Exploring the Impact of Technological Self-Efficacy on Employee Experiences: A Case Study on Workplace Computer Technology and eLearning Programs

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Abstract

This holistic and bounded case study explored the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. The Cybergogy for Engaged Learning Model was used as a theoretical lens throughout the study, which was also framed with this research question: *How do newly hired corporate employees with varying degrees of technological self-efficacy, describe their experiences using computer technology?* Data from five sources, including documentation, archival records, semi-structured interviews, direct observation, and physical artifacts, resulted in the identification of four themes and findings: (1) Technological Self-Efficacy Impacts Employees in Different Ways, (2) Low Technological Self-Efficacy Negatively Affects Employees, (3) Ineffective Induction Training Creates Negative Experiences for Employees, and (4) Inadequate Induction Training and Instruction Leads to Attrition. Considerations for future practice were provided, including: (1) using eLearning during induction training creates anxiety and frustration, and (2) increasing technological self-efficacy positively affects new employees. Additional research in several areas may also be helpful, such as the preparation of the new employees prior to induction training, assessing satisfaction with the new organization immediately following a successful eLearning induction training, understanding how technological self-efficacy may have been affected following the eLearning induction training, and finally, whether it may be necessary to either fully define the environmental factors of the Cybergogy model, or to potentially add a fourth factor to address learning environment needs.

*Key Words: Employees, Corporate Learning, eLearning, Computer Technology, Self-Efficacy, Technological Self-Efficacy, Induction Training, Orientation, Onboarding, Attrition, Cybergogy.*
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Table of Contents

Abstract ........................................................................................................................................... 2
Acknowledgements .......................................................................................................................... 3
Dedication ....................................................................................................................................... 4
Table of Contents ............................................................................................................................ 5
List of Figures ................................................................................................................................ 9
List of Tables .................................................................................................................................. 10

CHAPTER 1: INTRODUCTION TO THE STUDY ........................................................................... 11
Context and Background ............................................................................................................... 11
Significance ................................................................................................................................... 14
Research Problem and Research Question .................................................................................... 16
Definition of Key Terminology .................................................................................................... 17
Theoretical Framework: Cybergogy for Engaged Learning ........................................................ 18
  Supporters and Critics of Cybergogy ....................................................................................... 24
  Rationale for using the Cybergogy for Engaged Learning Model ........................................ 25
  Application of the Cybergogy for Engaged Learning Model ............................................... 26
Conclusion .................................................................................................................................... 27

CHAPTER 2: LITERATURE REVIEW ......................................................................................... 28
Learning and eLearning ................................................................................................................ 28
  Adult Learning .......................................................................................................................... 29
  Learning in the Corporate Organization ................................................................................ 30
  Technology in the Workplace ................................................................................................... 30
  The Evolution of eLearning ..................................................................................................... 31
  ELEarning in the Corporate Environment ............................................................................. 33
  Learning Culture ....................................................................................................................... 35
Incorporating eLearning into Corporate Environments ............................................................ 35
Benefits of eLearning ................................................................................................................... 36
  Cost ....................................................................................................................................... 36
  Any time, any place ............................................................................................................... 36
  Flexibility ................................................................................................................................ 37
  Format ................................................................................................................................... 38
Limitations of eLearning .............................................................................................................. 38
  Availability and commitment to implement ......................................................................... 39
  Obstacles to implementation ................................................................................................. 39
  High dropout rates .............................................................................................................. 40
  Lack of technical support ..................................................................................................... 40
  Less engaging than F2F learning ......................................................................................... 41
Summary .................................................................................................................................... 41
Technological Self-Efficacy .......................................................................................................... 42
  What is Technological Self-Efficacy? ....................................................................................... 43
CHAPTER 4: RESEARCH FINDINGS ................................................................. 91

Purpose of Study and Research Questions ....................................................... 91

Workplace training programs ........................................................................... 91

Research Study Participants ............................................................................ 93

Data Collection through Various Methods ..................................................... 95

Themes Identified through Data Collection and Analysis of Interviews .............. 96

Technological Self-Efficacy Impacts Employees in Different Ways ...................... 97

Computer technology makes life easier ......................................................... 98

Computer technology is viewed by some as not necessary for everything in life ... 99

Low Technological Self-Efficacy Negatively Impacts Employees ......................... 101

Using computer technology at work ................................................................ 101

Past experiences with computer technology .................................................. 104

Ineffective Induction Training Creates Negative Experiences for Employees .......... 106

Negative emotions displayed during ineffective training situations ................. 107

Negative emotions present when recollecting poor training situations from the past .. 109

Inadequate Induction Training Leads to Attrition .............................................. 112

Summary and Conclusion ............................................................................... 114

CHAPTER 5: DISCUSSION .......................................................................... 116

Alignment with the Theoretical Framework ..................................................... 116

Application of the Cybergogy for Engaged Learning Model ............................. 117

Research Findings ......................................................................................... 120

Technological Self-Efficacy Impacts Employees in Different Ways .................... 121

Connection to the Literature ......................................................................... 122

Implications for Practice .............................................................................. 122

Importance to Research Question ................................................................. 123

Low Technological Self-Efficacy Negatively Affects Employees ....................... 124

Connection to the Literature ......................................................................... 125

Implications for Practice .............................................................................. 126

Importance to Research Question ................................................................. 126
List of Figures

Figure 1.1 .................................................................................................................20
Figure 1.2 .................................................................................................................23
Figure 3.1 .................................................................................................................75
Figure 5.1 .................................................................................................................118
## List of Tables

Table 3.1 ..............................................................................................................74
Table 3.2 ..............................................................................................................76
Table 4.1 .............................................................................................................94
Table 4.2 .............................................................................................................107
Table 4.3 ..........................................................................................................110
CHAPTER 1: INTRODUCTION TO THE STUDY

The purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. The findings of this study are intended to be used to provide guidelines to best address the needs of these employees, resulting in a greater level of performance and proficiency for organizations. For the purposes of this study, technological self-efficacy will be generally defined as the self-defined technological ability of the employees, and the eLearning induction training will be generally defined as the initial phase of the new employee onboarding training, which also includes eLearning elements.

This chapter begins with a brief overview of the research related to eLearning and induction training to provide the context and background to the study. The rationale and significance of the study are discussed next, drawing connections to potential beneficiaries of the work. The problem statement, purpose statement, and research questions are then presented to focus and ground the study. Finally, the theoretical framework, which serves as a lens for the study, is introduced and explained.

Context and Background

As organizations fight to remain competitive, they are faced with addressing innovation, product design and development (Soylu & Campbell, 2012), as well as battling new hire attrition (Ferrazzi, 2015). Each of these factors can affect the organization’s profitability, and in turn, their success. One solution that can assist with each of these areas is new hire induction training, which is a part of the onboarding program, and generally occurs during the employee’s first weeks (Hendricks & Louw-Potgieter, 2012). Induction training helps new employees understand their job, and includes instruction on the people and teams, the processes, as well as the
necessary technology that they will be using (Hendricks & Louw-Potgieter, 2012). Induction training can be conducted in formal or informal settings (Hendricks & Louw-Potgieter, 2012), and is intended to encourage faster assimilation by increasing the employee’s familiarity with the job (Chidambaram, Thevar, & Ramachandran, 2013).

Unfortunately, training new employees can be very costly for organizations, especially because, on average, it takes a new employee around eight months to be fully engaged and productive (Ferrazzi, 2015). Further exacerbating this cost, about twenty-three percent of new employees leave a new job in less than twelve months ("Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013), forcing the organization to start the cycle of incurring training expenses, and lower productivity all over, either because they have to train another new hire that is not yet fully productive, or because the position is still completely vacant, and therefore not productive at all. For the new employees that leave shortly after starting a new job, many often note the reason is due to poor onboarding, as well as induction programs ("Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013).

However, when it is done well, induction training may also lead to a higher employee satisfaction level, which is related to more productive employees and can be a higher competitive advantage for the organization as a whole (Hendricks & Louw-Potgieter, 2012). To maximize employee efficiency, and even reduce the average eight-month learning curve (Ferrazzi, 2015), it is necessary for the induction training to be more individualized for the learner, increasing the flexibility of training, and is therefore recommended to include eLearning elements (Hendricks & Louw-Potgieter, 2012). Currently, less than forty percent of corporate organizations use eLearning to deliver induction training ("Get onboard with onboarding: How to build an
onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013), and many of those that do, treat it as a one-size-fits-all solution (Acharya, Mansour, Amis, & Reyahi, 2015). When done well, eLearning programs, including eLearning induction training, provide multiple paths for learning (Mohammadyari & Singh, 2015), and help employees gather knowledge to become more successful (Dubois & Long, 2012). Additionally, eLearning creates cost savings for organizations (Tripathi, 2012) by reducing the costs associated with live training instructors (Lai & Liou, 2010), reduced travel costs for the instructors and participants (Esterhuyse, Scholtz, & Venter, 2016), and increased participation and repetition through the same eLearning course (Capece & Campisi, 2013).

E Learning has many benefits, but it also comes with some downsides as well, such as employees that have not yet embraced technology, and therefore also do not utilize or embrace eLearning (Schweizer, 2004). Among this group of users, are also those that have varying degrees of technological self-efficacy, which is defined as the individual’s belief about whether or not they can accomplish a specific task using the required technology (Compeau & Higgins, 1995). Technological self-efficacy develops over time as an individual interacts with technology, and experiences success or failure (Compeau & Higgins, 1995; Y.-H. Lee, Hsieh, & Chen, 2013), which can impact the overall success of eLearning as individuals choose not to participate in eLearning or avoid it altogether. Zhang and Goel (2011) posit that for the employees that are not as technologically proficient, they are unable to grasp the concepts and content of the program entirely, and often experience anxiety when using a computer or interacting with computer-based training or education.

Additionally, some organizations conduct combined induction and eLearning programs for employees that are in various roles within the organization. Kampfen and Maurer (2018)
explain that different populations of individuals have lower degrees of technological self-efficacy, which include individuals that do not regularly use computer technology at work. According to Buckner, Castille, and Sheets (2012), this may account for twenty percent of the workforce. This can create a complex environment for conducting eLearning since the participants will have a varied background of computer usage and degree of technological self-efficacy, not to mention that they are faced with interacting with the same eLearning program in the same manner as all of the other participants, regardless of their ability to do so.

For these employees, the training has not been adapted to their abilities and therefore may be inadequate and unsuccessful (Downey & Kher, 2015). Palan (2007) believes that inadequate training does not resonate with the employees, becomes a negative reflection on the organization, and, in many cases, leads to attrition. Ultimately, organizations aspire to decrease attrition which is costly in both time and money, according to Penfold (2015). Therefore, the purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology.

**Significance**

The knowledge generated because of this study is expected to inform corporate organizations that use, or will use, eLearning elements during their induction process, and especially for those that hire employees with varying degrees of technological self-efficacy. This study employed a case study approach, with a qualitative methodology, which allowed the researcher to gain a greater understanding of the employees’ experiences using the eLearning induction training and how well they believe that it prepared them for their new role in the organization. A case study approach is appropriate for studies in which it will not be possible, or necessary, to control behavior, and for those that will be understanding contemporary events
Yin, 2018), as well as for situations in which it is necessary to study a phenomenon taking place in its own natural environment, or setting, so the researcher can observe social interactions and better understand their meaning (Walsh, 2014). The case study methodology is used to study and understand a specific problem, situation, or phenomenon, within the context that it occurs (Baxter & Jack, 2008; Boblin, Ireland, Kirkpatrick, & Robertson, 2013; Crowe et al., 2011; Noor, 2008; Unluer, 2012; Yazan, 2015; Yin, 1981). Some critics of the case study methodology note that it lacks objectivity and generalizability, however, for researchers opting to use this method, it is the very interaction between the researcher and the participant or object, that may lead to an even greater discovery (Walsh, 2014).

This approach was selected for this study to allow for the observation of participants’ behavior as they use, and interact with, the eLearning induction training to better understand their experiences and their level of technological self-efficacy, as well as to communicate with the participants through interviews, and collect documentation to further understand the situation. For organizations that are not currently using learning technology in their induction programs, it may be helpful to understand the impact that this technology can have on the organization and the employees before they begin to integrate it. A study that demonstrates the positive and negative elements of using eLearning induction training for employees with varying degrees of technological self-efficacy may illustrate how to use learning technology in the most appropriate way in order to conduct training as effectively as possible with all employees, thereby improving its performance and ultimate success for the employee and the organization.

Additionally, the use of this research may be applied to other eLearning programs outside of the induction program, potentially increasing employee engagement, and decreasing employee attrition. Therefore, the implications of this research are vast and may impact corporate
organizations that are currently using learning technology in training programs, as well as those that may be considering using learning technology in the future.

**Research Problem and Research Question**

Since successful induction training reduces attrition rates with new employees (Dubois & Long, 2012), and many organizations that use eLearning induction training treat it as a one-size-fits-all solution (Acharya et al., 2015), which does not benefit employees that have varying degrees of technological self-efficacy (Becker, Fleming, & Keijsers, 2012), it will be helpful to better understand these situations and identify potential solutions to help organizations better address eLearning induction training to become more successful. This is particularly true in organizations that are a part of two different industries, such as eCommerce and Manufacturing. In settings like this, many of the employees that work in the eCommerce division have higher degrees of technological self-efficacy and use a computer regularly to complete their work, whereas many of the employees that work in the Manufacturing division have lower degrees of technological self-efficacy and do not use a computer regularly to complete their work. Therefore, the purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. To frame this study, the following research question was developed: *How do newly hired corporate employees with varying degrees of technological self-efficacy, describe their experiences using computer technology?*
Definition of Key Terminology

To fully understand the key terms used in this study, a list of terms and their definitions have been provided below.

- **Asynchronous** – Training that takes place at different times for the students, often based on their own schedules.

- **Attrition** – The reduction of employees through resignation or retirement, typically by their own choice, and not through terminations or lay-offs.

- **Computer Self-Efficacy (CSE)** – An individual’s perceived confidence with regard to using a computer to complete a specific task, or set of tasks.


- **eLearning** – Training or education that is conducted via the use of electronic media such as a computer, tablet, or other electronic devices. It may, or may not, utilize the internet.

- **Face-to-Face (F2F)** – Live training that typically occurs in a classroom and is conducted with an instructor or facilitator.

- **Induction** – Initial training that takes place as a part of a new employee’s orientation program to introduce the employee to the new workplace and organizational culture. Induction is typically short in duration and takes place on the first day.

- **Initiation** – Training conducted for new employees with the intention of acclimating them to their new job and responsibilities. The term, ‘new employee initiation’ is often used synonymously with ‘new employee orientation’.
• **mLearning** – learning that takes place via wireless, portable devices such as mobile phones, personal digital assistants, and laptop computers.

• **Onboarding** – The process by which a new employee acquires knowledge and tools to assimilate into their new organization and effectively perform their new job duties. This process is often lengthy and may last as little as a week or as long as six to twelve months.

• **Retention** – The ability of an organization to retain its employees.

• **Self-efficacy** – The belief in one’s ability to succeed in accomplishing or executing a task or responsibility.

• **Synchronous** – Training that takes place at the same time for all students.

• **Technological Self-Efficacy** – The belief in one’s ability to succeed in accomplishing or executing a task or responsibility as it relates to the use of technology in order to do so.

• **Virtual** – Synchronous or asynchronous training that occurs in another location using the internet.

The following section of this chapter will include a description and discussion of Cybergogy for Engaged Learning, which served as the theoretical lens for this study.

**Theoretical Framework: Cybergogy for Engaged Learning**

To be effective, eLearning requires a balance between content and technology (Minjuan Wang, 2012). According to Minjuan Wang (2012), a learner in an eLearning setting must draw upon their prior knowledge, be motivated to learn and be engaged in the learning process. In understanding that educational strategies created for face-to-face learning are often different in an online environment, Wang and Kang (2006) developed the Cybergogy for Engaged Learning model, particularly for online settings. The term ‘Cybergogy’ is used to describe the strategies
that are used to create an engaging online learning experience (Collins, Huber, & Groom, 2010), and is derived from the synergy between andragogy and pedagogy (Carrier, 2003), with the intention of helping adults learn in online environments (Guzzetti & Stokrocki, 2013).

A better understanding of online learning environments illustrates the importance between a learner’s emotions and effective learning (Minjuan Wang & Kang, 2006). The designers of the Cybergogy model purport that there are three main states that are important to engaged learning: (1) cognitive, (2) emotive, and (3) social (Minjuan Wang & Kang, 2006), and that when these states are activated, learners become immersed in the learning process (Y. S. Wang, Wang, & Shee, 2007). The Cybergogy model integrates each of these states to encourage engaged learning (Muresan, 2012).
Figure 1.1

*The Cybergogy for Engaged Learning Model*

As shown in Figure 1.1, three overlapping domains make up the factors that are involved in Cybergogy for Engaged Learning. These domains are:
• Cognitive factors, which include prior knowledge, achievement goals, and learning style. A relevant example of a cognitive factor may be the technology experience that a new employee arrives with on their first day (Minjuan Wang & Kang, 2006).

• Emotive factors, which include feelings related to self, including technological self-efficacy, atmosphere, and learning process. An example of an emotive factor may be the feeling of apprehension when faced with using eLearning in the new hire training program (Minjuan Wang & Kang, 2006).

• Social factors, which include personal attributes, context, and communication. A typical example of a social factor that would affect a new employee would be the communication that takes place during the induction training with the instructor and the other new employees (Minjuan Wang & Kang, 2006).

Cognitive presence is described as both the sharing of information, as well as constructing new knowledge (Minjuan Wang, 2007), and it is important because it facilitates many things during the learning process, including learner engagement and satisfaction (Kang, Liew, Kim, & Park, 2014). Emotive presence includes the learner’s feelings as they relate to themselves, as well as the learning environment and community (Minjuan Wang, 2007). Emotion is instrumental in learning and can also enhance the learner’s overall presence (Kang et al., 2014). Social presence is described as how the learner presents themselves in the virtual environment (Minjuan Wang, 2007), and how they perceive their relationship with other individuals in the learning community (Kang et al., 2014).

To ensure effective and engaging learning, all three presences are necessary during the learning process (Kang et al., 2014), and learners only find themselves truly engaged when they are behaviorally, intellectually, and emotionally involved in their learning tasks (Minjuan Wang
& Kang, 2006). However, it is often difficult for practitioners to implement these new learning processes (Brill & Yeonjeong, 2008). When learning in an eLearning environment, the learners may feel a variety of emotions such as excitement and interest, alongside boredom, as well as frustration, anxiety, or confusion (Minjuan Wang & Kang, 2006). The latter emotions are often a result of technical difficulties or poor communication, which can affect their perceived self-efficacy, or ability to complete the learning tasks, ultimately negatively affecting their motivation or level of engagement (Minjuan Wang & Kang, 2006). Increasing the learner’s cognitive, emotive, and social presence may counteract these negative feelings and help overcome eLearning obstacles (Kang et al., 2014).

The Cybergogy model encourages the development of eLearning that will fully engage the learner, increasing the success of the learning program. When considering this in the context of how an individual may grow their technological self-efficacy, learning engagement is an essential element that increases success and performance (I.-S. Chen, 2017). Chen (2017) believes this to be true because engagement creates a more positive and open attitude toward learning to use computer technology, which can help them feel more motivated, capitalize on resources, and meet challenges. Cybergogy addresses the need for learning processes that enable the learner’s full engagement to achieve more effective learning (Muresan, 2015), and therefore a higher likelihood of increased technological self-efficacy.

Figure 1.2 shows the Cybergogy for Engaged Learning Model, and also highlights the specific areas that intersect with technological self-efficacy. Technological self-efficacy involves cognitive factors by calling on previous knowledge, creative knowledge goals, and connecting with the individual’s learning style. With regard to emotive factors, technological self-efficacy is a construct of how one believes they can complete a task, and therefore, is
directly related to feelings of self, and also to feelings of the learning process. Finally, as with the social factors in the Cybergogy model, technological self-efficacy is also connected to an individual’s personal attributes and the context of the situation in which they are interacting with computer technology, and therefore increasing their own technological self-efficacy.

**Figure 1.2**

*The Cybergogy for Engaged Learning Model including Technological Self-Efficacy Application*
Supporters and Critics of Cybergogy

The Cybergogy for Engaged Learning model has only developed a short time ago and has not been fully vetted by other researchers in the field. To date, very few researchers have addressed Cybergogy in their writings, or have assessed its standing in the educational and learning communities, and there has been limited research involving Cybergogy. Of the researchers that have explored Cybergogy, each finds the model to be a useful framework with eLearning programs. Muresan (2013) describes Cybergogy as appropriate for “educational models in a virtual environment” (p. 195), and has also written many papers, conducted several studies, and even spoken at numerous conferences, using Cybergogy as a framework for lifelong learning, eLearning, and collaborative learning (Muresan, 2014, 2015; Muresan & Gogu, 2013).

Scopes (2011) and Scopes and Carter (2013) have also built on the model developed by Wang and Kang (2006) to create a new model specifically designed for training that takes place in immersive virtual worlds such as Second Life (Ata, 2016; Cook et al., 2007). Although the original Cybergogy model as designed by Wang and Kang is the foundation, The Model of Cybergogy of Learning Archetypes and Learning Domains, which was developed by Scopes and Carter, is somewhat distanced from the Cybergogy for Engaged Learning model (Scopes, 2011), and includes a dexterous domain to capture the differences of the 3D environment (Ata, 2016).

At present, Cybergogy is not a widely discussed theory, and no dissenting views of this model were found during the very extensive literature review that spanned numerous searches, keywords, practices, and professions. The authors of the theory note that because it is still theoretical, it will need to be validated further through the use of various studies of online classes (Minjuan Wang & Kang, 2006).
Rationale for using the Cybergogy for Engaged Learning Model

The Cybergogy for Engaged Learning model was chosen for this study because it considers each domain (cognitive, emotive, and social) to be equally important in an eLearning program. ELearning induction training is an eLearning program in which new employees are faced with learning more information to prepare them for a new position in a corporate environment. ELearning induction training incorporates technology, which may be perceived as too complicated by some individuals (Tsai, Chuang, Liang, & Tsai, 2011), potentially creating anxiety (Oluwalola, 2015). Individuals with low technological self-efficacy, or anxiety, or both, do not engage with eLearning in the same way that an individual with high technological self-efficacy might, negatively affecting their overall level of learning (Wilfong, 2006).

Understanding the Cybergogy for Engaged Learning model, and applying it as a lens for the eLearning induction training will allow the researcher to identify the three domains, and evaluate their presence during the training. In situations where the three domains are present, a learner can be fully engaged, and therefore may have reduced stress levels, allowing them to interact with the eLearning in a more impactful way, and learn more than if only one or two domains were present.

ELearning induction training that incorporates the learner’s previous technology experience and background would engage the learner cognitively. Identifying and addressing apprehension to use eLearning, or how the learner feels when faced with using eLearning, would engage the learner’s emotions. Finally, the communication between the instructor and participant during the induction training would engage the learner socially. Each of these activities engages one of the three domains in the Cybergogy for Engaged Learning model, creating the opportunity for fully engaged learning, and potentially helping to address the
learner’s technological self-efficacy in a positive manner. The Cybergogy model was designed to help individuals learn in technology-enabled settings, such as for those in eLearning induction training, (Minjuan Wang, 2009, 2012) and by combining many of the fundamentals of pedagogy and andragogy (Carrier, 2003; Muresan, 2012; Minjuan Wang, 2009). Therefore, using this model not only allows for the identification of fully engaged learning, but may also assist in increasing the technological self-efficacy of those that have less experience working with eLearning, and those that experience anxiety in eLearning environments.

**Application of the Cybergogy for Engaged Learning Model**

For new employees, especially those that do not consider themselves to have a high self-efficacy toward technology, there are often negative feelings involved (Palan, 2007), and it will be important to recognize those feelings and accommodate the cognitive abilities such as prior technical knowledge. Although Cybergogy is a relatively new theoretical framework, this researcher found its construction valuable and believed that it would provide a foundation for gathering the desired data for this study because it allows for the various domains that are present during engaged learning (Minjuan Wang & Kang, 2006). When considering the experiences of new employees as they interact with eLearning, it was likely that they would experience several different emotions and cognitive functions because learners often become involved in their learning (Bangert-Drowns & Pyke, 2001; Minjuan Wang & Kang, 2006). The Cybergogy for Engaged Learning model was created to not only better understand the interaction with eLearning, but more specifically how this interaction affects different factors, including cognitive, emotive, and social aspects, as the learner becomes actively engaged (Muresan, 2015).
Conclusion

This chapter provided an overview of the direction for this doctoral thesis, which focused on exploring the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. Research demonstrates that eLearning induction programs cannot be one-size-fits-all solutions to be successful and that successful induction programs are essential for organizations that want to remain competitive and reduce their new hire attrition rates, therefore creating a need for further research to inform these situations better. This chapter also provided definitions of crucial terminology that will be important for understanding the topics contained in this thesis, as well as an understanding of the Cybergogy for Engaged Learning model, which was the theoretical lens that guided the study. The following chapter contains a detailed literature review and further discusses the many aspects of eLearning induction training.
CHAPTER 2: LITERATURE REVIEW

The purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. This literature review was conducted to provide an expansive view of the literature surrounding employees that have varying degrees of technological self-efficacy, and that will be participating in induction programs that include eLearning elements. Literature in three main topics was reviewed in this chapter: (1) Learning and eLearning, (2) Technological Self-Efficacy, and (3) Onboarding and Induction Training. Each of these topics will be discussed in detail, followed by a conclusion with recommendations for successful eLearning induction programs.

Learning and eLearning

The cornerstone of a society’s development is education (Aparicio, Bacao, & Oliveira, 2016), and learning is a natural aspect of daily life (Palan, 2007) and communication (Vinu, Sherimon, & Krishnan, 2011). Learning is everywhere (Aparicio et al., 2016), and occurs in both simple and complex settings (Jacobson & Spiro, 1994), as well as formal and informal methods (Levenberg & Caspi, 2010). Technology has altered learning (Y.-H. Lee et al., 2013), blending many of these aspects of learning together to create a new and more effective process known as eLearning, which can help increase productivity and efficiency (Reed, 2012). This section will begin by outlining adult learning, learning in corporate organizations, and the role of technology in the workplace. It will then provide a history of eLearning, explain the importance of learning culture, what is necessary when incorporating eLearning into corporate organizations, the benefits, and limitations of eLearning, and finally, a summary of the section will be provided.
**Adult Learning**

Learning is a complex process and is often defined as the way in which an individual expands their knowledge, skills or attitude (Illeris, 2003; Strauch & Al Omar, 2014). This expansion of knowledge, skills, or attitudes typically takes place with adults as they interact with their environment (Schwandt, 2005). As opposed to children, adult learners are both capable and willing to become more involved in their learning processes by taking responsibility for their behavior, actions, and opinions (Illeris, 2003). Although learning, in some fashion, is a constant theme in adults’ lives. Initially, they must “[learn] to learn” (Muresan, 2012, p. 241). As adults learn to learn, they increase their self-formative development, which allows them to become more autonomous, expanding the ability to achieve success with independent learning tasks and objectives (Muresan, 2012).

For children and adults, learning is desire-driven (Illeris, 2003), however, for adults, desire is increased when the learning becomes relevant for their personal or professional lives (Muresan, 2012). Traditional learning processes, such as the pedagogical approach for children, do not satisfy adult needs (Schwandt, 2005), most specifically because the majority of adults prefer a process that will allow them to obtain immediate value and a hands-on learning approach (Muresan, 2012). In many cases, adults reject both the approach, as well as the information, if they are unable to identify a need for the learning or an alignment with their own personal situation (Illeris, 2003).

Ultimately, adults desire learning that has meaning for them, using resources or experiences that they have already obtained because they see the value in increasing their knowledge, skills, or attitudes (Illeris, 2003). These aspects of adult learning have been
described by Malcolm Knowles as andragogy, and they incorporate the adult’s responsibility to the learning, as well as the decision-making process by the learner (Muresan, 2012).

**Learning in the Corporate Organization**

Adult learning, and andragogy has an impact in many different areas, including the corporate world. As the world changes, and organizations fight to remain competitive, they must sustain innovation, improve product design and development, and implement cost-cutting measures (Soylu & Campbell, 2012). As a result of these needs, employees experience increased pressure and work demands (Soylu & Campbell, 2012). These employees become the human capital that helps organizations gain a competitive advantage (Noe, Clarke, & Klein, 2014), thereby significantly increasing the organization’s success (Jafari Navimipour & Soltani, 2016).

It becomes not only essential to recognize the importance of human capital within an organization but to also create learning opportunities to increase skillsets to further enhance the organization’s success in the future (Esterhuyse et al., 2016). Learning opportunities may come in the form of formal training programs, informal and on-the-job training, or knowledge sharing opportunities (Noe et al., 2014). These opportunities allow employees to not only remain current with new techniques and processes but also to perform their work more effectively (Reed, 2012) and gain new and upgraded skills (Walsh, 2014). Investing in learning opportunities also demonstrates the company’s value to both the employees as well as its customers (Reed, 2012).

**Technology in the Workplace**

Technology has become ingrained in every aspect of today’s corporate organizations, including business processes and workplace classrooms (Soylu & Campbell, 2012). For these organizations to succeed, it has become critical for them to evolve in order to remain competitive (Becker et al., 2012), and often requires the adoption of ever-changing technologies that become
available (Williams, Gavino, & Jacobson, 2017), and to ensure that the technology supports the overall goals of the organization (Yueh, Lu, & Lin, 2016). Many organizations find that it is difficult to change and evolve (Reed, 2012), and that it sometimes increases employee stress levels (Soylu & Campbell, 2012), but that those pressures can often be alleviated with the adoption of training and eLearning that will help employees gain new knowledge and skills, thereby increasing their overall competence and confidence (Cheng, Wang, Moormann, Olaniran, & Chen, 2012) with these new technologies. Due to the constant innovation, and increased technological advances within organizations, and the need for employees to understand these innovations and new technology as soon as possible, training classes must be created quickly and made available on an as-needed basis (Esterhuyse et al., 2016), which can most easily be done with eLearning (Kimiloglu, Ozturan, & Kutlu, 2017).

The Evolution of eLearning

Although there is a common belief that distance and eLearning began only a few decades ago, its official beginnings started in the 1700s with the birth of the correspondence course (Schweizer, 2004). However, it took more than one hundred years to include multimedia after the invention of the motion picture camera and phonograph, which then further evolved into eLearning with the invention of the television, personal computers and the internet (Schweizer, 2004). With the availability of the internet came the possibility to repurpose instructor-led training and house it in online libraries to personalize an individual’s learning choices (Rossett, 2010). The term “eLearning” can be traced back to the 1980s (McGowan, 2015), with the first entirely online education course launched in 1981, followed by the first dedicated online learning institution, the Open University in the United Kingdom, opening in 1989 (Hope, 2009).
ELearning is generally referred to as learning that takes place via the internet, and it has grown substantially since its initial launch (Tsai et al., 2011; Y. S. Wang et al., 2007). In addition to developmental growth, the use of eLearning has experienced prolific user growth in the last two decades (Walsh, 2014), with almost six million students registered for an online training course during the same term (Foronda, Godsall, & Trybulski, 2013). ELearning provides new alternatives for learning and training (H.-J. Chen, 2010), and although it was initially limited to asynchronous training (Cant & Cooper, 2014), it has evolved to fill a number of previous voids in the learning environment, mainly by building on various strengths that were present in the earliest forms of distance learning (Schweizer, 2004).

It is generally accepted that today’s society has transitioned from the Industrial Age into the Information Age (Brill & Yeonjeong, 2008). However, some believe that society is further transitioning into the Knowledge Age (Capece & Campisi, 2013) or the Interaction Age (Milne, 2007). Regardless of the name for this new age, it is clear that learning has undoubtedly evolved, whether we look at the change of classroom learning to eLearning, or the inevitable development into mLearning, or mobile learning, (Brill & Yeonjeong, 2008; Minjuan Wang, 2012), it has become essential for individuals to have the necessary skills to navigate this new digital world.

Although it was once only used to describe computer-based training, eLearning is now used to describe learning, education, or training, that is available through any means of technology (McGowan, 2015). It is a flexible training tool (Muresan, 2012) that supports interaction, communication, and negotiation while encouraging individual exploration (Andersson, 2010). Unlike previous iterations, eLearning now combines synchronous and asynchronous tools (Muresan, 2012) and is considered to be an educational enabler of the 21st
century that “leverages knowledge diffusion and acquisition” (Aparicio et al., 2016, p. 58). With the continued growth of the industry, it is estimated that by 2022, the global eLearning market will reach more than $240 billion (Kimiloglu et al., 2017), exploiting every possible advantage and opportunity (Kumar & Gulla, 2011).

Before the last century, education was mostly limited to the upper class, however, with the advent of eLearning, it is now available to anyone with access to a computer, the internet, and a smartphone (Nordin, Embi, & Yunus, 2010). ELearning allows individuals to engage in learning that would have seemed previously impossible (Kirkwood & Price, 2006), creating a paradigm shift in learning that supports the need for an online pedagogy (Foronda et al., 2013). ELearning has reshaped education (Vinu et al., 2011), becoming not only a learning tool but also a stand-alone industry (Thompson & MacDonald, 2005).

**ELearning in the Corporate Environment**

In order to address competition from other organizations, organizations find that they must regularly improve their competitive advantage by considering market influences, financial constraints, globalization, and innovations (Cheng, Wang, Yang, Kinshuk, & Peng, 2011; Dubois & Long, 2012; Lim, Lee, & Nam, 2007). One of the most important ways to remain competitive is to provide training to employees to increase their access to information (Kumar & Gulla, 2011; Ozturan & Kutlu, 2010), improve their skills, and enhance their technological edge (Hardin, Looney, & Fuller, 2014; Y.-H. Lee et al., 2013). Each of these provides improvements to individual productivity and communication (Gupta & Anson, 2014), ultimately creating opportunities to help the employee succeed (Pollitt, 2014).

Training is the acquisition of knowledge, skills, and competencies (Tripathi, 2012), and when taking place within the workplace, provides skills, both basic and advanced, as well as
formal and informal, that are immediately applicable to their role in the organization (Cheng et al., 2012). Workplace learning allows for the employee’s continuous learning, and professional development (Cheng et al., 2012), and is seen as a significant factor in organizational development (Minhong Wang, Ran, Liao, & Yang, 2010). With organizational growth, many organizations have experienced a shift from traditional training models to increasingly popular eLearning approaches (Jafari Navimipour & Zareie, 2015; Lim et al., 2007), which increase employee learning and efficiency (Lin, 2011). Many organizations have found that eLearning allows for the improved opportunity to provide workplace learning (Capece & Campisi, 2013), and is a solution that addresses immediacy, convenience, and consistency (Y.-H. Lee et al., 2013). The goal of corporate eLearning is to enhance performance (Minhong Wang et al., 2010), and therefore receives a substantial investment (Cheng et al., 2012; Dubois & Long, 2012), accounting for about a third of the corporate training industry (Dubois & Long, 2012; Mohammadyari & Singh, 2015), which is estimated to be approximately $200 billion (Mohammadyari & Singh, 2015).

As organizational needs change, companies search for ways to best achieve their goals (Decker, 1999; Lai & Liou, 2010), and eLearning has allowed them to anticipate and address needs in this constantly changing world (Becker et al., 2012). The use of eLearning increases employees’ skills (Capece & Campisi, 2013; H.-J. Chen, 2010; Cheng et al., 2011), and fosters even greater communication (Kumar & Gulla, 2011), problem-solving and critical thinking (Ratten, 2012). Further, using training and eLearning to achieve organizational goals allows companies to remain competitive in the global economy (Schweizer, 2004). Leveraging eLearning to address business needs is beneficial because it naturally addresses globalization and
the necessity to conduct business anywhere and anytime, as well as the increased technological abilities of the age, and the demographics of today’s workforce (Zhang & Goel, 2011).

**Learning Culture**

The more capable the employees are, the easier it is for organizations to adapt to change, which translates to the employees becoming more capable by embracing learning when their organization demonstrates its commitment to it (Fleming, Artis, & Hawes, 2014). Organizations that support a learning culture have higher employee commitment and buy-in for learning (Palan, 2007), as well as higher employee perception of the usefulness of the learning content (Cheng et al., 2012). Corporate leaders that embrace learning, and integrate it into the strategic planning for the organization, further increase acceptance (Schweizer, 2004), and thereby increase the successful diffusion of learning and learning technology (Singh & Hardaker, 2014).

**Incorporating eLearning into Corporate Environments**

Due to pressing time constraints, employees often avoid eLearning that does not immediately satisfy their needs and feel less motivation when they experience roadblocks during their training (Dubois & Long, 2012). Organizations that implement low-quality eLearning may see increased attrition rates, and employees may abandon the course if they feel frustration or anger during their training (Dubois & Long, 2012). When utilizing eLearning, two main factors to consider are appropriate content, as well as technical support systems (Dubois & Long, 2012). Providing optimal technical assistance to the employees and the instructors can increase the costs for development, but can also ameliorate technical difficulties and frustration during the training (Dubois & Long, 2012). When eLearning programs are not developed with the appropriate level of preparation, employees may interpret that as a sign that the organization does not value the learning or the learning program (Dubois & Long, 2012). These adverse reactions from poor
content or training, fail to hold the interest of learners, especially those that were seeking new knowledge, which can potentially lead to attrition (Dubois & Long, 2012).

**Benefits of eLearning**

ELearning provides several benefits for both the employees as well as the organizations (Kang et al., 2014), including cost savings, greater availability of training programs, flexibility, and various formats of the classes.

**Cost.** For many organizations, the costs of training can be prohibitive due to budgetary restrictions (Tripathi, 2012). Many factors contribute to the reduced cost of eLearning (Becker et al., 2012), including those associated with instructor-led training (Hardin et al., 2014), which require the time and salary of the instructors (Lai & Liou, 2010), as well as the limited number of participants that are able to attend one offering of a course. For geographically dispersed organizations, the high cost of travel to and from the travel site (Galagan, 2010), as well as training location expenses and constraints (Esterhuyse et al., 2016; Oluwalola, 2015), and time away from regular responsibilities (Lai & Liou, 2010), make face-to-face training an even greater investment (Jafari Navimipour & Zareie, 2015; Y.-H. Lee et al., 2013). With the implementation of eLearning, there is a more significant development cost initially (Noe et al., 2014), however, organizations can repeat the courses indefinitely once they have been developed, for a broader audience than is possible with live training (Capece & Campisi, 2013), and without the training site expenses or supply costs, addressing many budget concerns for the organization (Mohammadyari & Singh, 2015).

**Any time, any place.** Every employee has different learning needs, including when to participate in learning, and each employee should have the ability to set their learning schedule (Vinu et al., 2011). Live training that takes place via a set schedule is difficult for many
employees and is exacerbated by geographically dispersed learners (Kumar & Gulla, 2011; Young, 2013), and also does not allow for an employee to gather the necessary information to solve a current issue without waiting for days, weeks or months for the class to take place (Galagan, 2010). With eLearning, an employee can reduce their overall learning time (Y. S. Wang et al., 2007), as well as learn at any time, and in any place (Ravichandran, Cichy, Powers, & Kirby, 2015; Rosett, 2010; Rostaminezhad, Mozayani, Norozi, & Iziy, 2013; Tsai et al., 2011; Vinu et al., 2011; Yilmaz, 2017), allowing them to attend training, or gather information whenever they may need it, ultimately customizing their own learning plan (H.-J. Chen, 2010; Lim et al., 2007). In addition to accessing training whenever they need it, employees are also able to access training wherever they may be, whether at home, at the office, or in another location entirely (Lai & Liou, 2010), and with whatever device they may have at their disposal at that time (Noe et al., 2014). Not only are these options more convenient for employees (Mohammadyari & Singh, 2015), but they allow employees to learn around other limitations such as meetings or family commitments (Loureiro-Koechlin & Allan, 2010), increasing their freedom to learn, which provides an added benefit by increasing intrinsic motivation to learn (Joo, Lim, & Kim, 2012; Yilmaz, 2017), defined as the enjoyment, or satisfaction, that an individual receives from performing a task (Joo et al., 2012).

Flexibility. Many adults lead busy lives that revolve around work responsibilities, family life, home responsibilities, and children’s activities, all which lead to less time to dedicate to learning, requiring the need for a flexible approach (Schweizer, 2004). eLearning has grown exponentially over the last several years for many reasons, with one primary aspect due to the ability for adults to use eLearning to learn at their own pace (Cant & Cooper, 2014), and in a way that is optimal for their own learning style (Esterhuysse et al., 2016). Not only does
eLearning allow adults to learn when it fits with their schedule (Jafari Navimipour & Zareie, 2015), but they are also able to repeat a course or module if necessary to further understand the topic, or at a later time to refresh their learning (Dubois & Long, 2012). The flexibility of eLearning, make it a preferred method by adults (Muresan, 2012; Nordin et al., 2010) and organizations alike (Ozturan & Kutlu, 2010; Singh & Hardaker, 2014).

**Format.** Technological advances have transformed learning (Mital, 2010) from a strictly classroom-based event to something that can be done in a classroom, virtually, or in a blended format together (Y. S. Wang et al., 2007), with increased flexibility to respond to evolving learning needs for the students or the organization (Thompson & MacDonald, 2005). ELEarning affords new opportunities and diverse ways to learn (Lim et al., 2007), and enables a more engaged learning outcome (Hrastinski, Keller, & Carlsson, 2010). The shift from sole classroom training changes the balance between teacher and student (Andersson, 2010; Chang et al., 2015), and encourages the students to take ownership of their learning, reducing their passivity in the classroom (Andersson, 2010), which is noted as being more effective (Fleming et al., 2014). In addition to increasing engagement, eLearning provides multiple paths for learning (Mohammadyari & Singh, 2015), and allows for the delivery of information in numerous formats, including auditory and visual, using different types of media, creating the ability for the knowledge to be comprehended better than when it is transmitted in only one mode (Graesser, 2013). Ultimately, eLearning provides additional alternatives that meet the needs of more students and provides learning in the way in which they need to receive it.

**Limitations of eLearning.**

Unfortunately, although there are a number of benefits for using eLearning, there are also some downsides as well. These limitations include the availability of technology, the
commitment to implement eLearning, obstacles to implementation, high drop-out rates, a lack of technical support, and a lack of engagement versus F2F training.

**Availability and commitment to implement.** When an organization considers adding eLearning to their training and development programs, many do not realize the time investment that it requires and that the transition cannot occur instantaneously (Lin, 2011). In addition to the time that it takes to develop the learning modules themselves, it is necessary to research the available options and understand the applicability of the new technologies (Hope, 2009; Jafari Navimipour & Soltani, 2016). The organization must review appropriate learning outcomes (Kirkwood & Price, 2006), and use research to determine how it can be implemented and used effectively (Becker et al., 2012) to ensure that the approach selected optimizes learning (Kirkwood & Price, 2006), rather than simply using the latest technologies because they look intriguing or are cutting-edge (Brill & Yeonjeong, 2008).

**Obstacles to implementation.** Although the internet and advanced technology has widespread availability (Buckner et al., 2012), many organizations still have reservations about implementing eLearning (Mohammadyari & Singh, 2015), and some employees have not yet embraced the use of eLearning in the business world (Schweizer, 2004). With so many advancements and possibilities for how to use eLearning, practitioners sometimes find themselves questioning the best way to incorporate the many facets into learning events (Thompson & MacDonald, 2005), and others find that they are not leveraging the many possibilities (Rossett, 2010). However, many organizations discover that once they begin the journey into developing eLearning, several of these obstacles begin to diminish (Kimiloglu et al., 2017), and with the increase of resources and information technology, there is greater support of the training process to assist them (Gupta & Anson, 2014).
High dropout rates. ELearning programs are widely available in many organizations, and they can be taken at any time, and in any place, however, even with the increased flexibility, high dropout rates are very common (Tsai et al., 2011), reportedly between twenty and eighty percent (Rostaminezhad et al., 2013). Researchers do not know precisely why many learners do not complete their eLearning programs (Asoodar, Vaezi, & Izanloo, 2016), but it is attributed in part to high workloads that keep employees overwhelmed, and therefore unable to complete training (Dubois & Long, 2012). Learners often report many reasons for their lack of completion, with one of the most common being a lack of time (Tyler-Smith, 2006). In a study conducted by Dubois and Long (2012), they found that the employees that felt the most overwhelmed, with the heaviest workloads, were often the ones that did not complete their courses. After their research, they concluded that for eLearning to be successful, employees must have the ability to complete coursework during the workday (Dubois & Long, 2012).

Lack of technical support. In addition to feeling overwhelmed, some learners do not complete their training due to a lack of technical support, which has been named as one of the most critical barriers to eLearning implementation (Becker et al., 2012). Technical problems may be with the actual learning content itself, or it could be due to poor internet speed, or even with the actual equipment needed to complete the eLearning. For on-site eLearning classrooms, not having enough classroom equipment, or an accessible location can create significant limitations to the success of the program (Vini et al., 2011). When initially implementing eLearning programs, it is helpful to conduct tests to minimize technical issues at the beginning to reduce potential problems at inopportune times, such as when the technical support team is unavailable (Asoodar et al., 2016). These technical difficulties create interruptions, which can
frustrate the learner, thereby decreasing their satisfaction (Capece & Campisi, 2013), and ultimately reducing the overall success of the eLearning program (Becker et al., 2012).

**Less engaging than F2F learning.** Even with the technical issues addressed, some practitioners and learners believe that F2F learning is more engaging than eLearning (Kang et al., 2014). Regardless of the increased use of eLearning, instructor-led training is still the most prevalent (Noe et al., 2014), and some educational experts believe that eLearning environments can hinder learning as a result of the limited individualized support that the learner receives, as well as the lesser amount of interaction than with F2F training (Kang et al., 2014). Although it can be more difficult to fully engage eLearning participants (Joo, Lim, & Kim, 2013), there are often multiple reasons that an individual is not successful in an eLearning environment, and it is typically because that student is not yet ready, or prepared, for eLearning (Yilmaz, 2017). When this happens, despite the benefits of eLearning, training cannot be considered effective if it does not produce the desired outcomes (Dubois & Long, 2012).

**Summary**

The intention of organizations to implement eLearning programs is to create effective learning events that help the employees gather knowledge to become more successful in their jobs (Dubois & Long, 2012), which often improves the competitiveness of the organization (Becker et al., 2012). When employee training is effective, participants perform their work more effectively (Reed, 2012) and feel more confident in using their new knowledge (Palan, 2007). One factor that improves eLearning effectiveness is organizational support (Mital, 2010), which is often defined as a learning culture where both middle and top management not only allocate the appropriate level of resources to eLearning (Y.-H. Lee et al., 2013) but also encourage participation and self-development (Mital, 2010), thereby increasing employee acceptance
(Schweizer, 2004). Unfortunately, when this is not present, there is often a lack of support, which not only negatively impacts eLearning programs in terms of participation, but also with a lack of resources and available technology, making the eLearning programs seem less appealing to the learner (Y.-H. Lee et al., 2013), resulting in the employees avoiding eLearning that they do not believe will meet their needs (Dubois & Long, 2012).

Additionally, in an attempt to develop eLearning, it is sometimes created quickly to address a training need (Esterhuyse et al., 2016), absent of the appropriate level of preparation, which can demonstrate a lack of organizational value to the employees (Dubois & Long, 2012). When developed effectively, eLearning enhances an organization’s learning library and provides some benefits including reduced costs (Mohammadyari & Singh, 2015) and increased flexibility (Ravichandran et al., 2015). ELearning also offers multiple paths for learning (Mohammadyari & Singh, 2015), but requires a time investment (Lin, 2011), high dropout rates (Tsai et al., 2011), and a lack of technical support (Becker et al., 2012). To compound these challenges, not all employees have embraced eLearning (Schweizer, 2004), and the majority of employees have varied backgrounds including computer skills, job needs, technical abilities, and beliefs, which create the need for different eLearning programs and formats to be effective (Mital, 2010). Therefore, organizations must consider these different needs and abilities and create eLearning that can be individualized to be most successful for their employees.

**Technological Self-Efficacy**

Individuals, including corporate employees, possess varying degrees of technological abilities, and beliefs about those abilities, known as technological self-efficacy (Wilfong, 2006). To understand the potential success of eLearning, it will be necessary to understand the different aspects of the learners’ abilities and technological self-efficacy to design and develop effective
training programs. One important facet to eLearning success in a corporate organization is dependent on the employees’ technological self-efficacy. This section will explain what technological self-efficacy is, how it is developed and formed, and why it is important. Next, the impact of technological self-efficacy on eLearning will be addressed, followed by learners’ attitudes toward eLearning, and then eLearning anxiety. Finally, this section will provide some details for creating eLearning that will reduce anxiety and consider technological self-efficacy, followed by a summary of the chapter.

**What is Technological Self-Efficacy?**

Self-efficacy is defined as an individual’s belief about how well they can perform a task (Bandura, 1994; Salanova, Grau, Cifre, & Llorens, 2000; Wilfong, 2006). Technological self-efficacy incorporates the aspect of using a computer, or other similar technology such as a tablet or mobile phone, to complete a task, and considers how well an individual believes they can accomplish it (Compeau & Higgins, 1995; Lim et al., 2007; Tsai et al., 2011; Wilfong, 2006). Technological self-efficacy also refers to an individual’s ability to feel motivated to use their cognitive resources to address a particular situation or need, with computer technology (Esterhuyse et al., 2016). An individual that believes they have the appropriate level of knowledge to be successful when dealing with computers and technology has high technological self-efficacy, whereas an individual that thinks that they do not have the necessary skills required to complete a task when dealing with computers and technology has low technological self-efficacy (Huffman, Whetten, & Huffman, 2013).

**The Development and Formation of Technological Self-Efficacy**

Technological self-efficacy refers to an individual’s beliefs about their own capabilities and does not include their actual abilities to complete a task (Bellini, Isoni Filho, de Moura Jr., &
Pereira, 2016; Compeau & Higgins, 1995; Hester, Hutchins, & Burke-Smalley, 2016; Huffman et al., 2013; Y.-H. Lee et al., 2013). Technological self-efficacy is developed over many years as an individual interacts with technology, and they experience successes or failures when attempting to complete tasks (Compeau & Higgins, 1995; Y.-H. Lee et al., 2013). Depending on previous experiences, some individuals exude positive emotions toward technology, while others exude negative emotions (Oluwalola, 2015). Many learners become more advanced with their technological skills as they interact with computer technology more often (Salanova et al., 2000), however this is not a guarantee, and many individuals that use technology on a regular basis do not feel an improved sense of technological self-efficacy (Becker et al., 2012).

The Importance of Technological Self-Efficacy

With the advancement of technology, many aspects of it have become ingrained in the daily work lives of most individuals, making some degree of technological self-efficacy a requirement for a great many professions (Bai, 2017). Self-efficacy, in general, impacts a learner’s performance (Tsai et al., 2011) and has been shown to significantly predict future academic and professional advancement (Huffman et al., 2013). Self-efficacy, including technological self-efficacy, can be central to motivation and can determine one's choices for how to proceed in a specific situation (Bellini et al., 2016).

Technological Self-Efficacy and eLearning

As with many types of learning formats, eLearning is used to develop skills and improve performance (Becker et al., 2012). When interacting with eLearning, students are required to perform many different computer-related tasks (Howard, Ma, & Yang, 2016), including complex processes such as collaborating online (Thompson & MacDonald, 2005). Unfortunately, not all students are comfortable performing these tasks.
Advantages of high technological self-efficacy. Individuals that have high technological self-efficacy are known as being digitally literate, which means that they have the ability to understand, analyze, assess, organize, and evaluate information when using various technology (Mohammadyari & Singh, 2015). Not only do these learners have higher motivation and engagement in activities (Bandura, 1994; Tsai et al., 2011), but they also value eLearning on a higher level than those with lower degrees of technological self-efficacy (Mohammadyari & Singh, 2015), and they also perform better academically than individuals with low technological self-efficacy (Bai, 2017).

Individuals with higher degree of technological self-efficacy have greater confidence when faced with using technology (Gupta & Anson, 2014), have a higher affinity toward technology and computers (Downey & Kher, 2015), work more diligently (Bellini et al., 2016), and are more inclined to use both technology and eLearning in general (Lu, Hu, Gao, & Kinshuk, 2016). Having employees with higher technological self-efficacy is more beneficial for the organization because they tend to set higher goals and have a stronger commitment toward accomplishing them (Downey & Kher, 2015). They also perceive difficult tasks and responsibilities as a meaningful challenge (Tsai et al., 2011), and are able to overcome more significant problems without reacting negatively (Oluwalola, 2015).

With regard to eLearning, employees with higher technological self-efficacy perceive eLearning systems as easier to use (Y.-H. Lee et al., 2013), take more responsibility and ownership for their own learning (C. Lee, Yeung, & Ip, 2017; Mohammadyari & Singh, 2015), are better able to make use of their time for eLearning (Mohammadyari & Singh, 2015), and have overall higher engagement in eLearning (Howard et al., 2016). Ultimately, having a higher degree of technological self-efficacy is not only more beneficial to the organization and one’s
learning, but can also positively impact an individual’s sense of achievement and accomplishment (Tsai et al., 2011).

**Consequences of low technological self-efficacy.** Some individuals may experience low technological self-efficacy as a result of a lack of access to, and limited experience using, both technology and eLearning (Howard et al., 2016). Additionally, limitations to access can prevent individuals from using technology and gaining experience and engagement (Bellini et al., 2016; Mital, 2010), and may create uncertainty about where to begin, as well as a perception that technology is too complicated (Tsai et al., 2011). Some limitations stem from no access to the internet, poor internet connection, faulty hardware and software, poor environment, and insufficient time to use technology (Bellini et al., 2016), creating what is commonly known as the digital divide (Muresan & Gogu, 2013). In addition to access limitations, some individuals experience cognitive limitations that stem from a lack of understanding of how to use the technology, or the presence of neurological and psychological distractions (Bellini et al., 2016).

Individuals with low technological self-efficacy experience lower levels of motivation to accomplish goals and complete tasks (Downey & Kher, 2015), and they may also choose to avoid using technology (Rohatgi, Scherer, & Hatlevik, 2016), sometimes in an attempt to avoid lesser feelings of self (Hester et al., 2016). For some individuals with low technological self-efficacy, they will not only resist talking or thinking about using technology, but they also experience anxiety when forced to use it, and in extreme cases can even have hostile or aggressive thoughts toward technology (Oluwalola, 2015).

In some cases of low technological self-efficacy, an individual may have negative feelings about their ability, or have an expectation that they will do poorly, causing them to try harder to complete the task, sometimes overloading their mental abilities, and creating a self-
fulfilling prophecy of failure, which further ingrains their negative beliefs about technology (Huffman et al., 2013). Many individuals with low technological self-efficacy do not have the skills needed to accomplish specific tasks, along with a poor sense of self, which may affect their willingness to seek the knowledge they need to succeed (Oluwalola, 2015). In organizations, employees that are less savvy are not able to use technology to improve their professional lives (Mohammadyari & Singh, 2015), and when placed in positions that require a great deal of computer use, they often experience increased feelings of overwhelm and burnout (Salanova et al., 2000).

When using eLearning, learners with low technological self-efficacy tend to experience negative feelings toward eLearning (Huffman et al., 2013), are less willing to participate in hands-on eLearning training (Hardin et al., 2014), are less likely to continue using eLearning (Mohammadyari & Singh, 2015), or just avoid it altogether (Tsai et al., 2011). Individuals with low technological self-efficacy often have low aspirations of success, feel less motivated, and frequently feel defeated, causing them to give up more easily when interacting with technology (Tsai et al., 2011). As a result of these different facets of low technological self-efficacy, they experience higher levels of anxiety when using eLearning (Wilfong, 2006), and their learning is negatively affected and does not occur at the desired level (Yilmaz, 2017).

For many individuals with low technological self-efficacy, they may encounter eLearning for the first time in their workplace, creating additional stress and an increased learning curve (Tyler-Smith, 2006). These new users will experience initial challenges (Becker et al., 2012) including cognitive overload (Tyler-Smith, 2006), which can affect their future participation and engagement in eLearning (Minjuan Wang, Novak, & Pacino, 2009). Unfortunately, there is scant research available that addresses first-time eLearners and how their initial use impacts
whether they persist with the training or abandon it altogether (Tyler-Smith, 2006). Therefore, identifying any applicable limitations and addressing them can improve a learner’s intention to continue using eLearning (Lin, 2011), ultimately promoting a higher degree of eLearning effectiveness (Bellini et al., 2016).

**Attitude Toward eLearning Usage**

Based on a learner’s technological self-efficacy, their intention and attitude to use eLearning is based on a number of different factors (Reardon, 2010), and may vary a great deal, from adopting early, to choosing to adopt later, to a complete rejection and avoidance of the technology (Darban & Polites, 2016). A central predictor to technology adoption is attitude (Bai, 2017; Esterhuyse et al., 2016), which may be inaccurate or ill-formed based on previous experiences with technology, such as errors, misapplication, and frustration (Reardon, 2010), creating a perception that the individual will not perform well in technology settings (Jafari Navimipour & Soltani, 2016). The formation of attitudes is typically comprised of an individual’s knowledge about an object, their feelings about that object, and their tendency to act with, react to, or use that object (Lu et al., 2016). Learners that have less experience with eLearning tend to have less favorable attitudes toward the technology (Lu et al., 2016; Oluwalola, 2015), which often leads to higher levels of overall anxiety toward technology and eLearning (Chiu & Churchill, 2015). However, for individuals that resist participating in eLearning, once they have moved past their resistance threshold, it is typically found that their acceptance of eLearning, and their attitude towards it, improves quickly (Kimitoglu et al., 2017), as well as their sense of usefulness for the technology if they believe that it will improve their performance at work (Jafari Navimipour & Soltani, 2016).
ELearning Anxiety

Many individuals that have low technological self-efficacy, and more negative attitudes toward computers or eLearning, experience anxiety when faced with using computers or eLearning (Cazan, Cocoradă, & Maican, 2016; Esterhuyse et al., 2016). Technological anxiety is the emotional response resulting from an individual’s overall computer literacy (Hester et al., 2016). Some adults will even refuse to use a computer to complete a task due to anxiety (C. Lee et al., 2017), which often stems from a fear that they are not competent using the technology (Singh & Hardaker, 2014). Anxiety can cause detrimental effects on learning (Darban & Polites, 2016; Downey & Kher, 2015; C. Lee et al., 2017) and some learners will avoid eLearning classes, further reinforcing their lack of confidence and low technological self-efficacy (Downey & Kher, 2015).

Learners that have high levels of anxiety toward using technology often experience mental disengagement and lower attention levels (Darban & Polites, 2016), impeded judgment (Hester et al., 2016), frustration (Oluwalola, 2015), and lower levels of eLearning acceptance (Chiu & Churchill, 2015) and satisfaction (Esterhuyse et al., 2016). Some learners overestimate their level of skills for working with eLearning and become anxious when they realize that they are not as prepared as they initially believed, and others simply feel helpless whenever they use eLearning (Tyler-Smith, 2006). With these fears and negative emotions in mind, overcoming anxiety is essential to the success of eLearning programs (Chiu & Churchill, 2015).

Developing eLearning to Reduce Anxiety

As with all training courses, the make-up of the class will likely include individuals with varying degrees of technological self-efficacy. Instructors and eLearning designers need to be aware of this and be prepared to intervene when necessary to assist the low self-efficacy learners
(Downey & Kher, 2015) to reduce eLearning attrition which can be as high as seventy or eighty percent (Tyler-Smith, 2006). Creating courses that are well mapped out (Schweizer, 2004; Thompson & MacDonald, 2005) increases learners’ confidence (Thompson & MacDonald, 2005), giving the learners a sense of understanding for what information and training will be provided during the course. Additionally, identifying the learners’ previous technology experience may help to identify those that will need additional assistance (Salanova et al., 2000), as well as anyone that has a higher level of technological self-efficacy but has had some negative experiences in the past that may contribute to a negative initial outlook (Lin, 2011).

ELearning instructors that do not initially assess the learners in the courses are forced to make assumptions about their backgrounds and experiences, which could provide false information, and does not create an opportunity to individualize training needs (Becker et al., 2012). Learners that have low self-efficacy avoid eLearning due to their perception of having lower technological capabilities (Tsai et al., 2011). Understanding the variations of the learners’ technology-related backgrounds allows instructors to use techniques to intervene with at-risk individuals, and alleviate anxiety or build confidence (Downey & Kher, 2015; Schweizer, 2004). Additionally, understanding the expectations of the learners, and any misalignment of the teacher’s expectations can prevent disengagement by addressing student needs early on in the training program (Howard et al., 2016).

Through various studies dating back more than two decades, it is estimated that anywhere from twenty-five to fifty percent of individuals experiences some anxiety when interacting with technology, and that true technology anxiety affects one-fourth of the human population (Wilfong, 2006). Although many students that experienced higher initial anxiety performed better in more supportive environments (Gupta & Anson, 2014), most individuals with
technological anxiety will avoid eLearning classes altogether (Dubois & Long, 2012). However, for many learners with anxiety, high exposure to technology can eventually reduce anxiety (Salanova et al., 2000) because technological self-efficacy typically increases over time, due to an increase in technology experience (Cazan et al., 2016; Downey & Kher, 2015). Because eLearning classes can create anxiety in some learners (Schweizer, 2004), especially in situations in which tests will be conducted (Joo et al., 2012), it is necessary to identify the overly anxious learners (Downey & Kher, 2015), and provide technology training (Schweizer, 2004), sometimes with the sole purpose of reducing technology-related anxiety (Armstrong, 2015) which can create more positive attitudes and satisfaction (Cheng et al., 2011).

**Misconceptions about digital natives and younger learners.** Individuals that were born after 1980 and had grown up using and interacting with technology in their daily lives are considered digital natives (Akçayır, Dündar, & Akçayır, 2016; Becker et al., 2012). Over the last several decades, it has been assumed that digital natives and younger learners are confident in their technology use (Howard et al., 2016). However, with the rise of digital natives, both education and workforce training programs have transformed (Becker et al., 2012), and it is becoming apparent that younger learners are not as confident in their technological self-efficacy as was previously believed (Becker et al., 2012; Brill & Yeonjeong, 2008; Howard et al., 2016). These individuals have a higher degree of familiarity with standard computers and technology (Lu et al., 2016), but this does not mean that they know how to learn using eLearning or that they have the ability to positively engage in learning utilizing this type of technology (Becker et al., 2012). Like with other learners, it is necessary to identify the confidence level of digital natives (Howard et al., 2016) and individualize training as necessary because learners of any age may experience anxiety or low technological self-efficacy (C. Lee et al., 2017).
Misconceptions about older employees. Like digital natives, misconceptions have also been made about older employees such as the stereotype that older workers are not as tech savvy as younger workers, or that they are rigid and do not like using technology (Becker et al., 2012). It is true that using technology can be stressful for older people, but that is often because they have not had as much experience using the technology and they are a bit apprehensive (Salanova et al., 2000). Unfortunately, organizations with a higher number of older workers tend to avoid adopting newer technologies (Becker et al., 2012), often based on a fear that older workers are not as agile and will be prone to making more errors when using new technology (Salanova et al., 2000). However, learners of all ages put in comparable levels of effort during eLearning classes, and older workers have been shown to react positively to technological innovations, including eLearning (Becker et al., 2012). When using eLearning, older workers need the opportunity to take their time to understand the technology and learn how to use it before being expected to complete the training assignments, and when done, they learn just as fast as younger learners (Ravichandran et al., 2015).

To be successful, organizations must address learning at all levels, including at the individual level, as well as the organizational level (Manikutty, 2009). Unfortunately, the workforce is made up of individuals of different ages, and older workers are often neglected in learning initiatives or are not provided with appropriate opportunities (Ravichandran et al., 2015). Twenty-four percent of the workforce will be made up of individuals that are over the age of 55 by the end of 2018 (Ravichandran et al., 2015). Many organizations are unprepared for this diverse workforce (Becker et al., 2012), and will need to work to incorporate learning practices that will meet the needs of older workers. Unlike younger workers, older adults are not as enthusiastic about using technology, and often view it as merely a tool that will help them
accomplish their tasks, rather than something to help them fulfill their personal or professional needs (Buckner et al., 2012). However, although older workers can sometimes get frustrated with the lack of time that they are given to learn new technology, they often appreciate when eLearning is incorporated into their training (Ravichandran et al., 2015). To best address the needs of older workers, managers should integrate F2F discussions in their learning to allow for questions and clarifications, and to reduce any potential anxiety that may be caused by the use of eLearning (Ravichandran et al., 2015).

### Summary

When considering technological self-efficacy and its impact on eLearning, it is essential to understand that an individual characterizes it as their belief about how well they will be able to complete a task using technology (Compeau & Higgins, 1995), and that corporate eLearning programs will be made up of individuals that have varying degrees of technological self-efficacy, including those that are digital natives, or older employees. Due to the advancement of technology, it has become necessary for most workers today to have a higher degree of technological self-efficacy (Bai, 2017), which can negatively impact individuals that have lower technological self-efficacy because they may not have the skills needed to complete their tasks (Oluwalola, 2015), causing them to develop negative feelings toward the technology, and affecting their choice to use eLearning in the future (Huffman et al., 2013).

Employees with higher degrees of technological self-efficacy are more inclined to use eLearning (Lu et al., 2016), which increases their knowledge and skills, improving their efficiency, in turn increasing the organization’s success (Tsai et al., 2011). Employees with lower degrees of technological self-efficacy are often less motivated to accomplish goals and complete tasks (Downey & Kher, 2015), and also experience feelings of overwhelm (Salanova et
al., 2000) or defeat (Tsai et al., 2011). However, identifying a learner’s self-efficacy limitations, and addressing them before the start of eLearning, can improve their outlook (Lin, 2011) by providing additional assistance to those that may need it. Further, since some employees may be using eLearning for the first time, or believe that they are more advanced than they are, it is essential to avoid making assumptions about anyone’s technological self-efficacy, and instead assess all employees to identify their technology experience in advance (Salanova et al., 2000), and then provide technology training for those with low technology self-efficacy for the sole purpose of reducing anxiety (Armstrong, 2015) in order to increase their comfort level and technological self-efficacy (Salanova et al., 2000). Although this will likely add time to the training class or program, increasing employees’ technological self-efficacy will benefit the organization overall by improving motivation (Tsai et al., 2011), time efficiency (Mohammadyari & Singh, 2015), and goal setting and accomplishment (Downey & Kher, 2015).

Onboarding and Induction Training

Before an employee can participate in an organization’s eLearning program, they must first get hired and experience the onboarding process. Although many organizations regularly offer onboarding for their new employees, a number of them misunderstand various aspects of onboarding, including what it is and how to optimize it for organizational success (Vernon, 2012). For most new employees, the onboarding program can have a huge impact because it is the first interaction that they have with other employees, the organizational culture, and their new company (Penfold, 2015). Many terms are often used interchangeably for the onboarding process; however, they each have a different meaning and purpose. Orientation is a one-time event that is typically conducted by a member of Human Resources on the new employee’s first day, and includes a time to fill out the necessary paperwork, learn about benefits, and understand
basic information about the organization (Penfold, 2015; Vernon, 2012). Induction training takes place after the orientation program and is the initial training for new employees (Chidambaram et al., 2013), and it usually occurs during the first week (Hendricks & Louw-Potgieter, 2012). Unlike the orientation and induction training, onboarding is a longer-term program for new employees (Penfold, 2015) that often takes place throughout the first 90 days and is intended to help the new employee fully integrate into the organization (Vernon, 2012). This section will begin by explaining the importance of induction training, the consequences of poor induction training, new employee anxiety, and the benefits of induction training. Next, challenges with implementing induction training will be covered, as well as the format of induction training, attrition, and retention, and finally, a summary of the section will be provided.

**The Importance of Induction Training**

Each element of the onboarding process is vital for the new employee; however, some aspects are more engaging and are more impactful than others. Many employees understand the importance of the orientation but admit that it is often forgotten shortly after completion (Penfold, 2015) unless they have a negative experience (Korver, 2016), in which case it tends to stay with them for much longer. Alternatively, induction training helps new employees understand their job, and includes training on the people and teams, the processes, as well as necessary technology that they will be using (Hendricks & Louw-Potgieter, 2012). This training can occur in formal or informal settings and may be conducted by training instructors, fellow employees, or supervisors (Hendricks & Louw-Potgieter, 2012), and its goal is to increase the employee’s familiarity with the job, thereby encouraging faster assimilation (Chidambaram et al., 2013; Hendricks & Louw-Potgieter, 2012).
Not only does induction training provide a new employee with essential knowledge for how to perform their job, but it also creates a positive foundation for the employee and the organization (Chidambaram et al., 2013). For many employees, when they have an initial negative experience due to orientation or induction training, they become less engaged and motivated. "Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013). The first month of employment is tenuous (Hendricks & Louw-Potgieter, 2012), and a successful induction program can reduce attrition ("Getting employees to stay on board instead of jumping ship," 2008), and create long term success for the employee (Vernon, 2012).

**Consequences of Poor Induction Training**

Just as a positive experience with induction training improves retention rates for new employees (Hendricks & Louw-Potgieter, 2012), negative experiences can create dissatisfaction, leading to higher attrition, and ultimately, a more significant cost to the company (Chidambaram et al., 2013). According to Ferrazzi (2015), as many as twenty-three percent of new employees leave a new job in less than twelve months, and a poor onboarding experience can be called the “kiss of death” for many new employees. "Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013, p. 20). Additionally, when considering the addition of involuntary terminations, as many as thirty-three percent of new employees leave their new job within the first year (Penfold, 2015). Although some involuntary terminations are not related to induction training, there is an additional subset that may have been successful in their new role if they had been provided with more detailed induction training. Johnson and Senges (2010) report that less than half of new employees are satisfied with their induction training. Further, they note that the initial beliefs that new
employee forms about their new employer remain for some time, highlighting the importance of a positive experience during their induction training (Johnson & Senges, 2010).

**New Employee Anxiety**

For many individuals, starting a new job can create a sense of anxiety and self-doubt (Korver, 2016), and may be distressing if the initial learning such as the orientation or the induction is not engaging (Hendricks & Louw-Potgieter, 2012). To help employees adjust to their new work environment faster, one of the main objectives for induction training is to relieve any anxiety that the new employee may have (Hendricks & Louw-Potgieter, 2012). Although almost no learning programs are perfect, and most may include minor difficulties along the way (Korver, 2016), after induction training, individuals typically have a better understanding of their roles and responsibilities, as well as a greater understanding of the expectations for them in their new position (Acharya et al., 2015), reducing much of the anxiety that may have been present. Additionally, programs that were more focused on the learner were even more successful in reducing anxiety and increasing confidence (Acharya et al., 2015).

**Benefits of Induction Training**

In addition to reducing anxiety and helping employees feel more settled in their new jobs, induction training may also lead to a higher level of satisfaction, which often relates to more productive employees, and the potential of a competitive advantage for the organization (Hendricks & Louw-Potgieter, 2012). Employee engagement and satisfaction is the first step in reducing their learning curve, which typically takes eight months to reach full capacity (Ferrazzi, 2015), but can be overcome with an effective induction training program (Hendricks & Louw-Potgieter, 2012).
Induction training can also be used to facilitate their socialization within the organization (Johnson & Senges, 2010). Van Maanen and Schein (1979) explain that as socialization takes place, individuals acquire the attitudes, behaviors, and knowledge that they will need to be successful in their new role (as cited by Johnson & Senges, 2010). Through the induction training and the inevitable socialization, new employees learn from other employees, often in a variety of settings (Cascio & Montealegre, 2016), further increasing their cultural assimilation and their comfort level with their environment (Chidambaram et al., 2013). This process of peer-to-peer learning can create a more cohesive team, which is more successful for the overall organization (Chidambaram et al., 2013).

**Challenges with Implementing Induction Training**

Induction training can be time-consuming and costly (Dunlap, 2015), and therefore, many organizations do not see the value in it and believe that it is not an essential part of running the business (Lieber, 2009). In other organizations, the induction training is left up to the manager, and as a result of their limited time, they are not always able to fully engage their new employee, or take the time to understand where their strengths and weaknesses may be (Ferrazzi, 2015). In still other organizations, their induction training is a one-size-fits-all program that cannot be modified for different job types or learning styles (Acharya et al., 2015). To further exacerbate these obstacles, many new employees believe that they need to get to work right away to prove their worth and show that they can be productive (Korver, 2016), in essence taking less time to attend induction training or skipping it altogether. To overcome these challenges, organizations should create induction training that is flexible and modular, because learner’s needs vary (Young, 2013), and it should be hands-on or skill-specific to encourage engagement and
immediate application (Vernon, 2012), which may increase the employee’s desire to attend, and demonstrate a benefit for the manager and the organization.

**Format of Induction Training**

Less than forty percent of organizations use eLearning to deliver induction training ("Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013), however, to increase flexibility of training for the different learners, and because “individualized job-related information is best presented electronically” (Hendricks & Louw-Potgieter, 2012, p. 3), it is recommended that induction training include eLearning as a self-guided learning approach (Hendricks & Louw-Potgieter, 2012). Although there is a higher up-front cost to creating eLearning, incorporating it could reduce the overall costs of the program (Buxton & De Muth, 2012), simultaneously addressing the cost concerns (Tripathi, 2012), as well as reducing the time that the new employee is away from their workstation since eLearning can be done as time allows and between other tasks (Minjuan Wang, 2007).

**Attrition after Onboarding**

Throughout an employee’s first year, disengaged employees have an attrition rate that is twelve times higher than that of engaged employees (Glint, 2016). As high as eighty to ninety percent of new employees weigh the choice to look for new employment in the first six months of starting a job (Johnson & Senges, 2010), and as many as one-third are already looking for a new job in that same period of time (Ferrazzi, 2015; "Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013). This decision is often the result of their first impressions at a new job ("Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits.
(ROADMAPS)," 2013), and as much as forty percent of employees who did not report a successful onboarding experience already feel disengaged after their first three months (Glint, 2016), and studies show that the first six weeks of an onboarding program influence an employee’s impression of the job ("Getting employees to stay on board instead of jumping ship," 2008). Many organizations spend a great deal of time and money to recruit new employees, only to find that ensuring their retention is just as critical as hiring them in the first place (Kawasaki, 2006).

Retention from Successful Onboarding

It is necessary for companies to hire and retain skilled, knowledgeable candidates (Mattox Jr. & Jinkerson, 2005), and fortunately, contrary to some reasons for leaving an organization, training is often a significant factor that influences an employee’s decision to stay (Mattox Jr. & Jinkerson, 2005). Retention is essential for organizations because it can be very costly to acquire, hire, and train new employees (Mattox Jr. & Jinkerson, 2005). Vernon (2012) notes that organizations experience almost a fifty percent attrition rate with employees in their first year, which can cost organizations up to 150% of the employee’s salary. Ferrazzi (2015) and Penfold (2015) agree that the impact can be detrimental to an organization, but Ferrazzi believes that the costs are between 100% and 300% of the employee’s salary and Penfold estimates that they are 300% of their salary. In addition to the replacement cost of employees, the impact can also be even more unfavorable when they take knowledge with them that can sometimes be impossible to replace (Mattox Jr. & Jinkerson, 2005).

Not only has training been found to impact retention positively, but it also creates opportunities within the organization to generate learning, allowing knowledge transfer to mitigate some knowledge loss when employees leave the organization (Manikutty, 2009).
Increasing knowledge boosts satisfaction and loyalty (Brown, Murphy, & Wade, 2006; Kandola, 2002), and research has demonstrated a correlation between retention and employee training (Brown et al., 2006). Training programs, including induction training programs, are essential to organizations that want to retain their employees (Palan, 2007), and those that have weaker programs experience higher attrition rates (Dubois & Long, 2012).

**Summary**

Aside from increases in productivity and employee engagement, the retention of new employees is the most essential benefit of conducting quality induction training (Johnson & Senges, 2010). Many companies are looking for ways to become more efficient and competitive (Vernon, 2012), and when done well, induction training can help employees ramp up faster, reducing time and costs for the organization (Chidambaram et al., 2013). Induction training also helps new employees understand their job, and includes training on the people and teams, the processes, as well as any necessary technology that they will be using (Hendricks & Louw-Potgieter, 2012). Companies that have highly successful induction programs create a positive foundation for their employees (Chidambaram et al., 2013), and report a retention rate of ninety-one percent, compared to only thirty percent at some of the lowest-performing companies ("Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013). However, induction training can be time-consuming and costly (Dunlap, 2015), and in many organizations is treated as a one-size-fits-all program (Acharya et al., 2015). To address these challenges, organizations can incorporate eLearning which may reduce the overall costs of the program (Buxton & De Muth, 2012), and also allow for more flexibility and modular approaches to address the different learners’ needs (Young, 2013). Therefore, conducting ineffective induction training, or not providing it at all, is far more costly.
to the organization (Vernon, 2012), and induction training, preferably with eLearning elements, is ultimately much more important for both the employee and the company than ensuring that they are informed and enrolled in their benefits or 401(k) plan ("Getting employees to stay on board instead of jumping ship," 2008).

**Conclusion**

This extensive literature review has demonstrated that organizations are striving to be more competitive and to find better ways to meet their organizational goals and develop their employees to maximize their efficiency. To accomplish this, many organizations conduct onboarding programs but have still not embraced an extensive induction program. However, when induction programs are done well, new hire retention rates are substantially higher, reportedly as much as ninety-one percent higher ("Get onboard with onboarding: How to build an onboarding program that engages and motivates new recruits. (ROADMAPS)," 2013).

Some of the most effective induction programs include eLearning elements because they allow for programs to be created as they are needed and also to provide multiple paths for learning, which better addresses the various needs of different learners. Although eLearning may incur increased costs during the initial development, research has shown that there are a more significant savings in the long term, which may allow the organization to remain more profitable and direct those savings to alternative efforts. However, employees have varied backgrounds using technology and arrive on their first day with varying degrees of technological self-efficacy.

When faced with using new technology, many learners experience anxiety and a lack of confidence that they will be successful using the technology to accomplish their tasks. Although this can be a negative aspect of incorporating eLearning into induction training, Individuals with
low technological self-efficacy can increase their self-efficacy as they gain experience using technology, and as self-efficacy increases, computer anxiety typically decreases. Therefore, before eLearning induction training takes place, users that are given the opportunity to use the eLearning system in a positive setting often increase their belief that they have the ability to perform well with eLearning (Downey & Kher, 2015; Y.-H. Lee et al., 2013), and increase their level of technological self-efficacy (Compeau & Higgins, 1995; Salanova et al., 2000; Tsai et al., 2011), which will increase their motivation and confidence (Gupta & Anson, 2014).

Conducting a pre-training assessment before the official training will allow the instructors to determine which employees may need additional assistance or training, and will also give them a chance to ask questions or voice their concerns about using the technology. In addition to conducting a pre-training assessment, it may be helpful to conduct a training class solely dedicated to familiarizing low technological self-efficacy students with the eLearning technology that they will be using during the induction program. Receiving additional information and direction before learning occurs can result in higher scores and mastery when compared with individuals that do not receive advanced instructions and information (Lu et al., 2016), and providing the opportunity to develop technology skills before the eLearning takes place allows for greater eLearning performance and eLearning acceptance (Y.-H. Lee et al., 2013), ultimately empowering the learner to become more engaged and involved in their own learning (Howard et al., 2016; Mohammadyari & Singh, 2015).

As the research has shown, eLearning, and eLearning induction training are not one-size-fits-all solutions, and organizations must choose to use them because they are the appropriate solution for the situation, and not simply because it is available and they have the capabilities to use it (Becker et al., 2012). Additionally, when these training elements are used, the employees’
individuality should be taken into account, providing any necessary training that may be needed to ensure that the training will be successful, and the employees are engaged and learning. With eLearning and eLearning induction training, although there has been some research dedicated to the effects of technological self-efficacy, there are still some gaps present. These research gaps are most prevalent when considering employees that have varying degrees of technological self-efficacy that will be participating in induction programs that contain eLearning elements. The literature review in this chapter has provided information that supports the overarching purpose of this case study, which was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. The following chapter will discuss the research methodology that was used in this research study, which includes the participants, research setting, data collection, and analysis, as well as data validity and trustworthiness.
CHAPTER 3: RESEARCH DESIGN

The purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. Chapter 1 provided an understanding of the background, context, and rationale for this study, Chapter 2 provided an extensive literature review, and this chapter will provide detailed information relating to the research design and methodology for the study. This chapter is divided into several sections and will address the research approach, study participants, site location for the study, data sources, and detailed procedure, including data analysis, ethical considerations, credibility, limitations, and finally, a summary of the chapter.

Qualitative Research Approach

Within social science research, there are two primary types of research methodology, quantitative and qualitative, that must be explored in order for the researcher to determine which approach would accurately guide the data collection and analysis processes in a manner that will provide further understanding of the topic (Butin, 2010). In quantitative research, the researcher seeks to describe a trend or explain a relationship among variables by collecting numerical data (Creswell, 2012). Qualitative data, however, is used when the intention is to explore a problem or develop a detailed understanding of a phenomena, by collecting data from a smaller number of individuals using words or gathering experiences (Creswell, 2012). One specific qualitative methodology, the case study method, has a great number of benefits and is the ideal choice for a variety of studies.

Philosophical Underpinnings

The case study methodology has been made popular through its use in psychology, medicine, and politics, and can be traced back to the early 1900s (Creswell, 2013). To be
considered a case, the study must be bounded, meaning that there are parameters, or a boundary, around what will be studied, such as one unit, one organization, or one specific group of individuals (Merriam, 1998). Of the many researchers that espouse the benefits of the case study methodology, Robert Yin and Robert Stake are often described as the seminal authors of the approach (Baxter & Jack, 2008; Creswell, 2013; Yazan, 2015). Both researchers believe in the strength of the case study approach; however, they each have different styles and processes. For Yin, his approach follows a post-positivist approach (Boblin et al., 2013). Creswell (2013) describes post-positivists as those that believe that cause and effect is fluid and does not always happen in a strict, or structured, manner. Post-positivists recognize that outside influences affect the reality or outcome of a situation that is being studied or explored. Stake (1995), however, follows a more constructivist approach, which relies on the experiences and perspectives of both the participants and the researchers, and Baxter and Jack (2008) note that constructivists tend to believe that truth is relative, and that it can change based on an individual’s perspective. In constructivism, there is likely more than one way to understand or explain a situation, also known as pluralism, which allows for the participants to share their experiences, leading to collaboration between the researcher and participants to define the reality together (Baxter & Jack, 2008).

Yin (1981) and Stake (1995) also differ in the terms that they choose to use to describe the type of case study that will be used. Yin uses a two-tiered approach to define case studies, first as explanatory, exploratory, or descriptive, and then as single or multiple case studies, while Stake defines them as intrinsic, instrumental or collective (Baxter & Jack, 2008). The variety of definitions allows the researcher to select exactly which approach fits with the desired study, and the data to be collected, further increasing the validity of the study (Yazan, 2015). When
considering data collection, both Yin and Stake recommend triangulation, or the use of multiple
data collection methods and sources, in order to identify both convergence and divergence of
data (Boblin et al., 2013). Another similarity between the researchers is the recommended use of
a database to capture and organize data because through the added level of organization, the
reliability of the data is improved (Baxter & Jack, 2008).

Overall, although Yin (1981) and Stake (1995) both support the use of the case study
methodology, their approaches are quite different. Yin provides a rather structured approach
with a recommendation that only minor changes take place once the research has begun, whereas
Stake prefers a more flexible approach that allows for the modification of the research design
throughout the study when the researcher deems necessary (Yazan, 2015). Yin is primarily
concerned with the validity of the data, and Stake understands the need to capture data and
modify the approach in order to gather the appropriate data (Yazan, 2015).

**Data Collection in Case Studies**

Case study research uses a number of different data sources to ensure that more than one
lens is used to explore the issue, which allows for multiple facets and perspectives to better
understand the phenomenon (Baxter & Jack, 2008). It often consists of direct accounts or
perspectives from the participants (Merriam, 1998) and is dependent on the researcher for
interpretation (Stake, 1995). According to Yin (2018), there are six important data collection
methods to consider in case study research: documentation, archival records, interviews, direct
observations, participant observation, and physical artifacts. Due to the interpretive nature of the
research, many case studies collect data in more than one source (Merriam, 1998; Stake, 1995;
Yin, 2018). The utilization of multiple sources of data creates the opportunity for data
triangulation and increases the internal validity of the study (Baxter & Jack, 2008; Merriam,
In addition to the data sources, one of the most important aspects of data collection is a data storage system or database in order to protect and securely store the data that is being collected during the study so it can be analyzed as well as referred back to at a later date (Stake, 1995; Yin, 2018).

Analytic Methods for Case Studies

As with many other categories, Yin (1981) and Stake (1995) differ somewhat in their beliefs of what constitutes data analysis. Yin (2018) asserts that there are five different techniques of data analysis: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis. Yin believes that comprehensive data analysis should follow proper protocols and investigation (Yazan, 2015). Data analysis following Stake’s model uses categorical aggregations and direct interpretation as well as the researcher’s own experience and reflection to understand and interpret the data, while also utilizing triangulation to validate data (Yazan, 2015). Stake also believes that it is crucial for the researcher to follow a process of analysis throughout the data collection process and not just during the analysis phase.

Specifics to this Research

This study followed a single case study design with a qualitative methodology that is representative in nature to the greater population (Yin, 2018). In the greater population, there are organizations in a number of different industries, both in what is classified white-collar, as well as blue-collar, and with a workforce that comes from a variety of different educations, backgrounds, and socioeconomic classes. The research site organization and research participants were representative to the greater population because it was comprised of individuals from many different industries, it was made up of an eCommerce business that represented a predominantly white-collar workforce, as well as a manufacturing operations business that
represented a predominantly blue-collar workforce. Additionally, the individual employees that made up the workforce, and the research participants for this study, came from different educations, backgrounds, and socioeconomic classes. This variety allowed for the representation of many different organizations and workforce compositions through just this one case study.

The study is holistic, as described by Yin (2018) because it only involved one unit of study, which was isolated to new employees joining the organization during the period of time that this study took place. This research was also considered a bounded study because it was comprised of participants from only one induction training class, and took place in one period of time, which creates a boundary around the case that will be studied, and without this boundary, the study would not qualify as a case (Merriam, 1998). According to Yin (2018), a case study approach is appropriate for studies in which it will not be possible or necessary to control behavior, and one that will be exploring contemporary events, such as the exploration of new employees and how they interact with eLearning technology. The case study methodology is used to study and understand a specific problem, situation, or phenomenon, within the context that it occurs (Baxter & Jack, 2008; Boblin et al., 2013; Crowe et al., 2011; Noor, 2008; Stake, 1995; Unluer, 2012; Yazan, 2015; Yin, 1981), and there is greater interest in the process rather than the outcome, due to the understandings that are achieved during data collection or while the researcher is in the field (Merriam, 1998).

This design approach allowed the researcher to gain a greater understanding of the employees’ experiences while they were using eLearning induction training. Stake (1995) notes that through the participants’ narratives, the researcher will also gather a greater understanding of the phenomenon that is being studied. Along with semi-structured interviews, observations, and a document review, the researcher collected a variety of data to fully inform the study (Boblin et
al., 2013), to allow for corroboration of the data (Yin, 2018) and to ensure validity (Stake, 1995). This design and data collection method allowed the researcher to observe participants at a local corporate organization as they interacted with eLearning induction training, and gather data related to their interactions and experiences, which was intended to help answer the question that the researcher was seeking to understand: *How do newly hired corporate employees with varying degrees of technological self-efficacy, describe their experiences using computer technology?*

**Participants and Access**

**Research Site**

The research site for this study was a combined manufacturing and eCommerce organization, which by its nature, is made up of employees with diverse backgrounds and varying degrees of technological self-efficacy. This organization was comprised of two different environments, one that was made up of more traditional office environments such as Marketing, Finance, Information Technology, Human Resources, Customer Support, and Sales, and also predominantly included salaried employees. The other was made up of a manufacturing environment that included Operations, Manufacturing Production, Purchasing and Logistics, and was also predominantly hourly employees. The organization had just under 200 employees, was family-owned, and was more than fifty years old, with strong support for onboarding and learning development programs. However, although there was great support for these areas, eLearning was new for the organization, including its incorporation into the induction training. Gaining access to this organization was not an issue because the owners of the organization understood the importance of onboarding for both the success of the organization as well as new employees, and because they were interested in gathering information to improve their
onboarding program further, one of the co-owners asked for the organization to be the research site for this study.

This organization conducted induction training for all employees, regardless of their role in the same class. As a part of that class, each new employee would complete an eLearning module created to express the importance of culture and diversity, including the welcoming environment for employees from any background. As a make-up of the employee population, employees from almost twenty different countries were represented, and although they spoke other native languages, all also read and spoke English while at work. The eLearning portion of the induction class ordinarily took approximately 30-45 minutes to complete and was done in the same manner for all employees, regardless of background or degree of technological self-efficacy.

Ultimately, this organization fit the researcher’s goals for a research site because it was comprised of individuals from many different departments, backgrounds, and technological experiences. Although it may have been helpful to conduct the study at several different organizations, the researcher intended to explore the experiences of new employees while they interacted with the exact same eLearning course to ensure consistency in both the content and the learning environment. Additionally, this type of setting may reduce variables when understanding how new employees with varying degrees of technological self-efficacy experience and interact with the same eLearning rather than attempting to understand their experiences as they work with different eLearning courses that may vary in complexity than the one at this research site.
Participants

This study explored the experiences of new corporate employees that joined an organization that used eLearning induction training as a part of their onboarding program. The study used a nonprobabilistic, or non-random and purposeful, sampling to gather a group of volunteers that would best inform the study (Merriam, 1998). For participants, this study sought 5-15 newly hired employees that were scheduled to participate in an induction program that included eLearning elements and were joining several different departments within the organization, as well as comprising a group that is made up of various demographics and technological abilities. Although it was not known in advance how many employees would be in the class, nor for which department they would work, due to the non-duplication of roles at the research site organization, it was understood that a variety of demographics and technological abilities would likely be a certainty. Since the participants in this study would be isolated to new employees taking part in one induction training for the organization, the actual number of participants was dependent on two factors: (1) the number of employees that were hired during the time period that the induction training class for this study was to be conducted, and (2) how many of the new employees were willing to participate in the study. In the unlikely event that the study did not receive the ideal number of participants from one induction class, the researcher would have expanded the study to include participants from the next induction class that was taught by the same instructor. Since the induction class material does not change, conducting the study with a second induction class from the same instructor should have yielded essentially the same experiences for the participants as if they had all been in one class together, and therefore should not have impacted the data collection.
Thirteen new employees from the induction class time period were mailed a Recruitment Letter (see Appendix A) fully explaining the study and the reasons that it was being conducted. In the letter, they were provided with contact information for the researcher so they could be briefed on their potential role in the study, informed that incentives would not be provided for their participation, other than a $10 gift card to compensate them for their time, and assured that both their identity, as well as that of the organization, would remain confidential and anonymous. Following the instructions and briefing, eight of the new employees volunteered to participate in this study.

In order to ensure that this study followed the highest ethical standards, upon agreement to participate, each volunteer was required to sign an Informed Consent Document (see Appendix B), and was provided with the opportunity to opt out at any time during the study. The participants in this study had very diverse backgrounds and degrees of technological self-efficacy, and brief summaries of their background and technological experience are provided in Table 3.1.
Table 3.1

Participant Backgrounds and Technological Experience

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Generation</th>
<th>First Used a Computer</th>
<th>Uses Computer for Job</th>
<th>Technological Self-Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melinda</td>
<td>F</td>
<td>Millennial</td>
<td>Middle School</td>
<td>No</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Jay</td>
<td>M</td>
<td>Millennial</td>
<td>Elementary School</td>
<td>Yes</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Charlie</td>
<td>M</td>
<td>Gen X</td>
<td>Elementary School</td>
<td>No</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Mona</td>
<td>F</td>
<td>Gen X</td>
<td>Elementary School</td>
<td>No</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Simon</td>
<td>M</td>
<td>Gen X</td>
<td>Adult</td>
<td>No</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Warren</td>
<td>M</td>
<td>Gen X</td>
<td>College</td>
<td>Yes</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Bruce</td>
<td>M</td>
<td>Baby Boomer</td>
<td>College</td>
<td>Yes</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Ed</td>
<td>M</td>
<td>Baby Boomer</td>
<td>Adult</td>
<td>Yes</td>
<td>Very Comfortable</td>
</tr>
</tbody>
</table>

Table 3.1 Participant backgrounds and technological experience related to gender, generation, computer use, and technological self-efficacy.

Initially, each participant was described as with a name that was a combination of “Participant” alongside the number corresponding to the order in which they were interviewed, such as “Participant 1”, however, to make it more personal and further protect their privacy, they were each provided with a pseudonym that was selected by the researcher at random.

Data Collection

After gaining an understanding of the details related to case study research, and developing a plan for the case study location and sampling procedures, a data collection plan was created for
this research. The data collection process that takes place during the induction training class is shown in Figure 3.1

**Figure 3.1**

*Data Collection Process during Induction Training*

In order to gather data from multiple sources that will provide unique and important data to this research, and to ensure validity, data for this researcher’s study was collected from a review of
documents, archival records, and physical artifacts, as well as interviews and observations. The different data collection methods are shown in Table 3.2.

**Table 3.2**

*Six Sources of Evidence and Data Collection Materials*

<table>
<thead>
<tr>
<th>Documentation</th>
<th>Archival Records</th>
<th>Interviews</th>
<th>Direct Observations</th>
<th>Participant Observations</th>
<th>Physical Artifacts</th>
</tr>
</thead>
</table>
| • Induction training class materials and documents  
  • Training class participant evaluations | • Company organizational charts | • Semi-structured 1-on-1 interviews with 5-15 new hire employees that have volunteered to participate in the study | • New hire induction training class observations | • N/A | • eLearning module |

Table 3.2 Six sources of evidence as defined by the various data collection methods used during the research study.

For the first phase of data collection, a document review was conducted, and physical artifacts were examined, in addition to researcher observations. Before the induction training class took place, the researcher reviewed the eLearning module and class documents in order to have a better understanding of what the instructor would be discussing, as well as context for participant questions that were asked. Although physical artifacts are not one of the strongest data collection methods, their inclusion can have important relevance on the overall case (Yin, 2018), and was the basis for the researcher’s desire to understand the class materials before interviewing participants and observing the induction training class.

Following the review of physical artifacts and an initial document review, as the participants interacted with the eLearning induction training, the researcher observed the actions and emotions of the participants to determine their comfort level with the technology and any
perceived difficulties or frustration. Noor (2008) explains that observations often generate insights about the phenomena that are not attainable using other sources. In order to capture the researcher’s thoughts and observations, a journal was used, and as described by Boblin et al. (2013), notes and thoughts were made for documentation. These notations were later integrated along with the observations during the data analysis phase to create a clear picture of the observations.

The second phase of data collection included the participant interviews which were conducted in person and recorded using two different recording devices to prevent any device malfunctions. The researcher conducted semi-structured interviews that provided an opportunity for the employees to describe their experiences, feelings, and perceived satisfaction level during the induction class, and primarily with the eLearning training module. Interview questions were used to understand not only how the employee was feeling during the eLearning induction training, but also how their previous degree of technological self-efficacy may have impacted them. During the interviews, the researcher recorded thoughts and observations next to the interview questions, so it was clear when they were observed during the interview. After the interviews took place, the recordings were transcribed line by line by the researcher, with assistance from a transcription service. Once the transcription was complete, the researcher integrated notations and observations into the transcription in order to fully understand the mindset and attitude of the participant.

Finally, the third phase of data collection included a document review of the anonymous participant evaluations that were conducted immediately following the induction training class, which happened following every training class at the research site organization. An additional document review included a review of archival records, which comprised the research site
organizational charts. Reviews of the participant evaluations provided insight into the participants’ thoughts right after the training took place and before they could fully reflect on the training. Although the evaluations were conducted for the overall induction class, the participants with lower technological self-efficacy may have included specific preferences or dissatisfaction of the eLearning module due to feeling less successful. This data was reviewed after the interviews took place in order to prevent the researcher from inadvertently guiding the participant’s responses during the interviews. In addition to the participant evaluations, the researcher reviewed the company organization chart which included the participants’ names and their positions within the company.

The researcher then compared all of the different data collected for each of the different participants, and then from participant to participant. This allowed the researcher to triangulate the data to identify any commonalities or differences between the participants’ experiences and their technological self-efficacy (Baxter & Jack, 2008; Boblin et al., 2013; Creswell, 2013; Crowe et al., 2011; Merriam, 1998; Stake, 1995; Yazan, 2015; Yin, 2018).

**Procedures**

A case study design was used to allow for a better understanding of the experiences that eLearning induction training has on newly hired corporate employees. This design was used along with a pilot test, observations, semi-structured interviews, as well as a review of physical artifacts, documents, and archival records. This design, and data collection method, allowed the researcher to observe participants at a local corporate organization as they interacted with eLearning induction training, as well as gather data related to their interactions and experiences, which as noted by Baxter and Jack (2008), helps answer the question of “how” that the researcher was seeking to understand.
Pre-Data Collection Process

Before commencing with the data collection process, the researcher sought approval for the study through the Institutional Review Board (IRB). This approval required the completion of several documents and an assessment to ensure that the human subjects that participated in the study would not be harmed in any way. Once approval was received, the researcher identified the next induction training class that was scheduled to occur and prepared to begin the data collection for the research study. After the induction class has been chosen, the researcher mailed each new employee registered for that class the Recruitment Letter (see Appendix A) fully explaining the study and the reasons that it was being conducted. The letters were mailed a minimum of two weeks before the class, and in the letter, they were briefed on their potential role in the study and assured that both their identity, as well as that of the organization, would remain confidential and anonymous. In the letter, they were also provided with the researcher’s contact information so they could seek additional information and volunteer to participate. The study sought to include approximately 5-15 newly hired employees of the research site location, made up of various demographics and technological abilities that would be interacting with the eLearning induction training at the start of their employment.

Data Collection Process

Data collection for this study took place using multiple sources of evidence: (1) physical artifacts, (2) observations, (3) semi-structured interviews, (4) document review, and (5) archival records.

Physical artifacts. To begin the data collection method, the researcher reviewed the eLearning module that was used for the induction training class. It was believed that the review would provide a better understanding of what the instructor would be discussing during the
induction training class, as well as provide additional context for when participants asked the instructor questions during the class. It was possible that understanding the materials would also help the researcher’s understanding when interviewing participants after the class took place. Although physical artifacts are not one of the strongest data collection methods, they can provide cultural and technical insights, and their inclusion can have important relevance to the overall case (Yin, 2018).

**Observations.** Direct observations occurred during the induction training for new employees. During this time, the researcher observed the class and made notes about interactions, questions asked by the participants, and other observations relevant to the eLearning induction training, as well as any behaviors that may have demonstrated high or low technological self-efficacy. Observations of the participants using the eLearning technology can be invaluable when trying to understand any technology problems that may be present (Yin, 2018). Once the class was finished, the researcher reviewed the field notes and made any additional observations that had not yet been noted in the journal.

**Semi-structured interviews.** Interviews took place following the induction training class, and the researcher believed that they would be a helpful data collection method since some behaviors and feelings cannot be observed (Merriam, 1998). Each interview was scheduled for one hour, and the participants were contacted to determine convenient dates and times that would work for their schedule, to best accommodate their needs and reduce any stress or inconvenience for them (Yin, 2018). Each participant signed an Informed Consent Document (see Appendix B) in advance of the interview which explained the purpose the interview, obtained permission to record the interview, and informed them of their ability to opt out of the study at any time. Once the Informed Consent Document (see Appendix B) was signed, the interview was able to
The interviews were semi-structured and followed an approach that was guided and conversational, rather than structured (Yin, 2018). The researcher arrived with an Interview Protocol (see Appendix C) containing scripts to open and close the interview, as well as a list of questions that guided the interview (Stake, 1995), comprised of open-ended questions (Merriam, 1998), that were aimed at attaining information related to the participant’s experiences not only during the induction training but also related to their background using computer technology, and their use of computer technology in the workplace. The researcher was also open to the fluidity of the conversation and where it may have led the interview and was prepared to explore other avenues during the interview as they came up. Both during and after the interviews, the researcher took notes related to additional observations and thoughts, as well as an overall impression of the openness of the participant to the interview process so they could be referred to later to allow for better understanding and context of the discussion.

**Document review.** Following the interviews, the researcher conducted a document review, which is considered to be relevant to most studies (Yin, 2018). The research site organization conducts training evaluations after every training class, and this induction training was no different. At the completion of the class, each participant was provided with a blank Training Evaluation (see Appendix D) and asked to complete it before they left the room. The evaluations are anonymous and gather information related to the environment, climate, topic, effectiveness of the material, and instructor style. The researcher received a copy of the completed training evaluations on the day following the class but did not review them until after all observations were noted. At a later date, the researcher reviewed the training evaluations to gather additional information that was shared about the eLearning induction training.
Archival records. The final data collection process was an archival records review. The researcher reviewed the research site organization’s organizational charts to gather information about each class participant’s role in the organization, the department that they work for, and their job title. Yin (2018) notes that the use of archival records has varying degrees of value to a case study, and the researcher believed that the insight that would be provided by the organizational charts would be helpful if interview responses varied greatly between participants with vastly different jobs. The researcher did not review this data before the interviews were conducted to ensure that bias was not unintentionally introduced or created.

Pilot test. Before beginning the actual case study, a pilot test was conducted with two volunteers that had varying degrees of technological self-efficacy and had been employed with the research site organization for less than twenty-four months. This pilot test allowed the researcher to determine if the questions were relevant (Stake, 1995; Yin, 2018), and it also guided the researcher in determining the appropriate timing for the interview, in addition to informing the researcher if any questions were confusing or needed to be rewritten (Merriam, 1998). The pilot test also allowed the researcher to collect a sample set of data and assess whether or not it aligned with the interview questions (Yin, 2018). The intention of the pilot test was to provide insights into the data collection process of the actual study (Yin, 2018).

Data Analysis

The analysis phase of the research study is often one of the most complex, especially in qualitative research because there are not as many defined formulas or guidelines as with quantitative research (Yin, 2018). However, this analysis process can become less complicated when broken up into different steps, such as starting with an early analysis phase, exploring available tools, and rearranging or manipulating data to identify previously unseen patterns (Yin,
Therefore, before the interviews took place, the researcher reviewed all of the field notes as they were taken and began to identify themes that were present, and then reviewed them once more before the interview phase of data collection began. As the review took place, the researcher began creating an initial list of codes that was based on the purpose of the study, the research question, the theoretical lens, and the preliminary field notes (Yin, 2018). This beginning list of codes was the starting point of the coding process which allowed the researcher to analyze the data in a manner that divided the textual data, comprised of thousands of words, into important terms or phrases that had meaning based on the recurrence and combination of the terms (Yin, 2018). The researcher began with descriptive codes initially and then moved into pattern matching as the patterns begin to form (Yin, 2018).

For the transcription process, after each interview was complete, the interview was transcribed verbatim, capturing the participant’s words, the researcher’s words, and any audible sounds that were used such as laughter or sighs, to enhance the meaning of the words. Following the transcription, the researcher listened to the audio recording and then read, and re-read the transcription to ensure accuracy. Once the transcripts were complete, the recordings were deleted, and the transcripts were reviewed repeatedly to identify additional themes that were present, making notations of any frequent words or patterns that become apparent. This process assisted in the overall analysis process by allowing both data collection and data analysis to occur simultaneously for periods of time, as well as to allow more introspection and increased analysis skills over time (Yin, 2018). Once these reviews were complete, the researcher began assigning description codes to the data in the transcripts using a color-coded process based on larger topics, themes, or observations that were represented by a code. The researcher also revised codes as it became necessary based on new information or emerging patterns, and then
evaluated them against the question being asked in the case study to identify any additional themes (Yin, 2018). This process was completed for all forms of data until the codes were analyzed and distilled down to the final list of patterns and themes that were present in the research, and the researcher was able to discuss the findings of the research using these codes and patterns.

**Ethical Considerations**

As with any study, it is of the utmost importance to maintain ethics in the research, as well as to preserve the anonymity of the participants, and secure the data and the documents (Yin, 2018). Although the researcher was the primary data collection instrument during this study (Merriam, 1998), multiple sources of data were collected and triangulated to ensure that the data was not accidentally skewed, which could have changed the outcome of the study. Additionally, data collection did not begin until full approval from the Institutional Review Board (IRB) was achieved through the researcher’s university.

Once IRB approval was received, and data collection commenced, each potential participant was provided with the Recruitment Letter (see Appendix A) fully explaining the study and the reasons that it was being conducted. The potential participants were assured that both their identity, as well as that of the organization, would remain confidential and anonymous. Once they elected to participate, they were fully briefed, asked to sign an Informed Consent Document (see Appendix B) and then advised that they may opt out of the study at any time (Butin, 2010). The researcher was forthright with every participant and avoided any possibility of perceived deception (Yin, 2018) by answering any, and all, questions truthfully. In order to protect the privacy and confidentiality of the participants, pseudonyms were used, as well as the
avoidance for the sharing of any details that could potentially identify any of the participants (Butin, 2010).

In addition to participant privacy, the researcher secured all data collected, including notes, interview transcripts, documents, and all electronic resources. A case study database was created to store all case study materials in a secure and organized manner, as well as to ensure construct validity and to allow for the evidentiary process to be traced both forward and backward as necessary (Yin, 2018). A password-protected database was created on the researcher’s computer, which was also stored in Dropbox®, a password-protected web-based tool, that stores data in the cloud, and backs it up in real-time. The Dropbox® data was then secondarily stored using Carbonite®, another web-based tool that backs up data on a daily basis. Both applications ensure data security and recovery in the event of any accidental data loss, creating two levels of data security to safeguard all data (Willis, Inman, & Valenti, 2010). All materials, documents, notes, and recordings were kept in electronic formats to ensure that they could be backed up to both Dropbox® and Carbonite®. Once interview transcripts were created, the audio recordings were deleted from the recording devices, and the computer, as well as the recycle bin, and the transcripts were stored electronically in the database. The researcher will preserve the data for five years, after which it will be destroyed.

**Credibility of the Study**

It is common to question the credibility of research (Merriam, 1998); therefore several steps have been taken to ensure trustworthiness of the data and the overall study, including the use of a detailed procedure list, recording devices, member checking, and data triangulation. First, the researcher has outlined detailed procedures to not only increase the trustworthiness of the data collection process but also to allow for another researcher to replicate the study if they
so desire (Butin, 2010; Merriam, 1998). The use of recording devices was also used for the interview phase of the data collection process to ensure that the interview was transcribed verbatim so that the entire discussion could be preserved for analysis (Merriam, 1998; Yin, 2018). To ensure that the transcripts were transcribed correctly, the researcher listened to the recordings several times, including after taking breaks as necessary, and throughout the process, to allow for data checking with fresh eyes, which can sometimes create the opportunity to find and correct errors (Willis et al., 2010). Once the interviews were transcribed, the transcription was provided to each participant to review and ensure accuracy, a process called member checking (Stake, 1995). Finally, triangulation, or the use of multiple data collection methods and sources, was used in order to identify both convergence and divergence of data (Boblin et al., 2013). The utilization of multiple sources of data creates the opportunity for data triangulation and increases the internal validity of the study (Baxter & Jack, 2008; Merriam, 1998; Stake, 1995; Yin, 2018).

**Positionality**

Machi and McEvoy (2012), when discussing researchers, state that bias and opinion can be a result of personal attachments and that a researcher can be influenced by one of their biases rather than reach a conclusion solely through scholarly work. Case study researchers are also subject to greater bias than some other researchers due to their greater understanding of the topic at the outset of the study (Yin, 2018). In considering my own bias, and the many years that I have spent working with the two main topics of this research study, eLearning and induction training, I have identified several areas in which I have strong beliefs. I have been working with eLearning since it was still a relatively new training process and have seen it used very well, and have also witnessed numerous poor implementations that negatively affected both the
participants and the organizations. I have been involved with onboarding and induction training for almost two decades, and similar to my observations of eLearning, have witnessed both effective and ineffective implementations. Since becoming involved in corporate education at the start of my career, I have devoted my professional life to the success of the employees around me, both up and down the hierarchical ladders of the organization.

Due to the years that I have spent working with corporate eLearning, I believe that it can be a very beneficial way to train employees, particularly in the corporate environment, because of its ability to be used at any time and in any place. I have worked for organizations that have employees located across not only the United States but also throughout the world, whereby repetitive classroom-based training would become very costly and time intensive. However, eLearning can be used by employees no matter where they are located or which time zone they reside in. Personally, since I have seen the benefits of eLearning for employees that are geographically separated, I am positively biased toward organizations that utilize it to provide learning for their geographically separated employees, and in many cases, question organizations that choose not to do so.

In addition to the ability to access eLearning at any time, and in any place, it can also be used to assist employees to be as successful as possible. In doing so, I have found that, for organizations that use eLearning, it is necessary to use it effectively to maximize learning. Although there are a number of factors that improve the effectiveness of eLearning, I believe that one of the most important ways to do so is to address the different technical abilities of individuals, especially for new employees. This additional step can be even more important when the eLearning is being used in an induction program due to the impactful nature of induction programs, and their value to a new employee’s satisfaction with their new
organization, which can ultimately impact attrition or retention. Due to cost and time savings, many organizations opt to eliminate this additional step, which I have found frustrating throughout my career. Employees have varying backgrounds which include their childhood exposure to technology, educational and career experiences, cultural and ethnic expectations, financial and economic levels, as well as their current or previous home life. These differences create a wide variety of technological abilities in the employees, and I believe that treating each one of them in exactly the same manner can create difficulties for the employees that do not conform to the expectations placed on them by the organization. Employees that lack technological experience, or even those that are very advanced, may feel dissatisfied with their opportunities and training. In some cases, I have seen this dissatisfaction lead to employees choosing to leave the organization. Therefore, I seek to address the varying degrees of technological self-efficacy in all employees, both new and old, to prevent this facet of training or organizational dissatisfaction. Unfortunately, from my experience and observations, this does not currently appear to be a standard practice in most organizations.

Although I am cognizant of my biases, I believe that my knowledge and awareness of them allow for greater diligence on my part, and I have reviewed my involvement critically to ensure that I am not inserting my own beliefs into the data. I have also been careful about my contribution to the interview process and refrained from sharing personal, or perspective-based comments while speaking with the participants. As an added measure of confirmation, all of the research, interview questions, and data were reviewed by an independent party to confirm that bias is not present.
**Limitations**

While it is the researcher’s desire that this study will contribute to the literature surrounding eLearning and induction training in corporate environments, there are several limitations, or potential limitations, present. These limitations vary and include the design of the study, the data collection process, and the subjectivity of the researcher. With a holistic design, it is possible that the circumstances that resulted in the selection of the design, may not be accurate, rendering the design ineffective or inaccurate, or it is possible that they may have changed at some point after the study began. Both of these situations could take place without the researcher’s knowledge, and therefore cannot be addressed during the study (Yin, 2018). One benefit to case studies is the flexibility that they allow within the study’s research parameters, however, this is precisely the reason that case studies are often criticized by those that perceive this flexibility as potentially leading to a flaw or defect in the data, and requiring the researcher to start over (Yin, 2018).

With regard to data collection, one potential area for concern is with the recording devices used during the interview process. Although these devices are valuable (Stake, 1995) and allow for the participant’s exact words to be analyzed at a later date (Yin, 2018), some participants may be uncomfortable with them and limit their responses, choose not to participate, or refuse to allow the interview to be recorded (Yin, 2018). Along with interviews, observations were also used to collect data during this study. There are two potential limitations that exist with this type of data collection, (1) although the researcher recorded observations as soon as possible after they were observed, it is possible that the researcher may unconsciously have had poor recall or misunderstood the situation that was observed (Yin, 2018), and (2) it is possible
that the participants may be uncomfortable being observed during the induction class, and could have altered their behavior, which would have been unknown to the researcher.

Lastly, the researcher, herself, is a limitation to the study. Every attempt was made to reduce bias and subjectivity; however, when the researcher is the main instrument of data collection and analysis, it is possible that unconscious bias may occur (Merriam, 1998; Yin, 2018), regardless of the efforts made to eliminate it. With this in mind, the researcher worked to remain diligent and address bias throughout the process to ensure that it did not interfere with the data or the credibility of the study.

**Conclusion**

This chapter has provided an understanding of the research procedures that took place in this study in order to explore the experiences of new employees with varying degrees of technological self-efficacy in corporate organizations when using eLearning induction training. The chapter details the specific research method, the research site, the participants, the data collection method, the data analysis process, and numerous ethical and transparency considerations. Previously, Chapter 1 provided an understanding of the background, context, and rationale for this study and Chapter 2 provided an extensive literature review. The next chapter will delve into the findings from this study.
CHAPTER 4: RESEARCH FINDINGS

This chapter presents the findings of the research study after the data collection and data analysis phase. The chapter restates the purpose of the research study along with the research question, and then outlines the findings from various data collection methods, including interviews conducted with eight newly hired corporate employees after they participated in a new hire induction training class. In addition to the presentation of findings, this chapter will also provide a description of themes that emerged from the data collection process, as well as a final summary which will conclude the chapter.

Purpose of Study and Research Questions

The purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. This case study was conducted with research participants that were newly hired employees at an eCommerce and Manufacturing organization. The induction training also incorporated eLearning elements in the program. To frame this study, the following research question was developed: How do newly hired corporate employees with varying degrees of technological self-efficacy, describe their experiences using computer technology?

Workplace training programs.

The participants in this study have participated in various workplace training programs, including those with computer technology. Melinda has not had a lot of experience using computer technology for training programs, but prior to the eLearning at the Research Site Organization, the ones that she has had have been frustrating because they are slow, require other individuals to participate that may procrastinate, and “if I’m working here 10 hours, I’m not going to want to be dealing with the procrastinator”, or if she has questions or needs help, the
instructor is not available (Melinda, personal communication, June 4, 2018). Jay believes that “the worst experiences are just the ones where you can tell no effort was put into creating them. It was just to get through, and get the information across. It’s using outdated technology. It’s clunky and slow, because, you know, especially with what I do, I’m in a fast-paced environment…” (Jay, personal communication, June 26, 2018). For someone like him, not using the best, and fastest, technology seems like a waste of time. Charlie would agree with him, and stated, “[t]hat would have to be right off the bat, the worst. An antique computer, [that] just didn’t have enough memory…”, because he doesn’t want to be slowed down by the technology itself when trying to learn something new (Charlie, personal communication, May 30, 2018).

Simon’s worst training experience was using computer technology in a previous job, and the memory of recounting that experience still created emotions that were perceived by the researcher as discomfort, embarrassment, and frustration. He rolled his eyes during the story, through his hands up in the air at the thought of the instructor training him incorrectly, and demonstrated what seemed like embarrassment, as though he felt that he should have known that he was not being trained correctly while he was in the class. Like Simon, Warren also demonstrated what the researcher perceived as embarrassment when he explained the last two computer technology training sessions that he had received. Warren questioned his ability to learn and shared that he was worried and felt turmoil, and asked himself why he was having so much trouble. He also added, “maybe it’s my age” or that he “couldn’t understand the [trainer] well enough when they were trying to explain [the material]…” (Warren, personal communication, May 31, 2018).

Ed did not experience the same frustration and embarrassment as Simon or Warren, but he shared several points about what he does not enjoy or appreciate about eLearning, including
the aesthetics, the design, the often limited additional information that is provided, and the lack of speed to move through the training, such as, “sometimes you have to wait for the person to speak whatever it is, quit speaking or, or whatever…is going on before it enables that next button, so I am not allowed to progress through the presentation as fast as I would like” (Ed, personal communication, June 14, 2018). Ultimately, he’d like to be able to progress at his own speed, and not be distracted by the style or design of the training.

**Research Study Participants**

The participants in the research study each had varying degrees of technological self-efficacy, and are made up of not only differing ages, but they also had varied work and educational backgrounds. Table 4.1 provides an overview of the demographic and technological self-efficacy information of the participants. Each participant was assigned a pseudonym, and when discussing data specific to one participant, their pseudonym will be used to protect their privacy.
Table 4.1

Participant Demographic and Technological Self-Efficacy

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Generation</th>
<th>First Used a Computer</th>
<th>Uses Computer for Job</th>
<th>Technological Self-Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melinda</td>
<td>F</td>
<td>Millennial</td>
<td>Middle School</td>
<td>No</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Jay</td>
<td>M</td>
<td>Millennial</td>
<td>Elementary School</td>
<td>Yes</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Charlie</td>
<td>M</td>
<td>Gen X</td>
<td>Elementary School</td>
<td>No</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Mona</td>
<td>F</td>
<td>Gen X</td>
<td>Elementary School</td>
<td>No</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Simon</td>
<td>M</td>
<td>Gen X</td>
<td>Adult</td>
<td>No</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Warren</td>
<td>M</td>
<td>Gen X</td>
<td>College</td>
<td>Yes</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Bruce</td>
<td>M</td>
<td>Baby Boomer</td>
<td>College</td>
<td>Yes</td>
<td>Very Comfortable</td>
</tr>
<tr>
<td>Ed</td>
<td>M</td>
<td>Baby Boomer</td>
<td>Adult</td>
<td>Yes</td>
<td>Very Comfortable</td>
</tr>
</tbody>
</table>

Table 4.1 Participant demographics and degree of technological self-efficacy, in relation to gender, generation, and computer usage.

The research participants spanned two genders and three different generations. For the purposes of this research study, the generally accepted ranges for the generation classification will be as follows: (1) Baby Boomers from 1946-1964, (2) Generation X from 1965 to 1984, and (3) Millennials from 1985 to 2004. In addition to the gender and generational differences, the participants also vary in whether or not they use computer technology for their job, as well as when they first used a computer during their lives. Some of the younger participants began using a computer shortly after entering elementary school, whereas some of the older participants did not use a computer until adulthood. Regardless of their current age, the age at the time of their
first computer use, or if they use a computer regularly for work, all of the participants stated that they were “Comfortable” or “Very Comfortable” using computers and computer technology, and therefore establishing their own classification for their degree of technological self-efficacy.

Data Collection through Various Methods

To allow for internal validity and data triangulation, five data collection methods were used for this study, including (1) physical artifacts, (2) observations, (3) semi-structured interviews, (4) document review, and (5) archival records. In addition to these data collection methods, a pilot test was also conducted, and through the observation of, and discussion with, the participants from the pilot study, it was determined that the study and interview design were appropriate and did not need to be modified. Prior to conducting interviews with the research study participants, the researcher reviewed physical artifacts and observed the induction training class. Following the interviews, the researcher conducted a document review and reviewed archival records. Each data collection method will be discussed here, with additional detail also provided in subsequent sections.

To provide the researcher with context, and to better understand the training content, the researcher examined physical artifacts, which included the class materials and the eLearning module that each new hire experiences when attending the induction training class for new employees. The class materials and eLearning module were easy to follow, and the researcher determined that they would provide a new employee with the necessary information to feel informed and/or successful at their new organization. This data was informative for the researcher and provided background knowledge for the observation phase of the process to assist with awareness of when the class was completing eLearning, and at which points they may have questions. During the induction training class, the researcher observed the research participants
as they received information from the instructor, as well as while they were interacting with the eLearning module. Each participant completed the induction class, including the eLearning module, and filled out a class evaluation form before leaving the classroom.

After the induction training class took place, semi-structured interviews were conducted with eight newly hired employees at the research site location. The participants were all given a choice to set the time and location for the interview. The interview times varied based on the participants’ work schedules, but all participants chose to conduct the interviews at the research site location, either before or after their shift, for their own convenience.

Following the interviews, a document review was completed by reviewing the class evaluations that the participants filled out for the induction class. Finally, archival records, which were made up of organizational charts for the research site location, showing the job roles of each of the participants, were reviewed as the last data collection method. This information helped to inform the researcher as to what each participant’s job was, and whether, or not, they used a computer on a daily basis. The combination of data collection methods helped to inform the researcher, and led to the identification of several themes, which will be discussed in greater detail in the next section.

**Themes Identified through Data Collection and Analysis of Interviews**

Through the analysis of the interview transcripts, several themes became evident in the data. The themes identified in this chapter are:

- Theme 1: Technological Self-Efficacy Impacts Employees in Different Ways.
  - Sub-theme 1A: Computer technology makes life easier.
  - Sub-theme 1B: Computer technology is not necessary for everything.
- Theme 2: Low Technological Self-Efficacy Negatively Impacts Employees.
Sub-theme 3A: Using computer technology at work.

Sub-theme 3B: Workplace training programs.

Sub-theme 3C: Past experiences with computer technology.

• Theme 3: Ineffective Induction Training Creates Negative Experiences for Employees.
  
  o Sub-theme 2A: Negative emotions displayed *during* ineffective training situations.
  
  o Sub-theme 2B: Negative emotions present when *recollecting* poor training situations from the past.

• Theme 4: Inadequate Induction Training Leads to Attrition.

Each theme will be discussed in greater detail below, along with supporting evidence from the participant interviews.

**Technological Self-Efficacy Impacts Employees in Different Ways**

For many individuals, computer technology has become embedded in every facet of their lives. The use of technology allows people to wake up in the morning and check email, watch the news, or listen to music (Melinda, personal communication, June 4, 2018). Cars incorporate computer technology to identify objects in blind spots and to ensure that the driver is staying in their lane (Bruce, personal communication, June 11, 2018). Most jobs are either entirely computer-based or have aspects of computer technology dispersed at various points (Ed, personal communication, June 14, 2018). After work, many people relax by using a computer, cell phone, or tablet to view entertainment, or to communicate with friends and family (Charlie, personal communication, May 30, 2018; Warren, personal communication, May 31, 2018). Houses even have programmable thermostats and security systems, and some beds even regulate...
the angle of the mattress, or the firmness of the bedding (Jay, personal communication, June 26, 2018). Regardless of the level of technological self-efficacy of the research participants, they have shared that it impacts every facet of their life; however, it is clear that it affects them in different ways based on their own degree of technological self-efficacy.

**Computer technology makes life easier.** With these types of technological advances, it is no surprise that the research participants also use computer technology throughout their days, and in various parts of their lives to make things easier. Individuals that have a higher degree of technological self-efficacy will likely welcome the use of computer technology easier than those with lower technological self-efficacy. Charlie, Mona, and Jay began using a computer during Elementary School, Melinda began in Middle School, Warren and Bruce started in College, and Simon and Ed didn’t encounter a computer until they were adults. From their first interactions, they have each continued to use computer technology in both their personal and professional lives and for entertainment, as well as practical purposes. Ed shared that he has “been interacting with computer technology for many, many, many years,” and in addition to using it in his personal life, he uses them throughout the day to complete his work tasks (Ed, personal communication, June 14, 2018). Simon does not use it for his job, but he does use it for reference when he is working on a project or needs additional instructions. He stated, “[n]ow I use it every day, probably every hour of the day. You know, because that’s just the new way of doing things”, and he felt that this saved him time and provided assistance at the moment that he needed it, regardless of what he was doing, or where he might be at that moment, because he always carries his cell phone with him, or is in easy reach of his computer (Simon, personal communication, May 31, 2018).
Charlie also stated that he looks up everything using computer technology (Charlie, personal communication, May 30, 2018). After taking a computer typing class when he was younger, he felt very comfortable with computers and uses them for work, everyday things, and even entertainment when he’s trying to relax or have fun. Based on how Mona used a computer for her job, she felt it would be very hard to stop using one because much of the work was completed on the computer and would be much more difficult to do without the use of a computer, including financials and scheduling. Jay did not grow up with a computer in his home, but used them so frequently when he was younger that he classifies himself as “a technology kid” and with the rise of social media, he believes that it has become embedded in his life, making him a part of that technology (Jay, personal communication, June 26, 2018). Computer technology has become an integral part of the participants’ lives, and not only do they use it for every aspect of life, including work, personal, and entertainment, but the thought of having to live without a computer “gives [Jay] palpitations” (Jay, personal communication, June 26, 2018). Each of these participants uses computer technology in their daily lives and finds that it makes their lives a bit easier.

**Computer technology is viewed by some as not necessary for everything in life.** Alternatively, some of the research participants do not use their computer technology for everything, and others even avoid it whenever possible. Warren shared that he felt confident with most of the things that he considered common, but not as confident when he was required to use a computer at work (Warren, personal communication, May 31, 2018). During the course of two different positions, he was asked to use a computer to complete the work, and although he shared that he will do what is asked of him, he found it stressful and preferred not to use the computer. When Warren does not receive what he perceives as enough training, he feels very
nervous and anxious trying to use computer technology to complete his assigned job, and as he was struggling to remember how to use one particular machine at work, he recalled that he thought to himself, “if I don’t grasp this, I’m going to be in trouble” (Warren, personal communication, May 31, 2018). Although he was eventually taken off the machine and given a different job to do, he clearly remembered how complicated the computer technology was and how little training he was given to learn how to use it properly. He didn’t understand why it was needed, or why it was so complicated, and “[i]t worried me, you know. I’ve taken on new things, tried new things, and learned to do different things [at work]. And then I’ve [also] learned to ride a motorcycle, learned to fly an airplane, and then I thought, how is this machine that cuts paper, why has it given me such turmoil” (Warren, personal communication, May 31, 2018).

Unlike Warren, who doesn’t usually use computers at work, in part due to his negative experiences in the past, Bruce uses computers so much at work that he actually tries to avoid them at home. He is very comfortable using a computer, and functions in a job that would not exist if computers were no longer used, but “I don’t dabble into too much other than paying my bills at home” (Bruce, personal communication, June 11, 2018). He occasionally shops online, and uses a computer for most of the time that he’s at work, and finds that it’s not necessary to surf the web or spend a lot of time using a computer at home (Bruce, personal communication, June 11, 2018). Melinda finds that she uses computer technology for communicating with friends and family, listening to music, and basic internet use such as ordering items online, and believes that she is very skilled at online shopping or using it for basic tasks (Melinda, personal communication, June 4, 2018). However, she feels that she is not tech savvy overall, and
chooses not to use computer technology if given the option because life is so busy and it’s not how she prefers to spend her time (Melinda, personal communication, June 4, 2018).

**Low Technological Self-Efficacy Negatively Impacts Employees**

Several emotions were present for the participants during their past experiences with computer technology, as well as during the induction training that they took most recently. During the interview, participants were asked about their experiences using technology, as well as their own comfort level with computer technology. Regardless of how much experience they each had using computer technology, or whether they used it on a regular basis, each participant responded that they were either “Comfortable” or “Very Comfortable”, using computer technology. Notwithstanding their stated comfort level with computer technology, from what was visible to the researcher, and what the participants shared during the interview, each participant has often experienced frustration, anxiety, or both, when using computer technology. An employee with low technological self-efficacy will have a more difficult time completing tasks using computer technology, which can negatively impact them at work.

**Using computer technology at work.** Melinda, Charlie, and Mona do not use computer technology to do their jobs. Simon uses computer technology on an as-needed basis if he needs assistance in completing a project. Warren had been using computer technology on a daily basis to complete his work tasks. All five of these research participants expressed anxiety related to situations that have caused them stress where computer technology was involved. Melinda has lost work and had tasks take longer than necessary due to having to follow instructions and typing on the computer. When work is lost, “and you didn’t back it up and then you have to start over. [You] cry a little bit and regroup, and then you start over” (Melinda, personal communication, June 4, 2018). She has had this happen to her on more than one occasion, and it
was both frustrating, and exhausting, for Melinda to have to rewrite or recreate work that had already been done once (Melinda, personal communication, June 4, 2018).

In a previous position, Charlie was expected to use new computer technology to complete work tasks, and without proper training, it was very hard to understand how to do so. Not only was it hard to do his job, but other individuals that did understand how to use the technology did not share the knowledge and “…if anyone [was] lagging in any way, the guys talk. And then it’s just gossip. And it’s basically a headhunting group…” (Charlie, personal communication, May 30, 2018). Charlie was faced with not only the stress and anxiety of learning to use new computer technology without training, but also with the awareness that his co-workers may be gossiping about him and from his perspective, “…knock down any potential [employee] that could possibly be better than them” (Charlie, personal communication, May 30, 2018). As Charlie recalled this situation, he seemed to be reliving the situation all over again and trying to hide his anger. It was clear to the researcher that he takes pride in his work and believes in equity. When he was not given what he believed to be a fair chance to learn the new computer technology, and that his coworkers were even acting in a spiteful manner, it was infuriating for him.

Mona did not face the same peer situation as Charlie, but she, too, was faced with learning to use new computer technology in a previous job without proper training, or an accommodating instructor. Her previous company was purchased, and they were in the process of transitioning to the new company’s processes. She stated, “I get very frustrated with that [when instructions are not clear]” (Mona, personal communication, May 30, 2018). When computer technology is complicated and difficult to learn, and it is usually necessary for her to have someone train her on the new process in a way that she can understand. When she does
need help, and “[She doesn’t] know who to call…you call the helpdesk, and you are on hold forever waiting for the helpdesk [technicians] to help you” (Mona, personal communication, May 30, 2018). For her, it is important to note that “everybody is not meant to train” because some individuals are not as open to helping and coaching others (Mona, personal communication, May 30, 2018). In this situation, Mona felt that the trainer was forced to travel to Mona’s location to train her team, and since the trainer did not want to be there, it caused the trainer not to care if Mona understood what was expected of her or not. As a manager that was responsible for completing new tasks and responsibilities with the new computer technology, and after being trained by someone that she perceived did not care, Mona felt frustrated during the training, and both anxious and angry when she tried to complete the tasks on her own following the training.

Simon has used computer technology in previous positions, but in his current role, he only uses it for reference and does not need it to complete his main tasks and responsibilities. In that previous role, he had training that he classified as “the worst” because he was taught incorrect computer functions and things that were not a part of his actual job (Simon, personal communication, May 31, 2018). He shared that he was frustrated, and “was always asking for help, like, you know, ‘how do you do this?’ and ‘what does F9 mean?’” (Simon, personal communication, May 31, 2018). Warren had a somewhat similar situation to Mona in which he was not provided enough training, and he felt like he never really understood how to use computer technology in his current or previous role. At the previous company, his training consisted of his manager telling him to “go process the returns,” which he didn’t know how to do (Warren, personal communication, May 31, 2018). He asked for help from another employee that had been there for a while, and “she came over, and she showed me a couple of screens”,
and said, “click here and click here”, and then said, “type this here’, and then she walked away” (Warren, personal communication, May 31, 2018). Warren explained that it took some time, but then he “got the hang of it” and “it wasn’t a problem,” but it was clear from his gestures and facial expressions that it had been a frustrating experience for him (Warren, personal communication, May 31, 2018).

**Past experiences with computer technology.** No matter how experienced with computer technology the participants were, or if they preferred to learn via eLearning or through face-to-face (F2F) classes, when asked about future interactions, each participant recalled enough negative experiences that it clouded their perception of computer technology or eLearning. For some, when they were asked if they would prefer to take a training class as a live, face-to-face class in a classroom, or through eLearning, they chose quickly, while others struggled with the decision. In almost every case, it was clear to the researcher that the decision was being made for a specific reason that had to do with their previous experiences with computer technology and eLearning.

Melinda, although she preferred to take training classes through eLearning when she was asked, she stated that she would choose eLearning, but questioned her decision because “…computers happen and your information can get lost or deleted and then you have to start over. Oh, that’s tricky. Hmmm, I’m going to go with the computer” (Melinda, personal communication, June 4, 2018). It was a difficult decision for her, and she was a bit hesitant, but ultimately chose eLearning. Jay chose classroom-based training because he preferred discussions and having conversations, and if he had to take eLearning, he felt that “it would just need to be really engaging” so that it wasn’t like some of his past eLearning classes (Jay, personal communication, June 26, 2018). Charlie chose to take eLearning over classroom-based
training because he felt it would be faster, stating, “[p]robably for the time, I would choose a computer class, just because I could work at my speed” (Charlie, personal communication, May 30, 2018).

Although Mona has had some poor experiences with computer training, her only experience with eLearning was during the induction training class for this research study, which she felt was engaging. Mona felt that she has a hard time staying engaged in classroom-based training, and that “[w]ith a computer, I think I would be more interested because it’s hands-on, and I’m constantly going to have to look, and look back, and use my hands to use the computer”, which might help her stay focused (Mona, personal communication, May 30, 2018). Simon had a harder time deciding than Mona because he recalled his past experiences and was wondering if the training would match up to how he would be using it for the job that he was working in. He also stated that the length of the class would be a factor, because “[i]f something is way too long on a computer, it’s not really up my alley,” and therefore he chose a F2F class over eLearning (Simon, personal communication, May 31, 2018).

Warren knew right away that he would prefer to take F2F training because he has had questions when using computer training before and not had anyone to help him. Warren said, “I feel safer with somebody there to watch me” (Warren, personal communication, May 31, 2018). When Bruce was asked which type of training he’d prefer, he said, “I guess just based on my past experience, I’d probably choose the classroom, uh, because of the interaction…” he went on to add, “e-training is very informative…but there’s a lot of other experiences that…you’re not going to hear in e-training” (Bruce, personal communication, June 11, 2018). Ed enjoys the interaction that you receive in F2F training, and although there are times when he would choose
to take eLearning, his past experiences have led him to believe that eLearning would be less engaging, and therefore, he chose F2F over eLearning.

**Ineffective Induction Training Creates Negative Experiences for Employees**

Prior to the eLearning induction training that took place at the research site location for this research study, each participant had experienced eLearning or computer technology during their induction or onboarding process for a previous position, either as a new hire or when they were being trained for a new job at a current company. Through data analysis, it became clear that ineffective induction training for eLearning and computer technology creates negative experiences for new employees, such as anxiety and frustration. This was evident through the participant interviews, as well as observations of the participants interacting with the eLearning module during the induction training class. During the induction training class, the researcher observed a number of emotions, shown in Table 4.2. Although some participants were relaxed at many points throughout the eLearning portion of the induction class, more than half displayed negative emotions such as frustration and anxiety. Table 4.2 shows the observed actions and behaviors of each participant during the technology portion of the induction training class, as noted by the researcher, as well as the emotion that was perceived by the researcher through observations and context of the class material.
Table 4.2

Participant Actions/Behaviors and Perceived Emotions during eLearning Module

<table>
<thead>
<tr>
<th>Participant</th>
<th>Action/Behavior</th>
<th>Perceived Emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melinda</td>
<td>Looking around in anticipation at the start</td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td>Smiling and giggling during the module</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Jay</td>
<td>Lack of emotion</td>
<td>Boredom</td>
</tr>
<tr>
<td>Charlie</td>
<td>Relaxed look throughout class</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Mona</td>
<td>Looking around the room for help/guidance</td>
<td>Confusion</td>
</tr>
<tr>
<td></td>
<td>Loud mouse clicking; Loud sighing</td>
<td>Frustration</td>
</tr>
<tr>
<td>Simon</td>
<td>Could not log in; Looking around for help</td>
<td>Confusion</td>
</tr>
<tr>
<td></td>
<td>Very quiet, and finished too quickly; No eye contact</td>
<td>Disengaged/Shame</td>
</tr>
<tr>
<td>Warren</td>
<td>Hesitant to start/Unsure of keyboard commands</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Bruce</td>
<td>Relaxed look</td>
<td>Comfortable</td>
</tr>
<tr>
<td></td>
<td>Clicking multiple keys frantically during one portion</td>
<td>Frustration</td>
</tr>
<tr>
<td>Frank</td>
<td>Glazed look</td>
<td>Boredom/Impatience</td>
</tr>
</tbody>
</table>

Table 4.2 Participant actions and behaviors, as well as perceived emotions, displayed during the eLearning induction training module.

Negative emotions displayed during ineffective training situations. Newly hired employees at the research site location are not told in advance that eLearning will be a part of their induction training, and to be consistent, the same was true for the research study participants. Upon arriving to the classroom for their induction class, and seeing the computers set up, the researcher observed that many of the participants looked visibly concerned, often looking back
and forth between one another. Although they were greeted warmly by the instructor, discomfort was visible through forced smiles and nervous questions to the instructor asking what the computers were for. For example, in addition to the clear nervousness, Simon demonstrated nervous laughter upon entering the classroom and looked around from person to person.

After everyone arrived, the instructor began the training class by introducing herself and giving an overview of company history. As the presentation was focused on topics aside from the computers, it was observed that the class relaxed somewhat. Once the instructor completed the non-technology portion of the class, she asked each new employee to log into their computers with the credentials provided to them. Upon this instruction, the nervousness returned to the class. Several employees logged in successfully without assistance, while several others seemed confused and looked to other employees, or the instructor, for help. Both Simon and Warren needed help logging in, and some sighs were expressed in what appeared to be frustration.

The eLearning modules had already been loaded onto the classroom computers, and the instructor asked each new employee to use the provided headphones, and click the “Start” button to begin. Mona became immediately frustrated and received assistance from Melinda. Mona repeatedly sighed throughout the eLearning portion of the class and banged the keyboard and mouse keys loudly at several points. Warren was unsure how to begin and needed assistance to get started; however, once he figured it out, he helped others around him that were also having difficulty. Although much of the class did look nervous, displayed frustrated behavior, or verbally sought assistance from others, there were a few in the class, such as Charlie and Melinda, that displayed some anxiety upon entering the classroom and seeing the computers, but after starting the eLearning module, remained relaxed throughout and appeared to enjoy some of the training.
Negative emotions present when recollecting poor training situations from the past.

The participant interviews took place following the completion of the eLearning module, and participants were asked about their experience using computer technology and eLearning, as well as when they first used a computer, if they use a computer in their job, their comfort level with computer technology, and several other questions related to these topics and their past induction and orientation training as new employees. The participants seemed generally relaxed and appeared to speak freely during the interviews. Like the visible changes that occurred upon entering the classroom and seeing the computers set-up, many of the participants became less comfortable as they were asked about their experience with computer technology.

Each participant began the interview in what was observed to be a relatively comfortable state and participated in light banter with the researcher. As the interview unfolded, and computer technology and eLearning was discussed, several actions and behaviors were observed, providing an opportunity for the researcher to perceive the emotions felt by the participants while they were recollecting their previous encounters with computer technology. Table 4.3 shows the observed actions and behaviors of each participant in this portion of the interview, as noted by the researcher, as well as the emotion that was perceived by the researcher through observations and context of the discussion.
Table 4.3

Participant Actions/Behaviors and Perceived Emotions during Interview

<table>
<thead>
<tr>
<th>Participant</th>
<th>Action/Behavior</th>
<th>Perceived Emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melinda</td>
<td>Mentioned crying and frustration</td>
<td>Stress/Frustration</td>
</tr>
<tr>
<td></td>
<td>Nervous laughter</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Jay</td>
<td>Heavy exhale, sighing</td>
<td>Frustration</td>
</tr>
<tr>
<td>Charlie</td>
<td>Eye-rolling</td>
<td>Annoyance</td>
</tr>
<tr>
<td></td>
<td>Hit hand on table</td>
<td>Anger/Frustration</td>
</tr>
<tr>
<td>Mona</td>
<td>Heavy exhale, sighing</td>
<td>Frustration</td>
</tr>
<tr>
<td></td>
<td>Sat back in seat and crossed arms</td>
<td>Dissatisfaction</td>
</tr>
<tr>
<td>Simon</td>
<td>Became quiet, looked down, gave shorter answers</td>
<td>Discomfort/Embarrassment</td>
</tr>
<tr>
<td></td>
<td>Eye-rolling, throwing hands up in air</td>
<td>Frustration</td>
</tr>
<tr>
<td>Warren</td>
<td>Nervous laughter, less eye contact, tighter expressions</td>
<td>Anxiety/Embarrassment</td>
</tr>
<tr>
<td>Bruce</td>
<td>Nervous laughter</td>
<td>Discomfort</td>
</tr>
<tr>
<td>Ed</td>
<td>Eye-rolling, exaggerated hand movements</td>
<td>Frustration</td>
</tr>
</tbody>
</table>

Table 4.3 Participant actions and behaviors, as well as perceived emotions, displayed during the eLearning semi-structured interview.

As previously noted, each participant’s self-diagnosis of their own technological self-efficacy was rated high, and more specifically, they considered themselves either “Comfortable” or “Very Comfortable”, with computer technology. However, when asked about their experiences, and while providing details related to their own induction training with computer technology and/or
eLearning, each one displayed negative actions, or behaviors, such as frustration, anxiety, anger, and discomfort.

For Mona, when she was being trained on a new system at work, she felt like the trainer was ineffective and was not able to answer her questions. If she has a question, and it is not being answered, she states, “…it’s just frustrating, and I don’t like it” (Mona, personal communication, May 30, 2018). Charlie had a similar experience with a new piece of computer technology that was not accompanied by proper training. Some of his peers were not able to learn the technology on their own, and he shared that “…it just aggravated [him] to death” because “…a lot of the younger guys who were so smart, were getting left behind” (Charlie, personal communication, May 30, 2018). It was troubling for Charlie because many of them were his friends, and as a result of not understanding computer technology, they chose to leave the company. Like Charlie and Mona, Simon also had a troubling training experience. After starting a new job, he attended a long induction training for the computer technology that he would be using, but after he finished up training and started doing his job, he found that it was nothing like his training and not only did he not need most of what was being trained, but “…it was a whole totally different ball game than what you learned in training”, and he explained that he felt frustrated and ill-prepared to not only do his job, but be successful in it as well. (Simon, personal communication, May 31, 2018).

As Warren recalled his new hire training for a specialized computer-based machine, he said he was not given much training and “felt like if [he] didn’t grasp this [he was] going to be in trouble” (Warren, personal communication, May 31, 2018). He said it was stressful and he had experienced a great deal of anxiety until he was moved to a different department without computer technology. After Warren changed departments, he remembered that he not only felt
better but slept better than he had in quite some time (Warren, personal communication, May 31, 2018). Similar to Warren, Melinda has had several situations interacting with computers that “makes [her] want to cry” because sometimes technology is something that “we can’t control”, especially when it does not function as expected, or when you are asked to use it in a way that you do not understand (Melinda, personal communication, June 4, 2018). For Melinda, she needs to feel that she really understands how to use computer technology and also has time to practice the skill or she will feel very anxious (Melinda, personal communication, June 4, 2018).

Bruce recounted his past eLearning training, and felt like he didn’t always learn very much, which is not helpful as a new employee. Ed shared that he often experienced frustration with eLearning or induction training because he prefers to progress at his own pace, and as reliance on technology increases, there are often “slowdowns or unexpected results, or poor behaviors from the system”, and it was always frustrating (Ed, personal communication, June 14, 2018). Jay is also frustrated with computer technology, or systems, that are slow, and felt like some of his worst experiences were when it was evident to him that they were done so poorly because “no effort was put into creating them” (Jay, personal communication, June 26, 2018). For him, both of these add up to what he called “a super drag” (Jay, personal communication, June 26, 2018).

**Inadequate Induction Training Leads to Attrition**

Induction training, like the one held at the Research Site Location, may contain eLearning elements, or it may be conducted without it. Regardless of the format, the training can often be the first impression that a new employee has of the new company that they are working for. Based on the reactions from the research participants, poor induction training causes
dissatisfaction in new employees, sometimes to the point that an employee thinks about leaving the new organization, or actually does choose to leave.

Each of the research participants has had negative experiences with induction training or computer technology training, and several of them have experienced situations that were so inadequate that it affected their perception of their new company. Unfortunately, half of the research participants actually left their new jobs as a result, most specifically due to the poor induction training. One participant, Ed, has not worked for many organizations and has been fortunate that he has not had a poor induction experience during his career. In a follow-up interview, he shared that a poor situation like that “…would have a large and negative impact on my perception of the company” and “[i]t would certainly be a factor in my thinking [about staying] and would put a negative tint on how I would perceive other things about the company” (Ed, personal communication, October 8, 2018).

Charlie attended an induction training in which the instructor was unsure of the material, and because he was training them incorrectly, the class was “actually correcting [the instructor] the entire time” (Charlie, personal communication, May 30, 2018). Charlie remains very open to leaving an organization if it does not appear to be the right fit. Mona attended an induction training that was so bad after a couple of hours that she was ready to leave but tried to give the company another chance. When there were too many inconsistencies between the training and the job itself, she said, “it’s time to go” and left her position (Mona, personal communication, May 30, 2018).

Simon had a similar experience after starting a new job and going through induction training in which the training and the job did not align. Not only did he have concerns with the training, but they were paid a certain rate per minute, “and you pick an order per minute and they
give you a score at the end of the order, and it tabulates how much you get paid. And, it didn’t
really add up with the numbers in my paycheck that they told me. So, yeah that kinda rubbed me
the wrong way” (Simon, personal communication, May 31, 2018). He left the company as a
result and said that it still bothers him to this day, and he jokingly said that the interview with the
researcher “…brought up bad memories” (Simon, personal communication, May 31, 2018).

Bruce has been in two different situations where he chose to leave, one was frustrating
and he said, “I’m banging my head up against the wall, so this is hurting me, and I’m not liking
it” because there really wasn’t an induction program to speak of and he had to train himself on
his job requirements (Bruce, personal communication, June 11, 2018). In the other situation, he
realized about two weeks into the new role that it just wasn’t going to work out. In addition to
leaving organizations due to poor induction training, Bruce has also gotten “frustrated in that
contant circle of not really resolving anything, and you know, I’ve gone to other positions” as a
result (Bruce, personal communication, June 11, 2018).

**Summary and Conclusion**

The purpose of this case study was to explore the described experiences of newly hired
corporate employees with varying degrees of technological self-efficacy as they used computer
technology. After a thorough analysis of five different types of data, four superordinate themes
were identified, along with seven sub-themes. This chapter presented those themes with
supporting evidence from physical artifacts, researcher observations, interview transcripts,
document review, and archival records. The themes discussed in this chapter were:

- **Theme 1: Technological Self-Efficacy Impacts Employees in Different Ways.**
  - Sub-theme 1A: Computer technology makes life easier.
  - Sub-theme 1B: Computer technology is not necessary for everything.
• Theme 2: Low Technological Self-Efficacy Negatively Impacts Employees.
  o Sub-theme 3A: Using computer technology at work.
  o Sub-theme 3B: Workplace training programs.
  o Sub-theme 3C: Past experiences with computer technology.

• Theme 3: Ineffective Induction Training Creates Negative Experiences for Employees.
  o Sub-theme 2A: Negative emotions displayed during ineffective training situations.
  o Sub-theme 2B: Negative emotions present when recollecting poor training situations from the past.

• Theme 4: Inadequate Induction Training Leads to Attrition.

Ultimately, through the observations of the researcher, and the interviews with the research participants, it became clear that poor induction training, and poor computer technology training, have a negative impact on new employees, sometimes resulting in attrition.

In Chapter 5, the research findings will be discussed in greater detail, including their relationship to the problem of practice and theoretical framework. Recommendations for practice will also be made, along with recommendations for future research. Finally, a conclusion for Chapter 5, as well as an overall conclusion for this doctoral thesis will be provided.
CHAPTER 5: DISCUSSION

This case study was focused on exploring the research question, “How do newly hired corporate employees with varying degrees of technological self-efficacy, describe their experiences using computer technology?” The study was conducted with eight research participants that were newly hired employees at an eCommerce and Manufacturing organization that were participating in an induction program with eLearning elements. The purpose of this case study was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. This chapter will discuss the various research findings, their relationship to the theoretical framework, their connection to the literature, as well as the implications for practice, and recommendations for future research. Finally, a conclusion for the chapter, as well as an overall conclusion for this doctoral thesis will be provided.

Alignment with the Theoretical Framework

This case study used the Cybergogy for Engaged Learning model as the theoretical framework. The model was developed in an attempt to help adults learn in online learning environments (Malek, 2017), and it explains that eLearning requires a balance between content and technology in order to be effective (M. Wang, 2012). As an individual participates in training in an online learning environment, three main states must be present for fully engaged learning to occur, including: (1) cognitive, (2) emotive, and (3) social (Minjuan Wang & Kang, 2006). The Cybergogy model integrates each of these states to encourage engaged learning (Muresan, 2012).
Application of the Cybergogy for Engaged Learning Model

Cognitive presence is described as both the sharing of information, as well as constructing new knowledge. Emotive presence includes the learner’s feelings as they relate to themselves, the community, and the learning process. Social presence is described as how the learner presents themselves in the virtual environment (Minjuan Wang, 2007). In this study, the instructor and the participants shared information, and the participants also constructed new knowledge as they took part in the induction training and the eLearning module, which constituted the cognitive presence. Through the interviews that the researcher conducted, it was also clear that emotive presence was a part of the participants’ experiences. For the social presence, each participant openly shared their feelings about the induction program that they had just attended, as well as previous programs that they had attended with other organizations. Also as a part of the social presence, the participants described their presence in the eLearning module, and the researcher shared the observations that were witnessed firsthand.

When considering engagement as proposed by the Cybergogy model, participants that experienced the overlapping facets of the model were more engaged, and although some participants may have been unsure of how to initially interact with the eLearning, it was clear that many of them wanted to try out the eLearning module. These same individuals shared their feelings about the module and were socially involved as well. Unfortunately, some participants appeared to arrive to the training class with a less than eager attitude toward learning. They each completed the eLearning module but seemed to do just what was asked of them, and nothing additional. They all shared their feelings during the interview, but they were not as socially involved in the training. For those participants, not only was their engagement not evident to the researcher during the observations, but they also exhibited less emotion and excitement when
answering questions about the eLearning module during the interview. According to the Cybergogy for Engaged Learning model, individuals that experience all three overlapping facets of the models during learning will be more engaged in their own learning, and those that do not will be less engaged.

**Figure 5.1**

*Cybergogy for Engaged Learning*

![Cybergogy for Engaged Learning Diagram](image)

Figure 5.1 The Cybergogy for Engaged Learning Model, developed by (Minjuan Wang & Kang, 2006), incorporates the three overlapping domains that learners experience when fully engaged in learning - cognitive, emotive, and social.
After examining the data from this research study, this premise also held true with these research participants.

In addition to the connection that the Cybergogy model had to the eLearning portion of the induction program, it is also possible that the engaged learning led to an increase in technological self-efficacy for the participants. Learning engagement is an important element that increases success and performance (I.-S. Chen, 2017), and based on the data in this study, created an open and welcoming environment for the eLearning. Several participants shared that they were motivated during the eLearning program and that the content of the cultural program created a welcoming feeling. All participants completed the program successfully, thereby meeting the challenge that they were faced with, likely increasing their success in the program. Hatlevik et al. (2018) note that increased technological self-efficacy can be directly related to culture, and Ferrazzi (2015) states that increased technological self-efficacy occurs after an individual experiences a success. Given the engaged learning that took place, and the success in completing the program, some participants may have also experienced an increase in technological self-efficacy, but that is not something that can be confirmed through this research study.

However, although the premise of the theoretical framework did apply to this research study, through the observations of the researcher, the interviews with the participants, and the examination of the data, the researcher found that the original description of the model did not fully define the environment as completely as may be necessary, because, based on this research study, the physical environment appeared to be a much more important factor for the participants. Not only does the atmosphere for learning matter (Karatas & Baki, 2013), along with the community that is created in an eLearning class, but the actual environment that the
learner is physically present in can drastically impact the ability for the learner to learn. Negative perceptions of the environment often impact the achievement of the learner (Tootoonchi, 2016). For many participants in this study, the setting created some discomfort and/or anxiety, which may have negatively affected their learning. Additionally, participating in an eLearning module in a classroom setting may have created a sense of self-consciousness for some participants, which was perceived by the researcher during the observation phase. This idea may be supported by Tootoonchi (2016), who believes that the attitude of the learner as a result of the environment can have a negative impact on the learner. However, for other participants, participating in an eLearning module in a more private setting, without the instructor present to answer questions, would likely have felt more isolating, and thereby less engaging. Just as learning environments will vary in their specific characteristics (Arens & Möller, 2016), it may be helpful to identify the appropriate environment for the learner. One specific type of environment will never be perfect for all learners, however, in order to experience fully engaged learning, it may be helpful to find the intersection between the cognitive, emotive, and social elements for engaged learning, and also consider the importance of the learning environment as well.

**Research Findings**

The collection and analysis of research data from this study resulted in several findings, including:

- Technological Self-Efficacy Impacts Employees in Different Ways.
- Low Technological Self-Efficacy Negatively Impacts Employees.
- Ineffective Induction Training Creates Negative Experiences for Employees.
- Inadequate Induction Training Leads to Attrition.
When considering technological self-efficacy, and a new employee’s perspective on eLearning induction training, there are a number of factors that affect both technological self-efficacy, as well as eLearning induction training. Each finding will be discussed in greater detail in subsequent sections, along with the connection to the literature, implications for practice, and the importance of that finding to both the research question, as well as the overall study.

**Technological Self-Efficacy Impacts Employees in Different Ways**

The data from this study identified the embeddedness of technology in both the personal, and professional, lives of individuals today. It was clear that the participants, although their ages and backgrounds varied, all use computer technology on a daily basis. Some participants have been using computer technology since they were in elementary school, while others never saw a computer until they were fully immersed in adulthood. Many shared that they use it at work, at home, and all throughout their typical days.

As a new employee in this era, each of the research participants has found that they often use computer technology in their jobs, and several of the low technological self-efficacy employees are unsure what that technology will be when they arrive at their new job, causing them to feel stress as they prepare to start a new job. Others have participated in different eLearning induction training programs at new jobs and experienced similar anxiety and frustration as they did with the eLearning induction training that took place at the research site location. Even for the participants that did not use computer technology during new hire induction training upon starting a new job, they have all used computer technology at several jobs as brand new employees, and have each had negative experiences due to poor training, or a belief that they are not capable enough to use the technology to complete the required task(s). For the high technological self-efficacy participants, in particular, most not only began using the
computer technology the moment they arrive at their new jobs but also with little-to-no training, which can be stressful, even for individuals that consider themselves to be very tech savvy. Additionally, they believe that their jobs would not even exist without computer technology, making it even more essential for them to not only understand how to use it but to do so efficiently and effectively.

**Connection to the Literature.** Compared to the usage of computer technology by the research participants, the literature also found that computer technology is often used for the purpose of making one’s life easier (Harris, 2016; Jena, 2015; Kämpfen & Maurer, 2018), even though it can also increase a new employee’s stress levels (Korver, 2016). One of the biggest areas of growth has been in the corporate world, where technology has become engrained in the organization’s structure (Soylu & Campbell, 2012), including education and learning which is seen as integral to improved performance (I.-S. Chen, 2017). This technology may also come in the form of automation, or efficiency, allowing tasks to be completed faster or on a different, or more convenient, schedule (Harris, 2016; Kämpfen & Maurer, 2018). Many of these advances may allow for multi-tasking at work, or even for accomplishing a goal in one’s personal life (Kämpfen & Maurer, 2018). Unfortunately, this increased use of computer technology is not always seen as a positive by some employees due to the many situations in which it is not used effectively; it can increase stress, rather than decrease it (Hendricks & Louw-Potgieter, 2012).

**Implications for Practice.** Based on this research, it may be helpful for organizations to understand that most of the research participants, all with varying degrees of technological self-efficacy, experienced some negative emotions as they used computer technology before, during, and after eLearning induction training. For roles in which employees typically have lower degrees of technological self-efficacy, organizations could provide an overview of what the
employee will experience in the first day or first week related to computer technology, to help them be more prepared on day one. For employees with higher degrees of technological self-efficacy, especially for those that will be expected to be proficient with computer technology immediately upon starting their new job, it may be helpful to ensure that the new employee has an appropriate level of instruction and understands how to use the computer technology. This research has shown that all of the participants experienced some anxiety or frustration before, during, or after the eLearning induction training, and organizations that work to address this may be able to assist new employees in feeling more successful in their new roles.

**Importance to Research Question.** Technological self-efficacy affects all employees that use computer technology (Compeau & Higgins, 1995), and potentially even more so for new employees that will be required to use it early in their new job. One way to fully understand the technological self-efficacy of a new employee is to understand how computer technology is presently being used in their lives (Compeau & Higgins, 1995). Since technological self-efficacy is influenced by the regular use of computer technology, someone that is a regular user will often have a higher degree of technological self-efficacy than someone that rarely uses computer technology. This same premise typically holds true for those that use computer technology in both their personal and professional lives, rather than for those that use it more sparingly, and only in their personal lives. Therefore, understanding what technological self-efficacy is, how to increase it, and anticipating what may create anxiety or frustration for employees as it relates to technological self-efficacy, may help organizations create a more welcoming environment for new employees.
Low Technological Self-Efficacy Negatively Affects Employees

Through observations, and participant interviews, the researcher was able to identify the technological self-efficacy of the study participants, which varied considerably from one to another. Every individual’s degree of technological self-efficacy is different based on their own interactions with computer technology, and it often changes over time as their technology use changes. When asked, each participant stated that they were either “Comfortable” or “Very Comfortable” with computer technology, however, that did not align with the researcher’s observations. Based on the participant responses during the interviews, coupled with the researcher’s observations of the induction training class and the interviews, the researcher determined that three participants had low technological self-efficacy, two had medium technological self-efficacy, and three were high in technological self-efficacy. The participants with low and medium technological self-efficacy demonstrated either an initial lack of understanding, and in some cases, a complete lack of understanding, of how to use the computer technology in the induction training class, and some also shared that they were frustrated at times, or that they were nervous when they entered the class and saw the computers on the desks. The participants with high technological self-efficacy had no issues interacting with the eLearning induction training but expressed frustration at certain points because the program did not move fast enough for them, did not allow for enough interaction, or did not provide enough additional information in areas where they wanted to learn more. Many of the participants, regardless of their degree of technological self-efficacy, were visibly nervous upon entering the classroom and remained so for a period of time while the instructor was talking. The researcher observed an obvious difference in interaction and engagement between the first half of the class that included the eLearning elements, and the last half of the class after the eLearning portion
was over. Engagement increased so considerably after the eLearning portion concluded that it became clear to the researcher that the anticipation of using the computer technology was creating stress and anxiety for the employees, affecting their participation, and potentially their learning.

The participants also shared that some eLearning programs are better than others, and many felt that it was not always necessary to use eLearning programs over a face-to-face training program. Several participants, spanning the low, medium, and high technological self-efficacy groups, preferred taking classes in a live classroom setting due to the presence of the instructor to answer questions, help if issues arise, and also for increased engagement among the class participants. The stress, anxiety, or frustration that new employees feel when using eLearning induction training affects the new employees and appears to also affect their learning and engagement in induction training programs.

**Connection to the Literature.** When reflecting on the preferences of the participants in this study, many researchers support their thoughts. Ma (2015) posits that learners sometimes require more assistance and guidance from the instructors. The quality and ease of use, of the eLearning program affects the perception of the learner, as well as their likelihood to continue to use similar programs (Larmuseau, Desmet, & Depaepe, 2018). Learners with a poor perception of a learning program may not achieve the learning goals set forth by the program (Larmuseau et al., 2018), thereby creating a lower sense of technological self-efficacy (Huffman et al., 2013). Technological self-efficacy is formed over the course of many interactions with computer technology (Compeau & Higgins, 1995), and it, therefore, stands to reason that a number of negative interactions will negatively affect one’s degree of technological self-efficacy. This can have a compounding effect over time, leading to lower levels of motivation to accomplish goals.
and tasks (Downey & Kher, 2015), and even to avoid using technology altogether (Rohatgi et al., 2016), which may include participating in eLearning induction training programs. In contrast, learners with high technological self-efficacy have greater confidence when faced with using technology (Gupta & Anson, 2014), have a higher affinity toward technology and computers (Downey & Kher, 2015), and are more inclined to use technology and eLearning (Lu et al., 2016).

Implications for Practice. As organizations design eLearning, especially eLearning induction training, it will be important to consider the usability of the eLearning program or computer technology, which may positively impact individuals with low technological self-efficacy. eLearning with inadequate instructions or complex technology may require additional support from an instructor, either by being present for the training or with a direct line for support, if the need arises. Ultimately, it should be the goal of the organization to ensure that eLearning induction programs do not create a negative experience for the employees, due to the unintended consequence of negatively impacting their technological self-efficacy.

Importance to Research Question. This research study aims to understand the experiences of new employees that have varying degrees of technological self-efficacy, as they participate in eLearning induction training programs. eLearning induction programs are a combination of eLearning programs and new employee induction training. Since eLearning induction training is not currently being used at all organizations, understanding the experiences of new employees that participate in eLearning induction training could provide data that may help them redesign their eLearning induction training programs, or eLearning programs, or induction programs that do not include eLearning elements. Regardless of which type of eLearning training program an employee is attending, the findings from all three can be used to
help create better ways to develop training. For example, an organization could use the findings from eLearning programs to improve other eLearning programs, or eLearning induction programs, because many implications can be universally beneficial.

**Ineffective Induction Training Creates Negative Experiences for Employees**

Since organizations are typically trying to increase work performance, it is likely that their induction and orientation training programs are intended to do just that. Considering all but one of the study participants had experienced poor induction training during their career, it is clear that many organizations are not doing enough to prepare their new employees for their new jobs. Induction training is one of the first impressions that a new employee has of their new organization, and all of the research participants explained that poor induction training often causes dissatisfaction, which then causes them to wonder if they have made the right decision in accepting a position with the new company. For them, they already arrived to the new job a little nervous because they know that they are new to the organization and have a lot to learn. Unfortunately, when their initial experiences do not go well, it is stressful for them and can turn the nervousness that they initially felt, into something more negative. When the participants did attend what they considered a good induction program, they felt more prepared to start their job, and more knowledgeable that they would be able to complete the tasks required of them. The support that they experienced translated into a more positive outlook on the new organization, and reduced discomfort and anxiety.

**Connection to the Literature.** Many organizations recognize the importance of their employees, referring to them as their most valuable asset (de Bussy & Suprawan, 2012). Induction training is created to ease a new employee’s transition while providing the training and confidence that they may need to be successful in their new job (Daneci-Patrau, 2016).
Unfortunately, induction training can be time-consuming and costly (Dunlap, 2015), and therefore, many organizations do not see its potential value and believe that it is not an essential part of the business (Lieber, 2009). As a result, some organizations do not have formal programs and expect the hiring manager to train the employee (Ferrazzi, 2015), or just use a one-size-fits-all solution that is not ideal for all employees or job roles (Acharya et al., 2015). Considering the stress that new employees have when starting a new job (Korver, 2016), an ineffective, or unengaging, induction training can exacerbate that stress (Hendricks & Louw-Potgieter, 2012), and create a negative perception of the organization that will remain for some time (Johnson & Senges, 2010). Alternatively, the quality of instruction or training classes has been shown to positively affect student outcomes, such as reduced stress levels (Arens & Möller, 2016), and greater learning retention (Clark et al., 2017). Ultimately, for the new employees, Yapchai (2016) believes that the experiences that they have during their new employee programs can help them determine if they have made the right choice.

Implications for Practice. For an organization that has invested time and money into hiring new employees, it would be very unfortunate if their induction program, or lack of one, negatively affected their new hires, causing them to question their choice to join the company. Starting at a new company can be both exciting, as well as stressful for a new employee, and it is important to reduce their stress on day one. One-size-fits-all training approaches may work for some employees, but leave many others dissatisfied and anxious. This research study has found that due to different backgrounds, job roles, and degrees of technological self-efficacy, employees would benefit from more customized induction training. Training that can be customized to meet the needs of the employees should increase retention and job skills, while
reducing stress and anxiety, culminating in a positive outcome for the employee and the organization.

**Importance to Research Question.** Dissatisfaction from employees that participate in ineffective induction training can often be a very negative experience for new employees. Findings from ineffective induction training are directly related to eLearning induction training and the experiences that new employees may have when participating in either program. Organizations that improve their ineffective induction programs may also positively impact new employees that participate in better eLearning induction programs as a result.

**Inadequate Induction Training Leads to Attrition**

For almost all of the study participants, the increased anxiety and negative feelings that they experienced as a result of their poor induction training were impactful enough that they considered leaving their new organization, and thirty-eight percent of the participants did actually leave. Even the participant that has never had a poor induction experience shared that if he experienced poor induction training, it would negatively impact his view of the company and he would definitely consider leaving as a result. Work is an important part of life, and staying employed somewhere that created stress, or did not support them, would not be an ideal situation for the participants. Where there were no formal induction programs in place, the participants relied on their manager, or team members, to help them learn their new job. In some cases, this worked out, but in others, the employee did not feel like a part of the team and were not provided with quality training. For some, they left work on their first day concerned that they had made the wrong decision by accepting that job, and one research participant was so negatively affected by the poor training that he received that he began to question his own intelligence and capability to learn. Even more disturbing, some of the participants shared that they were not the only
employees that felt the way they did, and that other employees also chose to leave the organization as a result. However, for participants that had positive experiences with their induction training, they felt vindicated that they had made the right decision, and their stress was relieved. For one participant in particular, after attending the induction training at the Research Site Location, which she characterized as the best she had ever been to, she is so happy working there that she has already decided that she is never leaving and hopes she can retire from there one day.

**Connection to the Literature.** People spend so much time at work, that it has become a very important part of their lives, which creates value and gives meaning to the time they spend there (Navarro-Abal, Climent-Rodriguez, Lopez-Lopez, & Gomez-Salgado, 2018). Job satisfaction and feelings of commitment to an organization can reduce an employee’s desire to leave, but when these are present, their dissatisfaction may transform into an intention to leave (Park, Jun, Lee, & Lee, 2018). Chapman (2018) understands how important employees are to the success of an organization, and believes that a comprehensive onboarding plan will not only give them the foundation that they need to assimilate quickly, but it will also reduce their intention to leave, saving the organization the costs associated with replacing them. Induction training can even be so impactful on an employee’s perception of the company that up to four percent of new employees leave their new organization after the first day, and even more leave within their first thirty days (Lawson, 2015). When employees do leave, not only do organizations experience financial costs related to replacing them, but there are also decreases in efficiency for the team, impacts to the organization of working with less experienced individuals, not to mention the difficulty of working with fewer employees when the positions are empty (Perreira, Berta, & Herbert, 2018).
Implications for Practice. The impact of induction training, with regard to employee turnover, is so great, that organizations will benefit from the creation of programs that will meet their employees’ needs. An employee that feels satisfied and supported after the first day, the first week, and the first month, will feel more committed to their new organization, thereby reducing their intention to leave. As employees become more assimilated and capable in their jobs, the organization will achieve greater efficiencies, potentially allowing it to become more successful (Chapman, 2018). Reduced turnover will have a positive financial impact on the company, which may then allow for additional monetary investments in other areas of the organization. The positive, or negative, impact of the induction training program for new employees can have a domino effect on the rest of the organization, resulting in greater successes, or unintended consequences, for everyone involved (Chapman, 2018; Lawson, 2015).

Importance to Research Question. From the interviews with the research participants and the many experiences that they shared, it is clear that ineffective induction training, whether it included eLearning elements, or not, can be very detrimental to organizations, based on the effect that it has on the new employees. Understanding why new employees may choose to leave organizations after ineffective induction training may provide organizations with the tools that they need to improve their induction training. Doing so may positively impact the experiences of new employees that participate in eLearning induction training, which may ultimately improve the organization's efficiency and productivity, and reduce the financial losses from employee turnover.

Considerations for Future Practice

In addition to the implications for practice, through the analysis of data, two additional factors were discovered that may impact organizations as they implement computer technology
or eLearning. These additional factors are: (1) using eLearning during induction training creates anxiety and frustration, and (2) increasing technological self-efficacy positively affects new employees. Each factor will be discussed in more detail below, followed by recommendations for future research.

**Using eLearning during Induction Training Creates Anxiety and Frustration**

Regardless of an employee’s degree of technological self-efficacy, this study has shown that eLearning induction training leads to anxiety and frustration. This is more widespread for those that have low technological self-efficacy due to their lack of knowledge using the computer technology, but it does also occur for those that have high technological self-efficacy as well (Cazan et al., 2016). As displayed during the induction training class, when a new employee encounters eLearning induction training, their body language and facial expressions show their anxiety, discomfort, or even fear. Each of the study participants experienced anxiety or frustration during the eLearning induction training, varying from complete confusion and anxiety to mild frustration. Participants with high technological self-efficacy generally had a better experience but focused on how it slowed them down, did not work properly, was not informationally expansive enough, or was not intuitive enough. Participants with medium or low technological self-efficacy expressed some of the same thoughts as those with high technological self-efficacy, but also focused more on the lack of instructions they received, as well as a fear for what would happen to them if they did not “pass” the class, even though no grade would be given. Many shared that they were generally uncomfortable using computer technology, and it not only created anxiety at work but also affected them at home as well, sometimes even affecting their quality of sleep.
Using computer technology, especially at work, can be frustrating for many employees (Cazan et al., 2016), which can lead to feelings of overwhelm or burnout (Salanova et al., 2000). When the computer technology is related to learning, the employee may develop negative feelings toward the technology or eLearning program (Huffman et al., 2013), resulting in less participation with future programs (Hardin et al., 2014; Mohammadyari & Singh, 2015), or avoidance of eLearning and computer technology altogether (Tsai et al., 2011). Additionally, not only do employees experience anxiety when they find themselves in unfamiliar or uncomfortable situations with computer technology (Wilfong, 2006), such as eLearning induction training, but the feelings of anxiety can also limit how much they learn in those situations, which also affects their overall learning capability (Yilmaz, 2017).

If employees, no matter their degree of technological self-efficacy, experience negative feelings when using computer technology in their jobs, especially during a new hire eLearning induction training class, it will be essential for organizations to not only be aware of these feelings but also to work to mitigate them. As a result of the participants’ expression of anxiety and frustration over lack of training, poor instructions, etc., when faced with using the eLearning induction training, organizations can likely improve these outcomes by evaluating their own technology training programs to determine where modifications and improvements can be made. Reducing negative experiences for employees will likely improve their learning capability, potentially leading to improved work performance.

Based on the negative experiences of the research participants’ using eLearning induction training, it is important to understand the impact that these negative experiences may have on the new employees’ perspective of the organization. The eLearning induction training is one of the first interactions with the new organization, and a negative experience may increase a new
employee’s anxiety even more than what they were feeling due to starting a new job at a new company. If an organization understands that most employees may feel some anxiety when using eLearning induction training, regardless of their degree of technological self-efficacy, it may help them work to minimize that anxiety through better training or instruction. When done successfully, and with eLearning induction training programs, new employees may have more positive experiences during their new hire onboarding period, helping them feel more comfortable in their new role.

**Increasing Technological Self-Efficacy Positively Affect New Employees**

This research has shown that many employees feel anxiety or frustration when interacting with eLearning induction training, and employees with lower degrees of technological self-efficacy are often more negatively affected than most. Additionally, induction training is one of the first interactions that a new employee has with their new company, and due to a negative experience, it may cause an employee to be dissatisfied with their new employee, sometimes to the point of leaving the organization. However, since an individual may increase their degree of technological self-efficacy by becoming more familiar with computer technology, increasing an employee’s technological self-efficacy may positively affect new employees.

As an individual begins using computer technology, their personal comfort level with it determines their degree of technological self-efficacy (Compeau & Higgins, 1995; Salanova et al., 2000). Someone that is not comfortable at all will have a low degree of technological self-efficacy, whereas someone that is very comfortable with computer technology will have a high degree of technological self-efficacy. The data from this study demonstrated that the age that the employee first interacted with computer technology was not a factor in the research participants’ degree of technological self-efficacy. Half of the research participants did not interact with a
computer for the first time until they were adults, yet most of those individuals were the ones with the highest degrees of technological self-efficacy. The other half of the research participants began using a computer in elementary school or middle school but still felt uncomfortable with computer technology, and completely avoided using it for some tasks. Although several participants have a relatively low degree of technological self-efficacy, which was evident by observing the eLearning portion of the induction training class, as they continued to interact with the eLearning, many became more comfortable using it. For example, participants that were visibly concerned upon walking into the classroom, and at the start of the eLearning module, became more relaxed after using the technology and even helped some other classmates that were having a difficult time. They may have been uncomfortable at first, but their increased use of the eLearning allowed their comfort level to increase. Whether an employee is in a classroom at work, or sitting at their desk, the more they interact with computer technology, the more comfortable they will become using it, potentially increasing their degree of technological self-efficacy (Compeau & Higgins, 1995; Y.-H. Lee et al., 2013; Salanova et al., 2000). Therefore, organizations that identify their employees’ degree of technological self-efficacy, and work to increase the lower degrees of technological self-efficacy may positively impact those employees, in turn positively impacting the organization due to increased efficiency and productivity, and potentially lower rates of attrition from employees that do not feel the need to leave the company after experiencing a poor induction training.

Individuals possess varying degrees of technological self-efficacy (I.-S. Chen, 2017; Hatlevik et al., 2018; Salanova et al., 2000; Wilfong, 2006), which also refers to an individual’s ability to feel motivated and capable to complete a task with the cognitive resources that they possess at a given moment (Esterhuyse et al., 2016). This belief of ability is important due to the
understanding that individuals will attempt tasks that they believe they can accomplish, and avoid those that they believe they are not capable of (Hatlevik et al., 2018). It is important to note that one’s belief in their own abilities is not necessarily a true assessment of what they can, or cannot, accomplish (Bandura, 1994). In a work setting, increasing an employee’s technological self-efficacy is essential due to the increased use of computer technology in the work environment, and because studies have shown that it also increases engagement and work performance (I.-S. Chen, 2017).

It is unclear from this study if the participants that experienced an increased level of comfort also experienced an increased degree of technological self-efficacy by the end of the class. However, increased use of computer technology does increase technological self-efficacy over time (Compeau & Higgins, 1995; Y.-H. Lee et al., 2013; Salanova et al., 2000). Therefore, in order to capitalize on the increased level of comfort, which could also impact an individual’s technological self-efficacy; it may be beneficial to allow for increased practice with computer technology. This may take several different forms, and one example could be a practice lab, either before the class, or at prearranged times, but ultimately one that is available to individuals that want to increase their familiarity with the computer technology.

Understanding that increased use of computer technology can increase technological self-efficacy over time is important because it can impact how an organization develops its eLearning induction training. For organizations that are aware that they will be hiring employees with lower degrees of technological self-efficacy, it may be helpful for them to design programs that will be successful for employees that have lower technological self-efficacy. Alternatively, they could use this information to develop programs that may help increase the employees’ degree of technological self-efficacy as a way to improve the success of the program.
Recommendations for Future Research

When considering the research gathered during the course of this doctoral thesis, there are several additional areas that may benefit from further research. First, since all of the participants in this study experienced some anxiety or discomfort when they discovered that they would be using computer technology, it would be helpful to know how they would be impacted if they had been given more advanced knowledge of the intended use of computer technology during the induction training before being asked to use it. This study did not provide prior notice to the participants of the presence of an eLearning module during the induction training, and it would be interesting to know if it had, would the levels of anxiety have increased, decreased, or remained the same?

Second, it may also be helpful to understand how employees feel about their new company immediately following an ineffective induction program. The participants in this study were generally satisfied with the induction training, with some even stating that it was the best that they had ever attended. However, it may be helpful to interview participants following an ineffective induction program to determine how their view of the company had changed, or if they were considering leaving the company as a result. Additionally, for employees that did have a bad experience, it may be helpful to follow up with them after one, three, six, or nine months at the new job to see if their views of the company had changed once there was some distance from the induction training.

Third, this study focused on the degree of technological self-efficacy within induction programs. Since technological self-efficacy does develop over time and can either be positively or negatively affected by interactions with computer technology, it may be helpful to understand how technological self-efficacy changes at certain intervals following an eLearning induction
training program. Also, for the participants that had lower technological self-efficacy, did their degree of technological self-efficacy increase following a positive experience.

Finally, due to the impact that the learning environment had on the participants in this study, it might be helpful to more fully understand how this particular factor has on the Cybergogy for Engaged Learning Model. Since the original model does not explicitly define the learning environment, perhaps additional research could determine if there may be a need for one additional element to be included in the model.

**Conclusion**

This chapter discussed the various research findings from this study, their relationship to the theoretical framework, their connection to the literature, implications for practice, considerations for future practice, as well as recommendations for future research. The findings discussed were: (1) Technological Self-Efficacy Impacts Employees in Different Ways, (2) Low Technological Self-Efficacy Negatively Impacts Employees, (3) Ineffective Induction Training Creates Negative Experiences for Employees, and (4) Inadequate Induction Training Leads to Attrition. The purpose of this doctoral thesis was to explore the described experiences of newly hired corporate employees with varying degrees of technological self-efficacy as they used computer technology. The research also sought to provide guidelines to best address the needs of these employees, resulting in a greater level of performance and proficiency for organizations. Through the research, this question was used to frame the study, “*How do newly hired corporate employees, with varying degrees of technological self-efficacy, describe their experiences using eLearning induction training?*”

Through the various data that was collected, it became evident that technological self-efficacy impacted new employees as they participated in induction training that included
eLearning elements. It has provided an understanding of how new corporate employees experience an induction training class with eLearning elements and has also created an awareness of the benefits, and difficulties, for employees as they participated in new employee induction training. The hope is that it will assist organizations in creating better induction training for the new employees, in an effort to positively impact the entire organization. Additionally, making the decision to take steps to increase employees’ technological self-efficacy may also positively impact the employee’s engagement and work performance, again, ultimately impacting the organization in a positive manner. Therefore, while answering the research question, “How do newly hired corporate employees with varying degrees of technological self-efficacy, describe their experiences using computer technology?”, this study has also provided new insights into this topic and may have also provided some guidelines for corporate organizations that use eLearning and eLearning induction training.
References


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doi: [http://dx.doi.org/10.1016/j.sbspro.2013.08.833](http://dx.doi.org/10.1016/j.sbspro.2013.08.833)


doi: [http://dx.doi.org/10.1016/j.sbspro.2014.01.1015](http://dx.doi.org/10.1016/j.sbspro.2014.01.1015)


doi:10.1111/j.1467-8535.2006.00626.x


Appendix A: Recruitment Letter

Dear (name of prospective participant),

My name is Colleen Todd, and I work at (Research Site Organization), and am also a student at Northeastern University in the Doctor of Education program. I am planning to conduct a study at (Research Site Organization) as a part of my doctoral degree, and through the study, I am hoping to learn more about new employees and their experiences using computers, and computer technology, during the beginning of their employment with a new organization.

Since you are a new employee with (Research Site Organization), you qualify as a potential participant for this study. This study is not sponsored by (Research Site Organization), and aside from it taking place at their location, will not impact your employment in any way. If you choose to participate in the study, both your identity, as well as that of (Research Site Organization), will remain confidential, and (Research Site Organization) will not know who did, or did not, participate. Additionally, your choice to participate in this study, or not, will have no impact on your employment with (Research Site Organization), and may simply provide valuable information to organizations that use computer technology in their new employee training programs.

If you elect to participate in this research study, you will be asked to take part in a one-on-one interview with me that could take up to one hour, and where we will discuss your background using computer technology as well as your use of computer technology in the workplace. Although there are no specific benefits to you for participating in this study, if you do volunteer you will be given a $10 gift card to thank you for your time.

The attached documents provide more information about the study, including the procedures and any potential benefits or risks. If you are interested in sharing your experiences with me, please contact me by (day before induction training class). You may call me at (phone number removed) or email me at (email address removed).

Thank you for taking the time to read this letter. I greatly appreciate your time and consideration, and I look forward to hearing from you soon!

Respectfully,

Colleen Todd, M.Ed.
Appendix B: Informed Consent Document

<table>
<thead>
<tr>
<th>Northeaster University, Department:</th>
<th>College of Professional Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Investigator(s):</td>
<td>Shannon Alpert (Principal Investigator), Colleen Todd (Student Researcher)</td>
</tr>
<tr>
<td>Title of Project:</td>
<td>The Exploration of eLearning Induction Training Experiences of Corporate Employees with Varying Levels of Technological Self-Efficacy</td>
</tr>
</tbody>
</table>

Informed Consent to Participate in a Research Study

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?

You are being asked to participate because you are a new employee with (Research Site Location, and will be participating in a new hire orientation class.

Why is this research study being done?

The purpose of this research study is to understand the comfort level and experiences of new employees when they use computer technology during a new employee orientation program at a new company.

What will I be asked to do?

If you decide to take part in this study, we will ask you to participate in a one-on-one interview with the Student Researcher.

- One interview will be scheduled that is estimated to take approximately 60 minutes and will be audio recorded. During this interview, you will be asked about your background using computers, and your experience using computer technology in your workplace, as well as computer technology for learning (eLearning).
- Following the interview, the interview will be transcribed and you will be asked to review the transcription and provide approval or recommend clarifications or modifications.

Where will this take place and how much of my time will it take?

The interview will take place at a location and time that is of your choosing that is convenient and comfortable for you. The interview will take approximately 60 minutes to complete, and will be scheduled within one week of the new hire orientation class.

You will be given a copy of the interview transcription and asked to provide approval or feedback within one week of receiving the transcription.
Will there be any risk or discomfort to me?

There are no anticipated risks of physical or personal harm to you from this study. Although unlikely, potential risks include possible non-physical discomfort related to research questions and sharing personal details with the researcher, possible breach of anonymity, or inaccurate representation or misinterpretation of data not identified during member checking. The likelihood of these risks occurring is extremely low due to the attention given to protection of data throughout the study by the researcher.

Will I benefit by being in this research?

There are no direct benefits to you for taking part in this study. However, the information that is learned from this study may help (Research Site Location) better manage the computer technology portions of their new hire orientation programs, as well as other training classes, which could positively impact when/if you attend other training classes.

Who will see the information about me?

Your participation in this study will be confidential. Only the researchers on this study will see the information about you. No reports or publications will use information that can identify you in any way, or any individual as being of this project. Your identity will not be revealed in the study, nor will the study identify (Research Site Location) as the location that the study took place.

The organization, and each participant will be assigned a pseudonym, and no names will be associated with any interview information. A list of participant names and assigned pseudonyms will be kept in a locked drawer, and all data used in the study will be deidentified to protect all identities. The interview recordings will not be labeled/saved/stored with the participant’s name, but rather their assigned pseudonym instead. All data files will be encrypted and password-protected, and all written/hard copy files will be stored in a locked drawer or safe. Only the Principal Investigator (Dr. Shannon Alpert) and the Student Researcher (Colleen Todd) will have access to the data files. Once the dissertation is complete, the original names of the participants will be erased from the files.

In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as the Northeastern University Institutional Review Board to see this information.

What will happen if I suffer any harm from this research?

No special arrangements will be made for compensation or for payment for treatment solely because of my participation in this research.

Can I stop my participation in this study?

Your participation in this research study is completely voluntary. You do not have to participate if you do not want to, and you can refuse to answer any questions. Even if you do begin the study, you may quit at any time. If you do not participate, or if you decide to quit, you will not lose any rights, benefits, or services that you would otherwise have as an employee.
### Who can I contact if I have questions or problems?

If you have any questions about this study, please feel free to contact Colleen Todd (phone/email removed), the person mainly responsible for the research. You may also contact Dr. Shannon Alpert (phone/email removed), the Principal Investigator.

### Who can I contact about my rights as a participant?

If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection (phone/address/email removed).

### Will I be paid for my participation?

You will be given a $10 gift certificate once the study is completed.

### Will it cost me anything to participate?

There will be no costs for you to participate in the study.

### Is there anything else I need to know?

You must be at least 18 years old to participate in this study.

### I agree to take part in this research.

<table>
<thead>
<tr>
<th>Signature of person agreeing to take part in study</th>
<th>Date</th>
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<td>Printed name of person above</td>
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<tr>
<th>Signature of person who explained the study to the participant above and obtained consent</th>
<th>Date</th>
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<tr>
<td>Printed name of person above</td>
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Appendix C: Interview Protocol

The semi-structured one-on-one interviews will be guided by the following questions; however, the researcher will add additional questions as necessary to explore themes brought up by the participants that are relevant to the research questions and/or study.

Introductory Script

Thank you for agreeing to be a participant in this study. As we’ve discussed, the purpose of this research study is to understand the comfort level and experiences of new employees when they use computer technology during a new employee orientation program at a new company. You are participating because you are a new employee at (Research Site Organization), and your perspective on using the eLearning that was a part of the orientation program may be of help to this organization, and others, when they consider modifying or updating the training classes.

As a reminder, your participation in this research study is strictly voluntary, and you may opt out at any time throughout the process, including before, after, or during the interview. I would like to assure you that your identity will be kept confidential and all data will be secured. You will be assigned a pseudonym, such as “Participant 1”, and this pseudonym will be used anytime information from your interview is referred to. Additionally, all identifiable information will be disguised to ensure complete anonymity. Finally, aside from myself, your employer will not be informed of your participation in this study, and a pseudonym will also be provided for (Research Site Organization) to be used throughout the entire research study. Your participation in this study will not impact your employment in any way.

Do you have any questions about the study, or any part of the process?

Please feel free to ask questions at any time.

If you are ready, I will start the audio recording now. This recording is solely being used to allow for the word-for-word transcription of our discussion. It will only be used to create a transcription of the interview, and will be deleted once the transcription is complete and has been reviewed by you.

For about an hour, we will be discussing your experiences using computer technology and learning technology in your workplace, with some focus on your previous orientation programs. There are no right, or wrong, answers, and I am only interested in your experiences and perspectives, both positive and negative.

To begin the interview, I’d like to ask you some questions about your background using technology, and then we will move onto some questions about how you have been using it more recently and in your workplace.
Interview Questions:
1. Would you please tell me about the best and worst orientation program you’ve ever had after starting a new job, and why you feel that way about them?

2. Please describe your experience using computer technology as you were growing up. What about now…how is it different?
   - How often did you use it when you were a child?
   - When did you first have access to the internet?
   - Did you use it in high school or college?

3. Please describe your comfort level using computer technology, and explain why you feel that way.
   - If not sure, prompt with… “For example, would you say you are typically … with computer technology? Ask why.
     - Very Comfortable
     - Moderately Comfortable
     - Somewhat Comfortable
     - Neither Comfortable, Nor Uncomfortable
     - Somewhat Uncomfortable
     - Moderately Uncomfortable
     - Very Uncomfortable

4. How would you describe your satisfaction using computer technology at work?
   - If positive response: how would your job change if you were no longer able to use the computer? How satisfied would you be?
   - If negative response, what would make it better?

5. E-Learning is generally defined as computer-based technology that is used for training or education. Thinking about when you have used eLearning, would you please tell me about your best and worst experience?

6. If you were offered the choice to take the same class as either a face-to-face class, or through eLearning, which would you choose, and why?
   - If chose F2F: what would need to change in order for you to choose to take that same class through eLearning?

7. Please explain what the organization could have done to help you feel more prepared or confident for using eLearning during this orientation program.

8. Would you please describe any situations at work in which you felt intimidated or uncomfortable using computer technology or eLearning?
   - What do you think could have made that/those situation(s) better?
9. Would you please describe how you feel about your job when you have bad experiences with computer technology or eLearning at work? How does it affect your desire to stay at that organization?

10. Please tell me about a time when you considered looking for a new job, after using computer technology or eLearning.  
   ▪ Did you end up leaving?  
   ▪ What could have made that situation better for you?

11. What advice would you give to employers to improve the eLearning training for new employees?

12. Is there anything else that you’d like to share with me about using computer technology, eLearning, or anything else, at this time?

Probes (to be used as necessary):
   ▪ Would you give me an example?  
   ▪ Can you elaborate?  
   ▪ Is there anything else that you can add to that?

Closing Script

Great...this concludes the interview! Thank you so much for agreeing to let me interview you for this research study. Your insights and experiences have been very helpful and they have helped me understand the impact of using computer technology and eLearning a little better. After I have finished conducting the interviews, I will be transcribing the interviews and will provide you with a copy so you can review it. Do you have any questions for me about the interview, the transcription process, or the overall research study? If you think of anything after we finish here, please feel free to contact me. I will be ending the recording now, and again, thank you for your time!
Appendix D: Training Evaluation

The Training Evaluation is conducted via a web-based survey tool, and administered to each participant. A copy of the evaluation has been downloaded and is provided here and on the following pages.
4. Please rate the following statements about the training room environment.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training room was set up to encourage hands-on-training.</td>
<td>○</td>
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<td>The temperature of the training room was comfortable.</td>
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<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The technology equipment functioned properly during the class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The basket of supplies helped keep me engaged.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Breaks were provided sufficiently throughout the class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Other (please specify)

5. Please rate the following statements about the content of the training class.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The class content was informative.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The class content was presented in an organized, consistent manor.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The class content was relevant to my role.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The materials provided were consistent with the course objectives.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Other Comments


6. Please rate the following statements about the group activities during the training class.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The group activities were engaging.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The group activities complemented the presentation consistently.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The group activities helped me clearly understand the content.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments:

7. Please rate the following statements about the training instructor.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The instructor was knowledgeable about the subject.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor answered all my questions completely.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor delivered the content in an organized, efficient way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor was able to stay on track.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The instructor kept me engaged in the conversation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments:

8. What was the most important thing that you learned during this class?


9. Which topics, if any, should be expanded in the next iteration of this class to provide more information? (Was there anything that we spent too little time on?)

10. Which topics, if any, should be excluded, or minimized, in the next iteration of this class to provide less information? (Was there anything that we spent too much time on?)

11. What, if anything, did we neglect to cover? (Was there anything that you thought would be discussed, but wasn't?)

12. What other comments, questions, or suggestions do you have about this class?

13. Please list any additional training topics that you would like to see us develop to help us continue to grow and be even more successful?