription service, after using the pseudonym to name the file. After the transcription was complete, the researcher carefully listened to each audio recording
and compared them to the transcripts to confirm quality. This also allowed for manual coding of emotions and emphasis the participant placed on comments during the interview. This process helped the researcher to be fully cognizant of the participants’ responses, and to recall the feelings of the participants as they shared their experiences. The process exposed distinctions to their experiences and resulted in fuller descriptions. The researcher emailed the completed transcripts to the participant with an invitation for clarification or the further exchange of information.

**Analysis Procedures**

This section presents the analysis procedures and techniques used in this study. There are also detailed accounts of the site, participant profiles and emergent themes discovered during data analysis.

**Bracketing**

The first step in phenomenological data analysis is to describe personal experiences with the phenomenon under study. The researcher begins with a full description of his or her own experiences of the phenomenon. Bracketing attempts to set aside the bulk of the researcher’s personal experiences to focus on the participants in the study (Creswell, 2013). Bracketing also permits the researcher to set aside their own experiences and associated bias and gain new perspectives on the studied phenomenon (Moustakas, 1994).

During the data collection process, the analysis was conducted using the Smith (2014) methodology. The initial task was to code and identify emerging themes during the interviews. The researcher attached codes to specific phrases at various points, indicating the emerging themes. The process required annotation of the transcript, completing the hermeneutic circle used in IPA. Table 4.2 shows the initial coding within an excerpt of the transcript.
The mechanisms. they tried to use a lot of different video mechanisms and different ways to present the material in text format or somebody reading it or videos but it just didn't feel like it was set to engage what my really needs were. I'm a believer that there in sometimes a better way to put together some of these courses and if it would've let me say what type of learner are you, would have been better to just put all the material together in a big text thing or provide it in a different mechanism, going through all these different little hokey things that they were trying to put in there [inaudible 00:12:37] it didn't feel right to me and it didn't get me interested in it so my main goal in it was just completing it, not really gaining the knowledge from it. Anytime I have a class that's like that, it makes me feel like it's not worthwhile to go through because if you're just going through the motions to go through the motions, you're not in that learning receptive mode that you really need to be to get the most out of it. So I would've preferred to have the class give me options in a way that they're gonna present it. Some people might be more audio related and they want to hear someone talk and speak it all out to them. Might've been another person who wanted to just download the material and just look at it and then see everything like that.

1 Goals and objectives need to meet the learner needs
2 Technology needs to enhance the learner experience
3 Engage the learner for a better experience
4 Use the right technology to engage the learner

Table 4.2. Initial coding.

Validating the research also requires the exposure of the researcher’s bias. The experiences and lived life of the researcher could influence the data collection and analysis phases. The Positionality section in this study illustrates the background and experiences potentially connect to this research. Creswell (2012) points out that clarifying the researcher’s bias is a validation technique. In addition to defining bias, the researcher used a journal to note personal observations and perspective throughout the study. Table 4.3 shows the methods used to ensure an accurate collection of data and validate the research. Using self-reflection and stated positionality, the researcher attempted to reduce personal bias in this study.
### Table 4.3. Data collection validity steps.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Established a clear scope as a doctoral level Scholar-Practitioner in training for the purposes of this study.</td>
</tr>
<tr>
<td>B</td>
<td>Ensures not to influence the research participants by the framing of the research questions. Safeguard against guiding the responses of the research participants.</td>
</tr>
<tr>
<td>C</td>
<td>During interviews, used the respondents’ language to increase communication and understanding.</td>
</tr>
<tr>
<td>D</td>
<td>Received IRB approval as an independent body to review the interview protocol.</td>
</tr>
<tr>
<td>E</td>
<td>Transcribed the responses accurately and adhered to what the data contained. Did not manipulate the results.</td>
</tr>
<tr>
<td>F</td>
<td>Utilized questions aimed at capturing the respondent’s true perceptions.</td>
</tr>
<tr>
<td>G</td>
<td>Ensured confidentiality to protect the participant and to avoid socially desirable answers.</td>
</tr>
<tr>
<td>H</td>
<td>Explained the procedures to protect their identity to create a safe environment to encourage genuine responses.</td>
</tr>
<tr>
<td>I</td>
<td>Kept the interaction conversational to avoid simple answers. Probed for meaning and reasons for the initial response.</td>
</tr>
</tbody>
</table>

**Horizontalization**

Given the small number of volunteer participants, transcription was completed without the use of analysis software, which allowed the researcher to become more intimate with the material. Microsoft Excel color-coded and highlighted and separate material and quotes. The researcher extracted codes from the transcript to aid in organizing the research analysis. These codes led to the emerging superordinate themes and their applicable subthemes. In some cases, a participant response applied to more than one theme, representing the interdependence of the theme concepts. The coded data broke out into four roughly equivalent superordinate themes. Figure 4.5 shows the superordinate themes discovered by the research questions and interview script.
The researcher developed a list of significant statements from these coded data. This process included locating sentences or quotes in the interview transcripts about how the individual experienced the phenomenon. Treating each statement as having equal worth or horizontalizing the data, maintained the voice of each participant. As Saldaña (2014) found, qualitative codes capture and essential elements of the research story. When clustered together according to similarity and pattern, these codes lead to themes. Table 4.4 shows the transitional list of clustered to emergent themes.
IPA is committed to descriptions of experiences, not explanations or analyses. The experiences are relevant to the participant in the study. To understand these experiences, it can help by providing a deeper description of the participants through the presentation of detailed information. This information provides more insight and context about the individuals who reported on the share experienced in this phenomenological study.

The coded responses from individual interviews often expressed multiple emergent themes in a single sentence or quote. For example, although the question asked may have been exploring the learner’s preferences, the response may have included information about the depth of the content. The result was that much of the qualitative data included more than a single subtheme category within a response. Breaking responses into smaller chunks of data was key in defining the subthemes and organizing them into the larger themes. The consistent responses involving the use of multimedia and mobile technologies figured prominently in participant narratives.

<table>
<thead>
<tr>
<th>Clustered Themes</th>
<th>Emerging Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations versus the online experience</td>
<td>Online experience</td>
</tr>
<tr>
<td>Ability to interact with others</td>
<td>Human interaction</td>
</tr>
<tr>
<td>Content is focused on a particular learner</td>
<td></td>
</tr>
<tr>
<td>Goals and objectives need to meet the learner needs</td>
<td>Learner-focused</td>
</tr>
<tr>
<td>Technology needs to enhance the learner experience</td>
<td></td>
</tr>
<tr>
<td>Engage the learner for a better experience</td>
<td>Goal and objective oriented</td>
</tr>
<tr>
<td>Use the right technology to engage the learner</td>
<td></td>
</tr>
<tr>
<td>Challenges using technology with learning</td>
<td>Using technology</td>
</tr>
<tr>
<td>Mobile technology grants easier access to learning</td>
<td></td>
</tr>
<tr>
<td>Cost of training has an impact on learning availability</td>
<td>Inability to remain current</td>
</tr>
<tr>
<td>Technology changes make it hard to stay current</td>
<td>Cost of training</td>
</tr>
</tbody>
</table>

Table 4.4. Clustered to emergent theme transition.
Emergent Themes

Upon completion of the coding process, the researcher separated the information collected based on emergent themes. The data analysis procedure developed these emergent themes. This process groups information into meaning units, as recurrent themes emerged during the analysis process. During thematizing, the researcher is asked to “cluster the invariant constituents of the experience that are related to a thematic label. The clustered and labeled constituents are the core themes of the experience” (Moustakas, 1994, p. 121).

By conducting a thorough and repeated review of the transcribed data, horizontalization, the researcher uncovered similar patterns of experiences expressed through words of the research participants. These statements are grouped into larger units of information, called “meaning units” (Moustakas, 1994). The information provided by the participants contributed to the emergent themes and highlighted the shared experiences of each consuming asynchronous learning. Through the careful review of the participant transcripts, verification of data via a follow-up with the participant for accuracy, and the analysis of summarized data being grouped together, four themes were identified. The themes applicable to the research study are: 1) Meeting the Adult Learner Need, 2) Effective Use of Technology, 3) Changes to Instructional Design, and 4) Impact on the Organization. Table 4.5 shows the superordinate themes and their associated subthemes.
Table 4.5. Superordinate and sub-themes.

<table>
<thead>
<tr>
<th>Meeting the adult learner need</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectations of the online experience</td>
<td></td>
</tr>
<tr>
<td>Learning through human interaction</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Effective use of technology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology needs to enhance the learner experience</td>
<td></td>
</tr>
<tr>
<td>Mobile technology grants easier access to learning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Changes to Instructional Design</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals and objectives need to meet the learner needs</td>
<td></td>
</tr>
<tr>
<td>Engage the learner for a better experience</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact to the Organization</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The cost of training has an impact on learning</td>
<td></td>
</tr>
<tr>
<td>Technology changes make it hard to stay current</td>
<td></td>
</tr>
</tbody>
</table>

Participant Profiles

The participants were students who have taken asynchronous and other forms of online learning courses offered by their company. The researcher recruited eight participants from a pool of students who completed at least one company offered an online course within the past two years. Each participant has a pseudonym to protect their identity. The participants were self-selected and were from various functional teams within the company profile and representing a range of age and experience. The roles listed are historical for each participant showing a wide range of knowledge requirements. Table 4.6 shows the participant profile matrix.
Table 4.6. Participant profile matrix.

The number of participants in this study represents a typical group used in IPA research. Creswell (2013) recommended that the sampling group be between 4 to 15 individuals. The recommendation of the Northeastern University IRB is to locate 6 to 8 participants. The researcher used the self-selection process to locate eight subjects for this study. This number of participants helps to avoid an overwhelming number of viewpoints that might hide the individual voice in the data. Interviews took place during the third business quarter, a more acceptable timeframe and outside of the end-of-quarter activities.

The eight participants each completed at least one company offered online course within the past two years. Although the participants were self-selected, they were from several departments and specialty areas of knowledge; they perform similar functions and comparably apply knowledge. Participants came from the various functional teams within the company profile and represented both age and experience. In addition to meeting the designated criteria, participant selection was also a matter of convenience. Convenience sampling is a qualitative technique involving the selection of the most accessible subjects (Seidman, 2006).

To protect the human participants, the researcher identified the eight participants in this

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Years Experience</th>
<th>Systems Engineer</th>
<th>Solution Architect</th>
<th>Network Engineer</th>
<th>Support Engineer</th>
<th>Sales Engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel</td>
<td>30</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Harry</td>
<td>30</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Kenneth</td>
<td>25</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Ronald</td>
<td>32</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Samuel</td>
<td>25</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Glenn</td>
<td>40</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Keith</td>
<td>28</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Paul</td>
<td>20</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
study as: Daniel, Harry, Kenneth, Ronald, Samuel, Glenn, Keith, and Paul. They all were employed by the same technology form at the time of this research, granting a similar set of role and performance parameters. All eight were engaged with the customer and had to adapt to newly released technology regularly. All had performed the role of Systems Engineer, a very technical role, during their careers, although, at the time of the interviews, 3 were Systems Engineers, 3 were Sales Engineers, 1 was a Solution Architect, and 1 was a Support Engineer. They ranged in age from 43 to 65 years old. Table 4.7 below displays demographic information about the eight participants.

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Nationality</th>
<th>Gender</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel</td>
<td>61</td>
<td>USA</td>
<td>Male</td>
<td>Support Engineer</td>
</tr>
<tr>
<td>Harry</td>
<td>55</td>
<td>Argentina</td>
<td>Male</td>
<td>Solution Architect</td>
</tr>
<tr>
<td>Kenneth</td>
<td>46</td>
<td>USA</td>
<td>Male</td>
<td>System Engineer</td>
</tr>
<tr>
<td>Ronald</td>
<td>53</td>
<td>Netherlands</td>
<td>Male</td>
<td>Sales Engineer</td>
</tr>
<tr>
<td>Samuel</td>
<td>45</td>
<td>USA</td>
<td>Male</td>
<td>System Engineer</td>
</tr>
<tr>
<td>Glenn</td>
<td>65</td>
<td>USA</td>
<td>Male</td>
<td>System Engineer</td>
</tr>
<tr>
<td>Keith</td>
<td>48</td>
<td>USA</td>
<td>Male</td>
<td>Sales Engineer</td>
</tr>
<tr>
<td>Paul</td>
<td>43</td>
<td>Finland</td>
<td>Male</td>
<td>Sales Engineer</td>
</tr>
</tbody>
</table>

Table 4.7. Participant profile summary.

**Participant Detailed Descriptions**

The brief portrait of each contributor below provides a better description of the research participants.

**Daniel.** Daniel had the most diverse background of the participants. He worked in several capacities and had changed his roles many times, requiring him to retool his skillset each time. He was very interested in sharing the extent of his training participation. He discussed a series of required, facilitated learnings which he consumed but often had to find out information himself:
“So, I have to attend training on all of our products and then productivity and then vendor training. So most of my stuff is done distance learning, directly talking to engineers that company.”

Daniel also went into the importance of education as part of his job. He reflected on the validity that a trained workforce could have for the individual and the company they represent:

“Every time that you run into a situation people do an assessment of you. Are you capable? Are you competent? And if people believe that yes, you're competent and capable they tend to do things, give you the keys to the kingdom.”

**Harry.** The session with Harry took place over a WebEx connection due to technical issues in his country. The interview took place in English as the researcher is not fluent in Spanish. The participant arranged a mutual time, as he is in a different time zone, and met to perform the interview using that virtual conference software. Harry had extensive experience as a field engineer and brought his preference for online training into the interview feedback:

“In other words, the online training should be ready if more than five students are logging into the same time. So, you have a different time slots do it, but, when you are doing it you are not alone, so you can share your questions or your feedback with other students that are doing the online training on the same slot time with you.”

Harry also introduced a company consideration to the interview. He found that working outside the United States introduced some discrepancies into corporate training:

“For example, as a pre-sales I believe that online training which contains whiteboardings, or a video with the whiteboardings, or the way that you need to aboard the subject is very useful.”

**Kenneth.** Kenneth is a United States based engineer. The interview took place using
Skype due to travel considerations for the participant. Kenneth is a director in the company who worked through the field engineer roles into a technical management position. He brought a different perspective on education, having completed his MBA recently:

“Now it's on you to understand hey where is your gaps, where is your areas that you're an expert on, where are areas you need to improve on, where do you find the material that's out there, is the material out there relevant to you, what pieces should you take out of it and you have to put together your own pieces. I think it's one of the areas that I've seen more people in management not focused as much on.”

Kenneth uses asynchronous and distance learning heavily in his personal and professional life. He also notes the responsibility of the learner to take ownership of their knowledge, something Knowles (2011) included in his outline of Adult Learning Theory:

“I've spent a lot more of time of going through those, watching the videos, watching things that have been recorded for those different hobbies in addition to so it's become pretty much pervasive across all the different areas of my life, work and all the different courses that I had to take to get up and running to understand it from technical skills to soft skills and the personal things in life and continuing my education for a degree and having an online program.”

Ronald. The interview with Ronald took place in the early morning using Skype as the participant lives in Western Europe. Ronald is currently in a role which connects the company’s engineering department directly to the customer. In this role, Ronald must understand the technology but also be able to explain it to the customer. When selecting training, he looks for engaging, hands-on activities:

“It might be good to actually have hands-on or have the option to get them involved in the actually deployment in the field, and that's something which is hopefully coming in the near
future again for the customer service, for the Field Service organization.”

Ronald prefers more traditional training. However, he also points out that his real preference is to have some form of human interaction when learning:

“I would prefer the human interaction, so that having a live teacher, or somebody, who's doing couple of days of presentations online.”

**Samuel.** Samuel was the first respondent to schedule an interview based on their availability. The online interview used Skype for the session. This method was convenient as this participant was in another geographic location from the researcher. Daniel was very keen to discuss his interest in lifelong learning and the need for continued education to remain a peak performer in his role:

“Learning is a part of the life, especially when you're on the technical side. You always keep learning it. When you're in IT, you can't give up otherwise it will be out of the date.”

With more than 25 years of experience, he also discussed the need for transitional learning, both technically and in soft skills to adapt to new technology and roles in the company:

“And now you go with the flow and you get things done. So, it is very important, the more you study and more you learn, then you will ... it's likely to become alike to that sense.”

**Glenn.** Glenn is a senior engineer from the East Coast of the United States. He has a long-time engagement with the company’s education department as a subject matter expert, exam writer, and field validation team member. Glenn noted his preference for classroom training as a result of his age and upbringing in that style of learning. However, he also notes that distance learning is now the majority of how he gains new skills. However, he also notes that not all learning is best suited to the online model:

“If it's something that I find useful like something that I didn't know that I could possibly
use in my everyday existence, then that's great. Yeah, that would be it. If it's something that I can find useful then I'm all for it.”

An important aspect of learning for Glenn is the quality of the course itself. Experiential learning and an engaging set of activities can make a big difference to his reaction and retention of new material:

“In other words, they're absolutely giving me an experience that I can tell that they put time and effort into doing, that would pique my interest. If it's a well-produced course that presents the ideas and builds retention of those ideas, then that will definitely make me feel better about taking the course.”

Keith. The Skype conference call with Keith took place during normal working hours at his request. He arranged a time during the lunch break, so it would not interfere with his work or personal time constraints. A challenge he felt with distance learning was the heavily scripted method of packaging training. He felt that the ability to interact with and question the instructor was a gap in this modality:

“Sticking to the script misses the insight I need or omits my functionality. Video can help but it’s one-way, it satisfies a little bit, but I don’t have the opportunity to ask questions and see reactions.”

However, the benefit of learning at your own schedule was attractive to him:

“Having a virtual schedule is good, it can help juggle your time/jobs. If the intention is to juggle other things along with training it is good. It allows me to use structure. I prefer the 9-5 sync training best. I know my own limitations and preferences.”

Paul. The interview with Paul took place in the early morning over a Skype connection as the participant is from Scandinavia. The role Paul performs is to engage with the customer
before the sale of a product, to confer with them on how best to solve a business problem. In this role, he is traveling for business 75% of the time. Distance learning options are very important to him as he cannot take part in a more structured and traditional learning environment:

“Those self-based learning ... It's quite okay because you can decide whenever you want to take it, and they are not that long, so it's quite easy to select a time when you take those”

As an English Second Learner (ESL), Paul had several comments on ways to improve the learning experience for others with similar language challenges:

“They are quite okay because there is usually a native English speaker because English is not my native language, and everything said usually is in English. I have had some mandatory trainings where the speaker is not from US country but definitely not native English speaking, and it is really hard to follow that.”

**Textural-Structural Descriptions**

Phenomenological data analysis requires the writing of textual-structural descriptions. Moustakas (1994) described these textural descriptions to provide “what” the participant experienced regarding the phenomenon being studied. Structural descriptions describe the context which influenced “how” the participant experienced the phenomenon. Together these descriptions provide a composite narrative of the phenomenon illuminating the lived experience. This textural-structural description helps the researcher to advance from coded and clustered themes to establishing a narrative exhibiting the participant’s experience (Smith & Osborn, 2007).

The recorded interview process included: transcription, member-checking, and categorization into descriptions of the experiences. The responses resulted in a final narrative which integrates the essential textural and structural descriptions into a unified statement of the
experience. The purpose of this phenomenological study is to understand and reveal lived experience of adult learning using asynchronous learning and the researcher’s goal was to explore their true experiences. This discovery of the lived experience of the participants are must exist without researcher interpretation or influence.

The discovery of the of the lived experiences resolved into four specific themes; “Meeting the Adult Learner Need”, “Effective Use of Technology”, “Changes to Instructional Design” and “Impact to the Organization”. The textural-structural descriptions of the participant experiences presented under each designated superordinate theme include verbatim examples from the interview transcriptions. The researcher developed the themes about the experience of multiple participants. As indicated by consistent participant responses, the four emergent themes were constant for all who took part in this research study. The matrix displayed in Table 4.8 shows the distribution of responses about the superordinate themes by the research participants.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Meeting the adult learner need</th>
<th>Effective use of technology</th>
<th>Changes to Instructional Design</th>
<th>Impact to the Organization</th>
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<tr>
<td>Daniel</td>
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<tr>
<td>Harry</td>
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<td>Kenneth</td>
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<td>Ronald</td>
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<td>Samuel</td>
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<td>Glenn</td>
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<tr>
<td>Keith</td>
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<tr>
<td>Paul</td>
<td>X</td>
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Table 4.8. Distribution of participant responses to emergent themes.

The remainder of this chapter presents a textual-structural narrative exploration of each theme and associated subthemes. Excerpts included from the interviews align with the IPA framework. The researcher interpreted and summarized the responses to help discover emergent
themes. There is a section to show connections to the literature review and existing studies, which expand or enhance that research. All participant responses use the pseudonym for the participant to protect the human subjects in this study.

**Superordinate Theme I: Meeting the Adult Learner Need**

An adult learner has additional criteria when determining the success of education. Among these needs are a desire to see personal value in the learning, a respect for their experience and time, and a social connection with the content and other learners. Each need is based on previous educational experiences and sets an expectation for the consumed training (Knowles, 1998). In this study, there was an older generational group of participants who learned in a traditional classroom environment. This group preferred classroom-based learning which was reflected in many comments during the interviews.

The adult needs were varied. The responses crossed generational and role boundaries, showing there was no direct tie to a specific need for one set of participants. Although there were ten separate subthemes, the most common were the expectations of the online experience and a stated need for interaction with others: teacher and fellow students (see Figure 4.6).

**Figure 4.6.** Adult learner needs subthemes.

**Subtheme A: Expectations of the online experience.** The first subtheme revolved around participants’ expectations of what asynchronous learning should be. Each participant had several years of learning online, which had progressed from traditional classroom experiences. It was very clear in the interviews that the participants preferred the in-person engagement from
Ronald responded to being engaged in their learning as; “if you're just sitting there listening, and you're not falling asleep during the presentation, most of the things that are presented get lost in, get lost quite quickly”. The example given was an online course, modeled after a traditional slide presentation. There were pages with information and a voice-over soundtrack, but it became background noise. The response indicated that some form of interaction or engaging activity might have kept Ronald focused on the learning.

One solution to the need for engagement and activity in online learning seems to be including some form of hands-on experience. With this group of participants, there was a need to learn a technological skill or process to be successful in their work. Glenn specifically called out the integration of learning knowledge with the practical application; “hands-on where I actually have to answer a question based on some of the material that I've already gone over.” Again, there is a connection to older classroom training where a student works in a lab using the same equipment they will see on the job. Glenn concludes with the desire for “a lab where I can actually play with something.”

The next most often discussed need was the connection of time efficiency with the proper level of content. Samuel was clear at the onset of the interview by stating, “I prefer online training. It saves a lot of time.” This comment relates to one of the tenants of asynchronous learning in that it allows the student to select the time for their learning. There was further validation that self-selecting time to learn was shared by Paul “Self-based learning ... It's quite okay because you can decide whenever you want to take it”. The participant appreciated the convenience which facilitated a desire to learn, “it's quite easy to select a time when you take those.”
The methodology Daniel used when taking an online class was to “skate along class”. In other words, the learner can selectively skim the material and search for relevant and new information. Daniel could look at the content and say, “I know this, we jump to this point, we jump to this point”. The result is that the learner can “distill down a two-day class to four hours.”

The depth of content figured into the time spent and level of interest from the learner. Several participants mentioned their belief that asynchronous learning provided “a great overview and a refresher for the class or an introduction to something.” Daniel summed up this feeling that they had a lower expectation that this modality could meet a need for deep knowledge transfer, “I don't expect it to really dominate.”

Although there was a general comparison drawn between the classroom and asynchronous learning, several participants referred to experiencing problems with distractions while attending training. Daniel brought up the subject of distractions interfering with the learning experience three separate times in the interview. The first comment was that “you can get pulled away by other things”. This multi-tasking issue related to many aspects of life including balancing personal need versus that of others. However, it was interesting that the technology which enabled online learning was a source of distraction “because you're online, people are IMing you”. Daniel indicates that the tools used in asynchronous learning could hurt the learner if not controlled. Daniel shared a conclusion on this; “Online they don't see the fact that you're getting pulled six different ways.”

The last set of responses all had a link to the importance of human interaction in the learning experience. Kenneth voiced a common theme about “classes that allow you to share other things between people, and to share that communication back and forth.” This ability to communicate with the instructor as well as fellow students kept appearing in responses.
Comments about the effectiveness and engagement of distance learning mention the human factor. The amount of commentary relegates this to a separate subtheme.

**Subtheme B: Learning through human interaction.** Each participant made a case for some form of human interaction in their online learning. An aspect found within the theme of human interaction is the ability to connect with others and build relationships. The participants did not view learning as solely an individual activity. Each participant acknowledged that learning as a group was a more effective way to learn. Kenneth very clearly states this; “you can talk to others and having those pieces is really key to me learning more effectively and being more engaged.”

The ability to interact, whether through chat, discussion board, does not seem to make a difference. Ronald viewed synchronous and asynchronous communication as being equally effective, “the interaction just helps you getting more and more out of the training that matches your requirements and needs.” This indicates that human communication was more important than the timeliness of that interaction. Through these comments, the participants express the connection between human interaction and effective learning.

A factor which came to light during the interviews was the ability to build a social network through educational experiences. Long-term relationships are ways to expand learner understanding and increase access to additional knowledge. Kenneth cites that during training “you build those relationships and you just have to communicate, and you see things from different point of views.” This idea lets you grow knowledge beyond packaged learning.

The importance of working with another person increased as the amount of access to an instructor decreased. For Glenn, not having direct access to an instructor raised a concern and a challenge for him to change his preferred learning method; “I need the comfort of immediate
feedback when I have a question. I have adapted because I have to do that. I have to adapt in order to stay competitive. No one's going to spoon feed me in the real world.”

The feedback that there is a loss for the learner using online learning is a concern. Harry stated; “if you have a doubt in the middle of a training that stop you from moving forward, maybe, is an issue to complete the training.” What Harry is saying is that there may be varied depths of knowledge from each student. If there are follow-up questions or a need for clarification, where will that come from? Additionally, this comment asks if it is possible to successfully complete training without those resources.

The remarks about asking questions indicate a reliance on others for knowledge and confirmation of understanding. Glenn wants immediate feedback to questions but realizes that there is not always this option in the learning taken. Glenn adapted to the method of learning. However, Harry repeats this same concern, showing that there is a lack of faith in asynchronous learning to stand on its own. Their faith in human interaction is a need and the training must be able to satisfy this desire through the content or using technology.

The effectiveness of the training, supplemented by human interaction, was able to overcome the limitations of asynchronous modalities. The initial belief by Ronald and several other participants was that “eLearning itself is rarely as effective as a learning with human interaction”. There again was the connection between effective learning and social interaction. There also seemed to be an assumption that online learning precludes the ability to make these connections with others. This offers a challenge for the designer of online learning than to be sure to include these forms of communication to create an effective learning event. An inability to allow learners to ask questions, interact with the teacher and other students is something to avoid. The risk for the learner is that they may become “disconnected” from the intended content
and the learning.

The participants found storytelling as a useful method of teaching; it gives a background to the learning. Kenneth describes that this is just as important with online learning, “the ability to share stories” However, the addition of a human connection allows the learner “to learn from other people's experience” and is “what drives, I think, really good education.” In this example, the storytelling is not only the instructor or the distance learning method of communicating that information; it is also the stories of other learners.

The communication and sharing of experience are something which the participants easily relate. Humans are social beings and interaction and conversations help retention. Connections between those interactions and stories allow for learning content categorization and storage for future use. Kenneth sums these benefits well; “interacting with others; sharing common experiences, common differences. You can learn from a lot more people.”

Superordinate Theme II: Effective Use of Technology

Technology is commonly leveraged for learning, especially in the corporate training space (Dobrovolny, 2006). The subthemes discovered, as shown in Figure 4.7, during coding also include some identified in other superordinate themes. However, the responses often cited a technology preference to deliver the content. The largest set of codes was within the multimedia and mobile space. When delving deeper into the interview content, it was apparent that the use of technology by itself was not as important as in using it to enhance the learning experience.
The second subtheme focused on how technology eased access to learning. The use of video was prevalent throughout the interviews. Most of the participants looked at video and similar technologies to control their learning, either for time, location, or repetition of interesting content.

**Subtheme A: Technology needs to enhance the learner experience.** In the previous superordinate themes, the challenge of providing direct human interaction and immediate support were very clear. Harry remarked on this challenge when consuming asynchronous learning assets “you know that when you are going to start this online training another four or five peoples are doing the same, on the same time, so you can share knowledge, or feedback, or questions, and so on.”

Harry offered an intriguing solution to this problem; “when you are doing it you are not alone, so you can share your questions or your feedback with other students that are doing the online training on the same slot time with you.” The idea that there could be a coordinated approach by the learners to share the training experience is interesting. They would replace the in-person contact with a virtual communication model, arranging the schedule outside of the class. This method uses chat, discussion, social media and other technologies to allow the learners to “have a lot of people you can share your feedback or your questions with.”

The use of chat apps is very familiar today. Social media platforms like Twitter and
Facebook are extensions of cell text messaging apps. Since there is a familiarity with this form of communication it is also natural that technology can be used in training. Paul notes this fact by stating; “usually there is some kind of chat box where you can ask questions and write some comments” Using this form of communication is intuitive, especially if the user interface is similar to those social media platforms the learner already uses (Al-Emran et al., 2016).

A discovered problem with online learning is the effectiveness relates to the activity offered in the training. Text-heavy content can result in poor knowledge transfer as Daniel shares with us; “my brain is lazy. If I'm watching a class, and it's online, and I know that the document is stored there, I can always go back to it.” So even though there was ample commentary about having a written document as a reference guide after the course concludes, there is a problem during the training in keeping their attention. Daniel continues; “I don't commit it to memory like I would if this is the only time I'm gonna hear this.” So how can the connection with the learner be maintained if they have a fallback option already?

Kenneth noted the problem in keeping the learner’s attention. The response about how “they tried to use a lot of different video mechanisms and different ways to present the material in text format or somebody reading it or videos”. The suggestion is to vary the method of knowledge transfer. Shift from text to video, to other tools to create interactive experiences to engage the learner.

Several participants called out the benefits when using video as an educational medium. Paul states, “If it's a video, you can rewind and start it again. You are thinking, ‘What was it? What they say?’ Then you can recall it much easier.” Using the standard video player options becomes an interactive experience. They also allow for better retention since you can rewind and experience the training again. This is a clear benefit over facilitative learning; there is no rewind
Most of the participants report that the preferred video training over other forms of online learning. There was a link between the general ages of the learner to this preference. The younger generations mentioned video more than the older generations. Ronald sums up this observation well; “I prefer watching the training, but I can imagine a generation that comes after me, they would be interested in looking at those podcasts, short podcasts 10, 15 minutes addressing particular topics of a solution.”

The participants all commented on hands-on or lab experiences as an important part of the technical training they attend. Kenneth states, “Creating a virtualized environment I found was really key because a lot of times you'd be going through and doing different work, especially in a technical area”. The use of technology to replace physical equipment in labs has two primary effects. The first is a resultant saving for the company which does not have to purchase expensive hardware and software for training (Nichols, 2004). The second effect is to virtualize these lab environments, allowing an on-demand approach to the labs which the learners are asking for.

Another option identified for providing hands-on experience in learning was the creation and use of simulations. Product training figured largely into this study due to the roles of the participants. Daniel expressed that “if you can get like the product simulator and then incorporate that into training, that's perfect.” Ronald states that “giving you the impression that you're actually working alive on something even though it is a simulator”. Daniel sees the simulator as a replacement for less engaging content presentation methods since “they give you a feeling that you've seen the product instead of just going through a slide with a screenshot of how it looks.” Ronald concludes the praise for simulations with, “There is a big difference in the experience
you get out of it.”

In general, “a simulator that's very good to get a look and feel” helps cement knowledge and prepare the vocational worker for their role, as related by Ronald. They provide a way not only to give experience but also confidence in their skills, Ronald concludes, “so you're not unprepared if you would go onsite to our customer, so you know how it works.” Glenn also agrees that simulations instill confidence: “I can always go back and redo a simulation to jog my memory and become familiar with it so that I'm not perceived as a newbie, actually I have practical experience in the subject matter.”

However, just using technology to add variation in training can fall short. Kenneth continues that in some cases “it just didn't feel like it was set to engage what my real needs were.” This refers to the older corporate training experience called “Death by PowerPoint”, a method of using slideware programs to lecture for long periods (Fox, 2017). What Kenneth is saying is that just adding technology is not always the best way to present the content. There must be consideration of the reason for using technology to represent content and it must align with the learner’s information consumption needs.

**Subtheme B: Technology grants easier access to learning.** Access to learning can be a challenge, as noted by several participants. The initial challenge revolves around scheduling. For employees of a large company, the participants commented on the challenges of taking training to maintain their job skills. Daniel explains the change in the training model: “the only time we actually travel or do a face to face learning thing is a workshop. Everything else is online.” The participant views the push from the company is towards online learning as a cost-savings device.

For the learner, Daniel explains that there is limited time to learn the things they need “So not only do you have to stay current with the new features are and how they work, but also what
has engineering changed in the code”. The number of changes mentioned may preclude traditional training methods, “trying to find that quickly is becoming more of a challenge.”

With distance learning, Paul reminds us that “you can decide whenever you want to take it”. The ability to take training assets where, when, and how you need seemed to be more important depending on the participant’s role. Those with an immediate need for information to be successful wanted the ability to “consume with your own pace and own schedule.” Distance learning using an asynchronous content model meets this need.

Ease of access also considers the ability to retake content on-demand; this appears to be helpful before performing a trained skill: a form of refresh training. Kenneth suggested “having a recap video that's, this is what you should've understood” from the training. This is a video summary of the key points delivered. Kenneth also notes that in some courses, “the instructions were provided in writing, written form, but I found the video format that worked a lot better.” The use of technology here becomes a substitute for the in-class instructor or facilitator. Kenneth continues to explain that “just an audio walkthrough of what they were thinking, what was going on, what they wanted to make sure you got out of it; that was extremely useful.”

When considering accessibility to learning, mobile technology was a method to gain remote access to training resources. As Kenneth and Paul pointed out, video learning is desirable but with some caveats. Glenn adds, “They work as long as they're repeatable. If you have the video feed that's only good for a day, that's not as good as something that can be recorded and played back at a later date just to refresh your memory.” The idea that you can go back and “refresh” your knowledge is reminiscent of YouTube and other video platforms. Mobile devices deliver these short on-topic videos to the learner on their device. This allows the learner to take the knowledge with them anywhere.
Glenn continues to refer to this method of using, “YouTube videos for specific tasks. If you have a question or if you have a need to look at how to do a specific task, there are YouTube videos that outline them.” How learning is packaged as an asset, maintaining context while formatting the video for the mobile device, is important. However, “today, with the software that's out there, it's a lot easier to develop quality classes or quality information learning experiences.” Course developers can leverage the tools and technology to meet packaging needs.

While mobile devices for easy accessibility are a trend and have benefits, the participants pointed out, there are also some challenges using these devices for learning. A common remark in this study was like this from Samuel, “I wouldn't be able to do the lab from the mobile”. This shows a concern about the size of the mobile screen to see detailed procedures or tasks. Harry agrees that “The problem, I think, is the size of the screen for a smartphone. For a tablet is okay.” Interestingly, several industries use video for demonstration and instruction with little or no problem. The adoption of this tool for learning may be the root problem here.

**Superordinate Theme III: Changes to Instructional Design**

This study shone a bright light on the ability of Adult Learning Theory to modify the participants’ perceptions of asynchronous learning. The proper use of instructional design techniques can enhance the adult learner experience (Knowles, 1998). Defining the objectives and methods of delivering content allowed the instructional designer to meet the learner’s needs. In cases where there was little or improper design, participants stated that training had failed. The use of ALT and learning frameworks produced by adult learners who were engaged in their learning. This brought meaning, understanding, and relevance to the learners (Tennant & Pogson, 1995).
This superordinate theme provided the most varied set of comments and produced many overlapping subthemes as shown in Figure 4.8. When examining the initial subthemes, the researcher noted that most were crossing two or three other themes. For example, often coded within the same response the learner focus, online experience, and goals and objectives. This allowed for a coalescing of these ten subthemes into two principles.

In the first subtheme, the use of goals and objectives are foundational constructs for instructional design to help meet the learner’s needs. This concept relates to the first superordinate theme as well. The second subtheme answers the call for engaging activities. This subtheme relates to the initial superordinate theme calling for “hands-on” and labs to engage the learner and bring interest to the training event.

**Subtheme A: Goals and objectives must meet learner needs.** Several comments reflected a deeper concept than the interview questions had intended. There was an undercurrent that course success depends on the proper use of instructional design concepts. First and foremost was the idea that the course must have a purpose for the learner. Kenneth diverged from the interview to interject that an asynchronous course must “have a goal and a purpose to it. I just felt like it could've made me more engaged and more want to understand it more if it was done differently.” Although not specifically calling out instructional design, Kenneth has expressed that the course must align with design principles.
Kenneth also noted that engagement tied to the learner's preferences. The preference of a learner has an impact on the success of knowledge transference (Sarica & Usluel, 2016). Harry states, “Some people might be more audio related, and they want to hear someone talk and speak it all out to them. Might've been another person who wanted to just download the material and just look at it and then see everything like that.” This could mean that an instructional designer should consider the wider audience when creating an online course. Because of the modality, it is possible to offer multiple methods of consumption; text, an image, and simulation could all be presenting the same topic. The learner now can choose how to gain knowledge, based on their preferred way to learn.

Several participants noted scenarios and real-life experiences as being a way to connect the learner with the course content. Using scenarios has ties to Digital Storytelling (DST) and is one way to show the relevance of content for the learner (Sarica & Usluel, 2016). Kenneth comment mirrors the DST concepts, “Real-life experience, this is what it led to, you could share that experience and you could say, wow, I could see that happening and how that would affect me, made it much better than just the same repetitive type of text over and over and over again.” Unfortunately, there seemed to be a few examples of this method of learning used in the Asynchronous courses discussed. Harry laments that “very few times we get a real-world scenario, or exercise, or sizing training, where presenting a real case.” So there seemed to be a mismatch for the instructional designer in using scenarios with online learning, something they used in the classroom regularly.

Another interesting note about limitations with distance learning came from Daniel, “it's a great way to get introduced to something or to kind of come back” This comment infers that distance learning delivers introductory knowledge more successfully than in the classroom.
Harry still says, “I like eLearning. It's got its place, and I use it extensively” but there seems to be doubt about it being able to present more advanced subjects.

Harry agrees with this belief and if you need to learn “basic level, the online training is a pretty good review or summary of the subject you are studying.” Other participants echoed these comments as well. In the academic world, Master and Doctoral programs are delivered online, so perhaps instructional designers share this belief in limitation of topics.

**Subtheme B: Engage the learner for a better experience.** Participants stated that meeting the needs of the learner using targeted objectives is the first step for the instructional design process with distance learning. However just meeting the needs was not enough to create a great learning experience. Glenn talked about truly engaging the learner as something very important with distance learning. When discussing a very successful asynchronous course taken, Glenn said, “They, basically, gave you an immersive experience. By that, I mean, you powered it up. They immediately drew you in by the graphics, the animations, the music, the voiceovers, and the actual information was kinda like secondary to the production of the course, itself.”

Glenn continued to connect engaging the learner with effective learning, “it was so interesting to see how something that was well done can capture your mind, your imagination, and your attention.” For the instructional designer this is a call to action, create an engaging learning event that immerses the learner in the experience. As Glenn concludes, “That's the intelligence behind the courseware. I'm talking about the entire experience and it being as immersive as possible.”

Using technology, the instructional designer could also engage the learner better. Harry suggested that “online training which contains whiteboardings, or a video with the whiteboardings, or the way that you need to aboard the subject is very useful.” This remark
introduces traditional methods of delivering knowledge along with asynchronous tools like video. The instructional designer could carefully apply design principles to the layered method of presenting knowledge in this way.

The question these comments raise is to ask, “what can we design to meet these remarks?” If an instructional designer wants to create Glenn’s “interactive experience” then they need to create the action of “tailoring the experience” for the learner. Several participants recognized the need for personalized learning. Harry and Glenn identified attempts to “tailor” content and “immerse” the learner. When discussing immersion, Glenn relates the experience to a movie, “drawing you in and it's asking you questions and taking your responses and then tailoring the experience.”

Kenneth brings up another way to engage the learner better in asynchronous learning. Kenneth relates a poor experience, “the way that they did it was so canned, it was so preorganized, it was so generically created with just putting in the details slightly different. It didn't feel personalized.” Of course, this same experience could happen in other methods of learning, but it seemed that the participants felt it was easier to fail with distance learning. Perhaps this is because there is no facilitator to recognize a problem and take steps to correct it right away.

Perhaps this might mean using technology to personalize the learning experience. Glenn also talks about focusing on the learner to improve the engagement in the learning. Glenn states, “If I feel that the course was produced with the end-user in mind. In other words, they're absolutely giving me an experience that I can tell that they put time and effort into doing, that would pique my interest.” This theme demonstrates that personalization can influence the engagement for the learner.
Superordinate Theme IV: Impact on the Organization

This study focused on a corporate site. The participants were all employees of a corporation, performing some form of technical operation. The interview included questions about the impact of learning on their job performance and how the company expects them to continue to do their job effectively. The resulting comments were more focused on the challenges the participants faced in their roles and how they would like to see corporate education assist them to remain current in their job. The company itself seemed to not be a focus as a specific entity, but rather as an exemplar of a more systemic issue within corporate education. Several of their comments reflected the results from other similar studies about corporate training (Cação, 2014; Strother, 2002; Tripathi, 2012).

Figure 4.9. Organizational subthemes.

This superordinate theme provided fewer comments and subthemes than the other superordinate themes as shown in Figure 4.9. When examining the initial subthemes, there was an interesting comparison in the subtheme weights: the cost of training was 4X the well-trained workforce subtopic. The subthemes broke into two principles categories.

In the first subtheme was the impact of cost on learning for employees. Each participant cited controlling finances and measuring employee capabilities against cost. The second subtheme reviews the difficulties in gaining current knowledge and skills to be able to perform their job. For the company there is a need to service their customer, this involves having a well-trained workforce.
**Subtheme A: The cost of training has an impact on learning.** The participants all commented on a massive reduction in classroom training availability at their organization. They stated that there was a corporate push to use online learning for the bulk of their vocational training needs. Samuel reflects on the financial factor in this decision, pushing to take “training online because lately, my corporate company has stopped paying for the classroom option”. The amount of classroom training has reached a new low, “At this point, it's zero in person and 100% online.” according to Glenn. The cost of travel and time out of work seems to be a factor in the organizational decision to use online learning.

The participant, as Harry reported, “Understand that online training is more easy to set up, is more cheaper, is more flexible”. However, there was a marked preference for synchronous training, some form of facilitator to leverage during class. Ronald states emphatically that the preference is for “either a classroom or live presentations, where you can immediately clear up anything you do not understand.” Each participant generally acknowledged this sentiment. They accept the organizational directive but still preferred direct, synchronous, knowledge transfer.

Accompanying the push to online learning is also a responsibility shift to the employee to manage their training. Kenneth states “having this all available and, unfortunately, puts a platform that becomes more 24/7”, meaning the learning system and course materials. Kenneth continues by noting, “It's a responsibility of the employee to ... take material and get it done, and you see a lot more that falling outside of the normal hours.” So not only is there a reduction in the cost of travel to classroom training, but the organization is also pushing for training to take place outside of work hours – at the employee’s expense.

The company also has shifted from being the sole provider of education and skills training (Litz, 2011). Kenneth notes this when he describes how he finds training; “here's the link
out here, go find it on your own, grab your stuff and sign up as you see appropriate.” The remarks show a change in thought from where the company was responsible for maintaining the employee’s skill set, to one where they make knowledge available, but it is now the employee’s responsibility to access that information.

There is an agreement in the organizational time and money savings realized when moving to online learning. Daniel brings up an important issue when trying to learn outside the classroom: “They are more apt to pull you from a class if it's online than if you are physically there.” The interruptions of the daily job are distracting to the learner. Samuel notes that “When I take the online courses, I am not giving up on my job”. This example shows there is a conflict when improving an employee’s skill set. Samuel concludes that when trying to learn with video, “I can catch up at the end of the day, that's definitely useful.”

Subtheme B: Technology changes make it hard to stay current. The job of learning trade skills is now squarely on the employee. The cost of training has shifted from the organization to a shared cost by the employee. “You just have to pay more attention and be focused on that because quite often it happens if you're during work day or just normal offices hours if you're trying to watch some learning or videos on education” according to Paul. But why is there a seeming conflict between the needs of the organization to offer training and the desire of the employee to remain current?

Part of the issue comes from this participant group’s roles and the site, which was a high-tech firm. As Harry tells us that several years ago, “the change of the industry appear in two or three years, or four, maybe in three years, there was a disruptive change.” However, “Nowadays, we have technology changes every two or three months. So, we need to keep up this change, be constantly trained on the new technology.” The change in the business drives the employee to
need to learn more often. Vocational training now becomes more important than ever before.

Additionally, there were comments that the products change very often now. Daniel tells us, “not only do you have to stay current with the new features are and how they work, but also what has engineering changed in the code.” Although there is a reduction in business cost when using asynchronous learning, there is a real need for the learner to gain knowledge quickly. Online learning is available anytime, whereas classroom training means you must register and wait for the class to begin. Online learning produces a real benefit to both the organization and learner using asynchronous methods of delivery.

One method of helping the employee remain technically current might be to offer personalized training paths. Harry sees an opportunity for training to “be set up by region, or by market, local market expectation. Because, maybe in Asia the focus is high end, and maybe in South America the focus is DPS.” This remark reflects another comment that some training is not useful, depending on the role performed. However, the company created a learning path for all employees.

Kenneth also adds that a general learning path “creates a disconnect between people especially that are supposed to be in jobs that communication is so key, they don't get as much of the training that really should be getting to be in their roles or refreshers in those areas.” It is interesting to note that in both examples, the learners are making responsible choices about which knowledge is important to them, a foundational argument in Adult Learning Theory.

**Summary**

The data collection and analysis followed the traditional approaches advocated by Creswell (2013) and Moustakas (1994). Bracketing separated the researcher’s experiences and bias from the experiences of the participants.
This chapter presented information regarding the experiences shared by technical practitioners within a large corporation. It reviewed the data collection and analysis processes, followed by the presentation of four emergent themes and their associated subthemes. Each section expanded on using textual-structural descriptions. The excerpts form a story which presents their interpretations of their learning experiences. This method of presentation allows the reader to gain a better understanding of what it is like to experience the phenomenon (Moustakas, 1994).

The in-depth exploration of the interview transcripts allowed the researcher to gain a deeper understanding of the participant’s experiences. IPA was the best approach to use in this study as it allows the participant interviews to delve deeply into the phenomenon. IPA also explores the perspective of the participants as part of a larger story, producing a narrative. The interviews were open, and the emotions and concerns expressed added weight to the spoken word. The study group of participants expressed an individual perspective but also gave a view of a shared experience. The use of textural-structure descriptions exposed those commonalities between the participants and gave depth to the emergent themes. The descriptions gave life to the narrative and how the participants “lived” those experiences (Creswell, 2013). The data collection and analysis process presented a clear presentation of what asynchronous learning is and could be, as seen by the participants.
Chapter V: Research Design

In the final chapter of this study, the researcher will discuss how the findings of the study answer the guiding research question. The researcher will present implications for future study and current practices. This chapter will also briefly review the problem of practice, case study methodology, and look at the significance of the study in relation to Adult Learning Theory and self-directed learning theory as well as the literature. The chapter will conclude by discussing the limitations of the study as well as the researcher’s recommendations.

Restatement of Purpose

The problem of practice involves researching the effectiveness of asynchronous learning for adults. Transforming a corporate educational program to an asynchronous educational model can affect the learners and the organization. The changes in corporate education mirror many of the transitions in public education including a shift to a more self-aware learner and a need for various methods of delivery (Marsick & Meyer, 2003). As corporations exist in a global market space with a multinational workforce, the educational department must follow and support the corporate goals and direction (Dobrovolny, 2006). It is possible to address the overall question of how to transition a corporate education department into a distance learning model and benefit both the company and the employee by examining these aspects (Čonková, 2013).

The purpose of this interpretative phenomenological analysis study was to investigate the lived experiences of adult learners who gain skill and knowledge using asynchronous, or distance learner, assets. The goal of this research was to understand the experience of these adult learners in order to define effective techniques and tools to use when learning online. The guiding research question was: How do corporate adult learners perceive the value of using asynchronous learning courses to acquire and maintain new skills?
This chapter presents a brief review of the theoretical framework, synopsis of the findings, connections to existing literature, future policy and practice implications, and additional research recommendations.

**Presentation of Findings**

Emergent themes arose as a result of the observation of reported information from a series of interview. These findings manifest from the collective experience of the participants in a phenomenological study (Perry, 2017). Figure 5.1 presents the discovered themes, along with their respective subthemes.

*Figure 5.1. Superordinate and sub-themes.*

After reviewing the shared experiences reported by individuals in this study, the following findings have been determined about the phenomenon of adult learners’ experiences when participating in asynchronous learning methods:

Four major findings emerged from the analysis of the data from the interviews:

1. Relevance to the Learner – the learner is aware of their needs and the success of
training depends on the course meeting those needs.

2. Human interaction is desired – adult learners need to interact with the instructor and fellow students to remain engaged.

3. Leverage the Right Technology – adding technology to learning must add to the experience and be stable and reliable.

4. Organizational Support for Online Learning – the organization needs to have a positive view of the creation and consumption of asynchronous learning.

**Finding #1: Relevance to the Learner**

Adult learner needs have direct import on the effectiveness of asynchronous learning. Adult learners must connect the learning to their needs in order to identify education as effective. The responses from Ronald and Glenn show that there is a need to get the learner engaged with the training event. For vocational learners, this also means that there must be some form of practical exercise in the training, a lab, or simulation, where they can gain experience. Comments such as “hands-on” and the use of labs make a solid connection to their previous classroom experiences. Many adults can relate to this idea of “playing” with the technology to cement understanding of newly gained knowledge. This method is identified in the literature as a valid form of adult learning (Bedrule-Grigorută & Rusu, 2014).

With asynchronous learning, there is the ability to learn at any time, but this was not as important as receiving the right amount, or depth, of knowledge. There were a few comments about the benefit of selecting the time to consume training but also express concern about the depth of knowledge offered. This concern presents an order of precedence which the learners share with us. As the study site was a technology company, there could be a bias in this audience’s needs. However, the ability to remain current in their job was a concern for the
learners. They cited an increase in change in the subject matter and that this pressured them to consume more training to keep up.

**Finding #2: Human Interaction**

Most important for the learner was the ability to connect and build relationships with other students. The participants all spoke of classroom training where they could exchange ideas with others and ask questions of the teacher. With online learning, they saw this as a challenge but acknowledged that if the class included this communication, online learning would be equally as successful as a classroom. These concepts all align with Adult Learning Theory and the teaching of Knowles. Adults need to see value in their education and to have social interaction in learning. The challenge here was to apply these principles to the asynchronous model. Since scenarios and real-life experiences were important items to the learner, these should be a focal area in the asynchronous design. Similarly, several participants directly called for personalizing the training to their role, their language, or their location. Tailoring the content, providing learning paths in the course, and including scenarios all consider the adult learner’s need to see the relevance in their education.

The clearest feedback was about how important human interaction is when creating an effective learning experience. Remarks about the classroom training call out the relationship between the students and the instructor. This relationship was so important that it became a counter-point for feedback about online learning. The repetition about resolving problems and questions right away, echoed by every participant, determined the success of all training events. There was a question here about the generational expectations of the learner. Can asynchronous learning meet the learner’s needs about engagement while offering an interactive social connection with others?
Finding #3: Leverage the Right Technology

The next factor in merging technology with education is about keeping the learner's attention. There are many participant examples of content where tools create interactive experiences in order to engage the learner. This concept aligns with Pang’s (2009) assertion that video can increase the quality of online learner and even compares to traditional classroom instruction. The preference was clearly for video content over traditional text or PowerPoint slides. Each participant expressed that video was an improvement over traditional eLearning. There were also benefits for remedial learning, refresh training and faster access to the content. Video also figured largely into the use of mobile devices which eased access and granted freedom to view training from anywhere.

A strong response occurred when discussing hands-on activities and labs. It was very plain to see that the experience gained by performing job-related tasks was a priority for the participants. Technology offers options to replace the older, and more costly, physical hardware solution. Software-based lab options include virtual lab environments, replicated systems, and interfaces using hypervisor technology. The respondents identified simulations as excellent alternatives to a physical lab environment. Educational tools can capture the software interface or physical tasks using a combination of video, graphics, and animation. They can prepare open or directed simulation exercises to give a real-life scenario for the learner to practice on. Again, there is the added benefit of making access to these hands-on activities easier and remove the need to travel to a specific location to gain this experience.

There also were cautions given about the use of technology in distance learning. Several participants identified using technologies without a specific goal as a distraction. There had to be a connection between the use of tools like video or simulation and the needs of the learner.
Adding items considered engaging, without looking at the benefit to the learning experience, was counter-productive. The participants also felt that the use of mobile devices, due to the size of the screen, might not always give the best learning experience.

**Finding #4: Organizational Support for Online Learning**

The participants felt that changes in the business cost model have affected education. To reduce costs, there is a drive to using online learning more for vocational knowledge. The asynchronous model offers even greater savings since there is no instructor used. There was also a reported change in placing the learner in charge of their own education. The learners, however, felt that there was value for them personally and professionally and are willing to learn outside their normal working hours. This concept aligns with Adult Learning Theory and trusts that the learner understands what they need to know.

However, there also was concern about the organization's respect for learning online. Several participants noted disruptions in their learning as the management team felt that since the cost was less, the training was somehow less important. Additionally, there was a theme of learners taking responsibility for their own knowledge. The organization was an enabler, but not solely responsible for learning.

Finally, there was recognition that the changes in the subject matter are increasing. Rapid change in technology was documented by using Moore’s Law fifty years ago (Brock, 2006; Moore, 1970). This speed of change in the business forced a greater need for training on the employee-learner. The organization needs the employee to be more adaptive of online learning and more efficient in their learning. The organization must accept the need for skilled workers requires respect for their training time. As change comes faster, the organization can lighten the pressure on the learner by recognizing this and granting time to learn for the employees.
Connections to Existing Literature

In this section, the study findings are defined and linked to the existing literature on asynchronous adult learning. Specific excerpts bring the participant’s experiences into the narrative and connect to establish an understanding of the problem of practice.

Finding #1: Relevance to the Learner

Participants expressed that scenarios and real-life experiences were important items to design. Again, there was a parallel to classroom training, which uses scenarios and labs extensively and is supported by Offir (2008). The comments where a course was highly effective all had notes about including real-life experiences in the training as shown in Hubackova’s (2014) study. As Marsick & Meyer (2003) found, this study supports the concepts that designing asynchronous learning then should include scenarios and consider the adult learner’s need to see the relevance in their education.

The participants referred to a limitation of distance learning in that it relates basic knowledge only. However, this may be a problem with the instructional design. The designer may not be familiar with the differences in asynchronous tools or design principles. Sung, Chang, & Liu (2016) revealed that design must accommodate tools to produce meaningful learning. If they can create an immersive experience, as they do for facilitative learning, then perhaps this mitigates a perceived limitation for the learner.

Personalized training is supported by the literature (Zhang et al., 2016). Several tools used for distance learning to present content allow for interaction and personalization within the developed material. Articulate Storyline, for example, can use variables to insert the learner’s name throughout the course. It can perform branching schemes where the learner “chooses their own path” through the content. This places adult learners in charge of their learning, a focal point
of ALT (Knowles et al., 2011). The participant’s comments strongly support the idea of personalization and align with the current literature. Their commentary adds importance and makes recommendations for implementation.

**Finding #2: Human Interaction**

The literature stated that learners before Generation X might have technical deficiencies making it difficult for them to take part in online learning as presented in today’s models (Strother, 2002). It also expressed concern that older generational learners as there is a human to facilitate the information (Drago-Severson, 2012). When discussing online learning, the participants saw this as a challenge but acknowledged that if the class included interactive communication tools then the online learning would be equally as successful as a classroom. These concepts all align with Adult Learning Theory and the teaching of Knowles (2011).

The participants all commented on the importance of human interaction when learning. Several participants stated that their preferred method of learning was where an instructor was part of the training. Another common preference was to learn in groups alongside others who perform the same role in their daily job. This information reflects what Neagu (2014) found, in that social interaction was a primary factor for adults choosing their own education. There is also a group formed when learning together which builds trust within the community (Weber, 2005).

There was evidence that learning as a group increased engagement with course materials. Kenneth stated that talking to other students “is really key to me learning more effectively and being more engaged.” This statement reflects the Barak, Watted, & Haick (2016) study showing that a sense of community increases the likelihood that they will engage more with course materials. It also proves that social connections facilitate a more genuine learning experience (Dobrovolny, 2006).
The participants noted the importance of human interaction when creating an effective learning experience. Remarks about the classroom training call out the relationship between the students and the instructor. In the literature, Rovai (2000) notes that the community is a central pillar for effective learning and can help to improve information transfer to adults. Lucardie (2014) found that adult learners reported that they liked to socialize and retained more information when they could interact with other students. Glenn laments that “There's no interaction between anyone else other than you and the courseware.” This interaction was so important for him that it became a negative experience of online learning. The participants also agreed that resolving problems and questions right away often determined the success of a training event. The use of other frameworks such as Experiential learning allows the student to gain more knowledge than traditional rote facts (E. E. Wang, 2011).

The changes to instructional design then seem to rely on awareness of the limitations of creating training which an instructor cannot influence immediately. The use of personalized training and specialized tools to create the content can remediate much of this, the instructional designer must be aware of how to do this. There is a change more in knowledge and process for the designer than in the effects of the asynchronous environment.

**Finding #3: Leverage the Right Technology**

A challenge with asynchronous learning often revolves around the technological aspects of the platform and learning modality (E. E. Wang, 2011). Using technology might be a way to bridge the gap these participants saw between the classroom and online learning. The participants noted system outages and software conflicts often arose during the courses they attended. These interruptions distracted them from learning effectively and reduced their engagement. These findings align with Cavus’ (2015) study showing these same effects. This
study agrees with Almarashdeh (2016) who found that an LMS which provides quality service and was reliable increased learner engagement with the content provided.

The participants mentioned that chat apps and discussion boards were ways to replicate in-person methods used today. Harry expressed that the use of chat apps and discussion boards helped connect him to other learners. Both Cavus (2015) and Strothers (2002) found similar responses in their studies. These same tools can also build engaging activities such as video, simulations, and format learning for mobile devices which allow access to learning anywhere. The participants agreed that the proper technology helps to meet the learner’s needs with online learning. The suggestions from the participants give a personal view on which technologies worked best and offer more effective learning assets.

Interestingly the participant response to mobile devices varied widely and both supported and refuted the established literature. The participants agreed with Cavus (2015) that mobile and tablets device are commonplace and used as ways to learn outside the traditional classroom environment. However, they were very clear that not all learners preferred using mobile devices. Kenneth stated this conflict in the existing literature, “it was great to have that mobile ability. But the smaller device is definitely more challenging.” The literature showed that some organizations are shifting towards mobile and remote learners and away from classrooms (Bidin & Ziden, 2013). The participants agreed that there are pressures from the company to use this technology for learning. Ronald tells us “I'm not sure when I had my last classroom training, must have been last year somewhere.” There is no option for other learning in this case.

**Finding #4: Organizational Support for Online Learning**

There was agreement that under older business processes, training was centrally managed and now there is a shift in responsibility to the employee. Ronald gives us an example, “I can
imagine a generation that comes after me, they would be interested in looking at those podcasts.”

Selecting training options from fewer choices and favoring online learning is now part of the learner’s job. This process aligns with other studies of transitional learning and deep understanding such as Offir et al. (2008). There was a direct comment that there was a managerial expectation that some training occurs out of work hours. Some comments indicated outrage at this change, especially when it appeared that this was a requirement of employment. Others were more open since it was also seen as useful knowledge in general, agreeing with Barak & Levenberg (2016). They add to that study by noting that the training improved their skillset; there was a personal benefit which overcame the resistance to training on their own time.

Participants expressed that there were steps the company could take to be more efficient in its training offerings and learning paths. Several participants noted that tailoring the learning more to roles and locations was something needed but not currently available. These comments were from participants who also identified with taking more ownership for their learning. As the learner becomes more responsible for their education, and the time is their own, they can contribute ideas to the organization about better ways to build education. This finding aligns well with Čonková’s (2013) study but also gives us additional reasons for organizational alignment in training.

With the learner taking over responsibility for their learning, there also was a growing awareness of how the organization viewed training the staff. There were many comments about distractions when consuming training. Even though online learning was replacing the classroom, there was a general feeling that managers did not view this form of training as important as instructor-led courses. Ayas (1997) concluded that some of this feeling came from the fact that the learner was not in a classroom, but was easily reachable by the manager. The conclusion was
that interrupting their training event with “standard business” issues were acceptable. The participants disagreed and placed the same value on training whether in classroom or on-demand.

The remarks solicited from the participants paint a similar picture of the organizational needs and changes surrounding learning. The participants all felt that there was a push from the organization to use online learning, particularly asynchronous methods. Some of the change was due to cost-cutting measures, to cut travel costs associated with traditional classroom learning. This trend is also acknowledged in Catalano’s (2014) and Litz’s (2011) studies about corporate learning environments. However, there also were also comments about this shift occurring for other reasons.

There is a disconnect here with the importance of keeping the employees current with company knowledge and the modality of learning and previous literature such as from Ophir (2008). The participants felt that this was a detractor from asynchronous learning; they could not concentrate as well as in the classroom. Additionally, the only way to gain the knowledge they needed was to use their personal time to complete training. There needs to be a value assigned to the knowledge rather than the modality of learning from the organization.

**Implications for Practice**

Based on the findings from this study, there are several recommendations which can improve asynchronous learning for adults in a corporate environment.

**Connect learners in the learning event.** Adult learners must connect the learning to their needs in order to identify education as effective. For vocational learners, this also means that there must be some form of practical exercise in the training, a lab, or simulation, where they can gain experience. With asynchronous learning, there is the ability to learn at any time, but this was not as important as receiving the right amount, or depth, of knowledge.
Most important for the learner was the ability to connect and build relationships with other students. The participants all spoke of classroom training where they could exchange ideas with others and ask questions of the teacher. With online learning, they saw this as a challenge but acknowledged that if the class included this type of inter-communication, online learning would be equally as successful as a classroom.

These concepts all align with Adult Learning Theory and the teaching of Knowles. Adults need to see value in their education and to have social interaction in learning. The challenge here was to apply these principles to the asynchronous model.

**Leverage technology intelligently.** Using technology might be a way to bridge the gap these participants saw between the classroom and online learning. Including chat apps and discussion boards could replace the in-person methods used today. The tools available to develop online learning experiences include these communication interfaces. These same tools can also build engaging activities such as video, simulations, and format learning for mobile devices which allow access to learning anywhere.

Technology can help to meet the learner’s needs. The same concepts apply when using ALT in online learning using technology tools and delivery platforms. The suggestions from the participants give a personal view on which technologies worked best and can produce more effective learning assets.

Organizations should not rely on technology trends. The comments surrounding the use of mobile devices show that there is learner bias to confront. However, there also was a note that there is no single answer for all learning needs. Mobile devices have an important place in the learning experience but are not a panacea.

**Instructional design must adapt to new methods of learning.** There were changes
identified as important to the effectiveness of asynchronous learning. Although similar frameworks and methods design this training, there seemed to be confusion or lack of effective use of these principles in much of the training the participants had taken. The changes needed here are more about the perception of online learning and acknowledge that good instructional design can remove many preconceived ideas about asynchronous learning.

The participants saw scenarios and real-life experiences as important items to the learner, these should be a focal area in the asynchronous design. Similarly, several participants directly called for personalizing the training. Tailoring the content, providing learning paths, and including scenarios all consider the adult learner’s need to see the relevance in their education.

**The organization must consider the learner’s needs.** Changes in the business cost model have affected education. To reduce costs, there is a drive to using online learning more for vocational knowledge. The asynchronous model offers even greater savings since there is no instructor used. There also a reported change in placing the learner in charge of their own education. This concept aligns with Adult Learning Theory and trusts that the learner understands what they need to know.

However, there also was concern about the organization's respect for learning online. Several participants noted that management did not place a high value on distance learning. There were several remarks about interruptions which would not have occurred with classroom training. The learners, however, felt that there was value for them personally and professionally and are willing to learn outside their normal working hours.

The ability to remain current in their job was a concern for the learners. They cited an increase in change in the subject matter and that this pressured them to consume more training to keep up. Asynchronous learning was a good solution since it allows learning anywhere and
anytime, but there remains a concern that the organization recognizes and supports the efforts of the employee to improve themselves.

**Recommendation for Implementing Successful Learning**

Based on this study, successful asynchronous learning should involve each finding. Asynchronous learning must be designed with the offline nature in mind, a simple conversion of classroom learning to an online format is not viable. The technology to be used also plays a large part in the student success factor and must be planned by the instructional designer at the inception of the learning design phase. There must be an investment in the right technology for asynchronous learning. The cost of this investment will require the buy-in and support of the corporate management team.

The critical point discovered was the need for interaction with the instructor and other students. Courses which are primarily meant as single-user learning events, should have some ability to communicate outside of the course. Human interaction could be achieved by using an ongoing discussion or interaction board, by incorporating social media integration, or through the inclusion of a live session. Due to the geographic dispersion of the company’s employees these live sessions should be recorded for those not able to attend at a particular time. Other technologies or methods may be employed, but some form of interaction should be provided. This point does seem to be contrary to the traditional idea of asynchronous learning. These methods provide a grounding in human connection for the students, marking that asynchronous learning must be rethought and that a blended approach is likely to be more successful for the learner.

**Limitations**

This design of this study included specific criteria and goals. The data collection and
analysis phases identified some limitations. This section defines the primary limitations along with their impact and potential methods to avoid them in future studies.

**Limitation 1 – Participants were male only.** Although the research site has approximately 20% female field engineers, the target audience, there were no respondents from that group. As a result, the feedback only reflects a male impression of asynchronous learning. There is an agreement that female technical engineers are under-represented today (Beede et al., 2011; Powell, Bagilhole, & Dainty, 2009). However, it is important to identify how this group reacts to the same learning models as their male counterparts. There could be an impact by researching and adjusting training programs to the female engineer. Benefits could be better retention of these individuals or an increased and more equal representation by females in the technology workplace. This study used a solicitation of existing learners and allowed for self-selection. Future studies could solicit a reverse ratio in the workplace to bring equality to the participant numbers. Additionally, there could be gender normalization by identifying the desired demographic percentages and accepting the number of participants who meet those criteria.

**Limitation 2 – The participants were experienced engineers.** The participants all were a minimum of 43 years of age, indicating an older generational group with similar educational backgrounds. They also had at least 20 years of experience in the industry giving them a wide variety of learning experiences to discuss during the interviews. This level of experience and maturity provided a rich data set from their responses. However, the workforce is changing to a younger demographic. Some studies place the number of millennials in these engineer roles as much of the workforce. (Bidin & Ziden, 2013) The site used provided similar numbers of millennials in these roles. This group learns differently and may have a varied response to the research and interview questions. As digital natives, there could be different reactions to the
modalities and tools used to consume vocational training. The results of this study may be less accurate if the workforce is from a younger generation than the participants. Future studies could vary the demographics to bring the age and experience into the demographic for the study group. Aligning the participant profile with that of the target site or the studied industry might produce a set of findings more accurate to that demographic.

**Limitation 3 – The site was a single industry.** The site used was a large, global technology company. The level of asynchronous learning occurring in this market is already high. Technology companies often use the technology they sell or develop as a part of their daily business. However, a technology company might assume a higher degree of comfort with technology in general. This could influence participant responses. They might know and accept some limitations or challenges which other adults, who are less technical, may find difficult. Future studies might use other settings, not just technical to gain an understanding of different learner demographics. Responses from novices with technology or a total unfamiliarity of non-facilitative learning could be very different from those in this study.

**Recommendations for Future Research**

Based on the presented conclusions and recommendations for practice, there are several recommendations to make for future research.

**Explore constructivist learning frameworks.** There may be some theoretical frameworks which operate better in asynchronous learning environments than others. The constructivist framework includes asking discovery questions, allowing the learners to extract and synthesize new ideas and theories in their studies. This framework leads to more lasting and meaningful knowledge processing by adults (Offir et al., 2008). This study identified no particular framework, it used a more generalized approach to learning. Examining the method of
designing the learning events might further the toolset and produce specific examples of success to use in improving asynchronous learning.

**Explore social interactions.** This study found it important for the learner was the ability to connect and build relationships with other students. The participants all spoke of classroom training where they could exchange ideas with others and ask questions of the teacher. Future studies might explore how to apply these principles to the asynchronous model. Since scenarios and real-life experiences were important items to the participants, these could be a focal area in additional studies. Similarly, several participants directly called for personalizing the training to their role, their language, or their location. An exploration of how to tailor the content, provide learning paths in the course, and include scenarios may be valuable in improving asynchronous learning for adults.

**Improving the platform.** Several comments involved concerns or issues with the learning platform itself. Cuéllar (2011) found that the structure of the LMS had the potential to impact both the performance of the platform and the engagement of the learner. The better the relation to the data with the LMS, the easier the interface was to navigate and the learner became more engaged (Cuéllar et al., 2011). A study could help expand on this information and find which features were most used or resulted in learner satisfaction improvement.

**Manager’s perspective.** Zornada’s (2005) case studies on Motorola and Cisco point to clear benefits to the company. Reduction in the cost of training by embracing eLearning technologies over classroom learning was evident, an important consideration for businesses. An exploration of how to implement eLearning, which can be complicated is worthwhile. Other studies might include identifying required operational and structural changes to help a company transition its learning model.
Conclusion

The goal of this study was to add to the current literature regarding asynchronous learning for adults. It also tried to understand the effect on learners by exploring their lived experiences as participants in corporate training programs. The researcher looked to gain insights into the use of asynchronous learning tools and platforms. The IPA methodology used in the study allowed the researcher to explore the experiences of eight participants, delving deeply into their feelings and reactions to online learning. IPA allowed the researcher to reflect on their experiences using hermeneutic inquiry, using interpretation and truly explore this phenomenon.

IPA uses a small sample size to illuminate important issues with the studied phenomenon. This study used a traditional qualitative approach to understand the voice of the participants and seek meaning from their experiences. The study highlights how online learning and the associated technology affects an adult learner. This research supports current literature on the effectiveness of asynchronous learning, as each participant found value in the ease of access and self-guided learning model offered. This study also highlights the importance of changing the mindset of instructional designers and organizational leaders to align with the shift in the learning experience. Most of the participants identified that using engaging techniques and having management support for vocational training were key success factors.

Most importantly, this study provided an opportunity for adult learners to express their concerns, struggles, and successes using distance learning in the corporate workplace. Interpretation of the students’ exact responses highlighted the importance of learner perspective in research. Some participants felt marginalized as if their voices did not matter in their own education. This study helps validate their experiences and to give voice to an often-voiceless population.
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Appendix A
Premises Permission Form

Northeastern University Institutional Review Board

IRB Coordinator:
Phone:

June 27, 2018

Dear Northeastern University IRB:

On behalf of [redacted], this letter acts as formal notification of permission for Michael Warner to conduct academic research regarding adult learning practices. The scope of the research is academic and limited to the doctoral study "The Corporate Adult Learner: A Study of the Effectiveness of Asynchronous Learning in a Corporate Workspace".

I understand that Michael Warner will recruit up to seven of our employees and conduct interviews over five weeks beginning in August 2018. We are happy to be a part of your research at Northeastern University and appreciate your commitment to protecting the confidentiality of [redacted] and the research participants.

Sincerely,

[Redacted]
Hello <Person Name>,

I am an instructional designer and technical subject matter expert at Dell EMC Educational Services. I am also working towards a doctoral degree in education at Northeastern University, for which I would like to ask your participation in my thesis research. I have received permission from Rebecca Shoher-Latson to contact you seeking volunteers.

If you are interested in volunteering to participate, I will interview you in person, via Skype, or on the phone for 45 to 60 minutes regarding your experience as an adult learner using distance learning technology to enhance your job skills.

Attached is a consent form with information about the study and your participation. If you agree to be interviewed, I will also review this information with you on the phone. Please review the consent form and decide if you would like to volunteer.

If after reading the consent form you are willing to volunteer for this study, please email me back at my Northeastern student email address indicating so, at warner.mi@husky.neu.edu

Thank you,
Michael Warner
Doctoral Candidate
Northeastern University
Appendix C
Introductory Script

Institution: Northeastern University
Interviewer: Michael Warner

RESEARCH QUESTION: How do corporate adult learners perceive the value of using asynchronous learning courses to acquire and maintain new skills?

Part I: Introductory Session Objectives (5-7 minutes)
Objective: Build rapport, describe the study, answer any questions (under typical circumstances an informed consent form would be reviewed and signed here).

Introductory Protocol
You have been selected to speak with us today because you have been identified as someone who has a great deal to share about adult learning in a corporate environment. This research project focuses on the experience of adult learners and how they can learn best using asynchronous learning.

Through this study, we hope to gain more insight into how using asynchronous learning methods can enhance the learning experience. We hope this knowledge will allow us to identify ways in which we can improve the learning of adults in a similar situation as you.

Because your responses are important, and I want to make sure to capture everything you say, I would like to audio tape our conversation today. Do I have your permission to record this interview? [if yes, thank the participant, let them know you may ask the question again as you start recording, and then turn on the recording equipment beginning with Part III]. I will also be taking written notes. I can assure you that all responses will be confidential and only a pseudonym will be used when quoting from the transcripts. I will be the only one privy to the tapes which will be eventually destroyed after they are transcribed.

To meet our human subjects’ requirements at the university, you must sign the form I have with me. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary, and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Do you have any questions about the interview process or how your data will be used?

This interview should last between 45-60 minutes. During this time, I have several questions that I would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete this line of questioning. Do you have any questions at this time?
Part II: Interviewee Background (5-10 minutes)
Objective: To establish rapport and obtain the story of in the participants’ general with the research topic. This section should be brief as it is not the focus of the study.

1. How long have you been a technical engineer?
2. What types of roles have you performed?
3. Tell me about how you gain new job skills and knowledge?

Part III: Interview Session (30-45 minutes)
One of the things I am interested in learning about is how asynchronous technology can be used for an online adult learner. I would like to hear about your perspective/experience about learning as an adult in your own words. To do this, I am going to ask you some questions about the key experiences you encountered. If you mention other people, please do not use their names.

1. Tell me about the training activities that you have participated in with your current organization.
   a. How many job-related courses have you taken?
   b. What portion of your training is conducted online versus in person?
   c. What is your preferred method or style of learning?
   d. Give me an example of why you prefer that learning style.

2. Select an online training course you have taken for the company in the past year and tell me about how you felt about this course.
   a. Describe your general feeling about online learning in this course.
   b. What were the aspects in this course which were successful for you as a student?
   c. What were the aspects in this course which were unsuccessful for you as a student?
   d. Was there anything in your personal attributes or situation that influenced these positive and negative aspects?

3. Consider this same online course and tell me about any challenges you faced when learning in this format.
   a. Describe how you were able to overcome these challenges?
   b. What resources do you wish had been available to overcome the challenges?
   c. Tell me about an example of how you made a connection with other learners in the course?
d. Explain the amount and depth of knowledge you gain in asynchronous online learning compared to that in a traditional classroom experience?

e. In what ways did these courses affect your confidence and ability to handle new technical topics successfully?

4. Tell me about how technology has affected your ability to learn online.

   a. Describe for me the tools you used in this online course and how they were helpful?

   b. Tell me about how you have used mobile devices to learn directly or indirectly?

   c. Explain which technologies or tools you feel gave you the best learning experiences?

5. Describe the effects that online learning has had on your job performance.

   a. Explain to me how does the ability to learn when you want been a benefit to you?

   b. How have you been able to experience real-world situations through online learning?

   c. Tell me about how an online course has helped prepare you to perform your job.

Ask the participant if they have any questions and thank them for their participation.
Appendix D
Informed Consent Form

Northeastern University, Department of Education

Name of Investigators: Dr. Monica Savoy, Principal Investigator and Michael Warner, student researcher

Title of Project: The Corporate Adult Learner: A Study of the Effectiveness of Asynchronous Learning in a Corporate Workspace

Request to Participate in Research
We would like to invite you to take part in a research project.

The purpose of the research is to give voice to the experiences of adults learning in an asynchronous online class, with the aim of identifying ways to support students and instructional design in such a class.

You must be at least 18 years old to be in this research project.
This study will place during this phone call, which will take 50 to 80 minutes and possibly during a follow-up phone call which will take less than 30 minutes. If you decide to take part in this study, I, the student researcher will ask you questions about your experiences in the database design course.

The possible risks or discomforts of the study are minimal. You may feel slightly uncomfortable answering questions about your feelings and experiences in taking online courses.

There are no direct benefits to you for participating in the study. However, your answers may help me learn more about the ways to support students in a database design course.

Your part in this study will be handled in a confidential matter. Only the researchers will know that you participated in this study. Any reports or publications based on this research will use only group data and will not identify you or any individual as being part of this project.

The decision to participate in this research project is up to you. You do not have to participate, and you can refuse to answer any question. Even if you begin the study, you may withdraw at any time.

You will not be paid for your participation in this study.
If you have any questions about this study, please feel free to call Michael Warner at [phone number], the person mainly responsible for the research. You can also contact Dr. Monica Savoy at [phone number], the Principal Investigator.

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, Northeastern University, Boston, MA 02115. Tel: [phone number], Email: n.regina@neu.edu. You may call anonymously if you wish.

Thank you.
Michael Warner