A MIXED METHODS RESEARCH STUDY INVESTIGATING THE INFLUENCE OF TECHNOLOGY ON OFFENDER MINDSET, RESILIENCE, AND SELF-EFFICACY IN NORTHWEST CORRECTIONAL FACILITIES

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AUTHORIZATION TO SUBMIT

DISSERTATION

This dissertation of Jesse Buchholz, submitted for the degree of Doctor of Philosophy in Education with a major in Educational Leadership and titled A MIXED METHODS RESEARCH STUDY INVESTIGATING THE INFLUENCE OF TECHNOLOGY ON OFFENDER MINDSET, RESILIENCE, AND SELF-EFFICACY IN NORTHWEST CORRECTIONAL FACILITIES has been reviewed in final form. Permission, as indicated by the signatures and dates given below, is now granted to submit final copies.

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DEDICATION

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ABSTRACT

Increasing a correctional offender's mindset, resilience, and self-efficacy can be accomplished through the efficient use of technology within correctional education. Correctional facilities that employ the use of technology have the capacity to provide offenders with a tool that will serve them while they are incarcerated and again when they are reintroduced into society. This study utilized a mixed-methods approach which allowed for an in-depth examination of the impact of technology on an offender's mindset, resilience, and self-efficacy. The theoretical framework of Carol Dweck was woven throughout this study to appraise the three research questions providing the foundation for this study. While using technology in a correctional education setting, offenders were given a self-reflective mindset, resilience, and self-efficacy survey instrument that provided quantitative data. Outcomes from an analysis of means demonstrated that correctional offenders established significant growth in mindset and self-efficacy, but did not express significant growth in resilience. Also, phenomenological interviews were collected that revealed themes related to the influence of technology on correctional offenders. Furthermore, themes from the interviews also highlighted a newfound confidence in the future and the ability to attain a new set of goals. Technology was proven to be a vehicle that can potentially catapult correctional students into higher levels of accomplishment. Correctional education was also proven to be able to provide a needed means to academic and future success for offenders. This study helps to fill the gap that currently exists in the literature concerning the impact of technology on offender mindset, resilience, and self-efficacy, as well as, the impact technology has on success measures for correctional offenders.

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Chapter I

Introduction

In the United States, there are currently more than two million individuals incarcerated within the prison system, and more than 700,000 offenders each year leave either state or federal institutions. Within three years, 40% of individuals released will have committed new crimes or violated the conditions of their release and subsequently will be reincarcerated (Davis et al., 2014; Rabuy & Wagner, 2016; Wagner & Rabuy, 2016). Davis, Boziak, Steele, Saunders and Miles (2013a) claim that correctional education reduces offender recidivism by 43%, and offenders who participate in high school/General Education Development (GED) programs have 30% lower odds of recidivating than offenders who did not participate in similar programs. This reduction translates to reincarceration costs that are $870,000 to $970,000 less for those offenders who receive a correctional education (Durose, Cooper, & Snyder, 2014; Davis, Boziak, Steele, Saunders, & Miles, 2013a). Correctional education further impacts an offender's future by illuminating the fact that individuals who participated in vocational training programs, as well as education programs, had a 28% higher chance of obtaining post-release employment (Davis et al., 2013a).

Research surrounding the integration of technology in education has thoroughly substantiated the positive impact such has on improving student mindset and resilience (Brady & Devitt, 2016; Dina et al., 2016; Garrett, 2014; Yeager & Dweck, 2012). Technology affords students the ability to make multiple attempts to progress towards mastery of skills or concepts (Brady & Devitt, 2016). A growth mindset was developed in students throughout this process. Students continually encounter barriers and develop the tools to overcome these obstacles. Garrett (2014) identified the importance of allowing students to use technology to test

conclusions. It is through the ability to test and retest actions that students can support further connections, logical reasoning, and higher-level thinking (Brady & Devitt, 2016; Dina et al., 2016).

Collectively, research studies have confirmed a correlation between the growth of teacher self-efficacy and the growth of student self-efficacy (Blackwell, 2013; Carpenter & Clayton, 2014; Garipagaoglu, 2013; Gecer, 2013; Kolburan-Gecer, 2014; Turel, 2014; Wang, Shannon, & Ross, 2013; Yang, 2012). Turel (2014) provided evidence that computer self-efficacy and frequency of technology use are associated with higher levels of education and educational technology use. In other words, the more education a student has and the more technology used in an educational setting, and for educational purposes, the higher the levels of student self-efficacy (Brown, Holcomb, & Lima, 2010; Crittenden, 2009; Turel, 2014). Additionally, a number of studies have analyzed evidence that a person's level of education increases self-efficacy, especially when using technology concerning education (Dina et al., 2016; Holden & Rada, 2011; Shieh, 2012; Kolburan-Gecer, 2014). Mindset, resilience, and self-efficacy are key pillars in the formation of the whole person. With the addition of the use of technology in the assembly, offender students now have a vehicle to substantially cultivate each of these mainstays within their lives and academics (Miles, 2013; U.S. Department of Education, 2017).

Statement of the Problem

Prisons across the country are overflowing with offenders who are not equipped to be successful members of society or return to society as productive members when their sentences are fulfilled (Aziz, Muhamed, Laiquat, & Ali, 2014; Carson, 2015; Davis et al., 2013a; Davis et al., 2014; Wagner & Rabuy, 2016). Currently, there are over 2.3 million people in 1,719 state prisons, 102 federal prisons, 942 juvenile correctional facilities, 3,283 local jails, and 79 Indian

Country jails in the United States (Rabuy & Wagner, 2016). Of these 2.3 million people, 646,000 people are housed in local jails, 211,000 people are housed in Federal prisons, and 1,351,000 are housed in state prisons (Wagner & Rabuy, 2016). Furthermore, there is an enormous flux of people who enter and exit the criminal justice system. On average 636,000 people arrive and depart through prison gates every year, while over 11 million people cycle through jails each year (Carson, 2015; Wagner, 2015; Wagner & Rabuy, 2016).

Current studies show that there is a direct link between the education attained by an offender and the rate at which that offender may recidivate (Davis, et al., 2013a; Davis et al., 2014). A quantitative study conducted by Aziz et al. (2014) provided evidence that the majority of offenders in prisons were interested in furthering their education while incarcerated. This study showed that 91% of the respondents thought more education would help them become better members of society, 94% of the respondents thought that more education would help them acquire better employment, and 89% thought increased education would help them serve their country better (Aziz et al., 2014). Recidivism and education are inextricably tied to one another, and for those offenders who do not want to return to prison, education is one path that will afford them the opportunity to forge a better path once they make parole (Durose, Cooper, & Snyder, 2014).

The body of literature focusing on the use of technology in education is expansive, however, mixed-methods research isolating the role of technology in correctional education and the impact that technology has on an offender's mindset, resilience, and self-efficacy remains scarce (Nally, Lockwood, Knutson, & Taiping, 2012; Holosko, Jolivette, & Houchins, 2014). Previous studies exclusively focused on released offenders to calculate the effect of the correctional education on recidivism (Nally et al., 2012). Understanding how technology

impacts students in correctional education and to what extent technology can enhance lifelong learning and societal readiness in such settings may allow researchers to better understand the impact of technology on growth mindset, resiliency, and self-efficacy (Carson, 2015; Center for Community Alternatives, 2015; Davis et al., 2013b; Davis et al., 2014).

This mixed-methods study examined the impact of technology on a correctional offender's mindset, resilience, and self-efficacy. First, qualitative data was analyzed from pre-recorded interviews with offender students from a previously conducted research project that examined the impact of technology on math scores and student mindset in traditional and correctional education. The collected phenomenological interviews provided substantial qualitative data related to a rise in outlook, growth in mindset, increase in resilience, and advancement in personal capacity. These factors were found to be interrelated with the integration of technology within the offender's correctional education classrooms.

Second, quantitative data was analyzed from multiple facility Likert-based surveys deployed within correctional education classrooms located in a selected region within the Northwest. The facilities that were selected for this study are home to the Department of Corrections alternative sentencing program for offenders. An alternative sentencing program, or rider program, as they will be referred to hereafter, is an alternative sentencing program where offenders are given a "second chance" and allowed the ability to attain help as well as academics (Alternatives to incarceration in a nutshell, 2013; "Sentencing – Alternative Sentencing", 2017; The Columbus Telegram, 2017). This program affords the offender the opportunity to complete specific programming, either therapeutic, educational, or both, as a means to avoid a prison sentence and return to society in a timely manner (Alternatives to incarceration in a nutshell, 2013; "Sentencing – Alternative Sentencing", 2017).

Background

Collectively, researchers affirm the importance of correctional education and the subsequent impact on recidivism among paroled offenders (Aziz et al., 2014; Davis et al., 2013b; Davis et al., 2014). If technology is to have a positive impact on student mindset, resiliency, and student self-efficacy, then it is imperative that it be implemented effectively (Abbitt, 2011; Aypay, Celik, Aypay, & Sever, 2012; Dweck, Walton, & Cohen, 2014). Dweck, Walton, and Cohen (2014) contend that a student's belief in their ability to gain knowledge and perform adequately in school can predict their future level of performance above and beyond any previously measured ability or prior showing. When all of these factors fail to materialize, offenders are 67% more likely to return to prison when paroled than those offenders who do not participate in correctional education (Davis et al., 2013a).

Researchers have found individuals that are imprisoned are disproportionately and progressively undereducated, with many demonstrating low skill levels in the basic areas of reading, writing, math, and communication (Aziz et al., 2014; Rebuy & Wagner, 2016, Davis et al., 2014). Researchers have also shown a close connection between the rate at which an offender will recidivate and the delivery of suitable educational services for offenders as well as those leaving prison (Davis et al., 2013a, Davis et al., 2013b). Offenders, who partake in correctional education programs, have substantially lower rates of rearrest, reconviction, and reincarceration than individuals who leave prison without educational intervention (Davis et al., 2013a, Davis et al., 2013b). A range of recent studies establishes a strong case for corrective intervention programs which include basic literacy skills and adult education (Arnbak, 2004; Kelly, 2011; Greenberg et al., 2011; Sabatini, Shore, Holtzman, & Scarborough, 2011).

Additionally, studies have found a direct link between the capacity for mental growth within an adult and increases in academic achievement and interpersonal growth (Drago-Severson, 2011; Erickson, 2010; Ihejirika, 2012). The internal growth of an individual's mental capacity is necessary to occur before an individual can truly gain academic and personal growth Drago-Severson, 2011; Symonds, Dietrich, Chow, & Salmela-Aro, 2016). Research evidence denotes that adults are more successful in academics when they have obtainable achievement goals (Remedios & Richardson, 2013). In addition, a number of scholars have suggested that academic growth, motivation, and areas of personal growth involve either mastery goals or performance goals (Dweck, 1986; Dweck & Elliott, 1983; Dweck & Leggett, 1988; Elliot, 2005; Harackiewicz, Barron, Tauer, & Elliot, 2002; Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Mastery goals are objectives that focus on increasing an individual's competence or understanding (Harackiewicz, Barron, Tauer, & Elliot, 2002). Performance goals focus on individuals winning positive conclusions around their competencies, all the while avoiding negative conclusions (Dweck, 2006; Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Furthermore, it is necessary for adult students to be able to intertwine their lived experiences with their academics as a means to retain and give information meaning (Erickson, 2011; Sandlin, Wright, & Clark, 2011).

Finally, research has proven that there is a direct connection between a person's mindset, resilience, self-efficacy, and academic achievement (Cassidy, 2015; Dweck, Walton, & Cohen, 2014; Farrington et al., 2012; Garrett, 2014; Hamill, 2003; Lee, Heeter, Magerko, & Medler, 2012; Sevincer, Kluge, & Oettingen, 2014; Waxman, Gray, & Padron, 2003; Yeager & Dweck, 2012). This connection further solidifies the necessity that education practices be transformed in such a way so that adult students have the ability to utilize a variety of strategies to increase their

academic performance as well as their internal motivation and sense of self (Chapman, Laird, Ifill, & KewalRamani, 2011; Dweck, 2006). Furthermore, research found a direct connection to the fostering of resilience and self-efficacy in students based on the mindset of the educators working within the classroom (Brooks & Goldstein, 2008; Cassidy, 2014). In addition, adversity is typically denoted in any setting where the growth of resilience, mindset, and self-efficacy are present (Bandura et al., 1999; Duckworth, 2013; Dweck, 2010; Snipes et al., 2012).

The Research Questions

Holosko, Jolivette, and Houchins (2014) describe how research study questions create an organizational scaffold for the investigator to be able to answer the designated inquiries. In this dissertation study, several queries helped to investigate the impact of technology on offender mindset, resilience, and self-efficacy in a greater amount of detail. The questions vital to this study included:

1. How does technology afford or limit offender mindset in the correctional education classroom?
2. How does technology affect offender resilience in the correctional education classroom?
3. How does technology affect offender self-efficacy in the correctional education classroom?

Research Hypotheses

Null Hypothesis

(H_O) Technology limits an offender growth mindset in the correctional education classroom.

(H_O) Technology has a limited effect on offender resilience in the correctional education classroom.

(H_O) Technology has a limited effect on offender self-efficacy in the correctional education classroom.

Alternative Hypothesis

(H_1) Technology increases an offender growth mindset in the correctional education classroom.

(H_1) Technology has an increased effect on offender resilience in the correctional education classroom.

(H_1) Technology has an increased effect on offender self-efficacy in the correctional education classroom.

Description of Terms

One of the challenges policy makers and researchers face with correctional education is the ability to effectively compare correctional education programs and the outcomes these programs have on offenders (Spangenburg, 2004; Tolbert, Klein, & Pedroso, 2006). Several technical terms are used to describe offender education and educational knowledge. Based on the research information in this study, this section brings clarification to these specific terms.

Academic Tenacity. The mindsets and skills that allow students to look beyond the short-term to the long-term as well as to be able to withstand and persevere through challenges and setbacks (Dweck, Walton, & Cohen, 2014).

Computer Based Testing. A method of administering tests in which the responses are electronically recorded, assessed, or both (Lockwood, Nally, Dowdell, McGlone, & Steurer, 2013)

Correctional Education. A phrase that includes any number of educational programs that occur inside a prison (Davis et al., 2014).

Correctional Facility. A building that is used for the confinement of people convicted of crimes (Davis et al., 2014)

General Education Development (GED). General education development test created by E. F. Lindquist that is made up of four subject specific tests that when passed provide certification that the test taker has high school equivalent skills (Quinn, 2002).

Jail. A confinement facility that is usually administered by a law enforcement agency that is intended for adults, but at times holds juveniles (Carson, 2015).

Mindset. An established set of intrinsic attitudes held by someone (Dweck, 2006).

Offender. People that reside at a correctional facility who have committed an act that is deemed to be illegal (Holosko, Jolivette, & Houchins, 2014).

Prison. A long-term confinement facility that typically holds felons and offenders (Carson, 2015).

Resilience. The ability or capacity to recover quickly from difficulties as they pertain to any certain situation in life (Yeager and Dweck, 2012).

Rider Program. A middle ground between being placed on felony probation and being sentenced to a term in prison ("Sentencing – Alternative Sentencing", 2017).

Self-efficacy. The beliefs in one's capacity to arrange and execute the course of action required to produce particular achievements (Bandura, 1997).

Self-Reflection. The evaluation of one's own former and/or current practices for the purpose of using past performance to influence future decisions (Travers, Morisano, & Locke, 2015)

Technological Pedagogical Content Knowledge (TPACK). A framework that identifies the knowledge teachers need to effectively teach with technology (Koehler, 2011).

Significance of the Study

A common theme in the correctional setting is the need for increased research in correctional education (Mohammed & Mohamed, 2014; Westervelt, 2015). Researchers have identified that correctional education is a catalyst for decreasing the rate at which offenders recidivate and it has been shown to increase an offender's potential for post-release employment (Davis et al., 2013a; Davis et al., 2013b; Davis et al., 2014). Furthermore, self-efficacy has been identified as a crucial factor in the development of resiliency and a growth mindset (Abbitt, 2011; Blackwell, 2002; Blackwell, Trzesniewski, Dweck, 2007; Briceno, 2014; Cianci, Schaubroeck, & McGill, 2010; Dweck, 2006; Gordon, 2017). Research in all of these areas asserts the importance of the above-mentioned themes; however, it lacks any specific references to the role of mindset, resilience, and self-efficacy for increasing offender achievement in correctional education.

Research also lacks data regarding the correlations between mindset, resilience, self-efficacy and the impact these themes have on offenders. Self-efficacy and resilience are products of a growth mindset (Briceno, 2014; Dweck, 2006, Yeager & Dweck, 2012). It is reasonable to believe that the increase in offender potential, through a shift in mindset and attaining higher levels of self-efficacy, has a direct effect on the potential that is attainable in the respective students (Blackwell, 2013). According to Dweck (2006), "potential equals someone's capacity to develop their skills with effort over time. . .it takes time for potential to flower" (p. 27-28). Transferring this understanding to correctional facilities within the Northwest contributes to the empirical body of knowledge and has the potential of yielding a better grasp of how to curtail the "prison pipeline" that is currently the standard school of thought (Jordan, 2015).

This study provides a window into the data on the impact of correctional education, the impact of technology on a correctional education student's achievement, mindset, self-efficacy, and resilience, along with the influence of the above concepts on actual offender student achievement. Policy makers are either looking for ways in which to cut funding for prisons and prison programs, streamline programming for offenders, increase the "punishment" aspects of prison, or reduce the mass incarceration that plagues our nation to date (Brown et al., 2016; 2016). If correctional education is to be used for the purpose of providing offenders with a means to better themselves, become a more productive citizen when they return to society, and truly find validation in the rehabilitation process of prison, it needs to be utilized effectively and across the entire correctional system so offender students may find the success that they are so desperately seeking (Haas & Spence, 2016). Lois Davis, a senior policy researcher at the RAND Corporation, made the following statements in a 2015 interview with NPR's Eric Westervelt regarding the topic of correctional education and the impact it has on offenders:

> This population is one with low education attainment. About 40 percent of prisoners lack a high school education. Sixteen percent of state prisoners have a high school diploma. Education can have a huge effect in really helping them to gain the skills they need and prepare them to be employed. So, as we look at the larger picture of how we reduce mass incarceration and investments in correctional budgets, part of that discussion needs to be what programs have the potential to help us reduce those high costs we are currently paying as a society (Westervelt, 2015, p. 2).

Current research serves as a vehicle for highlighting the importance of providing quality educational services for offenders as a means to fight future problems and benefit society (Hill, 2015). Correctional education within the United States has existed for the past 200 years, during

which it has primarily concentrated around the concept of changing behavior and the attainment of workforce skills (Messemer & Valentine, 2004). Additionally, research has indicated that obtaining an education within a correctional facility also has social and psychological implication for offenders (Case & Fasenfest, 2004; Davis et al., 2014). Furthermore, adult and basic education, as well as post-secondary education, participation is positively correlated to the attainment of post-release employment and a reduction in recidivism (Wilson, Gallagher, & MacKenzie, 2000). This study supports current research and aids policy makers, correctional education staff, prison administration, or other entities that are entrenched in the fight to enhance the quality of education and support services for offenders. This study also enhances current research within the areas of technology integration in education and correctional education, and the impact of technology and education as it pertains to an offender's mindset, self-efficacy, and resilience.

As an educator endeavors for continual improvement, they address problems and bring to light potential solutions by contributing to the existing body knowledge through research (Creswell, 2015). Research pertaining to the impact of technology on correctional education and offender mindset, self-efficacy, and resilience is nearly absent from the larger discussion (Ferner; 2015; Mohammed & Mohamed, 2015; Pilon, 2015; Rubin, 2016; VERA, 2016; Well, 2015). Additionally, the Rider program within Northwest correctional facilities is an exemplary program in which to conduct research as the program is designed to foster increased educational and behavioral treatment options ("Sentencing – Alternative Sentencing", 2017) Incarcerated individuals who participate in some form of correctional education are 43% less likely to recidivate (Davis et al., 2013a). By participating in correctional education, most incarcerated individuals experienced an increase in the opportunities for employment and earnings once they

are released (VERA, 2016). Not only does correctional education bolster an incarcerated individual's opportunities once paroled, but it is also the only program to offer a 400% return on the investment over a three-year period (Davis et al., 2013a). That equates out to a savings of approximately $5 for every $1 spent (Davis et al., 2013a).

Theoretical Framework

The theoretical framework of this study focuses on the modern social cognitive theory of growth and fixed mindset. This study relied on the motivation and achievement-based assessment developed by Blackwell (2002) to measure intelligence, achievement, resilience, and other motivational factors. The study also relied on the self-efficacy assessment developed by Muris (2001) to measure social self-efficacy, academic self-efficacy, and self-regulatory efficacy. The results of this study aim to contribute to the existing body of knowledge regarding the impact of a growth mindset, self-efficacy, and resilience through an offender's correctional education experience and as factors that contribute to an offender's academic achievement and reduction in recidivism.

Based on her theory, "Fixed vs. Growth Mindset," Dweck's (2006) framework is represented by two distinct theories. The first mindset theory states that there is a certain population of people that believe they were born with a certain level of intelligence and certain talents and those qualities do not have the ability to be changed. In essence, a person's potential is determined at birth, and it does not change. The person with the fixed mindset believes that any present limitations are evidence of a deficiency of some form of talent and are to be avoided as they will continually be areas of perceived weakness (Briceno, 2014; Dweck, 2006). The other mindset theory is designated "growth mindset" and is also known as an incremental or malleable mindset (Blackwell, 2002; Blackwell, Trzesniewski, Dweck, 2007; Dweck, 2006; Yeager &

Dweck, 2012). The growth mindset theory states that a person with the growth mindset deems that their intelligence and aptitudes are something that can be established over time through work, perseverance, and the overcoming of obstacles (Dweck, 2006; Yeager & Dweck, 2012).

Growth and fixed mindsets interrelate within the theories of what inspires a person to achieve the goals they settles on and the eventual levels of achievement a person either acquires or abandons when challenged. First, people with a fixed mindset are interested in being perceived in a positive light (Briceno, 2014; Dweck, 2006; Yeager & Dweck, 2012). Since any failure demonstrates weakness, a fixed mindset person will select circumstances where they will be able to demonstrate and/or perform admirably and without fail. Fixed mindset people will shy away from undertakings that they are unable to immediately perform with proficiency and prefer an undertaking that they can perform extraordinarily. If something goes wrong, these individuals are likely to attempt to hide that failure in some manner, potentially either cheating or lying to save their image or reputation (Briceno, 2014; Gordon, 2017). These individuals are externally motivated and are very susceptible to negative messages regarding setbacks that they take as a personal failure (Cianci, Schaubroeck, & McGill, 2010). The achievement level of a person with a fixed mindset seldom rises to meet their full potential. There have been individuals with tremendous potential or natural talent who achieve a certain level, however, once those individuals encounter challenges, they consequently struggle (Dupeyrat & Marine, 2005; Dweck, 2006).

Growth mindset comes from the belief that a person's intelligence, personality, and character can be continuously developed (Yeager & Dweck, 2012). Strictly speaking, a person's potential is unknown, and their limits and limitations are unknowable. Individuals with a growth mindset realize that setbacks are inevitable and that to overcome these setbacks, effort and

perseverance are needed and necessary. Individuals with a growth mindset support the understanding that any talent or skill can be changed or grown (Briceno, 2014). This belief leads these individuals to adopt a mastery approach to their perceived goals (Gordon, 2017). This approach is what fuels individuals with a growth mindset to adopt new strategies, apply increased effort, and exert higher levels of fortitude (Briceno, 2014; Dweck, 2006, Gross-Lon, 2016). Individuals with a growth mindset are also intrinsically motivated to want to show mastery and persevere through any setback, challenge, or potential negative feedback.

Fostering a growth mindset is critical for students as they develop and mature (Briceno, 2014; Dweck, 2006). Educators, either of adult education programs, correctional education programs or within the k-12 environment, have an opportunity to acquire a more comprehensive viewpoint of how to use growth mindset within their institution's curriculum and design to enhance their student's educational experience and achievement.

Overview of Research Methods

A mixed-method research design was selected for this study. This research approach affords the opportunity to examine academic data and demographic data for the incarcerated offenders within Northwest correctional facilities, as well as mindset, self-efficacy, and resilience of offender students. The selection of the participants in this study followed purposeful sampling strategies (Palinkas et al., 2015). Quantitative design coupled with a phenomenological qualitative approach has substantiated conducive to the exploration of the impact through lived experiences of mindset, self-efficacy, and resilience on offenders (van Manen, 2003; Creswell, 2016).

The first step of the research study involved gathering and analyzing previously recorded phenomenological correctional offender interviews that took place during the 2014 educational

technology pilot. Five correctional offender interviews were gathered and used to established the impact of technology integration on mindset, self-efficacy, and resilience. A semi-structured interview format allows the researcher to collect data efficiently and also allows the participants to voice their opinions (Creswell, 2007; Creswell, 2015; Marshall & Rossman, 2016; Patton, 2002). Qualitative researchers rely considerably on the use of in-depth interviews to be able to gather rich and valuable data (Creswell, 2007; Creswell, 2015; Marshall & Rossman, 2016; Strauss & Corbin, 1998). In-depth interviews are "the primary strategy to capture the deep meaning of experiences in the participants' own words" (Marshall & Rossman, 2016, p. 102). Previous to the current study, interviews were gathered by Mr. Grey (pseudonym) and his company as part of the data collection process during an educational technology pilot program. Interviews were audio and video recorded, and a compilation of the interview footage was created for educational and professional purposes. The researcher contacted Mr. Grey and sought permission to use and transcribe the audio from each of the interviews that had been previously collected (Appendix M). Once the digital file was shared with the researcher, the interviews were transcribed and coded by hand. Analysis of the interviews was conducted to identify themes related to the impact of technology on an offender's mindset, resilience, and self-efficacy.

Additionally, a Likert-based survey was administered to 108 correctional education students in two separate Northwest Correctional Rider program facilities to determine the impact of technology integration, mindset, self-efficacy, and resilience on offender students. Survey data was collected and analyzed for any associations and correlations among fixed versus growth mindset, change in mindset, perceived self-efficacy, change in self-efficacy, perceived resilience, change in resilience, and perceived impact of technology on educational attainment. Descriptive

statistics and inferential statistics were conducted to describe what the data displayed as well as to reach conclusions about the dependability of the data and the probability that findings did not happen merely by chance (Salkind, 2017; Tanner, 2012; Urdan, 2010). Wilcoxon's signed ranks test was conducted to determine the degree of change, as well as the direction of the differences between the pre-and posttest occasions (Frey, 2016; Salkind, 2017; Tanner, 2012). Cohen's effect size (d) was used to determine the relative position of one group of data to another group (Salkind, 2017). For all statistical tests, a resulting p‑value equal to or less than 0.05 was considered significant. Statistical analysis was conducted using the IBM SPSS Version 23.0 statistical program (IBM SPSS, 2015).

Chapter II

Review of Literature

Introduction

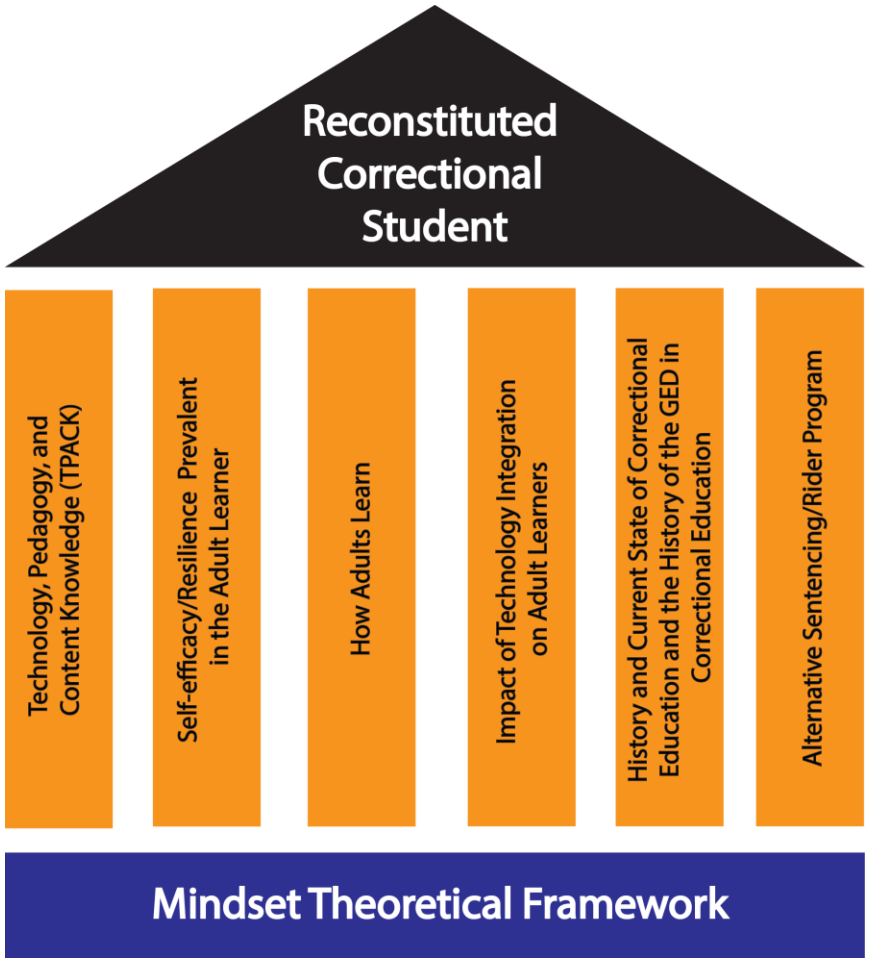
One of the chief tasks facing a correctional institution is in determining the impact of technology and educational programs on an offender (Davis et al., 2013a; Davis et al., 2013b; Davis et al., 2014; Haas & Spence, 2016; Moriarty, 2017). Within the American criminal justice system, there are more than 2.3 million people within correctional centers in U.S. territories (Wagner & Rabuy, 2016). With a sizeable number of facilities placed in every corner of the country and a sizable number of incarcerated individuals, correctional facilities are eager to recognize the influence that technology use has on the offenders that they serve and parole each year (Carver & Harrison, 2016; Moriarty, 2017; Rivera, 2016).

The utilization of technology within a correctional education program has the perceived ability to help foster resilience, overcome academic obstacles and shortcomings, and to empower students to rise above their current circumstances and build firm educational foundations for their future success (Brown et al., 2016; Moriarty, 2017; Petersilia, 2016). Research discovered that individuals who are incarcerated and participate in correctional education were 43% less likely to recidivate (Davis et al., 2013a). Furthermore, offenders that partook in correctional education experienced a greater number of employment opportunities and had a more successful reintegration once paroled (Carnevale, Smith, & Strohl, 2010; Duran, Plotkin, Potter, & Rosen, 2013; Erisman & Contardo, 2005). Furthermore, correctional education has been shown to improve the overall safety of the facility (Correctional Association of New York, 2009; Fine et al., 2001; Winterfield, Coggeshall, Burke-Storer, Correa, & Tidd, 2009).

Chapter II provides an infrastructure of how technology integration within Northwest correctional facilities has impacted offender's mindset, resilience, and self-efficacy. This chapter examines the following six categories: (1) the technology, pedagogy, and content knowledge (TPACK) framework, (2) self-efficacy and resilience prevalent in the adult learner, (3) how adults learn, (4) the impact of technology integration on adult learners, (5) the history and current state of correctional education and the history of the GED in correctional education, (6) alternative placement and Rider programs. It also explains Carol Dweck's mindset theoretical framework. The conclusion of this chapter provides an overview of the literature and explanation of emerging themes. Figure 1 provides a visual representation of these categories as they relate to this study.

Figure 1

Categories of the Literature Review



Technology, Pedagogy, and Content Knowledge (TPACK)

U.S. education entities have increasingly assimilated technological tools over the past five years and with this assimilation comes the challenges of an ever-changed educational market (Koehler, Mishra, & Cain, 2013; US Department of Education, 2016). According to a report by the U.S. Department of Education, the student to computer ratio in US classrooms during the Fall and Spring of 2009 was 5.3 to 1 (Gray, Thomas, & Lewis, 2010). In 2014, Project Tomorrow's Speak Up report found that 89% of high school students (9-12), and 73% of middle school

students (6-8) have some access to a smart phone (Project Tomorrow, 2014). The report also found that 66% of students in both the middle and high school groups had access to laptops (Project Tomorrow, 2014). Furthermore, the report also found that 61% of middle school students and 50% of high school students have access to tablets while 48% of middle school students and 39% of high school students had access to a digital reader (Project Tomorrow, 2014). These two studies show a stark rise in the infusion of technology within classrooms across the country. Furthermore, a recent study by Project Tomorrow found that digital communication is prevalent among parents and students, which was not the case in past research (Project Tomorrow, 2016).

Concurring, Gallup's report, *Searching for Computer Science: Access and Barriers in U.S. K-12 Education,* stated that nearly six in 10 students said their school offered classes that were dedicated to computer skills and one-quarter (25%) reported having no access to any technology or computer skills courses (Gallup, Norman, Lopez, & Calderon, 2015). However, mere access to technology does not ensure that those tools will be utilized through effective strategies that enhance the educational experience of students (Ertmer & Ottenbreit-Leftwich, 2010). Students need to be able to understand the practical uses of technology in all areas of their lives as well as within different academic disciplines (Hofer & Harris, 2012). Correctional educators, like traditional educators, have a fundamental role in shaping not just the assimilation of technology in a correctional classroom, but also inspiring the effective use of technology through an offender's educational experience (Haas & Spencer, 2016; Rivera, 2016).

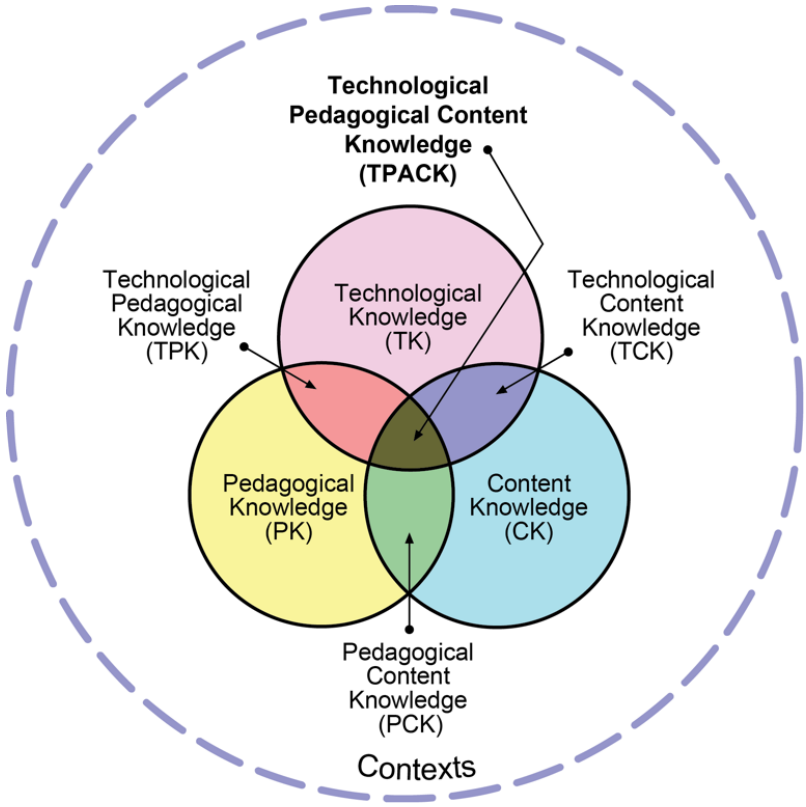
Having access to technology, knowledgeable educators, and room to grow are critical components within the correctional education classroom setting (Brazzell et al., 2009; Kelly & Turner, 2009). Students that traditionally participate in correctional education have less exposure

to technology due to a lack of knowledge or skills gained from their time in the outside world (Carver & Harrison, 2016). To add to the disparity, most correctional facilities prohibit the use of any technology with the walls of the facility or within the education classrooms (Davis et. al., 2013a). However, with the recent updates to the GED test, all facilities that utilize this test as a means of showcasing student achievement, are now having to find ways to incorporate technology not just for the sake of the test, but for the sake of the success of their students (Rich & Waters, 2016). In these educational settings, it is imperative that the correctional educator is able to effectively utilize and demonstrate technology use in their pedagogy, in their content knowledge, and to their students (Dick, Rich, & Waters, 2016; Kelly & Turner, 2009; Rivera, 2016).

Mishra and Kohler (2006), outlined specific types of interconnected teacher knowledge that are indispensable for effective technology integration. Technological Pedagogical Content Knowledge (TPACK) is an educational framework used to understand and describe the kinds of knowledge needed by a teacher for effective pedagogical practice in a technology-enhanced classroom or learning environment (Abbitt, 2011; Koehler, Mishra, & Cain, 2013; Kushner-Benson & Ward, 2013; Sahin et al.,2013). Figure 2 depicts the updated TPACK model. The TPACK framework is based on Shulman's (1986) theory of Pedagogical Content Knowledge (PCK) (Abbitt, 2011). Mishra and Koehler (2006) extended Shulman's foundational theory to include an area of technological knowledge, which added three additional connections among the knowledge spheres within the TPACK framework (Abbitt, 2011).

Figure 2

Technological Pedagogical Content Knowledge (TPACK) Framework



Note. Reproduced by permission of TPACK.org, 2017 (Appendix E)

The first model of the TPACK framework included three circles (T, C, and P) that were described as; Content (C) is the subject information that is to be learned or taught. The material that is covered in an elementary classroom is different than content covered in a high-school classroom and respectively different than content covered in a graduate course at a college or university. Technology (T) broadly embodies the standard use of technologies such as books and paper and pencils, as well as a more advanced form of technologies such as the Internet, mobile devices, and digital content. Pedagogy (P) includes the processes, practices, and methodologies of teaching and learning which include techniques used to educate and the strategies involved in evaluating student learning (Koehler, 2011).

Through research and revision, the TPACK framework underwent an empirical, theoretical, and conceptual upgrade in 2009 (Koehler & Mishra, 2009). This new version of the TPACK framework goes beyond seeing the three knowledge foundations in isolation and begins to emphasize the new categories of knowledge that are created at the crossroads between the spheres (Koehler, 2011; Koehler & Mishra, 2009). Successful technology integration around particular subject matter necessitates the creation of a new understanding of the components of knowledge in their respective contexts (Koehler, 2011; Shih & Chuang, 2013). This new foundation for the TPACK framework offers seven concepts that are comprised of three specific types of knowledge – technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK); and three manners of understanding about the interplay between technology pedagogy, and content – pedagogical content knowledge (PCK), technological pedagogical knowledge (TPK), technological content knowledge (TCK) (Cavanagh & Koehler, 2013). The final layer of the TPACK framework deals with the interaction between PCK, TPK, and TCK – technological pedagogical content knowledge (TPACK) (Cavanagh & Koehler, 2013). These statements to add strength to the overall methodology and design elements of the TPACK framework:

1. Content Knowledge (CK): This is the teachers' knowledge about a specific subject matter that is to be learned or taught.
2. Pedagogical Knowledge (PK): This is the teachers' in-depth knowledge about the foundation and practices related to teaching and learning.
3. Technology Knowledge (TK): This is the knowledge about the ways of thinking as they related to working with technology and the tools and resources related to such work.

4. Pedagogical Content Knowledge (PCK): This concept is consistent with Shulman's idea relating to knowledge of pedagogy as it relates to the teaching of content.
5. Technological Content Knowledge (TCK): This is the understanding of the method in which technology and content are able to influence and restrict one another.
6. Technological Pedagogical Knowledge (TPK): This is the understanding of how teaching and learning can change when specific technologies are used in specific ways.
7. Technological Pedagogical Content Knowledge (TPACK): This is the understanding of what effective teaching with technology represents using all aspects of the model in succinct correlation (Cavanagh & Koehler, 2013; Koehler, 2011; Koehler & Mishra, 2009; Koehler, Mishra, & Cain, 2013).

The formative knowledge a teacher has about technology use in the classroom and the belief that a teacher could use that technology effectively in the classroom has a greater influence on the success those particular teachers saw in their respective classrooms (Abbitt, 2011). The relationship between a teachers' perceived knowledge of technology, pedagogy, and content knowledge, and their self-efficacy beliefs as it related to their ability to successfully use technology in the classroom (Abbitt, 2011). Research has showcased that even with high levels of knowledge in each of the three main areas, the development of a teacher's knowledge overlap depended on many factors and was different for each teacher (Kushner-Benson and Ward, 2013). Furthermore, there is correlated evidence that successful teaching with technology helped teachers understand the supportive relationships between the areas within the TPACK

framework (Sahin et al., 2013). In other words, the research provides evidence that technology should be considered a fundamental and integral part of any learning environment (Duncan, 2010; Schleicher, 2011).

Over the past five years, numerous research studies have shown the significance of blending support and technology in relation to the growth of teachers' TPACK competency (Agyei & Voogt, 2012; Alayyar, Fisser, & Voogt, 2012; Gao, Chee, Wang, Wong, & Choy, 2011; Hofer & Harris, 2012; Koehler, Mishra, & Cain, 2013; Sancar-Tokmak, Surmeli, & Ozgelen, 2014; Wetzel & Marshall, 2012). This research focused primarily on the growth of a teachers' knowledge through effective professional development in teaching teachers how to use tools rather than using technology for technology's sake. A study conducted by Wetzel and Marshall (2012) brought attention to the understanding that technology, content knowledge, and pedagogy are not separate elements that live independently and only coexist when it is necessary, but that these elements have a coordinated interplay on different levels. Additionally, a study of pre-service teachers focused on whether or not working in teams helped teachers gain a deeper understanding and appreciation of TPACK skills and how they interplay within how a teacher uses and implements technology (Alayyar et al., 2012). The implications of these studies, as well as similar studies, highlight the need for richer professional development for teachers in the areas of technology integration as well as deeper connections to content and pedagogy (Alayyar et al., 2012; Archambault & Barnett, 2010; Pamuk, 2011; Wetzel & Marshall, 2012).

Further research added supplementary understanding that integrating TPACK into teaching is multi-dimensional, as well as progressive, continuous development for teachers (Gao et al., 2011). Research conducted with groups of pre-service teachers found a significant link to improved knowledge of the TPACK domains and an increase in teacher self-efficacy and

resilience (Abbitt, 2011; Holland & Piper, 2014). A study using results gathered from 365 pre-service teachers found that when teachers model effective use of technology, that effective use translates to their students (Shinas, Yilmaz –Ozden, Mouza, Karchmer-Klein, & Glutting, 2013). This increase in teacher self-efficacy has the potential to translate to the classroom and directly impact a student's current and future technology use (Abbitt, 2011; Alayyar, Fisser, & Voogt, 2012; Byker, 2014; Kushner-Benson & Ward; 2013; Morrison & Luttenegger, 2015; Sahin, Celik, Akturk, & Aydin, 2013; Tee & Lee, 2011; Wetzel & Marshall, 2012). Furthermore, this type of technological, pedagogical, and content knowledge training and development is critical for correctional education teachers as they learn to actually model the use of technology in their classrooms as well as deepening their learning of instructional strategies that would accommodate the various learning styles and preferences of their students (Ageyi & Voogt, 2012; Byker, 2014; Harris et al., 2010; Hofer & Harris, 2012; Hofer & Grandgenett, 2012; Liang, Chai, Koh, Yang, & Tsai, 2013; Sancar-Tokmak, Surmeli, & Ozgelen, 2013).

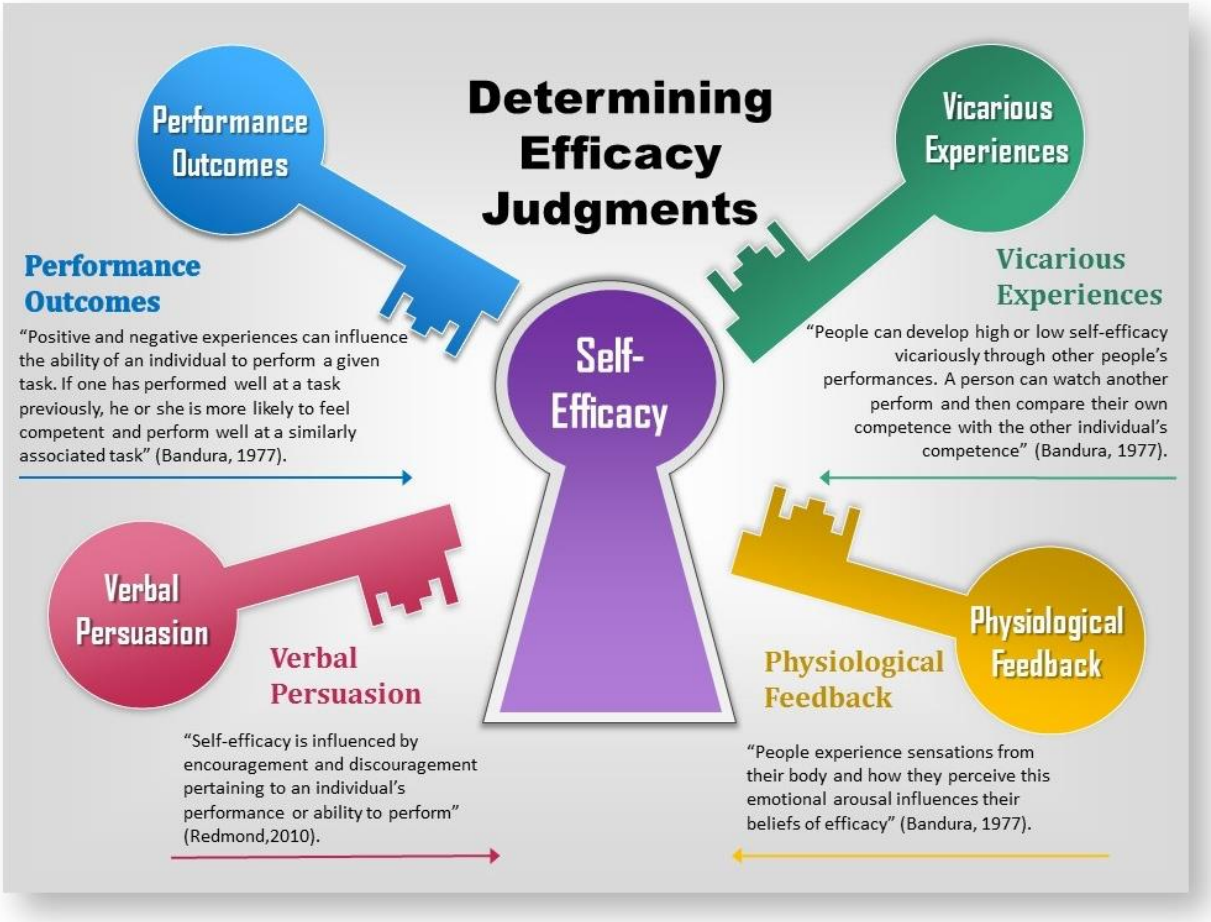
As of 2015, there were a growing number of corrections facilities and agencies incorporating technology into correctional education and vocational education offerings (Tolbert, Hudson, & Erwin, 2015). With the onset of the new online GED exam and computer-based testing model (CBT), correctional education facilities have had to radically acclimate and changeover to the online version of the exam (Lockwood, Nally, Dowdell, McGlone, & Steurer, 2013). Along with this technological and pedagogical transition, correctional education departments have started adopting technologies that are designed to help students join the current globally networked society and workforce along with providing expanded professional development resources for instructors (Dong, Chai, Sang, Koh, & Tsai; 2015; Tolbert et al., 2015).

Self-efficacy and the Adult Learner

One critical piece of this study is determining the impact of self-efficacy and resilience on the adult learner. Bandura (1997) described the concept of self-efficacy as the beliefs in one's capabilities to organize and accomplish the courses of action necessary to produce a specific achievement. In other words, self-efficacy is the set of beliefs that a person has that surrounds their perception of how they can complete a given task under specific circumstances. Collectively, research studies support the positive impact of self-efficacy and the effect that it has in students (Abbitt, 2011; Blackwell, 2013; Carpenter & Clayton, 2014; Gecer, 2013; His-Chi, Ya, & Hsin-Nan, 2012; Wang et al., 2013; Yang, 2012). Bandura's Self-Efficacy Theory (1977), as depicted in Figure 3, outlined four evidence bases that individuals engage to judge their efficacy. The Self-Efficacy theory is divided into four sources: performance outcomes (performance accomplishments), vicarious experiences, verbal persuasion, and physiological feedback (emotional arousal) (Bandura, 1977, Bandura, 1986). The components of this theory are also coupled with other beliefs such as effort and resilience, which influences self-efficacy beliefs and impacts an individual's belief in their ability to accomplish a specific task (Bandura, 1986; Bandura, 1995; Bandura 1997; Bandura, 2005; Bandura, Adams, & Beyer, 1977; Redmond, 2010; Redmond, 2016; Wang et al., 2013; Yu, 2014).

Figure 3

Albert Bandura's Self-Efficacy Model



Note. Reproduced by permission of Redmond, 2016 (Appendix F)

Performance outcomes, according to Bandura (1977), are the primary source of a person's self-efficacy. These past outcomes, either positive or negative, have the ability to influence the outcome of the task at hand. Positive influence comes from a past outcome where the individual has performed well at a task and then translates that positive experience into the current task. Thus, the individual is more likely to try harder to complete the task (Bandura, 1977; Redmond, 2016). A negative influence comes from a past outcome where the individual has not performed well at a task and has experienced an actual reduction in their personal self-

efficacy (Bandura, 1977; Redmond, 2016). However, a negative outcome and influence may be overcome through personal conviction, and these experiences can serve as motivation when a situation is perceived as achievable (Bandura, 1977).

Vicarious experiences are occurrences where an individual develops either high or low self-efficacy through another person's performance on a task (Redmond, 2016). In other words, a person can watch another person in a similar situation perform a task, and then compare their competence with that person (Bandura, 1977). If a person perceives success, it can increase their self-efficacy. However, if a person perceives failure, it can lower their own self-efficacy (Bandura, 1977; Crittenden, 2009; Redmond, 2016).

Research has found a direct link between technology use and an increase in a student's self-efficacy (Blackwell, 2013; Gecer, 2014; Gecer, 2013; Hsiao, Tu, & Chung, 2012; Turel, 2014; Varank et al., 2014; Wang, Shannon, & Ross, 2013; Yang, 2012). There is a direct correlation between a student's self-efficacy, the concurrent use of technology, the number of technological devices that were available for use, and socioeconomic category a student falls into (Crittenden, 2009; Gecer, 2013; Holden & Rada, 2011). Similarly, a link between the understanding of one's self-efficacy, successful technology implementation/integration, and an increase in the scores earned by students (Blackwell, 2013; Corkin, Ekmekci, White, & Fisher; 2016; Karakaya & Yazici, 2017; Saudelli & Ciampa, 2016). A research study examining survey data from two hundred and fifty-six students found a relationship between students' self-efficacy and their respective technology self-efficacy (Wang et al., 2013). The findings from this study discovered that students with previous online learning experiences had higher levels of motivation in their classes which led to higher levels of personal self-efficacy and technological self-efficacy, which in turn directly correlated to higher course satisfaction and higher final

grades (Wang et al., 2013). That is, students with a higher level of course satisfaction and a higher level of personal self-efficacy coupled with a greater level of technology self-efficacy tended to achieve a higher final grade in their respective courses (Kiray, 2016; Millen & Gable, 2016; Wang et al., 2013).

Another factor that adds to the growth of a student's self-efficacy within the classroom is the teacher that controls or administrates over the classroom (Britner & Pajares, 2006; Carpenter & Clayton, 2014; Gao, Chee, Wang, Wong, & Choy, 2011; Lent, Lopez, Brown, & Gore, 1996; Pajares, 1996; Pajares & Graham, 1999; Pietsch, Walker, & Chapman, 2003; Riding & Rayner, 2011; Usher, 2009). Teachers who embrace an understanding that technology can enhance student learning and student self-efficacy, achieve growth in both areas (Carpenter & Clayton, 2014; Kiray, 2016; Pajares & Graham, 1999). A study involving eight hundred and ninety-seven students concluded that self-efficacy plays a significant role in educational achievement, specifically in mathematics (Carpenter & Clayton, 2014). The results of this study pointed to the dominant source of self-efficacy being a students' mastery experiences within the classroom. These experiences of past successes became the foundation where students were then able to perform similar tasks with the same result (Carpenter & Clayton, 2014). A research study looking into how students formed self-efficacy beliefs within their mathematics course found that not only was mastery experiences significant to the formation and growth of a student's self-efficacy, a teacher's praise and belief in the student's perceived ability was also critical in the formation of self-efficacy beliefs (Usher, 2009). Together, these studies provide a credible foundation for the understanding that a teacher can either inspire a student with self-assurance or diminish a student's self-beliefs (Carpenter & Clayton, 2014; Usher, 2009). Furthermore, a teacher that has the ability to provide students with academically challenging content and

meaningful educational activities that can showcase a student's mastery, help to ensure the positive development of a student's sense of self-worth, self-confidence, and resilience (Carpenter & Clayton, 2014; Lent, Lopez, Brown, & Gore, 1996; Pajares & Graham, 1999; Riding & Rayner, 2011; Usher, 2009).

In addition, a research study focusing on the role of lifelong learning and how this concept supported self-efficacy uncovered the need for education to encourage positive attitudes towards both lifelong learning and self-efficacy (Garipagaoglu, 2013). A high level of self-efficacy can help people sustain their efforts until their goals are achieved (Garipagaoglu, 2013; Kumar & Uzkurt, 2010). Research has revealed that self-efficacy can be explained as the gathering of previous cognitive, social, physical experience and learning (Bandura, 1986; Bandura, 1997). Self-efficacy matures with hard-won accomplishments rather than with personality traits that are reasonably unwavering human characteristics (Kumar & Uzkurt, 2010). Self-efficacy, however, is not the only component that can affect student outcomes.

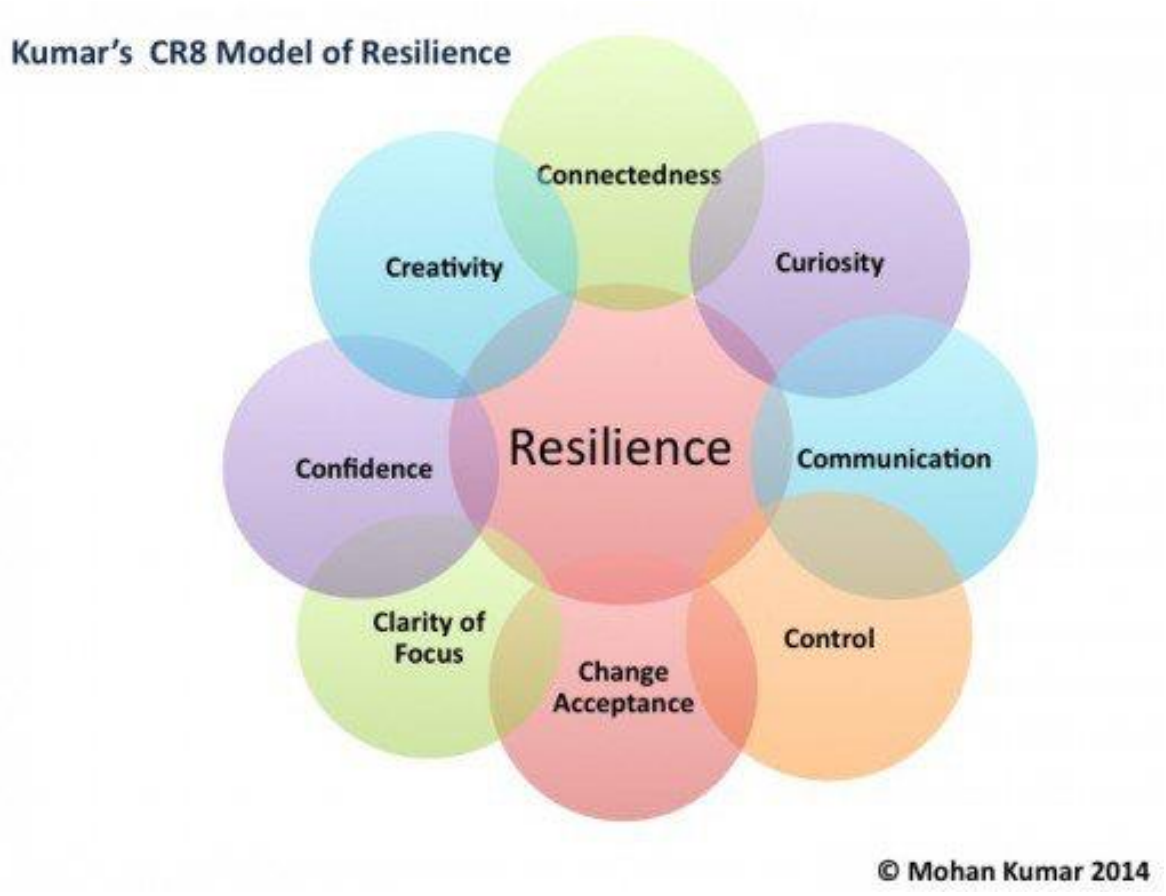
Resilience and the Adult Learner

Self-efficacy and resilience share many common character traits and therefore have consistently been shown to be associated with one another (Lightsey, 2006; Speight, 2009; Woosley, 2015). Specifically, if self-efficacy is a side of an internal coin, then resilience is the other side of that coin. This connection is illustrated through the understanding that if self-efficacy is a measure of an individual's confidence in their perceived ability and the ability to perform at a specific level in a specific situation, then resilience would be an individual's ability to stay focused on the long-term goals, the ability to put forth a sustained effort and the ability to internally recover from setbacks (Hamill, 2003; Woosley, 2015). Furthermore, resilience is a multifaceted paradigm that includes other personal resources such as self-esteem, optimism,

coping strategies, and good social relations (Condly, 2006). Figure 4 depicts a model of resilience. This model of resilience is based on Norman Garmezy's (1974) theoretical and empirical model gleaned from his research in the field of childhood resilience (Luther, Cicchetti, & Becker, 2000; Masten, Best, & Garmezy, 1990; Yates, Tyrell, & Masten, 2014). Mohan Kumar (2014) furthered Garmezy's theory to include eight attributes that seek to strengthen the larger concept of resilience (Kumar, 2014).

Figure 4

Updated Model of Resilience



Note. Reproduced by permission Kumar, 2014 (Appendix G)

The eight circles that overlap the larger center circle illustrated above are described as Connectedness, Curiosity, Communication, Control, Change Acceptance, Clarity of Focus,

Confidence, and Creativity. Connectedness is the ability to find or create a network of support that may include but is not limited to, family, friends, and/or peers. Individuals need to remain connected through networking and relationships, and it is through these relevant relationships that they both offer and receive reciprocal support (Kumar, 2014). Curiosity is the ability to stay with a perceived problem and question the potential outcomes. Individuals that are curious find that the sense of wonder, awe, and exploration internally drive them to determine outcomes within situations or emotional circumstances (Kumar, 2014). Communication is the aptitude to articulate one's thoughts and feelings through spoken word or another medium. This skill is a highly subjective trait, and in order to build resilience, it is necessary to communicate regularly and in a proactive and efficient manner (Kumar, 2014). Control is joined with the concept of crisis management and becomes the capability to regain control of oneself and regroup. Through this trait, an individual learns and gathers information from their mistakes and inherits the ability to crisis in a calm and effective manner (Kumar, 2014).

Change acceptance is the skill necessary to accept and prepare for changes, rather than hoping change does not arrive. Individuals that accept changes have the ability to maintain a positive approach to the variations that occur from day to day. They also develop the capacity to focus on the elements of their life that can be changed, instead of an emphasis on the things that can't be modified or are out of their physical or mental control (Kumar, 2014). Clarity of Focus is the aptitude to break down objectives into manageable chunks and focus on those tasks and see them through until the end. This approach grants a person the insight and capacity to change an approach to a situation if it doesn't seem to be working (Kumar, 2014). Clarity of focus also allows the individual to garner positive feedback from small successes and begins to internally build a process of scaffolding that positive feedback into a sound basis on which the individual

can build further skills. Confidence is the ability to create and maintain a positive self-image and attributes success, or failure to the amount of effort exerted or ability needed or gained. People that gain confidence view their effort and ability as a learnable skillset, and they value their ideas and contributions, as well as the ideas and contributions of others (Kumar, 2014). Confidence is one trait that closely mirrors self-efficacy and further solidifies the interconnectedness between resilience and self-efficacy (Kumar, 2014; Lightsey, 2006; Masten, 2013; Masten & Powell, 2003; Speight, 2009; Woosley, 2015). The final circle in the resilience model deals with creativity. Creativity is the propensity within an individual to synthesize new ideas and reason flexibly in regard to problems and situations. People with creativity find themselves thinking outside the proverbial box and engaging in interests that stimulate their mind as well as their body (Kumar, 2014).

Numerous studies have established a relationship between resilience and self-efficacy as it pertains to students and student achievement (Cassidy, 2015; Cassidy, 2012; Hamill, 2003; Lightsey, 2006; Martin & Marsh, 2006; Sagone & De Caroli, 2013; Riley & Masten, 2005; Speight, 2009; Waxman, Gray, & Padron, 2003). Self-efficacy training for students has been shown to promote a higher level of resilience in those same students (Cassidy, 2015). Additionally, self-efficacy is consequential to a students' capacity to effectively deal with challenges, adversity, and setbacks that were experienced within a school setting (Martin & Marsh, 2006). Self-efficacy has also been reported to be an important characteristic that can distinguish resilience and non-resilience in students (Hamill, 2003). This research builds a case that resilience is not only directly linked to self-efficacy, but also that the higher the levels of internal resilience within a student, the more internal fortitude that student has to be able to face the challenges of both academics and within the various spheres of life (Kumar & Uzkurt, 2010;

Lightsey, 2006; Sagone & De Caroli, 2013; Speight, 2009). Much like self-efficacy, resilience is an essential component for students, adults, and leaders and through the adoption and continual building of this trait, individuals will begin to use adversities, trials, and tribulations not as a crutch, but as a springboard to continually reach higher and higher (Kumar & Shah, 2015).

How Adults Learn

How adults learn, or adult cognition is related to life experience and is a life-long process (Drago-Severson, 2011; Erickson, 2010; Ihejirika, 2012; Postek, Ledzinska, & Czarkowski, 2010; Reese, 2012; Sandlin, Wright, & Clark, 2011). The associations that connect the understanding of adult cognitive development are often interconnected to a combination of elements, primarily the interaction of maturational and environmental variables (Goddu, 2012). Strictly speaking, the way that adults learn involves learning through both change and growth over time. This information translates to the classroom through the understanding that classrooms need to be spaces of learning that embody both current and past experiences, places that foster a desire to learn, a space that nurtures a reflective process on teaching and learning, a space that allows the growth of an individual's cognitive capacity, and a space that is not limited to a four-wall enclosure, but a dwelling that is connected not only to the curriculum, but the context of how that curriculum interacts within the real-world (Brookfield, 2000; Ellsworth, 2005; Sandlin, Wright, & Clark, 2011;

Numerous studies delve into the concept of cognitive growth within a student and the impact that such growth has on both academic and interpersonal outcomes. (Erickson, 2010; Chapman, Laird, Ifill, & KewalRamani, 2011; Condelli, Kirshstein, Silver-Pacuilla, Reder, & Wrigley, 2010; Drago-Severson, 2011; Ihejirika, 2012) Cognitive growth is an internal process that is predominant to the development of academic and personal competency, as well as, an

increase in the cognitive, emotional or affective, intrapersonal, and interpersonal competencies to better manage leading, teaching, learning, and living (Drago-Severson, 2011, Erickson, 2010). Growth-enhancing conditions support adult education in the following ways: teaming, with growth opportunities for individuals, organizations, and systems; providing leadership roles by learning and growing from leading together; collegial investigation through engaging in collective conversation and reflections on practice; and mentoring through constructing significant and growth-enhancing relationships (Drago-Severson, 2011). Furthermore, adults can be motivated to choose challenging tasks and to confront and overcome their mistakes (Dweck, 2006). It is through this type of growth that adult learners make inferences about the information that they are processing in conjunction with the lived experiences that they have faced. Understanding this facet of adult education, educators have the ability to make meaningful connections between sets of information and tailor the learning experience to each adult's unique learning style. It is through a variety of pedagogical, ephebagogical, or androgogical approaches and methodical application of information that an educator may be able to support and challenge an adult learner (Carter, Crowley, Townsend, & Barone, 2016; Drago-Severson, 2011; Flowers, 2014; Hord, 2016).

Another aspect in this adult learning equation is the needs associated with the increasing number of older or adult individuals that are attending colleges across the country. Examination of data retrieved from the National Center for Education Statistics (NCES) found enrollment throughout American college campus for students 25 and over rose by 42 percent from 2000-2010; and from 2010-2020, NCES projects a continued increase in the enrollments of students over 25, in upwards of 25 percent or more (Snyder & Dillow, 2012). Two large studies conducted by the National Center for the Study of Adult Learning and Literacy (NCSALL)

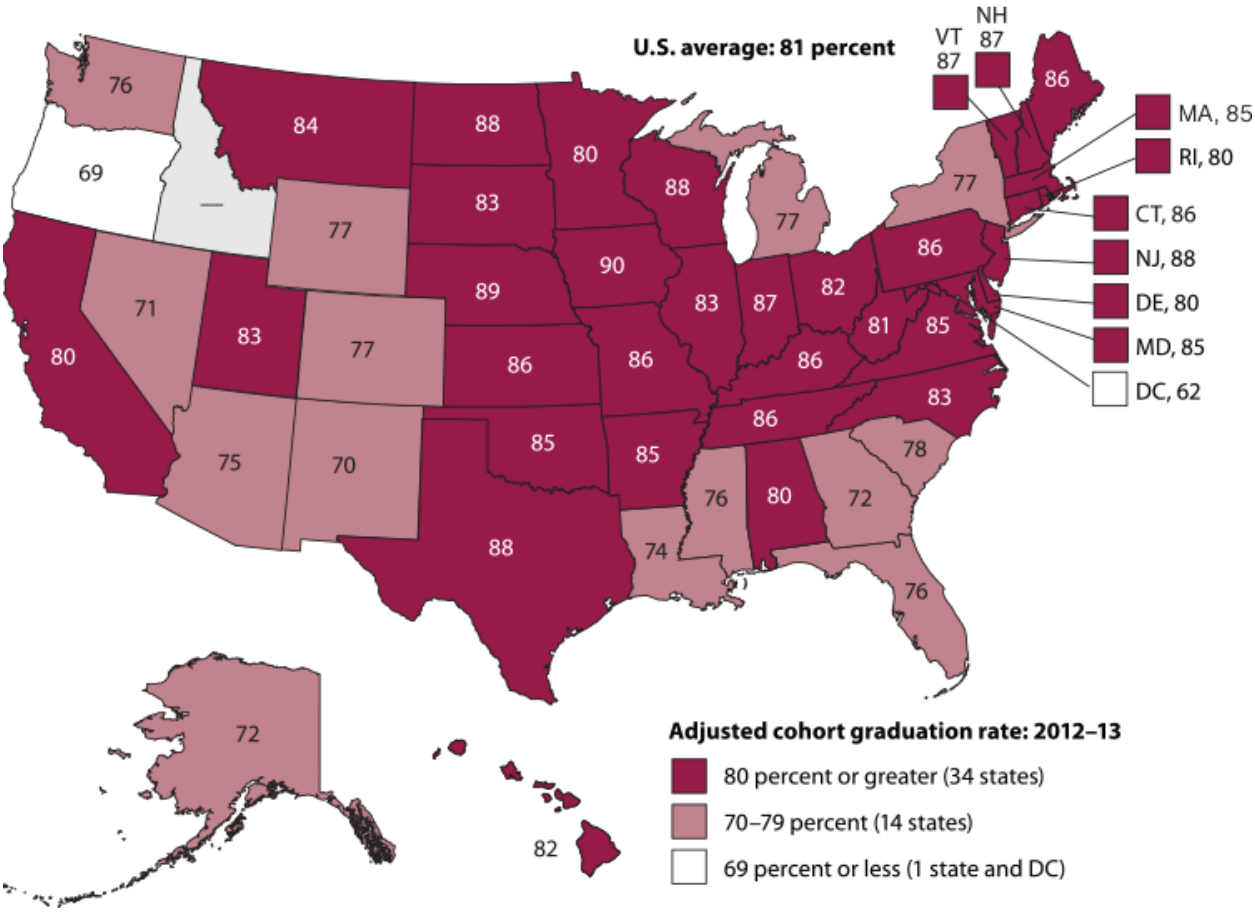
analyzed collected information which highlighted a definite correlation between adult literacy needs and social and economic changes (Condelli, Kirshstein, Silver-Pacuilla, Reder, & Wrigley, 2010). This study highlighted four areas of importance concerning the growing needs of adult learners: 1) build persistence in adult learners so that they remain in programs and participate in self-directed activities, 2) gather data and create accountability around long-term outcomes, 3) develop community-wide education support systems, and 4) utilize technology to increase capability, direction, and effectiveness (Condelli, Kirshstein, Silver-Pacuilla, Reder, & Wrigley, 2010). Furthermore, according to research, the learning theory of andragogy, or how adults learn, includes six conventions that need to be included in any classroom, whether they are face-to-face, online, or a hybrid of the two (Cochran & Brown, 2016). These six conventions of andragogy are: 1) the need to know, 2) the learner's self-concept, 3) the experience of the learner, 4) a readiness to learn, 5) an orientation to learning, and 6) motivation of the learner (Knowles, Holton III, & Sawnson, 2005). With this information as a footing, it is apparent that more and more instructors of adult students need to incorporate adult learning methodologies and cognitive theories into their practice and with that, an understanding that learning involves change and growth over a period (Cochran & Benuto, 2015; Goddu, 2012; Henschke, 2011).

Additionally, as more and more adults begin filtering back into educational programs, classrooms, and campuses, there is a definitive need to understand the reasoning behind their matriculation. Research into demographical, socio-economical, and geographical adult education statistics from the NCES revealed that 3.4 percent of students who were enrolled in public or private high schools left without completing a high school program (Chapman, Laird, Ifill, & KewalRamani, 2011). Additionally, the dropout rate of students living with low-income families was about five times greater (7.4 percent vs. 1.4 percent) than the rate of their peers

from high-income households (Chapman et al., 2011). Adding to this statistic, a report by the Organization for Economic Cooperation and Development (2013) declared that over 30 million adults do not have a high school diploma and 20% of U.S. adults with a high school diploma have only beginning literacy skills. Furthering this understanding, data reported by the Institute of Education Sciences and the National Center for Education Statistics (2016), under the direction of the US Department of Education, provided a look at information about the averaged freshman graduation rate for public high school students. Based on data released by the Department of Education in the Condition of Education 2012 brief, it was reported that 3.1 million public high school students, or 81%, graduated on time with a regular diploma (Aud et al., 2012). Condelli et al. (2010) stated that 14.1% of adults age 18-64 do not have a high school diploma or an equivalent degree. Figure 5 adds to this data-rich foundation and depicts the adjusted cohort graduation rate (ACGR) of public high school freshmen from 2012 - 2013 who graduate with a regular diploma within four years of starting the 9^{th} grade.

Figure 5

The Averaged Freshman Cohort Graduation Rate



Note. Reproduced by permission National Center for Education Statistics, 2017 (Appendix H)

While the above graduation rates are an improvement from previous years, it ultimately shows a stark portrait of a world in which the instructors of these adult learners are going to find it necessary to equip their classrooms and schools with information, technology, and theories that enhance the curriculum and tie an adult's lived experiences to the material in which they are trying to master. Educators need to have skills requisite of the population that they are engaging and need to master not just pedagogical concepts and content knowledge foundation, but they also need to seamlessly weave technology into their classrooms and curriculum so that students have access to a well-rounded and productive learning environment (Chang, 2010; Donovan,

Bransford, & Pellegrino, 1999; Flowers, 2014; Hoerr, 2016; Kumar, 2016; Stearns, 2017; Tomlinson, 2016).

Technology Integration and the Impact on the Adult Learners

Throughout history, technology has been touted as a potential "silver bullet" to increase educational achievement in students (Donkor, 2011; Turel, 2014; Werth et al., 2012; Yu, 2014). The depth at which technology is integrated into a classroom curriculum is largely left up to the classroom teacher. Computer-based testing within classes has become commonplace in many public and private schools and institutions of higher education (Bridgeman, 2009; Stearns, 2017; Tomlinson, 2016). Teachers see technology as a valuable tool that can be used to enhance student learning (Hord, 2016; Werth et al., 2012; Tomlinson, 2016; Turel, 2014). Werth et al.'s (2012) study validated the benefits of educational technology use in the classroom as numerous and extending beyond modernizing the educational environment.

Research revealed the importance of the technological perceptions of the educator as it relates to the use and impact technology has on the adult learner (Condelli et al., 2010; Ghost Bear, 2012; Gray, Thomas, & Lewis, 2010; O'Donnell, Sharp, Lawless, & O'Donnell, 2015; Turel, 2014). Particularly, when a teacher believes that technology can enhance their classroom and curriculum, that belief also translates to the student (Turel, 2014). Computer self-efficacy and frequency of information technology use by teachers is positively associated with a higher level of technology use for educational purposes both inside and outside of the classroom (Turel, 2014). Computer-based education (CBE) programs are more prevalent in education entities and classrooms across the country and have the ability to meet the needs of adult learners (Zappala, 2016). As teachers and students use different tools according to the various assignments and requirements, a deeper level of understanding is developed which, in turn, has a direct effect on

the growth of both the instructor and the student (Koh, 2016; Yu, 2014). Moreover, adult learners need to now make a shift from merely being passive in the learning process to actively engage and participate in their education (Turcsanyi-Szabo, 2012).

A study focusing on the role of web 2.0 tools in the classroom supported the importance of technological tools in the classroom and the impact those tools had on both the teacher and the student (Yu, 2014). A web 2.0 tool is a technological tool that allows the user to create content, collaborate, edit, and share their content online with ease (Yu, 2014). Research also provided evidence that students and teachers both felt that knowledge in and around technology was extremely critical when related to the coursework (Koh, 2016; Yu, 2014). It is important to also note that research suggests that the efficient use of digital technology should be a part of the whole package of tools offered in any classroom, albeit public, private, or correctional in nature (Bridgeman, 2009; Koh, 2016; Lockwood et al., 2013; Turel, 2014; Werth et al., 2012; Yu, 2014; Zappala, 2016).

History of Correctional Education

Correctional education in America has a long history that dates back to the mid to late 1700's (Coley & Barton, 2006; Gehring, 1995; Messemer, 2011; Silva, 1994; Teeters, 1955; Warburton, 1993). Founded by the Quakers in 1791, the Walnut Street Jail was the first true American prison and became the birthplace of correctional education (Coley & Barton, 2006; Teeters, 1955). This early type of correctional housing had three main objectives: to ensure the security of the public, prisoner reformation, and to show humanity to those that were housed within the prison walls (Coley & Barton, 2006). It wasn't until 1798 that the first correctional education classroom was built onto the prison (Coley & Barton, 2006; Teeters, 1955). The school was added to the prison as it was felt that this was the most beneficial practice as this

would help the prisoners learn and improve in reading, writing, and arithmetic (Coley & Barton, 2006; Teeters, 1955). Additionally, early correctional education programs were referred to often as the Sabbath School since the purpose of the education was to teach the offenders how to read so that they had the ability read and understand the Bible (Gehring, 1995, Messemer, 2011).

As prisons grew, three distinct coteries of thought regarding how prisoners should be treated and what type of services, if any, should be available to prisoners developed. The first two systems started in the 1820's. The first was called the Auburn Plan, which drew its name from the New York state prison it was created within and had prisoners sleep in solitary spaces but had the prisoners come together to work (Chlup, 2005; Gehring, 1995). The Pennsylvania Model was developed at the same time as the Auburn Plan and was slightly different from its counterpart as the Pennsylvania Model kept prisoners in solitary confinement for the entirety of their incarceration (Chlup, 2005; Gehring, 1995). In 1876, the third correctional system came into existence through a man named Zebulon Brockway and the Elmira Reformatory in New York (Chlup, 2005; Gehring, 1995). Brockway hired professors from the neighboring colleges and schools to come into the Reformatory and teach courses to the prisoners (Gehring, 1995). He is considered the pioneer of the social, academic, vocational, and special education of prisoners and is also slated as helping create the concept of parole (Chlup, 2005; Gehring, 1995; Silva, 1994).

During the mid to late 1800's education within the prisons changed to incorporate more of a traditional education approach (Gehring, 1995; Gehring, 1997; Messemer, 2011). Reading was then joined by writing and math curriculum. In some settings, history and geography instruction were also included in the curriculum. By the end of the 1800's, the reform movement mandated that offenders were to participate in educational as well as vocational programs as part

of their prison sentences (Gehring, 1997). The end of the 1800's also saw the creation of the first women's prison in Indiana, the concept of probation was also instituted, and the first federal prison in Leavenworth, Kentucky began construction (Chlup, 2006; Gehring, 1995; Glaser, 1995). It wasn't until the mid to late 1900's that the notion of rehabilitating offenders became part of the planning and implementing within correctional facilities (Ryan, 1995). Wolford (1989), stated that the Manpower Development Training Act of 1963, the Adult Education Act of 1966, and the Basic Education Opportunity Grant Program in 1972 played a crucial role in the development and expansion of correctional education throughout the nation. With this shift, came a new philosophy of correctional education that moved the focus of building reading, writing, and math skills to changing the behaviors of offenders (Hobler, 1999).

During the 1970's, correctional education saw the introduction of some form of post-secondary education within the prison system. These systems were able to support a rich curriculum of vocational training, as well as adult basic education services, secondary education, post-secondary education and numerous self-help programs and curriculum (Eggleston & Gehring, 1986; Gehring, 1997; Hobler, 1999; Ryan, 1995). Soon after, the state of Texas demonstrated that their college education program located in their prison facilities was able to reduce the rate of recidivism (Gehring, 1997; Messemer, 2011).

Current State of Correctional Education

Correctional education is a crucial part of the correctional system, especially as it relates to prison operation and the educational remedy for prisoner reentry to the community (Aziz et al., 2014; Bhuller, Dahl, Løken, & Mogstad, 2016; Davis et al., 2013a; Hill, 2015; Kaeble & Glaze, 2016; Meyer, 2011; Meyer & Randel, 2013; Mohammed & Mohamed, 2015; Oye-Johnson, 2014). At the end of the year in 2015, there were an estimated 6,741,400 individuals

that were under the supervision of the U.S. adult correctional system (Kaeble & Glaze, 2016). This equates to about one in every 37 adults in the United States or approximately 2.7% of the adults in the country (Kaeble & Glaze, 2016). Furthermore, the average incarceration rate in the United States in 1980 was 220 per 100,000 residents and has risen to over 700 per 100,000 residents (Bhuller, Dahl, Løken, & Mogstad, 2016). Within this massive population, nearly two million men and women are currently incarcerated, and more than 700,000 incarcerated offenders leave either federal or state institutions (Davis et al., 2013b; Kaeble & Glaze, 2016). Within three years of release, 40 - 45% of those released will have committed additional crimes or violated the conditions of their release and will be reincarcerated (Davis et al., 2013a). Correctional education has a critical impact on the life of an offender as education helps lower the risk of criminal behavior and recidivism (Delaney, Subramanian, & Patrick, 2016).

Focused studies with correctional education revealed information essential to building effective programs for offenders (Davis et al., 2013a; Delaney, Subramanian, & Patrick, 2016; Oye-Johnson, 2014; Wolf Harlow, 2003). Overall, the incarcerated population of men and woman have a lower attained level of education than similar populations that are not incarcerated (Delaney, Subramanian, & Patrick, 2016). To compound this tremendous disparity, only 35% of state prisons report offering general or postsecondary education classes (Gorgol, & Brian, 2011). The need for effective programs is even more critical since research has documented that students who participate in correctional education in prison commit fewer crimes and have fewer violations of their supervision or parole after they are released (Davis et al., 2013a; Delaney, Subramanian, & Patrick, 2016). It was also discovered that offender students who engage in correctional education find it easier to obtain employment, establish and strengthen relationships with family and friends, and have a higher likelihood of earning a higher annual wage than those

offender students who did not participate in correctional education while they were incarcerated (Davis et al., 2013a; Delaney, Subramanian, & Patrick, 2016)

A research study on the effectiveness of correctional education for rehabilitating offenders highlighted the power of correctional education and provided outcomes that offenders who participated in correctional education were 43% less likely to recidivate (Davis et al., 2013b; Nally et al., 2012). Also, the researchers also found that individuals who partook in vocational training programs had a 28% higher chance of obtaining employment after they were released over those offenders that did not participate in the same programs while incarcerated (Davis et al., 2013a). Furthermore, there is significant research to show the importance of correctional education on post-release recidivism and employment (Davis et al., 2013a; Delaney, Subramanian, & Patrick, 2016; Nally et al., 2012). Essentially, education within a correctional institution had a positive impact on those offenders when they were released and sought employment. A longitudinal study on post-release employment and recidivism provided results that confirmed that an offender who did not attend correctional education programs during their incarceration was 3.7 times more likely to recidivate after release from the Indiana Department of Corrections (IDOC) custody when compared with an offender who had participated in a variety of correctional education programs during their incarceration. (Nally et al., 2012). It is important to note that while the recidivism rate for offenders who attended educational programming while in the IDOC was 29.7%, the recidivism rate of those offenders who did not participate in educational programming rose to 67.8% (Nally et al., 2012).

In addition to post-release outcomes associated with correctional education programs, there are other inherent benefits to correctional education (Delaney, Subramanian, & Patrick, 2016; Meyer, 2011; Nally et al., 2012). According to research, five areas of importance

concerning engagement in correctional education are: 1) improved conditions in correctional facilities and change in inmate behavior and attitudes, 2) reduced disciplinary infractions, 3) improved relationships between offenders and correctional staff, 4) the development of positive peer role models, and 5) an enhanced growth in offender self-esteem (Meyer, 2011). Additionally, research has exhibited a correlation between correctional education and the benefits from that knowledge that translated to higher success after release (Davis et al., 2013a; Meyer, 2011). Correctional education has a responsibility to society to provide the individual offender empowerment and to provide the offender the recognition that he or she has the potential to become something more than they currently are (Werner, 1990).

A large body of research has documented the relationship between participation in correctional education programs and the reduction of recidivism (Davis et al., 2013a; Davis et al., 2014; Meyer, 2011; Meyer and Randel, 2013; Nally et al., 2012). Research further shows that correctional education serves as an important mechanism in reducing the recidivism rate among offenders who are released; and, in turn, this significantly reduces incarceration costs that are associated with offenders who recidivate (Nally et al., 2012). Evidence has been documented that the costs of reincarceration are $870,000 to $970,000 less for those offenders who received a correctional education while incarcerated (Davis et al., 2013a). Also, educational attainment in correctional education programs points to a reduction in offender recidivism, and it also shows better preparation for the transition of an offender back into society (Chen, 2015). A similar study declared that correctional education had a direct impact on student outcomes on both standardized tests as well as student engagement (Meyer & Randel, 2013). Offenders who engaged in correctional education, on average, had increased educational aspirations of .44 points for each point increase in academic engagement on a 4-point scale (Meyer & Randel,

2013). Stated differently, if a student's response to academic engagement grew from a 2 to a 3 on a 4-point scale, then the student's educational ambitions also increased which lead to a greater increase in the attainment of post-secondary credits.

A large-scale meta-analysis of correctional research was conducted, and it was determined that the overall outcome of computer-assisted instruction relative to traditional instruction is 0.04 grade levels in reading and 0.33 grade levels in mathematics (Davis et al., 2013b). These figures equate out to be about .036 months of learning for reading and about three months of learning in mathematics (Davis et al., 2013b). The research showed that computer-assisted learning in correctional education increased a student's instruction, and the research also brought to light that students achieved slightly more in reading and subsequently more in mathematics. However, in many correctional education settings, any type of computer-based testing is very limited. As a result, the level of computer literacy among offenders is now becoming a barrier to implementing any computer-based testing (Lockwood et al., 2013). According to Amodeo, Jin, and Kling (2009):

> Approximately three-quarters of all offenders reported that they had no computer skills. This is considerably different from the average household population, in which more than three-quarters reported they had used a computer and had adequate computer skills. Similar to these results, the majority of incarcerated adults were not computer literate[;] …… a smaller percentage (30 percent) of adults in the average household population was not computer literate (p.3).

In summary, the studies researched show a distinct correlation between the impact of correctional education and the future an offender has outside of the institution once they are released (Davis et al., 2013b; Davis et al., 2014; Gaes, 2008; Meyer, 2011; Meyer, Fredericks,

Borden, & Richardson, 2010; Meyer & Randel, 2013; Nally et al., 2012; Winterfield, Coggeshall, Burke-Storer, Correa, & Tidd, 2009).

History of the GED in Correctional Education

For the vast majority of the adult population who do not have a high school diploma, the GED test has been one of the best and cheapest alternatives to obtaining the missed coursework and credentials they are needing (Quinn, 2002). The first GED test was developed in 1942 to educate young military members who were returning from World War II ("History of the GED test", 2015; Quinn, 2002). This influx of test takers needing to gain a high school education so that they could find employment ("History of the GED test", 2015). The new GED exam, which in entirely computer based, had four predecessors: the original GED test which was published in 1942, the second GED test which was released in 1978, the third generation of GED which was published in 1988, and the fourth iteration which was released in 2002 (Lockwood et al., 2013).

The GED test has been used to measure the academic attainment of offenders since the early 1970's when most states began to offer post-secondary education in prisons ("History of the GED test", 2015; Messemer, 2011). Approximately four percent of U.S. GED test-takers in 2003 were incarcerated in correctional facilities across the nation (Harlow, Jenkins, and Steurer, 2010). Of these incarcerated test takers in 2003, 37% did not have a high school diploma or a GED test credential (Harlow, Jenkins, & Steurer, 2010; Ormsby, 2017). In 2002, the United States Bureau of Justice Statistics published a report that stated that 67% of the inmates that were released from state facilities in 1994 had committed at least one serious crime in the three years following their release (American Council on Education, 2011; Ormsby, 2017). Similarly, the New York State Department of Correctional Services found in 2003 that inmates who earned a GED credential while incarcerated were significantly less likely to recidivate within the three

years after they were released (Nuttall, 2003). It was further found that offenders who earned their GED credential and were under the age of 21 were 14% less likely to return to prison within three years (Nuttall, 2003). This research is additionally strengthened by a set of studies that highlight the impact of education on offenders. Research on inmates at a county correctional facility that participated in a college program while incarcerated and found that those inmates were less likely to return to the facility within five years that a comparable control group of offenders that did not participate in any education programs (Burke and Vivian, 2001). An additional study established that the more years of education an inmate completes while they are incarcerated, the less likely they were to recidivate (Harer, 1995). The study also found that recidivism rates were inversely related to participation in an educational program (Harer, 1995).

In 2014, a new General Education Development (GED) assessment was implemented across the United States. This new test was more rigorously aligned with the Common Core State Standards (CCSS) and utilized the new computer-based testing delivery model, which effectively replaced the paper-and-pencil examination (Lockwood et al., 2013). The new GED test has three score levels: the GED Passing Score, which is a user score that is at or higher than the minimum needed to demonstrate high school equivalency, the GED College Ready, which is a user score that demonstrates the abilities and skills necessary to enroll in a college course, and finally the GED College Ready + Credit, which is a score higher than the College Ready score and allows the user to be eligible for up to 10 hours of college credit (GED Testing Service, 2017). The new GED test consists of four content areas, of which each section has a specific time limit associated with it. The first section is entitled Reasoning Through Language Arts and has four sections with a total test time of 150 minutes (GED Testing Service, 2017). The second section is entitled Mathematical Reasoning and has two parts with a total test time of 115

minutes (GED Testing Service, 2017). The third section of the test deals with Science test questions and content and has a total test time of 90 minutes (GED Testing Service, 2017). The last part of the new GED exam deals with Social Studies questions and content and has a total test time of 70 minutes (GED Testing Service, 2017).

Alternative Placement/Rider Program

Several states across the United States have developed an alternative sentencing programming for incarcerated offenders, or those that are on their way to being incarcerated, as a means to curtail the prison pipeline and provide offenders an opportunity to better themselves and possibly avoid a prison sentence (Lawrence & Lyons, 2011; Martin & Grattet, 2015; Nieto, 1996). State and federal sentencing policies provide the framework and foundation that hold offenders accountable for their actions and reduce the likelihood that they will recidivate or commit new crimes (Lawrence & Lyons, 2011). Alternative custody, community correctional program, or an alternative sentencing program is an alternative to incarceration that provides the offender with treatment or programming that involves something other than confinement in a secure facility that takes place either at the point of sentencing or during the time an offender is under community supervision (Martin & Grattet, 2015; Nieto, 1996). These programs are also provided at a lower cost to the communities and states in relation to the increased incarceration cost of prison or jail (Neito, 1996). The State of California has a number of alternative sentencing programs both at the state and county levels that allow for offenders to be placed into them either voluntarily or involuntarily (Martin & Grattet, 2015; Nieto, 1996). North Carolina uses an intermediate sentencing option as part of a structured sentencing guideline along with a statewide community corrections system (Lawrence & Lyons, 2011). The state of Pennsylvania has an alternative sentencing program for drug-addicted offenders that incorporates a minimum

prison sentence where the offender participates in an intensive treatment program (Lawrence & Lyons, 2011). This is then followed by a term of time in a community-based residential facility and placement in an outpatient counseling program along with a period participating in community supervision (Lawrence & Lyons, 2011).

In the Northwest, there is an alternative for offenders beyond being convicted of a crime and matriculating directly into the prison system. This alternative sentencing program is known as a Rider program and is a pseudo middle ground where an offender is sentenced, but the courts retain jurisdiction of the defendant ("Sentencing – Alternative Sentencing", 2017). It is during this time that an offender is assessed for the best possible programming based on his/her particular needs and circumstances (Young, 2015). There are three distinctive types of Rider programs:

1. CAPP Rider: The Correctional Alternative Placement Program (CAPP) is a 90-day program that offers an intensive treatment program for substance abuse issues as well as cognitive issues. This program is mainly for low-to-moderate-risk offenders. To be eligible for a CAPP Rider, an offender must possess a GED or high school diploma (Bergman & Berman, 2015; "Sentencing – Alternative Sentencing", 2017).
2. Traditional Rider: The Traditional Rider is a 120-day program in which the offender is incarcerated in a therapeutic environment. In this program, offenders are screened and assessed to determine their individual needs. Based on those needs, the offender will receive intensive programming and education (Bergman & Berman, 2015; "Sentencing – Alternative Sentencing", 2017).

3. Therapeutic Community Rider: The Therapeutic Community Rider is a 270-day program were offenders are entrenched in an intensive drug and alcohol program (Bergman & Berman, 2015; "Sentencing – Alternative Sentencing", 2017).

At the conclusion of the Rider program, an offender returns to the sentencing judge and is either placed on probation or is ordered to serve out the rest of their sentence in a traditional prison setting (Bergman & Berman, 2015). This type of program is all about providing the offender with the tools and help that they to rebuild a stable foundation that will assist them once they leave their current facility. The Northwest Department of Corrections reports that 41% of those that complete a Rider program return to prison within three years of their parole or release (Bergman & Berman, 2015). The financial benefits to the state and its constituents for those offenders who complete the Rider program is tremendously beneficial as an offender who completes a three-month Rider and does not return to prison; the state saves more than $58,000 (Alternatives to incarceration in a nutshell, 2013; Bergman & Berman, 2015; "Sentencing – Alternative Sentencing", 2017; The Columbus Telegram, 2017). Furthermore, if an offender completes a six-month Rider program and does not return to prison, the state saves more than $117,000 (Alternatives to incarceration in a nutshell, 2013; Bergman & Berman, 2015; "Sentencing – Alternative Sentencing", 2017; The Columbus Telegram, 2017).

Mindset Theoretical Framework

The theoretical framework of the study focused on the contemporary theory of mindset. The results of the study aimed to contribute to the existing body of knowledge regarding growth vs. fixed mindset and to support past studies that found growth mindset to be attainable within the adult learner, the adult brain to be malleable, and self-efficacy and resilience to be attributed

to an individual's growth mindset. Also, Dweck's initial research and subsequent research that has been collected demonstrates the important connections between mindset and self-efficacy.

Several studies point to the impact that an internal mindset has on motivation, a sense of belonging, self-efficacy, and resilience (Dweck, Walton, & Cohen, 2014; Farrington et al., 2012; Garrett, 2014; Lee, Heeter, Magerko, & Medler, 2012; Sevincer, Kluge, & Oettingen, 2014; Yeager & Dweck, 2012). The Yeager and Dweck (2012) study posed two significant questions: 1) would the group of high school student participants be able to define the term resilience, the role it played in their lives, what caused it, and how it could be increased; and, 2) would the participant group be able to shed light and help create a better understanding of the concept of implicit theories? The study established the theory that one's intelligence is permanent and unalterable can lead students to determine academic challenges as a sign that they may lack aptitude (Yeager & Dweck, 2012). Their study also revealed that a students' mindset could be transformed and in doing so resilience and self-efficacy are encouraged and cultivated within those individual students (Yeager & Dweck, 2012). A study by Cianci, Schaubroeck, & McGill (2010) found that people with mastery goals are less susceptible to negative feedback due to setbacks than those who are motivated by performing well. Using criticism constructively, individuals with a growth mindset are regularly "returning to the drawing board" mentally and realigning their focus on their goal and ultimate objective (Gordon, 2017).

In addition to the cultivation of a student's resilience and self-efficacy, recent studies on a student's non-cognitive or motivational factors have created the new label: Academic Tenacity (Dweck, Walton, & Cohen, 2014). By building their academic tenacity, an offender can learn to attain new knowledge, mindsets, and skills that will assist them in becoming successful after they are released from a facility. Carol Dweck explains how a student's non-cognitive factors are

essential for ongoing and continued academic achievement. Dweck states that as an individual begins to understand the differences between a fixed and growth mindset, a person will begin to "see exactly how. . . a belief that qualities are carved in stone leads to a host of thoughts and actions, and how a belief that qualities can be cultivated leads to a multitude of different thoughts and actions, taking you down an entirely different road" (Dweck, 2006, p. 10).

Adding to this understanding, Lee et al. (2012) described people with a fixed mindset are those that believe that a person's abilities are fixed early in life and cannot be changed, and individuals with a growth mindsets are those that believe that a person's abilities can be developed through learning and practice. Carol Dweck adds to this concept of fixed and growth mindset by stating:

> The growth mindset is the belief that abilities can be cultivated. But it doesn't tell you how much change is possible or how long change will take. And it doesn't mean that everything, like preferences or values, can be changed……. The growth mindset also doesn't mean that everything that can be changed should be changed……. The fixed mindset stands in the way of change. The growth mindset is a starting point for change, but people need to decide for themselves where their efforts toward change would be most valuable. (Dweck, 2006, p. 50)

Research proves that the influence of students' mindset on their resilience in the face of academic and social trials is crucial for a students' achievement in school and life (Yeager & Dweck, 2012). The results also indicated that a students' mindset would contribute to poor academic performance and low self-esteem depending on the interactions between students and peers (Yeager & Dweck, 2012). In short, how a student perceived him/herself in the world, plays heavily on the way the student interacts with their peers (Dweck, 2006). Ultimately, this

has a direct impact on the future trajectory of the student (Dweck, 2006; Yeager & Dweck, 2012).

Enhancing the research about incremental and entity theorists, Sevincer et al. (2014) revealed that incremental theorists are primarily concerned with evolving their capabilities for their future whereas entity theorists are concerned with demonstrating their skills today. In other words, people with a growth mindset were able to focus more on the future and what skills were needed for the future and individuals with a fixed mindset were solely concerned with the happenings of today and cared very little about skills for the future. These researchers confirmed that building validity and positive mindset is critical for building resilience in future settings.

Conclusion

The literature review supports the concept of effective technology use as a vehicle for increasing student mindset and self-efficacy (Abbitt, 2011; Aypay et al., 2012; Blackwell, 2013; Gecer, 2013; Ghost Bear, 2012; Koehler, 2011; Kushner-Benson & Ward, 2013; Turel, 2014). The following themes derive from the literature: 1) the impact of the TPACK framework on student learning, 2) prevalence of self-efficacy in the adult learner, 3) the way adults learn, 4) the role of correction education, and 5) technology's impact on the adult learner. The fifth area within the literature, an overview of the concept of mindset, provides a foundation for this study in regard to the impact of growth mindset on student self-efficacy and resilience.

The first area of focus highlighted Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) framework, which is being used extensively by the greater education community, and provides guidelines for effective technology integration in adult education classrooms in correctional facilities (Koehler, 2011). The TPACK framework

and Dweck's (2012) Mindset theoretical framework provide a strong framework for answering this study's research questions.

The second area of attention looked primarily at the prevalence of self-efficacy in the adult learner and revealed how self-efficacy was inextricably tied to student achievement (Abbitt, 2011; Blackwell, 2013; Carpenter & Clayton, 2014; Gecer, 2013; Wang et al., 2013; Yang, 2012). The literature even highlighted the correlation between teacher self-efficacy and that impact on the respective student's self-efficacy (Blackwell, 2013). Adding to this concept, resilience and the adult learner, built a foundation that resilience and self-efficacy are directly linked and are both necessary for an adult learner to be successful in their academic and personal lives (Kumar & Uzkurt, 2010; Lightsey, 2006; Sagone & De Caroli, 2013; Speight, 2009). The research stressed that resilience is an essential component for students, adults, and leaders and through the adoption and continual building of this trait, individuals will begin to use adversities, trials, and tribulations not as a crutch, but as a springboard to continually be able to reach higher and higher (Kumar & Shah, 2015).

The third area of concentration, the way that adults learn, offered all-encompassing research into related theories and concepts into understanding how the adult brain processes and retains information (Drago-Severson, 2011; Erickson, 2010; Ihejirika, 2012; Postek et al., 2010; Reese, 2012). The concepts and insights focused on areas related to adult learning theory and cognitive brain science research on how adults learn over time (Drago-Severson, 2011; Erickson, 2010; Goddu, 2012).

The fourth area of focus, technology impact on the adult learner, placed importance on the implications integrating technology into the adult classroom has on learning (Werth et al., 2012; Turel, 2014; Yu, 2014). Turel (2014) and Yu (2014) stressed the importance of

technological tools in the classroom and the impact the effective use of those tools had on both the teacher and the student. Numerous studies revealed the importance of the technological perceptions of the educator as it relates to the use and impact technology has on the adult learner (Condelli et al., 2010; Ghost Bear, 2012; Gray, Thomas, & Lewis, 2010; O'Donnell, Sharp, Lawless, & O'Donnell, 2015; Turel, 2014).

The fifth area of emphasis, correctional education and the GED, focused on the history of both correctional education and the GED, while building a foundation for the importance of both in the life of an offender (Davis et al., 2013a; Hill, 2015; Kaeble & Glaze, 2016; Meyer, 2011; Meyer & Randel, 2013; Mohammed & Mohamed, 2015). The literature also builds a critical understanding for the need for effective correctional educational programs since research has documented that students who participate in correctional education in prison commit fewer crimes and have fewer violations of their supervision or parole after they are released (Davis et al., 2013a; Delaney, Subramanian, & Patrick, 2016).

The final topic of the literature review focused on the positive impact mindset has on offender students and their learning. Notably, research supported the concept of growth mindset, how it affects student's achievement, the impact it has on teachers in the classroom, and the impact that mindset has on student achievement both in and out of the classroom. The studies highlighted the impact that an internal mindset has on motivation and resilience (Garrett, 2014; Lee et al., 2012; Sevincer et al., 2014; Yeager & Dweck, 2012).

In conclusion, research literature supports that effective technology integration has a positive impact on student achievement, resilience, and self-efficacy, in addition to a strong understanding of how adults learn and develop a new growth mindset (Abbitt, 2011; Blackwell, 2013; Carpenter & Clayton, 2014; Dweck, Walton, & Cohen, 2014; Sahin et al., 2013; Werth et

al., 2012; Yeager & Dweck, 2012; Yu, 2014). Additionally, the literature highlights the crucial nature correctional education has played in the life of an offender, as well as the essential role correctional education has in advancing an offender's levels of resilience and self-efficacy and how, upon their release, they are able to reclaim their place in society (Meyer, 2011).

Although the literature supports the importance of mindset and self-efficacy on student and teacher achievement, the research appears to be inadequate in the area specific to the role of technology integration and these theories in correctional education (Davis et al., 2013a; Davis et al., 2014; Meyer, 2011; Meyer and Randel, 2013; Nally et al., 2012). This research study sought to investigate these correlations, and by doing so, adds to the present body of literature.

Furthermore, within the body of literature there is a need for further study, specifically, in the areas of the TPACK framework integration in classrooms and curriculum, and how technology implementation positively impacts offender correctional education (Koehler, 2011; Nally et al., 2012). Hofer and Harris (2012) found that teachers are in need of more focus on pedagogy with technology than they are in need of content and technology. These researchers went on to say that professional development for teachers is necessary but is still very technology heavy and what is required is a shift towards more general-purpose concepts that all teachers can gravitate and use, rather than content-specific concepts that only a select group or chosen few will be able to use effectively (Hofer & Harris, 2012). Holosko, Jolivette, and Houchins (2014) conclude that studies should consist of larger samples in order to confirm the connectedness of integration practices, culture, achievement, and theory. In addition to laying the groundwork for the development of models and frameworks, connectedness through research can provide a sharper description and ways of measuring products (Holosko et al., 2014).

Chapter III

Design and Methodology

Introduction

One of the greatest challenges facing a correctional institution is in determining the impact of educational programming and technology on an offender (Davis et al., 2013a; Davis et al., 2013b; Davis et al., 2014; Haas & Spence, 2016; Moriarty, 2017). The United States' incarcerates 693 people for every 100,000 citizens, which is more than five times higher than most of the other countries throughout the world (Wagner & Walsh, 2016). Furthermore, the American criminal justice system holds more than 2.3 million people within 1,719 state prisons, 102 federally controlled prisons, 942 juvenile correctional facilities, 3,282 local jails, 79 Indian County jails, and a whole host of military prison, immigration detention facilities, civil commitment centers, and correctional centers in U.S. territories (Wagner & Rabuy, 2016). With a sizeable number of facilities placed in every corner of the country and an enormous number of incarcerated offenders, correctional facilities are desperate to recognize the influence that technology use has on the offenders that they house, educate, rehabilitate, and release (Carver & Harrison, 2016; Moriarty, 2017; Rivera, 2016).

Utilizing technology effectively within a correctional education program has the potential to create bridges to impasses and barriers that offenders encounter while in a prison facility and once they are released from a facility (Brown et al., 2016; Moriarty, 2017; Petersilia, 2016). Research has found that incarcerated individuals who participated in correctional education were 43% less likely to recidivate than those offenders who did not participate in the same programming (Davis et al., 2013a). Also, offenders that participated in correctional education while incarcerated experienced a higher level of employment, a higher attainable wage, and a

more successful reintegration into their community once paroled (Carnevale, Smith, & Strohl, 2010; Duran, Plotkin, Potter, & Rosen, 2013; Erisman & Contardo, 2005). Furthermore, correctional education has been shown to improve the overall safety of the facility in which education is an option (Correctional Association of New York, 2009; Fine et al., 2001; Winterfield, Coggeshall, Burke-Storer, Correa, & Tidd, 2009). Even with the depth of research on the positive implications of correctional education on offenders, the research is virtually tongue-tied on the impact of technology as well as the impact of an increase in growth mindset, self-efficacy, and resilience on offenders.

Chapter III discusses the foundation of the research design and the methodology used to gather and analyze the collected data related to offender mindset, self-efficacy, and resilience. This chapter includes an explanation of the researcher's role, as well as specific information about the location, sites, population, and phenomenon relating to the study. Additionally, a discussion on the reliability of the data and ethical concerns is provided.

Research Design

The research methodology best suited for this study was a descriptive mixed method phenomenological research (MMPR) qualitative dominant approach. Mayoh and Onwuegbuzie (2015) state, "Within these quan → PHEN studies, methods are combined for the purpose of development, which seeks to use the results of one method to help inform another" (p. 99). A quantitative research approach is the most effective method for determining correlations between variables within the data pool (Creswell and Poth, 2018; Kaplan, 2004; Marshall & Rossman, 2016; Maxwell, 2005). Quantitative methodology checks for reliability and validity between data points determines any statistical significance within the data and analyzes data to ascertain any correlations between the variables (Tanner, 2012). A qualitative research approach, specifically

a phenomenological methodology, is the most efficient method for determining the impact of technology on correctional education student's mindset, self-efficacy, and resilience (Creswell, 2015; Creswell & Plano Clark, 2007; Marshall & Rossman, 1999, Strauss & Corbin, 1998). Todres and Holloway (2006) state that using a phenomenological approach allows human beings to be understood from inside their subjective experiences. In other words, phenomenological research allows the researcher to answer the research questions by describing and interpreting human experiences in through interviews or observations of those closest to the phenomenon in question (Davidson, 2013: Mayoh & Onwuegbuzie, 2015).

Within this dissertation study, several research questions were used as a guide in order to explore in great detail the impact of technology on offender mindset, resilience, and self-efficacy. The essential research questions, as well as the null and alternative hypothesis, for this study, included:

1. How does technology afford or limit offender mindset in the correctional education classroom?
2. How does technology affect offender resilience in the correctional education classroom?
3. How does technology affect offender self-efficacy in the correctional education classroom?

Research Hypotheses

Null Hypothesis

(HO) Technology limits an offender growth mindset in the correctional education classroom.

(HO) Technology has a limited effect on offender resilience in the correctional education classroom.

(HO) Technology has a limited effect on offender self-efficacy in the correctional education classroom.

Alternative Hypothesis

(H1) Technology increases an offender growth mindset in the correctional education classroom.

(H1) Technology has an increased effect on offender resilience in the correctional education classroom.

(H1) Technology has an increased effect on offender self-efficacy in the correctional education classroom.

Facilities for Participant Data Collection:

A total of three correctional facilities were selected as research sites for this study. Correctional offenders at two correctional facilities were selected for survey distribution and analysis. Offenders at a third correctional facility were selected for the interviews. The first facility(A) chosen was a former military radar station. This facility is a program-specific prison with an operating capacity of around 415 male offenders. Facility A primarily houses offenders who are sentenced to a rider by the court system. This type of alternative sentencing allows the offenders, after a period of evaluation and programming, to possibly be candidates for probation instead of further incarceration.

The second facility (B) chosen for this study was a treatment and transition facility for minimum security female offenders. This facility has an operating capacity of around 290 offenders. These offenders are separated into two different housing units on the campus. Facility B offers programming based on an offender's cognitive and behavioral change through intensive treatment, education classes, and personal accountability.

The third facility (C) chosen for this study was originally an old state school and mental health facility that was modified into a prison. This facility has an operating capacity of around 550 male offenders. Facility C primarily houses medium custody offenders as well as offenders that are in need of protective custody. Facility C offers education and vocational work programs along with additional programming opportunities.

These sites were selected based on their proximity to the researcher, their participation in the Rider program for offenders, and the level of technology integration within the respective correctional education departments at the correctional facilities. Marshall and Rossman (2016) consider the selection of setting, site, population, or phenomenon as "fundamental to the design of the study" and "serves as a guide for the researcher" (p. 105). Conducting research within these sites provided an understanding of the profound impact technology has had as well as the overwhelming change in offender mindset, resilience, and self-efficacy due to the increased educational attainment afforded by productive and effective technology integration.

Participants

The participants that took part in the Likert scale mindset survey were current offender students that were either currently engaged in taking education classes within a correctional facility or were previous students who had either recently obtained their General Education Degree (GED) certification or had participated in another of the education programs within the correctional facility. Table 1 represents the gender distribution and completion rate for each gender. Table 2 represents the ethnicity distribution and completion rate for each ethnicity.

Table 1

Percentage of Each Gender Completing the Survey

Gender	*Completion Number*	*Percent*
Male	74	74%
Female	23	23%
Do not wish to self-identify	1	1%
No Response	2	2%
Total	100	100%

Table 2

Percentage of Each Ethnicity Completing the Survey

Ethnicity	*Completion Number*	*Percent*
White	70	70%
Hispanic or Latino	15	15%
Black or African American	2	2%
Native American or American Indian	4	4%
Asian / Pacific Islander	1	1%
Other	2	2%
Do not wish to self-identify	2	2%
No Response	4	4%
Total	100	100%

The sample size for the quantitative section of the study was 108 students. Current and former correctional education students were recruited on the day of the survey and were asked to confirm participation through an informed consent form (Appendix B) explaining the study. Using positive responses and acceptance via the informed consent form, participants were given the mindset, resilience, and self-efficacy survey instrument (Appendix BB).

Additionally, five correctional education students participated in the qualitative phenomenological aspect of the study. Phenomenological interviews used in this study were previously collected in both audio and video formats. These interviews were conducted with correctional education students who were purposefully selected based on previous experience with correctional education technology and were housed at Facility C. A phenomenological research design was chosen as a foundation for this part of the research study due to the fact that this study specifically deals with how individuals experience a phenomenon. Patton (2002) states that phenomenological and phenomenographic approaches share a common understanding by which they both rely on the exploration of how human beings make sense of their experiences and how they transform those experiences into meaningful thoughts and memories. Phenomenology brings to light how a person perceives, describes, feels about, judges, remembers, makes sense of, and talks about an experience that has made in impact on them (Patton, 2002; Van Manen, 2016). Interviewing the offender students who have experienced the impact of technology on their mindset, resilience, and self-efficacy allowed the researcher to enter into those experiences and perspectives.

Facility C was a site for a state-wide educational technology rollout that took place from 2013 – 2014. Offender students were randomly selected from the entire population and age demographic. Informed consent was gathered from the offenders prior to the interview process,

and permission to conduct the interviews was gathered from both the facility and the department of corrections. Those collected interviews were not previously published and were the rationale and foundation for the current study. This also supports the research methodology of an MMPR research design as the phenomenological findings during the initial phase of research were the driving force that forged the hypotheses that the current study was framed (Mayoh & Onwuegbuzie, 2015).

Protection of Human Rights

To make research more successful, researchers must protect the anonymity of all participants and must ensure all individuals are shown the utmost respect. Also, researchers must also work within the configuration and boundaries of the laws that are in place to protect individual privacy (Marshall & Rossman, 2016). The Family Educational Rights and Privacy Act (FERPA) (20 U. S. C. § 1232g; 34 CFR Part 99) has defined the suitable use of student information when conducting research (§ 99.31(a)(3)). The agreement for conducting research in any location needs to reflect the purpose and extent of the study along with any specific information that is going to be disclosed. Any education facility sanctioning research within the educational setting should also mandate the researcher protect all student data from any source that does not have a legitimate interest in those records. The education facility needs to also require the researcher to destroy or return any and all records when the study has been completed (U.S. Department of Education, 2011).

As part of preparation to become an ethical researcher, training was fully completed, and a certification for Human Research through the National Institute of Health was acquired (see Appendix A). Permission from the administration of the Department of Corrections was obtained in order to use correctional students, as well as student data (see Appendix C). Consent

was also sought and obtained from the Human Research Review Committee (HRRC) before commencing this study (see Appendix D).

Data Collection

Table 3 outlines the structure of the study and methodology of data collection.

Table 3

Data Collection Methods

Data Collection	*Method*
Interviews of Offender Students	Qualitative
Pre/Post Survey on Mindset, Resilience, and Self-Efficacy	Quantitative

Table 4 presents the timeline of research activity for the study.

Table 4

Timeline of Research Activity

Timeline of Research Activity	*Dates*
Phenomenological Interviews	June – July 2014
Data Collection and organization	End of August, 2016
Survey Validation / Distribute Survey	September – October, 2016
Analysis of Survey Data	October, 2016 – January, 2017
Interview Collection Meetings	August – November, 2016
Collection of Interview Recordings	August – September, 2016
Transcription and Coding of Collected Interviews	October, 2016 – January, 2017

At the inception of this study, the researcher reached out to previous contacts within the Department of Corrections. Mrs. White (pseudonym), the education director for the Department of Corrections, was contacted and an initial meeting to explain the parameters of the study, to seek approval to conduct research within the department of corrections, and to answer any questions, was scheduled. At the conclusion of the meeting with Mrs. White, full support to conduct the research study was given and was also agreed upon by the Deputy Director of the department of correction through written approval (see Appendix C). Before the researcher was granted access to offenders within the facilities, NIH approval (see Appendix A), full HRRC approval (see Appendix D), and a background check was completed. This background check constituted of a full background questionnaire and evaluation, full fingerprinting, and a urinalysis that was completed offsite by a community partner. Once all of these parameters were satisfied, the researcher was granted the ability to conduct research within the department of corrections and the correctional education classroom.

Phenomenological Interviews

Previously recorded interviews of five offender students were gathered by Mr. Grey (pseudonym) and his company as part of the data collection process during an educational technology pilot program. Facility C was chosen to collect offender and correctional educator interviews based on their overall academic achievement and exemplary participation in the pilot program. Mr. Grey and his team were granted access to the facility, the offender student population, and the education staff at the facility. Interviews were conducted with five correctional education offender students and two correctional education staff. Interviews were audio and video recorded, and a compilation of the interview footage was created for educational and professional purposes.

The researcher contacted Mr. Grey and sought permission to use and transcribe the audio from each of the interviews that had been previously collected (see Appendix M). A face-to-face meeting was scheduled where permission was given to the researcher to access the audio recordings of the interviews and access to the interview protocol was given to the researcher (see Appendix N). A digital file was shared with the researcher via WeTransfer. The researcher downloaded the files and began the transcription process. To speed up the transcription process, the researcher developed a plan to accommodate the use of modern technologies to transcribe the audio from the interviews. The researcher uploaded the audio files into Camtasia Studio ™ and added a static image to the files. The files were then exported into YouTube ™ and set as unlisted so that the interviews would only be seen by the researcher. YouTube ™ uses a speech recognition technology to automatically create captions for uploaded videos (Google, 2017). Once the speech-to-text process was complete, a .SRT file was generated and downloaded by the researcher. An .SRT file is the most basic subtitle format and includes four parts:

1. A number that indicates the subtitle and where it is in the sequence
2. The time that the subtitle should appear on the screen, and then disappear from view
3. The subtitle text
4. A blank line that indicates the start of a new subtitle (Matroska, 2016).

Once the caption files had been collected for each of the interviews, they were uploaded to Rev.com ™, a website that specializes in transcription, captioning, and translation (Rev.com, 2017). Each .SRT file was uploaded and translated into a plain text file. Once that was completed, the researcher downloaded the plain text file and copied the text into Microsoft® Word ™. The researcher then used iTunes ™ to play the audio samples while the transcripts in Word ™ were checked for errors and consistency with the recording. Edits and revisions were

made to each transcript using this process until each audio file had been transcribed with 100% accuracy. Through this process, the researcher was able to identify word and thought patterns which set the foundation for later theme emersion (Smith, Larkin, & Flowers, 2009). These patterns were then clustered into meanings to support the formation of themes that surrounded the research questions for this study.

The first step was the raw audio from the interview was imported into Camtasia™ and converted into a MPEG-4 compression (mp4) video format. MPEG-4 is a type of video compression that is widely used for sharing high-quality video files on the internet (FileInfo, 2017). The video file was then uploaded to YouTube™ and was then run through the speech-to-text engine to produce a SubRip file format (srt). SRT subtitle files include four parts which are all in a text format (Matroska, 2017). These parts include a number indicating which subtitle it is within the sequence of subtitles, the time that the subtitle should appear and disappear on the screen, the text subtitle, and a blank line that indicates the start of a new subtitle (Matroska, 2017). This file was then imported into Rev.com™, which is a website that converts caption files into different text formats (Rev.com, 2017).

Each .SRT file was uploaded and converted into a standard transcript text file (txt). A text file is the simplest form for creating or reading documents (Reviersoft.com, 2017). These text documents were then opened and played at the same time as the original audio recordings. The researcher was then able to fully check the transcribed audio file for accuracy and make any edits or adjustments that were necessary. Furthermore, qualitative research is very personal, and an ethical researcher must seek protect the identities of the participants unless they choose to have their identities exposed (Creswell, 2015; Marshall & Rossman, 2016). In this study, all of the participants were assigned pseudonyms, and personal information was changed to protect

their identities. Each interview audio was transcribed via a two-step method that was developed by the researcher. Once the interviews had been transcribed and checked for accuracy, coding began. Encoding interview responses is the process of determining an appropriate code and labeling the section within the interview (Creswell, 2015; Marshall & Rossman, 2016).

Survey Reliability and Validity

The research questions for this study served as a foundation for the methodology used to gather and analyze collected data. These questions were refined through review and evaluation until testable research questions emerged. From these testable questions, a Likert scale survey was selected. This survey adapted for the current study was taken from a previous research study that investigated the impact of technology on mathematics performance outcomes in schools. This survey was constructed from an instrument that was originally created by Lisa Sorich Blackwell, who is a colleague of Carol Dweck and a co-founder of Mindset Works. This original survey was designed for Blackwell's doctoral dissertation with Columbia University in 2002 and was designed to measure key variables that impact student motivation. Subsets of this survey include Theory of Intelligence, Performance Approach Goals, Performance-Avoid Goals, Learning Goals, Effort Beliefs, and Helpless vs. Master-Orientated Attributions (Positive and Negative Strategies) (Blackwell, 2002).

The Blackwell (2002) survey was then adapted for a previous research study by modifying the original survey to use a 4-point scale instead of a 6-point scale. Additionally, this study used a post-reflection design in which students were asked to assess their view on their mindset and internal motivation both before and after the technology implementation. The researcher for the current study sought permission to use the original Blackwell (2002) research questionnaire and question subsets and modified it in a similar manner (see Appendix I & J).

The survey instrument was composed of several sections of questions in a pre/post reflective assessment format. A post-reflection design has been shown to be reliable in comparing both pre-and post self-reflections (Creswell & Plano Clark, 2007; English & Horowitz, 2002; Kilgour, Reynaud, Northcote, & Shields, 2015; Travers, Morisano, & Locke, 2015). The basic principle surrounding the reflective pretest-posttest design involves acquiring a pre-assessment measure of the outcome being studied prior to the administration of some form of treatment or intervention, followed by a post-assessment measure on the same measure following the administration of a treatment or intervention (Salkind, 2010, Shuttleworth, 2009). This reflective assessment format allowed offender students the opportunity to reflect on their experience within correctional education and the role that technology has played within their perceived growth. This survey design also allowed the researcher to not have a need for a control group (Salkind, 2010). The question banks were divided throughout the survey instrument allowing offender students adequate time to reflect on each question and answer before responding and proceeding to the next question.

Furthermore, the researcher shaped the current questionnaire to reflect the impact of technology within the correctional education environment, as well as for correctional education students. Survey questions were rated using a four-item Likert scale which supports strong internal consistency (Croasmun & Ostrom, 2011; Gliem &Gliem, 2003). Participants were asked to respond with their level of agreement to each of the survey mindset questions using the following four-point scale:

1 = Strongly Agree

2 = Agree

3 = Disagree

4 = Strongly Disagree

Once the mindset, self-efficacy, and resilience survey instrument had been adapted for this study, it was then validated through a Google Form™ that was sent out to each facility education director. Each question was displayed, and correctional education directors were asked to rate, in their opinion, the validity of the question. The survey included the following variables: offender number, gender, highest grade level attained, completion of a GED, ethnicity, highest educational level of the parent(s), answers to mindset questions, answers to self-efficacy questions, answers to resilience questions, and an open-ended question where offenders could write in an answer of their choosing. At the end of the content validity survey, there was an open-ended question that allowed the directors to leave overall commentary and feedback about the survey. The gathered information was used to reformat both the survey as well as individual questions. Two questions were reformatted as a result of receiving less than an 80% acceptance rate. From the gathered feedback and responses, the last version of the survey instrument was created and then distributed during the data collection phase. This final version of the survey instrument was used to create an electronic model of the study using Qualtrics™. The electronic version of the survey was then checked for accuracy, spelling, and grammar. A Microsoft Word™ version of the survey was then exported, printed, and organized for distribution. This method was employed due to the fact that a correctional education facility has limited internet access for offenders and an electronic survey was not able to gain approval.

Reflective Pre/Post Mindset, Resilience, and Self-Efficacy Survey

Survey data was collected from offender students who participated in the study during the data collection phase. Particular care was taken in designing the questions of the survey. Survey questions were created so as not to indicate the identity of any participant. Survey questions were

also designed not to determine the reasons why the participants were incarcerated. Due to the nature of access within a correctional classroom, a paper survey was distributed to each offender population that participated in this research study. The researcher traveled to each location with a printed survey for each participant. The researcher explained the rationale for the study, the procedure for participation in the study, and the parts of the survey during initial contact with a group of offender students. Informed consent was given to each offender student that volunteered to participate in the study. Once the informed consent form was signed with the offender's number and signature, it was collected, and a survey was distributed to the offender. The researcher remained in the room where the surveys were distributed and collected. Once an offender finished a survey, it was collected by the researcher and matched with the corresponding informed consent form. These documents where matched by an offender's number. This process ensured that both forms were completed by the same offender.

At the conclusion of the allotted time for the researcher to collect surveys from offender students, the researcher hand entered each survey response into the electronic survey on Qualtrics™. At the completion of the data collection window, 108 surveys were collected of which 100 were able to be used in this study. The 100 surveys that were able to be used in the study had both an informed consent form with an assigned offender number, an offender signature, and a mindset, resilience, and self-efficacy survey with matching the assigned offender number. The survey information was then exported from Qualtrics ™ into IBM SPSS Statistical Software Version 23. This data was analyzed and correlations between the variable of gender, grade level, educational level of the parent(s), mindset growth, self-efficacy growth, and the fostering of resiliency. For this study, growth in mindset, resilience, and self-efficacy were set as independent variables. IBM SPSS Statistical Software Version 23 was used to determine any

statistically significant relationship between the variables that may predict student success in the future.

Collected data was stored on a protected USB drive in a locked cabinet in researcher's home office. The data was also saved on a backup USB device, and both devices were encrypted for security. The researcher was the only person to know the password for all devices. In compliance with the Federalwide Assurance Code, collected data from this study will be kept for three years, after which, all data will be destroyed (45 CRF 46.117).

Analytical Methods

Qualitative

One interview was conducted with each of the five participants for a total of five correctional offender interviews. Each of the five interviews were transcribed through professional audio voice recognition software and then reviewed for mistakes or discrepancies and coded for themes. After the transcription process, collected interviews were examined for common themes (Creswell, 2015; Marshall & Rossman, 2016; Raymond, 1992). The act of reading the transcripts while listening to the audio stream allowed for a better understanding of the content of the interview, as well as the nuances, perceptions, and emotion contained within the words of the participants.

After reviewing the transcripts, themes were developed using thematic codes as outlined by Creswell (2015), Marshall and Rossman (2016), and Raymond (1992). Initial coding began with codes that were anticipated to surface based on an extensive evaluation of the literature, such as growth in mindset, increase in perceived self-efficacy, and growth of resilience. Each interview was scanned for the relevant code, and the subsequent information was underlined. Then, each fragment was given a unique number or "address," which indicated the fragment's

precise location in the transcript (Raymond, 1992). This number represented the line number in the transcript plus an alphabetical letter (a, b, c, or d) to indicate which fragment on that line was being located. Next, a special coding sheet was developed in order to carry out the classification process. This coding sheet was divided into column and rows that represented the categories of relevant information. Finally, the identification number of each coded fragment of relevant information was placed into the appropriate cells in the table.

Quantitative

Data analysis took place using IBM SPSS Statistical Software Version 23 (IBM SPSS, 2015). Analysis of the data was conducted to determine descriptive statistics about the ratio-scale and interval data collected. A dependent t-test was utilized as there are two different groups of scores from one group of participants and this statistical test will focus on the difference between the scores (Salkind, 2017; Tanner, 2012). A Wilcoxon rank test (W) was also utilized due to each group being measured exactly twice. This test allowed the researcher to rank the scores and then compare those ranks across to measurement times (Frey, 2016). Multiple tests were conducted to look for correlations and trends within the sample that might be generalized to offenders nationally. For the purpose of all statistical tests, a resulting p-value equal to, or less than 0.05, and a z-value greater than 1.984 was considered significant (Salkind, 2017; Tanner, 2012). All of the data was conveyed, and variables were evaluated to answer the research questions relating to growth in mindset, self-efficacy, and resilience in offenders.

Role of the Researcher

Unfortunately, researchers are not without bias (Creswell, 2015; Marshall & Rossman, 2016). The researcher had extensive experience working with many correctional educators over the past three years. Moreover, the researcher has also worked extensively over the past three

years with the Department of Corrections in various modes. It is from this experience that lead the researcher to believe that technology had a significant impact on offenders within the correctional education classrooms. Research has indicated that technology has the potential to raise student resilience and self-efficacy, and well as to foster a growth mindset (Dweck, 2006; Hofer & Harris, 2012; Wetzel & Marshall, 2012). As the primary researcher, there were great lengths taken to avoid any ethical dilemmas. At all times the confidentiality of the participants were protected. Due to the special nature of the population participating in the study, confidentiality was held in strictest confidence throughout the study.

Furthermore, for the researcher to circumvent being biased, the use of bracketing, or reduction, was employed in the research. Bracketing refers to the act of suspending one's various beliefs in order to study the "essential structures of the world" (Van Manen, 2016, p. 175). Additionally, reduction is the ability to come to an understanding of the crucial construction of something we need to reflect on and, once that process is complete, being able to return to the real world as lived in an enhanced and heightened method (Van Manen, 2016). In other words, bracketing is when a researcher sets aside their personal understandings, as much as is possible, to be able to then take a renewed viewpoint toward the phenomenon that is under examination (Creswell, 2007). Heeding the recommendations laid out by Van Manen (2016) and Creswell (2007), the researcher was able to put his own sensitivities and conclusions aside to be able to succeed in bracketing.

Limitations

Each and every research study has limitations (Creswell, 2015, Marshall & Rossman, 2016). Marshall and Rossman (2016) note, "Ethical practice in ongoing; obtaining a signature on an informed consent form is merely one observable indicator of the researcher's sensitivity" (p.

56). Ethical issues in research do not conclude when the interviews are coded or when the interviews have finished. As a researcher, there is an ongoing effort to ensure a participant's anonymity and that they are treated fairly throughout the study. Mixed methods research, while stronger than quantitative or qualitative research alone, has a limitation in the requirement of large pools of data required (Marshall & Rossman, 2016). The reasoning for this is due to the fact that the analysis of quantitative data requires a much greater sample size to achieve statistical significance (Wisdom & Creswell, 2013). On the other hand, qualitative analysis, within a mixed methods design, requires meeting the targets of saturation and relevance (Wisdom & Creswell, 2013).

Furthermore, another limitation is that the sites for the research were familiar as the researcher previously conducted professional development training for the correctional education staff during 2003 and again in 2004. The advantage to using familiar sites is that rapport has already established and the researcher can often collect richer data due to the fact that they know the research field already and can take advantage of this knowledge to answer the research questions (Oliver, 2010). However, a drawback is that because there is already an established rapport between the researcher and the research sites, there may be an increased bias to keep that relationship in good standing. Every effort was taken to allow for conversation in this regard, and each site ensured that their participation was voluntary and could be terminated at any time during the study, without any recourse.

Another limitation was the small female sample size. This small female sample size may not adequately represent the overall female correctional population, and further female participants should be included to increase the female sample size. Also, there were no female offenders that were part of the collected phenomenological interviews, which does not

effectively embody the female correctional population or their opinions and feelings about the impact that technology had on their mindset, resilience, and self-efficacy.

The self-reflective pre/post-test structure of the survey instrument was also cause for limiting the study. During this study, the self-reflective pre and post-test questions were administered at the same time and participants had to recall how they previously felt on the survey, as well as how they currently were feeling. This potentially limited the results. In the future, a pre-test survey and post-test survey need to be administered separately with enough time between the two survey windows to allow for change to occur and register within the participants. However, gains or losses that are represented through data points are best viewed over a period using a pretest/posttest design (Astin, 2001; Chang et al., 2006; Terrell, 2015).

A final limitation is that in the study only two correctional facilities were surveyed and the interviews were not conducted at one of the participating sites or at the time of the survey. Results could be different if more facilities were included and the interviews conducted at the same facilities throughout the study.

Chapter IV

Results

Introduction

There is an accord that additional research in the area of correctional education is necessary to distinguish the impact of technology on an offender's mindset, self-efficacy, and resilience (Clift, 2016; Moriarty, 2017; Parrish & Maull, 2017; Rivera, 2016). Most of the research around correctional education is being conducted with regards to the correlation between time spent in correctional education and a reduction in the rate of recidivism (Davis et al., 2013a; Davis et al., 2013b; Davis et al., 2014). With a massive number of incarcerated individuals in correctional facilities across the country and more and more offenders finding correctional education a means to a better foundation upon release, gaps still exist in the research regarding the factors that influence correctional student achievement and growth in the areas of mindset, self-efficacy, and resilience. The questions guiding this dissertation study were:

1. How does technology afford or limit offender mindset in the correctional education classroom?
2. How does technology affect offender self-efficacy and resilience in the correctional education classroom?
3. How does technology affect offender resilience in the correctional education classroom?

As discussed in Chapter III, the methodology for data collection included:

- Phenomenological interviews with five correctional education offenders that provide a deep analysis into the impact of technology and growth of an offender's mindset, self-efficacy, and resilience.

- Likert scale surveys distributed to two different correctional facilities across a state in the Northwest, which focused on the impact of technology on an offender's mindset, self-efficacy, and resilience.

Chapter IV offers the results that are germane to each research question utilizing data gathered from a correctional offender student survey that was distributed at two correctional facilities (Facility A and B) and a series of in-depth interviews conducted with correctional offender students at Facility C. All three correctional facilities were located in a Northwest state. Graphical representations of collected data were used as a realistic way to encapsulate the outcomes of this study (Mills, 2007).

Furthermore, this study employed a triangulation matrix as a framework to display the various kinds of data sources that were utilized to answer each of the three research questions in this study. Mills (2007) states that the potency of a research foundation lies in triangulation, which is a process of accumulating data points from several sources and not just relying on one source of data. Additionally, Creswell (1994) states that the literature in a research study provides a framework that helps to establish the importance of the study, as well as providing a scale for comparing the results of the study with other findings. Table 5 represents the triangulation matrix for this study.

Table 5

Triangulation Matrix

Research Questions	*Data Source*		
	Source 1	Source 2	Source 3
1. *How does technology afford or limit offender mindset in the correctional education classroom?*	Mindset, Self-Efficacy, and Resilience Survey (quantitative)	Phenomenological Interviews (qualitative)	Literature Review (quantitative / qualitative)
2. *How does technology affect offender self-efficacy in the correctional education classroom?*	Mindset, Self-Efficacy, and Resilience Survey (quantitative)	Phenomenological Interviews (qualitative)	Literature Review (quantitative / qualitative)
3. *How does technology affect offender resilience in the correctional education classroom?*	Mindset, Self-Efficacy, and Resilience Survey (quantitative)	Phenomenological Interviews (qualitative)	Literature Review (quantitative / qualitative)

Participants Profile

Phenomenological Interviews

The first phase of the research study involved gathering and analyzing previously recorded phenomenological correctional offender interviews that took place during the 2014 technology pilot. Qualitative researchers rely considerably on the use of in-depth interviews to be able to gather rich and valuable data (Creswell, 2007; Creswell, 2015; Marshall & Rossman, 2016; Strauss & Corbin, 1998). In-depth interviews are "the primary strategy to capture the deep meaning of experiences in the participants' own words" (Marshall & Rossman, 2016, p. 102). From the analysis, 23 codes emerged from all five interviews and were then recorded into a spreadsheet (see Appendix AA). Next, the 23 codes were organized categorically using the interview question protocol to begin the process of emerging themes. Nine categories emerged from the analysis.

Next, the researcher reflected and realigned codes based on the second tier of alignment. Four categories emerged and were labeled as "Technology, Academics, and Mindset", "Technology, Academics, and Resilience", "Technology, Academics, and Self-Efficacy", "Technology, Academics, and Success". Continued reflection and deliberation on these four categories identified 15 subthemes within the four categories. Creswell (2015) defines this process is defined at codifying (Creswell, 2015). The entire coding process was completed manually and recorded using a spreadsheet (see Appendix AA). In particular, this gathered information provided a perspective from the offender students' viewpoint concerning their perceived growth in mindset, resilience, self-efficacy, the impact of technology on their education and educational achievement, and the impact of these experiences on their future goals and trajectory.

The interviews were conducted within an all-male correctional population, and as such the five collected interviews are all from male correctional offenders. Pseudonyms were used to ensure anonymity of each of the participants and research sites (Marshall & Rossman, 2016). Table 6 illustrates the demographics and position of the participants.

Table 6

Participant Synopsis

Pseudonym	*Role*	*Gender*	*Facility*	*GED Completion*
Mr. Blue	Student	Male	C	Yes
Mr. Pink	Student	Male	C	No
Mr. White	Student	Male	C	No
Mr. James	Student/Tutor	Male	C	Yes
Mr. Smith	Student/Tutor	Male	C	Yes

Survey Response and Participation Rate

The comprehensive investigation of the survey instrument began with an emphasis on the response and participation rates. A table that displayed the collected demographic data then followed this analysis. A total of 108 surveys were distributed to correctional education students that were housed in two correctional facilities in a state in the Northwest. Of the 108 surveys, a total of 100 responses were able to be used in the study. This data represented an overall response rate of 93%. Of the 100 total responses, 99 completed the survey in its entirety for a 99% participation rate. Only one of the participants that completed the entire survey decided to decline participation upon handing in the survey. Creswell (2007) states that a healthy response rate provides the researcher a great deal of confidence when generalizing the results. Table 7

provides a summary of the overall response rate and participation by correctional education students.

Table 7

Overall Survey Response Rate

Response and Participation	*Total*
Surveys Distributed	108
Surveys Collected	108
Complete Surveys	100
Response rate	93%

Demographic Section

One hundred respondents completed the demographic section concerning; gender, highest grade level attained, completion of a GED or high school diploma, ethnicity, and questions concerning the educational attainment of both mother and father. The tables in this section reflect responses from the 100 respondents for the specific questions.

Demographic data (Table 1, p. 65) relating to the gender of the participants completing the survey revealed that 74 males, 23 females, one participant who did not wish to self-identify, and two surveys that did not have a response in this category completed the survey. The overall interpretation of this data indicates that gender was skewed towards males who made up 74% of the recorded responses. Females made up 23% of the responses, the one individual, who did not wish to self-identify, made up 1% of the recorded responses, and there were two individuals who did not fill out a response, which made up 2% of the recorded responses. Combining all the totals came up with a total of 100%.

Further demographic information (Table 2, p. 65) relating to the ethnicity of the participants completing the survey revealed that there were 70 White, 15 Hispanic or Latino, two Black or African American, four Native American or American Indian, one Asian / Pacific Islander, two respondents who claimed "Other", two respondents that did not wish to self-identify, and four surveys that did not have responses. The interpretation of this data recognizes that the majority of correctional students who took the survey were White, which made up 70% of the recorded responses. Hispanic or Latino respondents made up 15% of the responses, Black or African American made up 2%, Native American or American Indian made up 4% of recorded responses. Those that chose "Other" or did not wish to self-identify made up 2% respectively of recorded responses and there were four collected surveys that had no response recorded, which made up 4% of the recorded responses.

The highest level of attained education revealed that 39 of the respondents, or 39%, were at a 12th-grade level. Eleventh-grade attainment made up 22% of the respondents, 10th-grade attainment made up 21% of the respondents, and 9th-grade attainment made up 12% of the respondents. Seventh and eighth-grade attainment made up 1% and 3% respectively. However, when the respondents were asked if they had obtained a GED or high school diploma, 55 respondents or 55% said that they had with 43, or 43%, stating that they had not yet completed a GED or high school diploma. Table 8 summarizes the breakdown of the educational level and Table 9 reflects a GED or high school degree attainment in this study.

Table 8

Educational Level

Grade	*Completion Number*	*Percent*
6th Grade	0	0%
7th Grade	1	1%
8th Grade	3	3%
9th Grade	12	12%
10th Grade	21	21%
11th Grade	22	22%
12th Grade	39	39%
No Response	2	2%
Total	100	100%

Table 9

Attainment of GED or High School Diploma (HSD)

GED or HSD	*Completion Number*	*Percent*
Yes	55	55%
No	43	43%
No Response	2	2%
Total	100	100%

The final demographic area focuses on the highest level of education a correctional education offender's parents had attained. The summary of this information found in Table 12 and Table 13 shows the majority of responders stated that both their mother and father had

achieved a high school diploma, 66%, and 57% respectively. However, information found in Table 14 and Table 15 illustrate the majority also reported that both their mother and father did not have a college degree, 51%, and 59% respectively. Also, there is a population of respondents that are unsure of the level of education attained by either their mother or father or both. Table 10 through Table 13 summarize the responses gathered from the survey in regard to the highest educational degree achieved by a respondent's mother and father.

Table 10

Maternal Attainment of a High School Diploma (HSD)

Parent	*Completion Number*	*Percent*
Mother - Yes	66	66%
Mother - No	24	24%
Mother – Not Sure	6	6%
No Response	4	4%
Total	100	100%

Table 11

Fraternal Attainment of a High School Diploma (HSD)

Parent	*Completion Number*	*Percent*
Father - Yes	57	57%
Father - No	28	28%
Father – Not Sure	11	11%
No Response	4	4%
Total	100	100%

Table 12

Maternal Attainment of College Degree

Parent	*Completion Number*	*Percent*
Mother - Yes	27	27%
Mother - No	51	51%
Mother – Not Sure	18	18%
No Response	4	4%
Total	100	100%

Table 13

Fraternal Attainment of College Degree

Parent	*Completion Number*	*Percent*
Father - Yes	18	18%
Father - No	59	59%
Father – Not Sure	19	19%
No Response	4	4%
Total	100	100%

Survey Validity and Reliability

Content Validity Index (CVI)

Content validity is a way to measure the construct of a section of items using an index that measures the validity of the subsequent content (Larsson, 2015; Lynn, 1986; Polit & Beck,

2006). The researcher, as part of the process of achieving content validity, created and distributed an example of the survey instrument to the Educational Director for the Department of Corrections and five other education experts, who were not study participants, for assessment (Polit & Beck, 2006). The education experts received a link to the survey via an email from the Education Director of the Department of Corrections. An email was sent requesting feedback on the survey instrument. From the collected feedback, an overall S-CVI was determined. An S-CVI of .90 is required to validate a survey instrument (Larsson, 2015; Lynn, 1986; Polit & Beck, 2006). Any questions that received a rating of 86% or below was either rewritten or eliminated from the survey instrument. Two expert educators recommended minor edits to three questions on the survey. Those suggested edits were made, and the experts reevaluated the survey instrument. The mean S-CVI score for the survey then fell at 90.2 for the first section of questions and 90.39 for the second section of questions (Appendix L). The mean scores were above the .90 threshold for an acceptable S-CVI (Lynn, 1986; Polit & Beck, 2006). Each question was rated on the following scale that was proposed by Polit and Beck (2006):

1 = Not Relevant

2 = Somewhat Relevant

3 = Quite Relevant

4 = Highly Relevant

Ratings of a "3" or a "4" indicate the educational expert's endorsement of the element (Polit & Beck, 2006). Appendix K represents an outline of the electronic survey that was distributed to the expert educators. Appendix L represents the results from the CVI analysis of the gathered results.

Cronbach's alpha

Cronbach's alpha is a statistical test used to measure reliability and internal consistency (Field, 2013; Salkind, 2017; Tanner, 2012). In other words, Cronbach's alpha measures how closely related a set of items or variables are as a group (Field, 2013; Salkind, 2017; Tanner 2012). Furthermore, the higher the alpha, the more confidence a researcher can have that the test is internally consistent, or measures one thing (Salkind, 2017). The measured element is the sum of what each item on the survey evaluates (Salkind, 2017). Research also shows that it is imperative that Cronbach's alpha coefficient be calculated for any scale used (Gliem & Gliem, 2003; Tavakol & Dennick, 2011). With this information in mind, the survey instrument was placed in SPSS and underwent Cronbach's alpha testing for each question that was focused on mindset, self-efficacy, and resilience. A research instrument is considered reliable and has internal consistency if it has a Cronbach's alpha score of .70 or higher and questionable if it has a Cronbach's alpha of .60 - .69 (Gliem & Gliem, 2003; Tanner, 2012; Tavakol & Dennick, 2011). To determine the internal consistency reliability of the subsections within the survey instrument, the statistical program SPSS was used to determine Cronbach's alpha for each of the subsections. Each of the subcategories had an internal consistency reliability of .70 or greater, which was consistent with the discoveries of Blackwell where all of the subcategories were found to be reliable (Blackwell, 2002).

However, upon closer examination of each question, twenty individual questions did not meet or were not close to the reliability standard of .70 and were examined further (Appendix CC). In the mindset section of the survey there were ten questions that fell below a reliability standard of .64. Eight questions that fell between .64 to .69 and had reliability considered "questionable", but were ultimately included in the subsequent analysis due to their relative

closeness to an alpha of .70. In the resilience section of the survey there were two questions that fell below a reliability standard of .64. One question fell between a .64 to .69 and had reliability considered "questionable", but was ultimately included in the subsequent analysis due to its relative closeness to an alpha of .70. Within the self-efficacy section, the researcher found eight questions that fell below a reliability standard of .64. Six questions that fell between .64 to .69 and had reliability considered "questionable", but were ultimately included in the subsequent analysis due to their relative closeness to an alpha of .70. Combined there were 20 questions that were excluded from the 57 total questions found on the mindset, self-efficacy, and resilience survey instrument.

Results for Research Question #1: Technology on offender mindset

The influence that technology has on the growth of an individual's mindset and the subsequent effect that has on their academic achievement has been debated (Abbitt, 2011; Blackwell, 2013; Dweck, Walton, & Cohen, 2014; Garrett, 2014; Gecer, 2013; Kushner-Benson & Ward, 2013; Turel, 2014). With an enormous incarcerated population housed within correctional facilities across the country, the national discussion is transitioning from conceptual "what's working" commentary, to how to better help and empower correctional offenders to develop internal tools that will better help them once they leave a correctional facility (Davis et al., 2014; Delaney, Subramanian, & Patrick, 2016; Harlow, Jenkins, & Steurer, 2010; Meyer & Randel, 2013; Nally, Lockwood, Knutson, & Taiping, 2012).

Quantitative Results

One of the primary purposes of this research study was to investigate the impact of technology integration within correctional education on a correctional offender's mindset. With

this as a foundation, survey questions and recorded phenomenological interviews were analyzed to answer the following research question:

> How does technology afford or limit offender mindset in the correctional education classroom?

The null hypothesis for this research question stated that technology would limit an offender's growth mindset in the correctional education classroom. The alternative hypothesis stated that technology increases an offender's growth mindset within the correctional education classroom. Of the 24 survey questions in this section, only 14 were found to have a Cronbach's alpha score of .64 to .70 or above and were considered reliable. Appendix P illustrates these questions. The remaining questions on the survey are relevant to the second and third research question and will receive discussion in the section that is specific to that particular question.

To answer the first research question, SPSS was used to run both a dependent t-test analysis, otherwise known as a paired-samples t-test, and a Wilcoxon Signed Rank test analysis. The purpose of using both types of analyses was to determine if correctional education students believed the use of technology in correctional education had a significant impact on their mindset. A paired samples *t*-test was conducted to compare the means from correctional education student's feelings in before and after technology integration conditions. A paired or dependent *t*-test is used when a single group of the same participants is being studied under two conditions (Salkind, 2017; Tanner, 2012). In other words, the same group of participants are tested at two different times. A Wilcoxon signed ranks test is used as a nonparametric alternative to the dependent *t*-test and is used to compare the magnitude as well as the direction of the differences between two groups of data (Salkind, 2017; Tanner, 2012). Z-scores, which are

derived from the Wilcoxon signed ranks test, are also used a numerical measurement to display the relationship of the data point to the mean in a group of values (Salkind, 2017; Tanner, 2012).

The first subsection of questions was founded around Dweck's Theory of Intelligence (Blackwell, 2002). The questions that encompassed this section were 13.1, 14.1, 15.1, and 17.1 (Appendix P). A paired samples t-test, Wilcoxon Signed Rank test analysis, and Cohen's effect size were conducted to compare an offender's feelings before technology was introduced into correctional education and after the technology was introduced. Cohen's *d* effect size (Appendix DD) was calculated using the following formula:

$$d = \text{Mean}_{\text{difference}} / \text{SD}_{\text{difference}}$$

The following guidelines were used to determine a small, medium, and large effect size:

- A small effect size ranges from 0 to .2
- A medium effect size ranges from .2 to .5
- A large effect size is any value above .5 (Salkind, 2017; Schwartz, Wilson, & Goff, 2015).

Effect size is used to determine the relative position of one group to another group (Salkind, 2017). The lower the effect size, the more overlap of the two groups and the less difference between the groups. The higher the effect size, the less overlap of the two groups and the greater amount of difference between the two groups (Salkind, 2017).

Evidence gathered from the mindset portion of the survey in relation to Dweck's Theory of Intelligence (Blackwell, 2002) indicated that students did not feel (M=3.31, SD=.982) that technology use afforded them the understanding that intelligence can be changed. However, students did feel that technology could help them grow their capacity (M=3.21, SD=1.140) and

learn new things (M=3.18, SD=.978) that would, in the end, enhance their intelligence. Students also felt one could grow their intelligence (M=1.37, SD=.761) no matter the circumstance.

The data in Table 14 reflects either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). Of the four questions that comprised the subsection, three out of four (75%) were found to show a significant difference (Appendix Q). Therefore, the null hypothesis was rejected, and the alternative was accepted. Technology increases an offender growth mindset in the correctional education classroom.

Table 14

Scores for Dweck's Theory of Intelligence Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
13.1	3.17	.975	3.31	.982	-.373	.710	-.414	0.04
14.1	3.09	.866	3.21	1.140	2.492	.014	-2.655	0.25
15.1	2.98	.877	3.18	.978	2.378	0.19	-2.551	0.24
17.1	1.81	.849	1.37	.761	5.363	.000	-4.853	0.54

The second subsection of questions surrounded the concept of Learning Goals (Blackwell, 2002). The questions that encompassed this section were 17.2 and 17.6 (Appendix P). The collected results from this subsection specified that students felt (M=1.29, SD=.640) that completing their assignments helped to learn new concepts and skills. Additionally, students felt (M=1.89, SD=.898) that challenging coursework helped them learn more.

The data in Table 15 shows either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). All of the questions that comprised the subsection (100%) were

found to show a significant difference (see Appendix R). Therefore, the null hypothesis was rejected, and the alternative was accepted. This, again, indicates that technology increases an offender growth mindset in the correctional education classroom.

Table 15

Scores for Learning Goals Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
17.2	1.69	.761	1.29	.640	5.519	.000	-4.928	0.55
17.6	2.48	1.010	1.89	.898	6.909	.000	-5.717	0.69

The third subsection of questions was founded around Blackwell's Effort Beliefs (Blackwell, 2002). The questions that encompassed this section were 13.4 and 17.3 (see Appendix P). The evidence gathered from this subsection denoted that students felt (M=3.20, SD=.964) that completing a hard assignment did not make them feel unintelligent. Students also felt (M=1.65, SD=.796) that challenging coursework created a desire for them to work harder.

Table 16 illustrates either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). All of the questions that comprised the subsection (100%) were found to show a significant difference (see Appendix S). Therefore, the null hypothesis was rejected, and the alternative was accepted. Technology increases an offender growth mindset in the correctional education classroom.

Table 16

Scores for Blackwell's Effort Beliefs Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
13.4	2.96	1.034	3.20	.964	2.285	0.19	-2.488	-0.24
17.3	2.08	.837	1.65	.796	5.411	.000	-4.829	0.54

The fourth subsection of questions was founded around Mueller and Dweck's Performance-Approach Goals (Blackwell, 2002). The questions that encompassed this section were 13.3, 16.1, and 16.2 (Appendix P). The collected results from this subsection specified that students felt (M=1.96, SD=.909) that they liked completing assignments without mistakes. However, the results also elucidated that students did not feel (M=2.12, SD=.935) that they liked assignments that did not take much effort to complete. Also, students did not feel (M=2.16, SD=1.032) that completing work was just a means to showcase how good they were at a particular subject.

The data in Table 17 shows either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). Of the three questions that comprised the subsection of questions, two of the three (66.7%) were found to not show a significant difference in the results (see Appendix T). Therefore, the null hypothesis was accepted, and the alternative was rejected. Technology does not increase an offender growth mindset in the correctional education classroom.

Table 17

Scores for Mueller and Dweck's Performance-Approach Goals Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
13.3	2.19	.895	1.96	.909	2.532	0.13	-2.811	0.25
16.1	2.17	.805	2.12	.935	.600	.550	-.779	0.06
16.2	2.28	.944	2.16	1.032	1.269	.208	-1.405	0.13

The fifth and final subsection of questions was founded around Middleton and Midgley's Performance-Avoid Goals (Blackwell, 2002). The questions that encompassed this section were 13.2, 14.2, and 14.3 (Appendix P). The evidence gathered from this subsection denoted that students felt (M=2.02, SD=.974) that it was important that they did not look foolish in class. Students also felt (M=2.93, SD=1.066) that the reason that they complete their assignments within their class is so as not to embarrass themselves. Furthermore, students did not feel (M=3.09, SD=.944) that the reason they complete their assignments is so that others won't think that they are dumb.

Table 18 shows either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). All of the three questions that comprised the subsection of questions (100%) were found to not show a significant difference in the results (see Appendix U). Therefore, the null hypothesis was accepted, and the alternative was rejected. This, again, indicates that technology does not increase an offender growth mindset in the correctional education classroom.

Table 18

Scores for Middleton and Midgley's Performance-Avoid Goals Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
13.2	2.20	.870	2.02	.974	.842	.402	-1.078	0.08
14.2	2.97	.834	2.93	1.066	.435	.665	-.125	0.04
14.3	3.06	.814	3.09	.944	-.365	.716	-.403	-0.04

Based on the collected information, three out of the five subsections (60%) were found to show a significant difference in the responses ($p < 0.05$, $z > 1.984$). Therefore, overall the null hypothesis was rejected, and the alternative accepted. This, again, indicates that technology may increase an offender growth mindset in the correctional education classroom.

Qualitative Results: Themes for technology on mindset in the correctional education classroom

Qualitative inquiry allowed the researcher the ability to engage with the participant interviews surrounding the phenomenon of their experience with the impact of technology on the fostering and growth of a positive mindset. The essence of this theme relates to how correctional education students have experienced a growth in their mindset due to the use of technology in their correctional education classrooms. The following descriptions are designed to help build a scaffold for the study and draw out the lived experiences of each of the participants (Marshall & Rossman, 2016, van Manen, 1990).

Participant (Table 6, p. 85) commentary and the shared experiences regarding the impact of technology built a framework for defining themes. Table 19 illuminates the major theme regarding the use of technology in correctional education and its effect on mindset.

Table 19

Correctional Education Student Mindset Theme Derived from Top Interview Codes

Theme	*Codes*	*Number of Responses*
Technology, Academics, and Growth Mindset	Help that improves growth and enjoyment	31
	Services that increase effort and empowerment	28
	Time and improvement that creates a drive to learn	34

All of the five participants described how technology has affected their effort in learning, enjoyment for learning, and drive to learn. Participants shared their experiences while commenting on the meaning formed from their shared experiences. Mr. Blue added value to this theme by stating:

> Well, for me it has been a great help.....because it's, it's [technology] helps me. I am using it for to self-paced. Helps me as I slowly go through and I am able to, to learn on an individual basis at my own speed. With the computer, I can sit down and actually see what is being done on the video and go from that. It makes it a lot easier for me, and I can pick it up real quick.

Mr. Pink discussed how the technology has impacted his life. He stated, "The technology is cool, that's more easy for me because when you learn something, you can repeat when you're not understanding you because one more time and repeat one and one time and when I in trouble I got my teachers right here, he helps me a lot." Mr. Pink went on to discuss how technology

had helped him overcome his difficulties with the English language. He said, “Sometimes it’s difficult for me because the Spanish is my first language, but I still try, and I learn more English. Every day I learn something new, you know. [Technology helps] because when you’re stuck in something, you could go back and repeat and repeat”.

Mr. White, a correctional education student, added to this theme by stating that, overall he enjoyed the use of technology and felt that they were one of the biggest reasons he has been successful. He stated, “There is a video on there, they’ll teach me if I don’t know. I don’t have to ask for help so much, um, there’s tons of instructions on it, so it helps. [Technology] is easier too, there’s always help on the videos. Every once in a while, there’s not a video, but most time there’s help”. He went on to say that he doesn’t like the traditional way of learning because “the book doesn’t have help, I have to find it. For some reason, it made it, [technology] making it fun”. Mr. White went on to discuss how his interaction with this new technology has instilled in him a desire to learn more and to continue to learn each day. He said, “with [technology] I want to come back every day, sometimes stay extra hours and do math. I don’t know why. I don’t like sitting at the computer most of the time, but [technology] makes it fun”.

Mr. James, a correctional education student, and tutor, added to this theme by addressing his experience as both a correctional student and a tutor for other correctional students. He said, “[technology] is actually helping these students. I’m seeing a lot of these students return and continue to come every day. They’re [students] enjoying it, and they come down every day for it. [Students] want to learn the new computer skills and stuff but they also find that the videos and interacting with the software. In the past, before we had [technology] we’d have students, and they all want kind of individualized help and, and you would have to sit down with each one. With [technology] it’s, it’s like having another person there is helping you at the same time and

so they can even though they might be on the same subject or in the same area they're getting their individualized help and so it kinds frees me up to help go around to the other students, you know". On the other hand, Mr. James addressed how technology in correctional education has helped him achieve more confidence through the classes that he has taken over years he has been incarcerated. He also stated that, "I think as the more of classes I take up over the years is really built up my confidence and then I see that with the students that come in too, is that their confidence grows when they see that completed certain things on [technology], so it's not just with myself with confidence, but I see this confidence in the students also".

Mr. Smith, another correctional education student and tutor added to this theme by offering his opinion on the impact that he has seen since the technology implementation. He said, "[technology] is a tool that will enhance the learning environment down here. This [technology] is kind of tailor-made for that and here with Adult Basic Education we encounter people from all different learning level it's not a seventh-grade class or 12th-grade class". Mr. Smith went on to talk about technology's power to break down barriers and stated, "a tool like this is great to accommodate that diverse setting that we encounter here down at the school, so it's been really great in that regard. Here we're removed from technology, so it's you know kind of a new allowance that was not available before so that kind of helps with it too."

Results for Research Question #2: Technology on offender resilience

The influence that technology has on the growth of an individual's resilience and self-efficacy, and the subsequent effect that has on their academic achievement has been debated (Blackwell, 2013; Dweck, 2006; Dweck, Walton, & Cohen, 2014; Hofer & Harris, 2012; Kushner-Benson & Ward, 2013; Wetzel & Marshall, 2012). With an enormous incarcerated population within correctional facilities across the country, the discussion is transitioning to how

to better help and empower correctional offenders to develop internal tools that will better help them once they leave a correctional facility (Davis et al., 2014; Delaney, Subramanian, & Patrick, 2016; Harlow, Jenkins, & Steurer, 2010; Meyer & Randel, 2013; Nally, Lockwood, Knutson, & Taiping, 2012). With that information as a framework, the second research question posed in this study asks:

How does technology affect offender resilience in the correctional education classroom?

Quantitative Results

This subsection of questions was founded around Blackwell, Trzesneiwski, and Dweck's Resiliency: Helpless vs. Mastery-Oriented Responses to Failure (Blackwell, 2002). Furthermore, this portion of the survey (see Appendix V) had a hypothetical failure scenario that then asked the students to predict their most likely responses to the given situation (Blackwell, 2002). The questions that encompassed this section were 19.1, 19.2, 19.3, 19.4, 20.1, 20.2, and 20.3 (see Appendix V). A paired samples t-test, Wilcoxon Signed Rank test analysis, and Cohen's effect size were conducted to compare an offender's feelings before technology was introduced into correctional education and after the technology was introduced (see Appendix X).

The evidence gathered from this subsection denoted that students do not feel (M=2.89, SD=1.081) that based on the scenario they would have felt the main reason they did not do well on the quiz was due to the fact that they were not smart enough. Students also did not feel (M=2.99, SD=1.030) that the reason that they failed the hypothetical quiz was due to the quiz being unfair or too hard for the class. Conversely, students felt (M=2.67, SD=1.083) that failing the quiz would make them feel that they were just not good at the subject. However, students did not feel (M=2.59, SD=1.120) that the reason they failed the quiz would be because they didn't really like the subject.

In addition, students did not feel (M=3.01, SD=1.115) that in preparation for the next quiz that they would spend less time preparing for the subject. Contrariwise, students felt (M=3.16, SD=.950) in the future they would take more classes, and they also felt (M=3.44, SD=1.157) that they would not try to cheat on the next test.

The data in Table 20 depicts either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). Of the seven questions that comprised this subsection of questions, four out of seven, (57%) were found to not show a significant difference in the results (see Appendix U). Therefore, the null hypothesis was accepted, and the alternative was rejected. Technology has a limited effect on offender resilience in the

Table 20

Resiliency: Helpless vs. Mastery-Oriented Responses to Failure Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
19.1	2.76	1.006	2.89	1.081	-1.354	.179	-1.422	0.14
19.2	2.90	.969	2.99	1.030	-.976	.331	-1.004	-0.10
19.3	2.45	.978	2.67	1.083	-2.525	.13	-2.503	-0.25
19.4	2.53	1.058	2.59	1.120	-.631	.530	-.641	-0.06
20.1	2.92	.961	3.01	1.115	-.933	.353	-1.083	-0.09
20.2	2.85	.857	3.16	.950	-3.338	.001	-3.182	-0.33
20.3	3.25	1.140	3.44	1.157	-2.269	.025	-2.228	-0.23

Qualitative Results: Themes for technology on resilience in the correctional education classroom

Qualitative inquiry allowed the researcher the ability to engage with the participant interviews surrounding the phenomenon of the impact of technology on the fostering and growth of resilience. The essence of this theme relates to how correctional education students have experienced a growth in their resilience due to participation in their correctional education classrooms. Table 21 illuminates the major theme regarding the use of technology in correctional education and its effect on resilience.

Table 21

Correctional Education Student Resilience Theme Derived from Top Interview Codes

Theme	*Codes*	*Number of Responses*
Technology, Academics, and Resilience	Services that support recovery of learned information	28
	Growth to come back from failure academically	36
	Rise through help, time, and support	31

Four of the five (80%) participants described how participating in correctional education had affected their effort to recover lost learning, the feeling that they can come back to where they were before they were incarcerated in their educational journey, and their ability to persevere and rise above any negative barriers. Mr. Blue explained his previous experience with the traditional classroom and how his experience has changed since the implementation of technology in the correctional education classroom. He said, “I was very bored in school. Uh…….I remember, uh……sitting in the classroom and teacher would show us like how to do division problems. And she’d say, ‘ok, this is how you do it.’ She would write it out. She’d give

us a sheet that had 40 or 50 problems and you gotta do this and have it back in the morning. And after doing about 10, 15 of em, I was like, 'so I already know this.' And, why should I continue with it, and I generally wouldn't do anymore, and my grades showed it because I didn't have the ah, ah assignment completed. And then the next day, it was another sheet of the same thing over again. And, yeah, I got very, very bored with what I was doing". Mr. Blue went on to explain the difference with:

> [technology] is they, they, your taught what yer, ah, application there had been, gives you, um, multiple problems to do. But, it sees that you know what yer doing before it says, ok, you completed this, you've mastered it. Now go on to the next part. So, it actually makes sure that you know what yer doing without letting you sit there and get bored with what you are doing.

Furthermore, Mr. Blue added that that:

> it's, it's been wonderful for me to keep my attention going. I can't see an end to it. It just, it's, there is so much more out there and open and my drive to learn is just expanded so far, and I realize that I don't know anything…..he, he, he. I am just eating it up. I just want to learn more and more. I can't get enough of it. So, it [technology] has opened a whole new world for me.

Mr. White had a similar experience and feeling about the resilience that has been fostered through the implementation of technology in his correctional classroom. He stated:

> The reason I want to learn is because all my life I've pretty much just pushed learning away. Once I actually think about it, I'd much rather go back through high school or something, so I could learn everything that I possibly could because knowledge is power

and once you learn that you understand it and it, it was way easier to learn back then than it is now. I have to go over everything a lot, one more times anyways.

Mr. James was able to add to the theme of resilience by elaborating on his experience as a student and a tutor. He stated that he felt that the technology has, "kind of helped me prepare for being in an environment it where the classes taught with lectures and stuff like that. I've been incarcerated for almost 19 years, and so I think that's [technology] kind of preparing me for how things will be instructed when I get back to college". He goes on to say that, "this [technology] helped with my confidence."

Additionally, Mr. James states that he has seen an increase in the resilience of the students that come into the correctional education classroom. He said, "Well, a lot of them [students] are just used to if they had struggled with a little problem they want you to come over and show them right away. On [technology] has kind of presenting a new way of how things are taught to the students. I'll ask them, "what, have you watched the video first" and many will say "no." I said while trying to video first and see if this helps and if you still have problems after that, you know, we'll sit down and let's start working on, working through a problem and see it, if we could get you to understand it". He also added that, "I think as the more of classes I take up over the years is really built up my confidence and then and I see that with the students who come in too is that their confidence grows when they see that completed certain things on [technology], so it's not just with myself with confidence, but I see this confidence in the students also".

Mr. Smith offered a wide perspective on the impact of technology in the fostering of resilience within the correctional education classroom. He stated that he was:

> Fortunate to see the transitions when I first started down here we taught in a class setting with textbooks and um, I think a lot of people down here have some bad experiences from school, you know. Whether it was boredom or failure or whatever but, um, I think they've kind of held onto those negative experiences, and I think the book kind of reminded them and it was like an uncomfortable setting so when we introduced the [technology], I've kind of seen that kind of dissipate a little bit.

On the other hand, Mr. Smith commented about his personal feelings towards the impact technology has on his own sense of resilience. He stated:

> Tomorrow for me now, uh, doesn't look anything like what the tomorrow was before I started learning [capacity], um, I think my confidence level was pretty low. I think anybody's confidence level is pretty low and they come in here. If not, that's probably something you should look at, but, ah, mine was pretty low, and there was a moment in schooling a long time ago when I was doing pretty good and, and then I departed from that and I took some time and kind of, um, got to learn that old part of me [come back] [rise again] [resilience] and realized it didn't, didn't go anywhere it was just lying there so, you know.

Results for Research Question #3: Technology on offender self-efficacy

The influence that technology has on the growth of an individual's self-efficacy, and the subsequent effect that has on their academic achievement has been contemplated (Brown, Holcomb, & Lima, 2010; Duncan, 2010; Holden & Rada, 2011; Miles, 2013). With that information as a scaffold, the third research question posed in this study asks:

> How does technology affect offender self-efficacy in the correctional education classroom?

The questions that encompassed this section were 22.2, 22.3, 22.6, 22.8, 22.9, 22.10, 22.12, 22.13, 22.16, 22.17, 22.18, 22.19, 22.20, 22.21, 22.22, and 22.23 (see Appendix Y) and surrounded the concept of self-efficacy (Muris, 2001, 2002). This portion of the survey was divided into three question banks. Each question bank had eight questions that were randomly distributed throughout the self-efficacy question section (see Appendix Y). An academic self-efficacy subsection made up questions 1, 4, 7, 10, 13, 16, 19, and 22 (see Appendix O). A social self-efficacy subsection made up questions 2, 6, 8, 11, 14, 17, 20, and 23 (see Appendix O). An emotional self-efficacy subsection made up questions 3, 5, 9, 12, 15, 18, 21, and 24 (see Appendix O). Eight questions did not have a reliability index of .64 to .70 or above and were excluded from the analysis. Three of the excluded questions came from the academic self-efficacy subset, three of the excluded questions came from the social self-efficacy subset, and two of the excluded questions came from the emotional self-efficacy subset. With those questions excluded there remained five questions in the academic self-efficacy subset, five questions in the social self-efficacy subset, and six questions in the emotional self-efficacy subset. A paired samples t-test, Wilcoxon Signed Rank test analysis, and Cohen's effect size were conducted to compare an offender's feelings before technology was introduced into correctional education and after the technology was introduced (see Appendix Z).

The evidence gathered from this subsection denoted that students felt (M=2.64, SD=1.133) that after time in correctional education they can express their opinions when others disagree with them and that they (M=2.51, SD=1.059) can successfully cheer themselves up after an unpleasant event. However, students did not feel (M=2.31, SD=1.089) that after time in correctional education that there was a change in their ability to make friends. Equally, students

felt (M=2.35, SD=1.175) that after time in correctional education that they were better able to start a conversation with someone that was unfamiliar.

In addition, students felt (M=2.75, SD=.999) that after experiencing correctional education they were better able to prevent themselves from becoming nervous and students also felt (M=2.02, SD=1.119) that they were able to accomplish all of their school-related work each day. Correctional students also sensed (M=2.30, SD=1.142) that they were able to control their feelings and were able to (M=2.18, SD=1.114) pay better attention during every class. Moreover, students felt (M=2.47, SD=1.210) that after time in correctional education they were able to find success in understanding the information in all of their classes.

Students in correctional education found (M=2.59, SD=1.280) that after some time they were better able to tell funny stories to a group as well as being able to (M=2.27, SD=1.347) express to a friend that they may not be feeling well. Furthermore, student responses indicated (M=2.46, SD=1.314) they were able to succeed in satisfying their family with their academic accomplishments. Students perceived (M=2.44, SD=1.200) that they were more successful at staying friends with others, finding (M=2.53, SD=1.201) success in suppressing unpleasant thoughts, and successfully (M=2.46, SD=1.259) passing examinations after time in correctional education. Finally, students sensed (M=2.43, SD=1.208) that time within correctional education has equipped them to be able to diffuse quarrels with others.

Table 22 provides data indicating either a significant or not significant difference in the responses ($p < 0.05$, $z > 1.984$). Of the sixteen questions that comprised this section of questions, fifteen out of sixteen, (94%) were found to show a significant difference in the results (see Appendix U). Therefore, the null hypothesis was rejected, and the alternative was accepted.

Technology has an increased effect on offender self-efficacy in the correctional education classroom.

Table 22

Scores for Self-Efficacy Subsection

Question	*Mean Before Technology*	*SD Before Technology*	*Mean After Technology*	*SD After Technology*	*T score*	*P Value*	*Z score*	*D Effect size*
22.2	3.14	1,083	2.64	1.133	4.415	.000	-4.046	0.44
22.3	3.03	1.105	2.51	1.059	4.826	.000	-4.472	0.48
22.6	2.44	.988	2.31	1.089	1.311	.193	-1.688	0.13
22.8	2.89	1.043	2.35	1.175	5.103	.000	-4.887	0.51
22.9	3.26	1.011	2.75	.999	5.230	.000	-4.775	0.53
22.10	2.79	1.122	2.02	1.119	7.002	.000	-5.638	0.74
22.12	2.79	1.018	2.30	1.142	4.851	.000	-4.412	0.49
22.13	2.90	1.068	2.18	1.114	6.429	.000	-5.399	0.64
22.16	3.01	1.096	2.47	1.210	4.734	.000	-4.724	0.47
22.17	2.99	1.277	2.59	1.280	3.464	.001	-3.547	0.35
22.18	2.52	1.291	2.27	1.347	2.343	.021	-2.657	0.23
22.19	3.14	1.247	2.46	1.314	5.765	.000	-5.001	0.58
22.20	2.67	1.164	2.44	1.200	2.092	.039	-2.195	0.21
22.21	3.11	1.205	2.53	1.201	5.054	.000	-4.715	0.51
22.22	3.00	1.092	2.46	1.259	5.247	.000	-4.792	0.52
22.23	2.94	1.118	2.43	1.208	4.274	.000	-4.037	0.43

Qualitative Results: Themes for technology on self-efficacy in the correctional education classroom

Qualitative inquiry allowed the researcher the ability to engage with the participant interviews surrounding the phenomenon of the impact of technology on the fostering and growth of self-efficacy. The other side of this theme relates to how correctional education students have experienced a growth in their self-efficacy due to participation in their correctional education classrooms. Table 23 addresses the major theme regarding the use of technology in correctional education and its effect on self-efficacy.

Table 23

Correctional Education Student Self-Efficacy Theme Derived from Top Interview Codes

Theme	*Codes*	*Number of Responses*
Technology, Academics, and Self-Efficacy	Success gained from help and support	38
	Motivation gained from growth	29
	Increase in capability through services and technology	36

Four of the five (80%) participants described how participating in correctional education has affected their drive and motivation to succeed currently and continue to succeed, their motivation to want to continue to learn and better themselves, and their desire to continue to push the boundaries of their perceived capabilities and to grow their skills. Mr. Pink stated that he has seen “too many people come in and learn something every day. Taken everything here. Is right here for myself and for more better future remaining in the life, you know”. He added that

he felt that he would be able to gather "more one more opportunity for working or something else, you know. I want to that next step, next step".

Mr. White added to this theme as he stated his intentions and desires for continuing to learn and succeed academically. He expressed:

> The reason I'm doing that [education], no one asked me to do what I wanted to do. I took it upon myself simply so when I get out I'm better. I've always not been good at math, so I took it upon myself to get better. So far it's [education][technology] helped me a lot. I feel much more confident.

When asked about his future goals and thoughts on continuing his education, Mr. White stated that:

> [Continuing my education] hasn't always been the case. Normally, thinking I just want a good job, but now, since being here and hearing everybody talk, the instructors and stuff, to help me. I'm sick of not doing something with my life. I'm, that's why I want to do the math because math is one of the number one things that will help everything and the same with the English.

Mr. James further added to this theme when asked the question about what tomorrow looked like for him. He stated:

> [Tomorrow looks like], I don't know. A lot of hope I guess. I don't know. I mean I have dreams, you know, and I want to succeed at them and, you know, it and, and this is [technology] being in the education department here at the prison has, has giving me all the tools that will help me succeed and I hope to prove that I can, you know.

He continued to add to his feelings about the future and talked about that his hope:

> My hope is that I'll be, you know, that would be paroled in a year and a half, and so, and I would like to finish up a school in the last, you know, over the years I've been taking correspondence courses one at a time, you know, just trying to get all my cores and all the core classes required for like an environmental engineering or environmental science degree. And so, that's what I'm working towards and so and I'm pretty much done all that I've got two years pretty much completed. Now it's just a matter of just getting all the stuff that's done at the school done.

Furthering the theme of self-efficacy, Mr. Smith added:

> We all down here at the school believe education is one of the biggest, uh, the biggest factors in whether someone is going to come back here or not [education] [success] [motivation]. We try to pay a lot of attention to that, so anything we can do to enhance the education and build that probability of success for people not to come back here is huge.

He continued to expand upon this thought and incorporated the increased levels of confidence he was seeing grow in the students he was working with. He stated, "I think it's [technology] [education] really helped with that. In that setting in everything, you know, people, the confidence to learn [mindset] [resilience] [self-efficacy]".

Mr. Smith also noted an increase in student motivation was evident now in the correctional education classroom. He said that "we have students coming down here now, um, they probably wouldn't have envisioned spending their prison time learning math [education] are going down to learn math and now all of a sudden their paths crossed with this path of this [technology] and all of a sudden they're doing something they never expected [capacity]

[success]". Mr. Smith ended his thought by stating that he didn't think this would have "happened without the [technology]."

Mr. Smith also added a personal note to the theme of self-efficacy when asked what the biggest thing he noticed within himself. He articulated:

> The confidence [capacity] thing is huge for me because I never would have even sat here and came up with long-term goals, the kind I do now, because the kind I have now, they're ambitious goals [success] [motivation] [determination]. Now I have the confidence that I really believe [self-efficacy] [capacity] I can go out and achieve them, so I think the confidence has been the biggest thing for me.

Mr. Smith added a final comment about his new-found confidence and how that has impacted what tomorrow looks like for him. He said that where he is now is not a place that he ever thought he would be and he "never would have bought it" and he now "kind of entertained, you know", the idea that he may "want to get a minor in math because I find it so fun and interesting to learn [succeed] [motivation] [self-efficacy] [capable]".

Additional Theme: Technology, Academics, and Success

Technology has permeated every facet of modern society, not only becoming a critical part of achievement and learning, it has solidified itself as a necessary tool to enhance student-teacher engagement (Gallup, Norman, Lopez, & Calderon, 2015; Garrett, 2014; Hofer & Harris, 2012; Koehler, Mishra, & Cain, 2013; Project Tomorrow, 2014; Turel, 2014). With an ever-rising incarcerated population within correctional facilities across the country, technological skills are a critical element necessary for empowering correctional offenders and advancing their educational and vocational training (Davis et al, 2014; Delaney, Subramanian, & Patrick, 2016;

Harlow, Jenkins, & Steurer, 2010; Meyer & Randel, 2013; Nally, Lockwood, Knutson, & Taiping, 2012).

This theme relates to how correctional education students have experienced a success due to participation in their correctional education classrooms and the effective use of technology. Table 24 addresses the major theme regarding the use of technology in correctional education and the impact on present and future success.

Table 24

Correctional Education Student Success Theme Derived from Top Interview Codes

Theme	*Codes*	*Number of Responses*
Technology, Academics, and Success	Career readiness through technology and success in academics	25
	Family support and inclusion from success in academics	22
	Increase in social skills through goal attainment and success	29
	Enhanced leadership through technology, support, and overall growth	27

Three of the participants (60%) described how participating in correctional education and using technology in the correctional education classroom has affected their academic attainment and the possible future opportunities they will have once they are paroled. Mr. Blue stated that the technology that he was able to use in correctional education "was a good experience" for him. He also said that when he first started out, he "was just basically learning how to read all over again." However, Mr. Blue said that after taking a literacy class he was able to "actually

able to complete the GED." He said that he was able to accomplish this by "you know. Uh……..I put myself forth, put a lot of effort and with using ah…….[technology] on that".

Mr. White goes on to expand upon the impact technology has had on him by helping him to feel that he has more of future then he once thought he had in front of him. He said, "I'm doing it [education] for my family, mainly, me, but so I can better myself but that way I'm not known as someone that's just been in a prison their whole life, whatever, going in and out of jail." Further adding to this theme, Mr. Smith stated that he thinks:

> when people are first approaching getting their GED, um, I think for most people math is the most difficult one and that's the one we usually give the most attention to, you know. We start off taking these other tests [GED], and we'll hold math off for the end because you probably need to give that a little more attention, so yeah, this program [education].

He continues to lay the foundation for the importance of technology in correctional education by saying:

> Math might have been discouraging some people from getting my GED, or their GED or whatever. I got my GED in here so when I came in I didn't have that, but yeah. I think it [education] [technology] kind of strips away some of that discouragement, and they hear the buzz about it, you know. They hear about [technology], you know, if your buddies 'oh no, I'm not going to play cards right now. I'm going down to go to [technology] [education]', well, I mean that's kind of piques their interest. They want to go down and see it. A lot of times we have, you know, a couple buddies come down, both of them, at the same time.

Mr. Smith goes on to say that "it's [technology] a huge help in probably a lot of areas that aren't even having really jumped out at us yet, you know. It's [technology] kind of working behind the scenes, but it's definitely worked without question".

Conclusion

Overall, Chapter IV presented a summary of the discoveries from both qualitative and quantitative data collection methodologies in relation to technology integration within correctional education and the impact on mindset, resilience, and self-efficacy. A paired *t*-test, Wilcoxon Signed Rank test and Cohen's *d* effect size discovered some significant relationships between technology integration and mindset, resilience, and self-efficacy. To add to the strength of the relationships, qualitative methods were necessary to further solidify the impact of technology on cultivating an individual's mindset, resilience, and self-efficacy. Themes from the phenomenological interviews further brought clarity and strength to the concept that technology integration and correctional education have a positive impact on the growth of an offender's mindset, resilience, and self-efficacy. The data presented in this chapter is expanded upon in the following chapter. This allows for greater depth in discussing the factors that affect correctional offenders and promote student achievement, affect positive growth in mindset, resilience, and self-efficacy, as well as the factors that affect greater completion and success academically within correctional education programs.

Chapter V

Conclusion

Introduction

The number of individuals incarcerated in the United States has been declining since 2008, but as of 2016, there were still more than 2 million individuals incarcerated in correctional facilities across the country (James, 2015). Annually since 1990, an average of 590,400 inmates have been released back into communities from either state or federal facilities (Carson & Golinelli, 2013; Kaeble & Glaze, 2016). The U.S. Department of Justice's Bureau of Justice Statistics (BJS) estimates that almost three-quarters of all the released offenders will recidivate, which means that these released offenders will be rearrested within three to five years of parole and on average six in ten will be retried and reconvicted (Davis et al., 2013a; Davis et al., 2013b; Durose, Cooper, & Snyder, 2014). Scholars continue to debate that reentry initiatives that combine correctional education with counseling and workforce training can reduce these recidivism rates (Carson, 2015; Chen, 2015; Davis et al., 2013b; Gaes, 2008).

Multiple studies have been conducted using correctional education and reentry programs to make generalizations about the necessary programming and technology needed to adequately rehabilitate an offender so that they will leave a facility and become a productive member of society (Aos, Phipps, Barnoski, & Lieb, 2001; Hill, 2015; James, 2015; Kyckelhahn, 2012; McVay, Schiraldi, & Ziedenberg, 2004; U.S. Department of Justice, 2007; Wilkinson, 2002). Another collection of research studies related to correctional education comprise studies that highlight the power of correctional education and the deep and lasting impact it has not only on the offender, but on their future (Davies et al., 2013a; Davis et al., 2013b; Davis et al., 2014; Ferner, 2015; Gorgol & Sponsler, 2011; Harlow, 2003; Philon, 2015; Seiter & Kadela, 2003;

Sherman, Gottfredson, MacKenzie, Eck, Reuter & Bushway, 1998; Wells, 2015; Westervelt, 2015). With the explosion of technology infusion in education classrooms across the country and the ever-increasing numbers of individuals being incarcerated or reentering society, research must be conducted to illuminate what can really work to build productive and empowered rehabilitated members of society (James, 2015; Ferner, 2015; Gorgol & Sponsler, 2011; Harlow, 2003; Mohammed & Mohamed, 2015; Philon, 2015; Wells, 2015; Westervelt, 2015).

While there is an ever-increasing need for continued research on the impact and effectiveness of correctional education, stakeholders must not overlook the impact that technology implementation has on correctional education student achievement. Furthermore, there is also an increasing need to delve deeper into the impact of growth mindset, resilience, and self-efficacy on offenders and their future achievement. The body of research supporting the area of technology integration in education has thoroughly substantiated the positive impact of technology on improving student mindset and the growth of student resilience (Brady & Devitt, 2016; Dina et al., 2016; Garrett, 2014; Yeager & Dweck, 2012). Technology affords students the ability to make multiple attempts to progress towards mastery of skills or concept (Brady & Devitt, 2016). Turel (2014) supplied research that computer self-efficacy and the frequency of technology use are highly associated with higher levels of education attainment and educational technology use. In other words, the more education a student has and the more technology used in an educational setting and, for educational purposes, the higher the levels of student self-efficacy. Several studies have analyzed evidence that a person's level of education increases personal self-efficacy, especially when using technology (Dina et al., 2016; Shieh, 2012; Kolburan-Gecer, 2014). Mindset, resilience, and self-efficacy are key pillars in the formation of the whole person. With the addition of the use of technology in the assembly, offender students

now have a vehicle to substantially cultivate each of these mainstays within their lives and academics.

The questions investigated in this research study were:

1. How does technology afford or limit offender mindset in the correctional education classroom?
2. How does technology affect offender resilience in the correctional education classroom?
3. How does technology affect offender self-efficacy in the correctional education classroom?

Chapter V interprets the results of this study, how they relate to the theory of growth and fixed mindset, and describes recommendations for future research, as well as implications for professional practice.

Summary of Results

This study investigated factors that affect correctional education student academic success and personal growth. Due to numerous factors that affect student achievement, the growth of one's mindset, and the growth of resilience and self-efficacy, neither quantitative nor qualitative research alone were sufficient to fully explore the phenomenon. Creswell (2015) states "a mixed-methods study is conducted when you have both quantitative and qualitative data, and these types of data, together, provide a better understanding of your research problem then either type by itself" (p. 537). In this study, Likert-based survey data from a mindset, resilience, and self-efficacy survey provided insight into the growth of correctional education students in the three areas contained within the survey. In addition, a collection of prerecorded phenomenological interviews were transcribed and analyzed to help determine the perceived

impact of technology integration in correctional education and the effect this further had on a student's mindset, resilience, and self-efficacy.

Based on the collected results, empowering offenders through the effective use of technology within correctional education and providing increased access to educational tools is vital to the success an offender may obtain within correctional education. Furthermore, the results showcase an increase in an offender's desire to transition to a productive member of society once they are released. Research shows that rehabilitation and education are paramount pillars for offenders who want to reduce the likelihood that they will return to a correctional facility once they parole (Davis et al., 2013a, Davis et al., 2014). In addition, correctional research continues to investigate the effectiveness of correctional education programming, workforce programming, technology integration, and rehabilitation services, as well as meeting the needs of the diverse multitude of adult learners that matriculate in their classrooms and facilities (Ferner, 2015; Philon, 2015; Rampey et al., 2016; Wells, 2015; Westervelt, 2015).

Additionally, the rejection of the null hypothesis for both mindset and self-efficacy illuminates the impact these intrinsic motivators have once unleashed through effective technology integration within correctional education. Mindset growth underscores an offender's desire to grow their intelligence through challenging activity. Additionally, the shift from a fixed mindset to a growth mindset is apparent through the collected experiences given by offenders who have overcome barriers while in correctional education. Growth in an offender's self-efficacy highlights the internal belief that they have the ability to succeed while undertaking a challenging task. Furthermore, the demonstrated growth in an offender's self-efficacy is evident in the qualitative explanations of how offenders approach goals, tasks, and challenges.

Despite the inability to significantly prove resilience can be fostered through effective technology integration in correctional education, the collected voices of correctional offenders highlight the personal impact technology and correctional education had on their lives and their trajectory. These reflections indicate that offenders believe that technology and correctional education have made a significant impact on their ability to recover from difficult circumstances and they feel that in the future these experiences will enable them to adapt in the face of future adversity, stress, and problems.

Methodology

A mixed-method research design was selected for this study. The mixed-method approach afforded the researcher the opportunity to examine demographic data for the incarcerated offenders within Northwest correctional facilities, as well as mindset, self-efficacy, and resilience question data from offender students. The selection of the participants in this study followed purposeful sampling strategies (Palinkas et al., 2015). Quantitative design coupled with a phenomenological qualitative approach has substantiated conducive to the exploration of the impact through lived experiences of mindset, self-efficacy, and resilience on offenders (Carr, 1994; Creswell, 2016; Davison, 2014; Mayoh & Onwuegbuzie, 2013; van Manen, 2003; Watson, & Welch-Ross, 2000). Additionally, using this type of methodology revealed the impact that technology has on the growth of an offender's mindset, resilience, and perceived self-efficacy.

Within this study, two primary forms of data collection were conducted, which, in turn, complimented the order of the three research questions. The first form of data collection was gathering the prerecorded phenomenological interviews that took place during an educational technology pilot in 2014. These interviews framed the study and portrayed the lived experiences

of the offenders who experienced technology integration and implementation within correctional education classrooms. The second form of data collection was gathering responses to a mindset, resilience, and self-efficacy Likert-based survey. The Likert survey was distributed to two different correctional facilities, and then hand-entered online into Qualtrics. The survey focused on quantifiable growth in the areas of mindset, resilience, and self-efficacy in correctional education students.

Descriptive statistics and inferential statistics were conducted to describe what the data revealed as well as to reach conclusions about the dependability of the data and the probability that findings did not happen merely by chance (Salkind, 2017; Tanner, 2012; Urdan, 2010). Dependent *t*-test, Wilcoxon's signed ranks test, and Cohen's *d* for effect size were conducted to determine the degree of change, as well as the direction of the differences between the self-reflective pre-and posttest occasions (Frey, 2016; Salkind, 2017; Tanner, 2012). For all statistical tests, a resulting p‑value equal to or less than 0.05 and a z value greater than 1.984 was considered significant. Statistical analysis was conducted using the IBM SPSS Version 23.0 statistical program (IBM SPSS, 2015).

Qualitative Data

The first phase of the research study involved gathering and analyzing previously recorded phenomenological correctional offender interviews that took place during the 2014 educational technology pilot. Facility C was chosen during this pilot program, and offender interviews were conducted to gather qualitative data on this phenomenon. Qualitative researchers rely considerably on the use of in-depth interviews to be able to gather rich and valuable data (Creswell, 2007; Creswell, 2015; Marshall & Rossman, 2016; Strauss & Corbin, 1998). In-depth interviews are "the primary strategy to capture the deep meaning of experiences

in the participants' words" (Marshall & Rossman, 2016, p. 102). This gathered qualitative information provided a perspective from the offender students' viewpoint concerning their perceived growth in mindset, resilience, self-efficacy, the impact of technology on their education and educational achievement, and the impact of all of these experiences on their future goals and trajectory.

Four major themes emerged throughout the qualitative analysis aspect of this study. A triangulation matrix was used to identify the phenomenological interview data as a major source of data for the three framing research questions in this study (Table 5, p. 83-84). Themes that emerged during the phenomenological interview analysis were related to and framed within the each of the research questions that guided this research study. Emerging themes were also found within the relevant literature surrounding this study and gave further solidification of the research framework for the study. The themes that surfaced from the frequency codes were: 1) Technology, academics, and growth mindset, 2) Technology, academics, and resilience, 3) Technology, academics, and self-efficacy, 4) Technology, academics, and success. These emerging themes are grounded in Dweck's theoretical framework, specifically in the areas of a fixed and growth mindset (Dweck, 2006; Garrett, 2014; Hofer & Harris, 2012; Lee et al., 2012; Lightsey, 2006; Wetzel & Marshall, 2012; Yeager & Dweck, 2012).

Technology, Academics, and Growth Mindset

The first theme, technology, academics, and growth mindset, surfaced as a foundation for the entire study and proved to be a prevalent concept throughout the study. Participants in this study were able to concisely articulate the way technology impacted their academic success and aided in fostering a growth mindset. Their explanations highlighted the transition from a fixed mindset to one that allowed each offender to experience academic success. This growth in

mindset supports current research as well as Dweck's (2006) theory and adds validity to the benefits of technology integration within correctional education.

Technology, Academics, and Resilience

The second theme describes the impact of technology on academic and resilience. Respondents in this study expounded upon the impact technology use in correctional education had on their academics and resilience. These descriptions illuminated the perceived growth in resilience as the offenders examined past deficits and adversity, and then explained their transformation as they adapted and grew from those challenges. This growth in offender resilience supports the theory found in the body of research that states passion is necessary to achieve long-term goals and overcome obstacles or challenges that lie within the path to the accomplishment of that goal (Cassidy, 2015).

Technology, Academics, and Self-Efficacy

The third theme focused on the impact of technology on academics and self-efficacy. Participants within this study were able to specifically communicate the process in which technology afforded the opportunity to exert control over their motivation, behavior, and social environment (Bandura, 1977). Additionally, growth in self-efficacy backs the theory that is found in the literature that an intrinsically motivated individual is more likely to challenge themselves and put forth a much larger degree of effort to meet or exceed their personal goals (Carpenter & Clayton, 2014). Technology supports both of the concepts and allows students to dig deeper than was previously possible in a correctional education classroom.

Technology, Academics, and Success

The last theme, technology, academics, and success, speaks to the intersection of each of the above three concepts at a particular point of attainment in a correctional education students

career. Participants of this study described varying degrees of technological impact on their academics, which in turn, had a direct influence on their success and fostered a desire to continue to push the boundaries of that success. Participants commented on new goals that had been set before them, of which some were current goals that needed to be worked on while they were incarcerated, and others were set for when they were released. Using this success as a vehicle, technology created a roadmap for the offenders to perceived a future that was different from the one that they previously envisioned. Through the culminations of the tenants of this study and the fostering of the first three themes, correctional education student developed the capacity and the fortitude to continue to push through barriers and discover personal success and educational achievement.

Quantitative Data

For this study, growth in mindset, resilience, self-efficacy was gathered via a Likert-based survey. Participants responses (n=100) were used to determine relationships between technology integration and growth in mindset, resilience, and self-efficacy. Relevant demographic factors were also collected at the time of the survey but were not utilized in the analysis of the responses. Using the collected data, descriptive statistics were calculated using IBM SPSS Statistical Software, Version 24 (IBM SPSS, 2015). For this study, the researcher was testing three different null hypotheses:

1. (H_{o-1}) Technology limits an offender growth mindset in the correctional education classroom.
2. (H_{o-2}) Technology has a limited effect on offender resilience in the correctional education classroom.

3. (H_{o-3}) Technology has a limited effect on offender self-efficacy in the correctional education classroom.

Results for Research Question #1: Technology on offender mindset

The primary purpose of this study was to deliver a descriptive explanation of the impact of technology on an offender's mindset within the correctional education classroom. Quantitative data was collected via a self-reflective pretest-posttest Likert-based survey, and qualitative information was gathered via phenomenological interviews. Results from the mindset portion of the survey revealed that four out of the five (80%) subsections showed that correctional education students considerably believe that technology has a significant effect on the fostering and cultivating of a growth mindset within the correctional education classroom. Qualitative data further illuminated these findings by supporting the researched themes and adding solid support to the significant role technology has played in helping foster a growth mindset within the correctional education classroom. Compiling all this information, the researcher rejected the null hypothesis that technology limits an offender's growth mindset in the correctional education classroom and accepted the alternative hypothesis that technology increases an offender growth mindset in the correctional education classroom.

Participants in this study unfailingly strengthened the notion that mindset was impacted due to the effective integration of technology within correctional education classrooms. This impact was expressed by a participant in the following way:

> I feel that the correctional education has helped me so much! I have been able to pass all my G.E.D. test so far thanks to the support of the educational teachers and the C.O.'s in the units. Although I have my math test left, I am confident I will leave here with my G.E.D. I feel that my future is brighter now that I've experienced in this program as well

> as the correctional education. My experience has helped me in being more knowledgeable in technology and education for when I leave.

Participants reinforced the literature (Dweck, 2006; Cianci, Schaubroeck, & McGill; 2010; Farrington et al., 2012; Lee et al., 2012; Yeager & Dweck, 2012) in identifying the impact growth mindset has on continued academic achievement.

Results for Research Question #2: Technology on offender resilience

The second theme that was investigated in this study through qualitative and quantitative methods was the impact of technology on an offender's resilience. This section revealed that correctional education students do not significantly believe that resilience is something that can be increased through the effective use of technology in a correctional education classroom. This is counterintuitive to the body of research that states that resilience is not only directly linked to self-efficacy, but also that the higher the levels of internal resilience within a student, the more internal fortitude that student has to be able to face the challenges of both academics and within the various spheres of life (Kumar & Uzkurt, 2010; Lightsey, 2006; Sagone & De Caroli, 2013; Speight, 2009). However, correctional education students did believe that technology use had a significant effect on the decision to take additional classes in an area that they did poorly on and that technology had a significant effect on their desire to not cheat on a future exam.

Furthermore, participants acknowledged the impact resilience had on their academic achievement in the following way:

> Before I was sentenced to my Rider, I did not take my education seriously at all. I didn't care if I got any High School education at all. Since I came to [correctional education], I've noticed a huge change in myself. I'm actually excited about coming to school. About 80% of my free time is spent on my studies. I hated Math, and now I am acing tests! I'm

> proud of myself, and I feel better about myself. I strongly feel as though Correctional Education helps and is a necessity for inmates like myself.

Participants in the study verified research findings (Lee, Heeter, Magerko, & Medler, 2012; Sevincer, Kluge, & Oettingen, 2014) as they regularly cited the connection between an individual's mindset, their motivation, their sense of belonging, and their perceived resilience. Taking all this information into account, the researcher accepted the null hypothesis that technology limits offender resilience in the correctional education classroom and rejected the alternative hypothesis that technology increases offender resilience in the correctional education classroom.

Results for Research Question #3: Technology on offender self-efficacy

The third theme that was revealed in this study through qualitative and quantitative methods was the impact of technology and correctional education on an offender's self-efficacy. This section revealed that correctional education students do significantly believe that self-efficacy is something that can be increased through the effective use of technology and correctional education. This is supported by the body of research that support the positive impact of self-efficacy and the effect that it has in students (Abbitt, 2011; Blackwell, 2013; Carpenter & Clayton, 2014; Gecer, 2013; His-Chi, Ya, & Hsin-Nan, 2012; Wang et al., 2013; Yang, 2012). Qualitative data further illuminated these findings by supporting the researched themes and adding solid support to the significant role technology and correctional education has played in helping foster resilience and self-efficacy within the correctional education classroom.

In addition, participants added to the body of research in demonstrating that technology has the ability to impact not only an individual's mindset but their self-efficacy as well. A participant stated:

> Having this opportunity has made such an impact on me, it's hard to put into words. However, I can say that I was a person who through very lowly of themselves and I have become aware that I can learn new things. I am smart, and I can get my GED, and make coming to prison more than just that.

Another participant added:

> The education here has helped me gain the courage to believe in myself that I can get my GED. I'm very hopeful for obtaining my GED since being here. The technology here has helped me be more familiar with the subjects, so if I don't get all my test here, I can still be ready to finish them when I'm released.

The impact that an internal mindset has on motivation, a sense of belonging, self-efficacy, and resilience is supported throughout the literature (Abbitt, 2011; Blackwell, 2013; Carpenter & Clayton, 2014; Cianci, Schaubroeck, & McGill; 2010; Farrington et al., 2012; Gecer, 2013; His-Chi, Ya, & Hsin-Nan, 2012; Kumar & Uzkurt, 2010; Lee, Heeter, Magerko, & Medler, 2012; Lightsey, 2006; Sevincer, Kluge, & Oettingen, 2014; Wang et al., 2013; Yang, 2012). as well as through the reinforcement of the participants. Bringing together all this information, the researcher rejected the null hypothesis that technology limits offender self-efficacy in the correctional education classroom and accepted the alternative hypothesis that technology increases offender self-efficacy in the correctional education classroom.

Recommendations for Further Research

Recommendation for further research are proposals that are made by the researcher for additional areas of research based on the results of the present study (Creswell, 2015). These recommendations link to the limitations of this study and also provide direction for new

researchers interested in exploring areas of need or applying the results of this study to practice (Creswell, 2015).

1. It is radically important to continue to research the phenomenon of correctional education and the impact that it has on offenders (Davis et al., 2013a; Davis et al., 2013b; Davis et al., 2014; Ferner, 2015; Philon, 2015; Wells, 2015; Westervelt, 2015). While this study focused on the impact of technology on an offender's mindset, resilience, and self-efficacy, further research is essential in the field of correctional education to increase the effectiveness of technology in this setting and the impact that it has on students.
2. Due to the nature of the reflective pretest-posttest design being distributed and gathered at that same time, further research would need to survey a population at different times to gather a more accurate representation of growth over time. This was identified as a limitation of this study, and it would be beneficial to determine if the longer data collection window would alter the conclusions.
3. A larger female correctional sample may also highlight additional information in regard to female offender growth in the areas of mindset, resilience, and self-efficacy. Due to a much larger male incarcerated population, it is more difficult to sample large groups of female offenders (Harlow, 2003; Rampey, et al., 2016).
4. This study did not examine the perceptions of correctional educators working in the classroom. With new federal initiatives and 2nd chance opportunities, it would be highly enlightening to determine the impact of technology and professional development on the correctional educator. Qualitative research investigating this phenomenon would be informative, beneficial, and would add to the body of research in the field of correctional education.

5. Correctional offenders who do not opt to engage in correctional education would be another stakeholder group that needs to be examined. These students, in particular, have a great perspective that would be beneficial to expand the literature on the future integration of technology and correctional education within a correctional facility. Qualitative and Quantitative research is recommended to further determine the effect that not participating in correctional education has on that group's mindset, resilience, and self-efficacy.
6. The final recommendation for future study is to expand upon the foundation of mindset, resilience, and self-efficacy as it relates to correctional offenders. The qualitative interviews with correctional offenders illuminated other facets that allowed the researcher to dig into other areas of research to build a concept that needs to be studied. The researcher has developed a theory of fortitude that encompasses the concepts of mindset, resilience, and self-efficacy, but also adds the concepts of endurance, character, spirit, and courage. This theory also incorporates Kurt Lewin's Force Field Analysis Model (Lewin, 1946). Lewin's theory looks at patterns of behavior in an institutional setting not as static and motionless, but as a dynamic balance of forces working simultaneously but in opposite directions (Lewin, 1946). Lewin (1946) postulated that change occurs when there is an imbalance between the sum of the forces for change and the sum of the forces against change. The imbalance is caused either by a change in magnitude or direction of the main forces, or the addition of a new force (Lewin, 1946).

Implications for Professional Practice

There is little research conducted on the impact of technology on correctional offenders (Batiuk, Moke, & Roundtree, 1997; Borden & Richardson, 2008; Coffey & Gemignani, 1994;

Davis et al., 2013a; Davis et al., 2014; Gehring, 1997; Gerber & Fritsch, 1995). Research needs to improve in this area, so policymakers have the ability to use study results to aid in making decisions (Zoukis, 2015). A significant movement in the 21st century is the increasing role of information technology in society, and with that, technology has transformed resulting in an increased requirement for a technologically experienced workforce (Davis et al., 2014). There is also limited data on how the length of an educational program affects recidivism, employment, and wages (Zoukis, 2015). The results of this study will be helpful to correctional institutions or correctional department that currently has correctional education offerings for offenders.

Furthermore, the impact of technology on academic achievement is a major component for reentry and reducing the rate of recidivism. Better understanding is critical when it comes to correctional education offerings, technology integration, and the impact of these items on correctional education students (Gill & Wilson, 2016). Current research states that 15% or less of research studies are designed well and look into the effects of correctional education (Zoukis, 2015). Additionally, more research looking into the instructional quality within correctional education settings, and ways to leverage technology to enhance instructional practices needs to be conducted.

There is little research carried out on how mindset, resilience, and self-efficacy affect correctional offenders while they are housed within a correctional facility (Brendtro & Brokenleg, 1996; Mathur & Schoenfield, 2010; Sealey-Ruiz, 2011; Visher & O'Connell, 2012). Also, additional research coupled with research into correctional therapeutic communities would be of interest to the greater body of literature (Tripodi, Bledsoe, Bender, & Kim, 2016). The results of this study will be helpful to correctional settings that are trying to incorporate more

technology into their programming or for institutions that are looking for funding to provide technology for their offender population.

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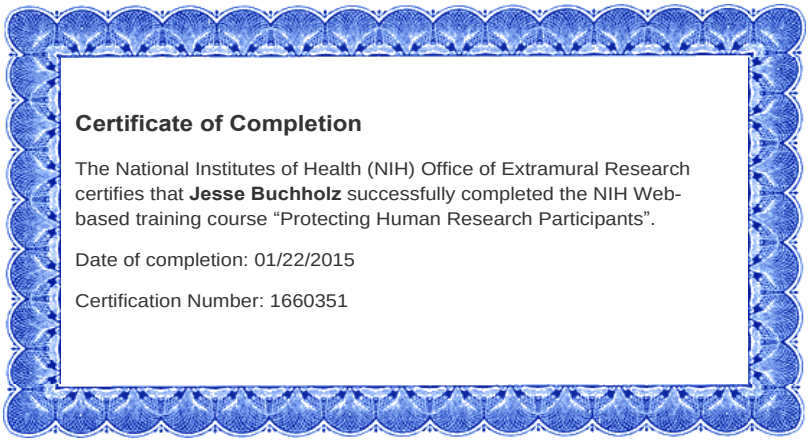
Appendix A

NIH Completion Certification



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Jesse Buchholz** successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 01/22/2015

Certification Number: 1660351

Appendix B

Informed Consent Form

A. PURPOSE AND BACKGROUND

Jesse Buchholz, PhDc, in the Department of Graduate Education at [redacted] is conducting a research study related to the effective of technology integration on offender education. The study will gather data and interviews related to the impact of technology on offender educational attainment as well as offender mindset, resilience, and perceived self-efficacy.

You are being asked to participate in this study because you are a healthy volunteer, over the age of 18.

B. PROCEDURES

If you agree to be in the study, the following will occur:

1. You will be asked to sign an Informed Consent Form, volunteering to participate in the study and to release any educational records that pertain to your educational attainment while within the [redacted].

2. You will meet with your education teacher in the education classroom at your facility.

3. You will answer a set of demographic questions, mindset questions, resilience questions, and self-efficacy questions on standard paper and pencil. It should take approximately 10-20 minutes to answer these questions.

4. You will be asked at the conclusion of the study to confirm the data that was gathered during the research process.

These procedures will be completed within the education classroom where the offender is housed and will take a total time of about 50-55 minutes.

C. RISKS/DISCOMFORTS

1. Some of the discussion questions may make you uncomfortable or upset, but you are free to decline to answer any questions you do not wish to answer or to stop participation at any time.

2. For this research project, the researchers are requesting demographic information. Due to the make-up of [redacted] population, the combined answers to these questions may make an individual person identifiable. The researchers will make every effort to protect your confidentiality. However, if you are uncomfortable answering any of these questions, you may leave them blank.

3. Confidentiality: Participation in research may involve a loss of privacy; however, your records will be handled as confidentially as possible. No individual identities will be used

in any reports or publications that may result from this study. All interview statements will use a pseudonym to protect the identity of those individuals that will be interviewed. All data from notes, audio tapes, and disks will be kept in a locked file cabinet in the Department and the key to the cabinet will be kept in a separate location. In compliance with the Federalwide Assurance Code, data from this study will be kept for three years, after which all data from the study will be destroyed (45 CFR 46.117).

D. BENEFITS

There will be no direct benefit to you from participating in this study. However, the information you provide may help stakeholders, legislators, and educators to better understand the impact of technology on the educational attainment of offenders as well as growth of an offender's mindset and perceived self-efficacy.

E. PAYMENTS

There are no payments for participating in this study. You will not receive any type remuneration or compensation of any kind for participating in this study.

F. QUESTIONS

If you have questions or concerns about participation in this study, you should first talk with the investigator. Jesse Buchholz can be contacted via email through your education teacher.

Should you feel distressed due to participation in this, you should contact your own health care provider.

G. CONSENT

You will be given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You are free to decline to be in this study, or to withdraw from it at any point.

I give my consent to participate in this study and to release any educational records from the IDOC:

_____ _____

Signature of Study Participant **Date**

I give my consent for the interview and discussion to be audio/video taped in this study:

_____ _____

Signature of Study Participant **Date**

I give my consent for direct quotes to be used in this study:

Signature of Study Participant	**Date**
Signature of Person Obtaining Consent	**Date**

THE [redacted] HUMAN RESEARCH REVIEW COMMITTE HAS REVIEWED THIS PROJECT FOR THE PROTECTION OF HUMAN PARTICIPANTS IN RESEARCH.

Appendix C

Department of Corrections Conditional Approval to Conduct Research

[redacted]

Jesse,

The [redacted] has made steady progress on furthering the implementation of technology in the education program during the past 4 years. We have up graded the computer labs with new servers and workstations, standardized computer labs with software and curriculum, implemented computer based testing and installed work stations in our classrooms to utilize instructional software ([redacted] and [redacted]) and support computer aided instruction.

Transition services were expanded with the inclusion of Computer Literacy in the PreRelease program, insuring that all inmates leave our institutions with basic computer skills. This year inmates at [redacted], [redacted] and [redacted] have higher level computer skill instruction available with Microsoft Office Specialist.

There is also a website, [redacted], to share new information and resources with staff and stake holders statewide. In the upcoming year there are new projects on the docket using technology, the Second Chance Pell Grant and inmate internet accessibility. Exciting and changing times for correctional education and the programs offered to inmates.

Pending approval by an IRB at [redacted], the [redacted] approving your dissertation project. Please note that conducting research using information from inmate education records must receive approval from the inmates using a Release of Information form.
In addition, researchers who are utilizing inmate education records in their research must agree to:
Use the information only for purposes of the approved research project. Any new use of the information requires new approval.
Provide adequate protection for the information to ensure that it is not compromised or subject to unauthorized access.
Ensure that no one outside the research team has access to the information.
Destroy the information within a reasonable time after completion of the research.

Looking forward to working with you in February!

Appendix D

HRRC Approval

[redacted] 5/31/16

[redacted]

These changes look good Jesse. You've received Full Approval from the HRRC. You may begin your research. If you have any questions, let me know.

[redacted]

On Mon, May 30, 2016 at 11:01 PM, Jesse Buchholz <[redacted]> wrote:
[redacted]

I added the research assistant/transcriber form to my HRRC application, along with a set of forms that included signatures. Please let me know if there is anything else that is needed. I appreciate your time and helping me fine tune this application.

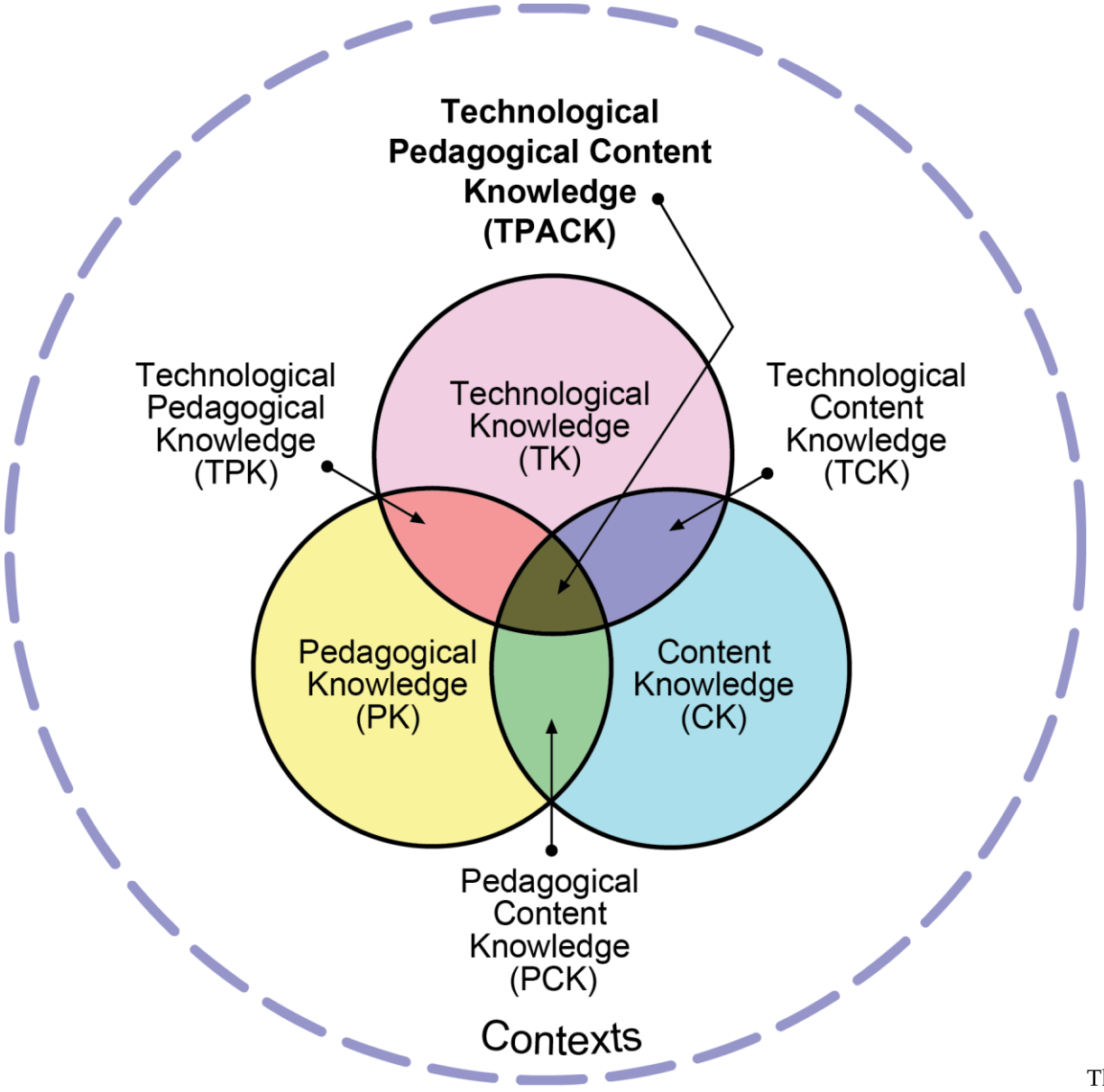
Jesse Buchholz
[redacted]

Strength Finders 2.0 *Connectedness**Input**Strategic**Positivity**Learner*

Appendix E

TPACK Image Approval

Using the TPACK Image
Published on May 11, 2011 by mkoehler



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Appendix F

Self-Efficacy Graphic Approval

Brian Francis Redmond
to me, els5196

Hi Jesse,

You may use the graphic, but for educational purposes only. So it is fine for your dissertation, but if you publish your results elsewhere, it can't be used. That is a Penn State proprietary graphic, so any use that makes money (e.g. a journal) is not allowed.

Take care,
Brian

Brian F. Redmond, PhD
Director Organizational Leadership
The Pennsylvania State University
503C Keller Building (Safe Place)
University Park, PA 16802
814-867-0375
brian.redmond@psu.edu

From: "Jesse Buchholz" [redacted]
To: els5196@psu.edu, bfr3@psu.edu
Sent: Saturday, February 11, 2017 6:30:05 PM
Subject: Use of Self-efficacy graphic

Good Afternoon,

My name is Jesse Buchholz and I am a Doctoral student at [redacted]. I would like to use the following graphic in the literature review portion of my dissertation in regard to Bandura's model of self-efficacy. All credit will be given to you and a copy of your approval would be included in the appendix of my study. Thank you for your time and I look forward to hearing from you.

Jesse Buchholz

Appendix G

Resilience Graphic Approval

Mohan Kumar <mohan.kumar@btinternet.com>
to me, mohan.kumar

Dear Jesse,

I am delighted you have found my Resilience model useful and that you would like to use it in your dissertation.

As long as there is attribution (I have attached a link to the original article where I compiled this theme online) I give you permission to use my model and graphic.

http://hubpages.com/education/A-Simple-Guide-to-Teaching-Resilience

Please do send me a copy or a link to your thesis/dissertation when complete as I am curious to see how you have used the model.

Regards,

Mohan

Dr Mohan Kumar MBBS PGCE FRCGP
Associate Dean of Primary Care Education (Wigan & Preston)

Health Education England working across the North West
3rd Floor | 3 Piccadilly Place | Manchester | M1 3BN
Regatta Place | Brunswick Business Park | Summers Road | Liverpool | L3 4BL
T. 0161 625 7653
E. mohan.kumar@nw.hee.nhs.uk
E. mei.lee@nw.hee.nhs.uk
W. www.nwpgmd.nhs.uk

On 13 Feb 2017, at 06:32, Jesse Buchholz [redacted] wrote:

Good Evening,

My name is Jesse Buchholz and I am a Doctoral student at [redacted]. I would like to have permission to use your CR8 Model of Resilience in my dissertation as it pertains to my research into the link between self-efficacy and resilience.

Please let me know if it is permissible to use your graphic and model in my study? Thank you very much for your time. I look forward to hearing your response.

Jesse Buchholz

Appendix H

IES/NCES Graphic Approval

RESOURCES FOR RESEARCHERS

IES Policy Regarding Public Access to Research

The Institute of Education Sciences is committed to advancing education research through the sharing of publications and scientific data that emanate from funded research. This page provides an overview of expectations for providing public access to publications and data along with links to more detailed information regarding these requirements.

The IES Policies are aligned with the U.S. Department of Education's Plan and Policy Development Guidance for Public Access, which was approved October 21, 2016.

View, download, and print the full plan as a PDF file (626 KB)

Publications: Beginning in FY 2012, the Institute of Education Sciences (IES) required its grantees to submit their peer-reviewed scholarly publications to the ERIC. Contractors that do not have their results published by IES must also submit any peer-reviewed scholarly publications to ERIC. Investigators are to submit the electronic version of their final manuscripts upon acceptance for publication in a peer-reviewed journal. The author's final manuscript is defined as the final version accepted for journal publication, and includes all modifications from the peer review process. Posting for public accessibility through ERIC is strongly encouraged as soon as possible but must be within 12 months of the publisher's official date of final publication. Researchers receiving grants or contracts prior to FY 2012 are encouraged, but not required, to submit publications from IES funded grants and contracts to ERIC.

Data Access: IES established a requirement for data sharing in FY2013 for Goal 4 Effectiveness grants, and this requirement was extended to include Goal 3 Efficacy and Replication grants in FY2015. In FY2016, IES included a requirement for data sharing for the Research Networks on Critical Problems of Policy and Practice competition. Grantees are required to provide access to the final research data from grants in a timely fashion, and no later than the time of publication in a peer-reviewed scholarly publication. Applications must include a data management plan that describes the method of data sharing, types of data to be shared, and documentation that will be created to promote responsible use of data. In providing public access to data, researchers must protect the rights and privacy of human subjects at all times. Beginning in FY2016, contractors that do not provide their final data set to IES as part of their contract are required to provide access to their final research data as described for grants above. Specifically, contractors must propose a data management plan at the start of each study. For data collected by the contractor, plans must include which data will be collected, how the data will be stored, the method of sharing, documentation that will be created for the file, and how the researchers will protect the rights and privacy of human subjects at all times.

Links to pages on the IES website with further information and policies and resources are provided below.

Links:

Policy Statement on Public Access to Publications Resulting from IES Funded Grants

Policy Statement on Public Access to Data Resulting From IES Funded Grants

Appendix I

Mindset and Resilience Survey Instrument Approval

Jesse Buchholz [redacted]

Mindset survey use for Dissertation

5 messages

Jesse Buchholz [redacted] Tue, Mar 22, 2016 at 10:34 PM
To: Lisa Blackwell <lasblackwell@mindsetworks.com>
Cc: [redacted]

Dr. Lisa Blackwell,

Good morning. I hope that this email finds you doing well. My name is Jesse Buchholz and I am a doctoral student at [redacted] in [redacted]. I am currently working through the Educational Leadership program and I would like to use and adapt your mindset survey that you had previously created in your dissertation, Psychological Mediators of Student Achievement During the Transition to Junior High School: The Role of Implicit Theories.

My research study will be focused on the impact of technology on offender mindsets in correctional education. I feel that your survey is a tremendous asset and would afford the opportunity to dig deep into the mindsets of offenders.

Thank you for your time and I look forward to hearing from you.

Jesse Buchholz

Strength Finders 2.0 *Connectedness**Input**Strategic**Positivity**Learner*

Lisa Blackwell <lasblackwell@mindsetworks.com> Wed, Mar 23, 2016 at 7:52 AM
To: Jesse Buchholz [redacted]
Cc: [redacted]

Sure, that's fine. The full survey with all items and scale stats is attached.

Good luck!
Lisa

****
Lisa S. Blackwell, Ph.D.
VP of Design, Implementation & Evaluation
Mindset Works, Inc.
[Quoted text hidden]

Blackwell et al. 2007 Student Motivation Measures.docx
20K

Jesse Buchholz [redacted] Thu, Mar 31, 2016 at 2:39 PM
To: Lisa Blackwell <lasblackwell@mindsetworks.com>

Dr. Blackwell,

Thank you very much for allowing me to use your mindset survey. I appreciate it. I hope that you have a great day.

Jesse Buchholz

Appendix J

Mindset Question Use Approval

Jesse Buchholz [redacted]

Mindset Survey use for Dissertation

8 messages

Jesse Buchholz [redacted] Tue, Mar 22, 2016 at 10:33 PM
To: dweck@stanford.edu
Cc: [redacted]

Dr. Carol Dweck,

Good evening. I hope that this email finds you doing well. My name is Jesse Buchholz and I am a doctoral student at [redacted] in [redacted]. I am currently working through the Educational Leadership program and I would like to use and adapt some of your previous work that you had previously created in several studies. I would like to use the following items:

Items:

Levy, S., & Dweck, C. (1997). Reliability and validity data for new scales for measuring implicit theories. Unpublished manuscript, Columbia University.

Your intelligence is something you can't change very much.
You have a certain amount of intelligence, and you really can't do much to change it.
You can learn new things, but you can't really change your basic intelligence.
No matter who you are, you can change your intelligence a lot.
You can always greatly change how intelligent you are.
No matter how much intelligence you have, you can always change it a good amount.

Mueller, C., & Dweck, C. (1998). Intelligence praise can undermine motivation and performance. Journal of Personality and Social Psychology, 75,33-52.

I like school work best when I can do it perfectly without any mistakes.
The main thing I want when I do my school work is to show how good I am at it.
I like school work best when I can do it really well without too much trouble.

Sorich, L., & Dweck, C. (1997). Reliability data for new scales measuring students' beliefs about effort & responses to failure. Unpublished raw data, Columbia University.

Negative Items:
To tell the truth, when I work hard at my schoolwork, it makes me feel like I'm not very smart.
It doesn't matter how hard you work--if you're not smart, you won't do well.
If you're not good at a subject, working hard won't make you good at it.
If a subject is hard for me, it means I probably won't be able to do really well at it.
If you're not doing well at something, it's better to try something easier.

Positive Items:
When something is hard, it just makes me want to work more on it, not less.
If you don't work hard and put in a lot of effort, you probably won't do well.

The harder you work at something, the better you will be at it.
If an assignment is hard, it means I'll probably learn a lot doing it.

My research study will be focused on the impact of technology on offender mindsets and self-efficacy in correctional education. I feel that your survey items are a tremendous asset and would afford me the opportunity to dig deep into the perceived self-efficacy and mindsets of offenders.

Thank you for your time and I look forward to hearing from you.

Jesse Buchholz

Strength Finders 2.0 *Connectedness**Input**Strategic**Positivity**Learner*

Carol Dweck <dweck@stanford.edu> Fri, Mar 25, 2016 at 1:54 PM
To: Jesse Buchholz [redacted]

Jesse, you are most welcome to use these items in your research!

Lewis & Virginia Eaton Professor

of Psychology

Department of Psychology

Stanford University

Stanford, CA 94035

Jesse Buchholz [redacted] Thu, Mar 31, 2016 at 2:42 PM
To: Carol Dweck <dweck@stanford.edu>

Dr. Dweck,

Thank you very much for allowing me to use your research and previous work. I greatly appreciate it.

Appendix K

Buchholz Dissertation Survey Content Validity

Section 1 of 3

Buchholz Dissertation Survey Content Validity

This form is designed to gather data as to the content on the survey that will be distributed to the offenders. Please fill out the information and then rank each question that you see below on whether you feel the question is not relevant, somewhat relevant, quite relevant, or highly relevant. Each question measures either an offender's mindset, resilience, or self-efficacy. If you have any comments, please feel free to leave them at the end of this survey. All of the information gathered through this pilot will be used to determine the final draft of the survey that will be given to offenders. Thank you very much for your time. I appreciate it immensely. Jesse Buchholz

First Name
*

Last Name
*

Email Address
*

What grade are you currently in?
*

Have you completed a GED or attained a high school diploma?
*

My mother has finished a high school diploma?
*

My father has finished a high school diploma?
*

My mother has finished a college degree?
*

My father has finished a college degree?
*

Your intelligence is something you can't change very much?
*

It is very important to me that I don't look foolish in class.
*

I like an assignment best when I can do it perfectly without any mistakes.
*

To tell the truth, when I work hard at an assignment, it makes me feel like I'm not very smart.
*

If a subject is hard for me, it means I probably won't be able to do really well at it.
*

You have a certain amount of intelligence, and you can't really do much to change it.
*

An important reason why I do my assignments is so that I won't embarrass myself.
*

An important reason I do my work for my classes is so others won't think I'm dumb.

*
It doesn't matter how hard you work -- if you're not smart, you won't do well.
*
If you're not doing well on something it is better to try something easier.
*
You can learn new things, but you can't really change your basic intelligence.
*
If you are not good at a subject, working hard won't make you good at it.
*
I like school work best when I can do it really well without too much trouble.
*
The main thing I want when I do my school work is to show how good I am at it.
*
No matter who you are, you can change your intelligence a lot.
*
No matter who you are, you can change your intelligence a lot.
*
An important reason why I do my assignments is because I like to learn new things.
*
When something is hard, it just makes me want to work more on it, not less.
*
If an assignment is hard, it means I'll probably learn a lot doing it.
*
You can always greatly change how intelligent you are.
*
You can always greatly change how intelligent you are.
*
I like a subject best when it makes me think hard.
*
If you do not work hard and put in a lot of effort, you probably won't do well.
*
No matter how much intelligence you have, you can always change it a good amount.
*
I like a subject best when I am learning, even if I make a lot of mistakes.
*
The harder you work at something, the better you are at it.
*
After section 1
Continue to next section

Section 2 of 3

Section 2

This section of the survey will ask students to read a short story and answer a bank a questions. Their responses will be broken up into two parts. How they would have felt before technology and correctional education, and after technology use and/or correctional education. When you read this story, pretend that it really happened and think about how you would feel and what you would do. You start a new class at the beginning of the year and you really like the subject and the teacher. You think you know the subject pretty well, so you study a medium amount for the first quiz. When you take the quiz, you think you did

okay, even though there were some questions you didn't know the answer for. Then the class gets their quizzes back and you find out your score: you only got a 54, and that's an F. What would you think was the main reason why you failed the quiz?
I wasn't smart enough
*
The quiz was unfair, too hard for the class.
*
I'm just not good at this subject.
*
I didn't really like the subject that much.
*
I would spend less time on that subject from now on.
*
I would try not to take more of these classes.
*
I would try to cheat on the next test.
*
I would spend more time studying for tests
*
I would work hard in this class from now on.
*
After section 2
Continue to next section

Section 3 of 3

Self-Efficacy Questions

How well can you get teachers to help you when you get stuck on schoolwork?
*
How well can you express your opinions when other classmates disagree with you?
*
How well do you succeed in cheering yourself up when an unpleasant event has happened?
*
How well can you study when there are other interesting things to do?
*
How well do you succeed in becoming calm again when you are very scared?
*
How well can you become friends with other people?
*
How well can you study a chapter for a test?
*
How well can you have a chat with an unfamiliar person?
*
How well can you prevent yourself from becoming nervous?
*
How well do you succeed in finishing all your school related work every day?
*
How well can you work in harmony with your fellow classmates?
*

How well can you control your feelings?
*
How well can you pay attention during every class?
*
How well can you tell other students that they are doing something that you don't like?
*
How well can you give yourself a pep-talk when you feel low?
*
How well do you succeed in understanding all subjects in school?
*
How well can you tell a funny event to a group?
*
How well can you tell a friend that you don't feel well?
*
How well do you succeed in satisfying your family with your academic accomplishments?
*
How well do you succeed in staying friends with others?
*
How well do you succeed in suppressing unpleasant thoughts?
*
How well do you succeed in passing a test?
*
How well do you succeed in preventing quarrels with others?
*
How well do you succeed in not worrying about things that might happen?
*
Any Additional Comments

Appendix L

CVI Table of Results

Rating Scale	Highly Relevant	Quite Relevant	Somewhat Relevant	Not Relevant	Comments: Content Validity Index (CVI)		
	4	3	2	1			
Question					Number of Experts in Agreement		
Section 1/2							
1	3	2			6/6 100%		
2	5	1			6/6 100%		
3	1	4	1		5/6 83%		
4	1	4	1		5/6 83%		
5	3	2	1		5/6 83%		
6	3	2	1		5/6 83%		
7	3	3			6/6 100%		
8	3	2	1		5/6 83%		
9	3	2	1		5/6 83%		
10	2	3	1		5/6 83%		
11	3	3			6/6 100%		
12	3	2	1		5/6 83%		
13	2	4			6/6 100%		
14	2	4			6/6 100%		
15	3	2	1		5/6 83%		
16	2	3	1		5/6 83%		
17	3	1	2		4/6 67%		
18	3	2		1	5/6 83%		
19	3	2	1		5/6 83%		
20	2	3	1		5/6 83%		
21	3	2	1		5/6 83%		
22	3	2	1		5/6 83%		
23	4	2			6/6 100%		
24	3	2	1		5/6 83%		

25	2	3	1		5/6 83%		
26	4	1	1		5/6 83%		
27	4	1	1		5/6 83%		
28	2	3	1		5/6 83%		
29	3	3			6/6 100%		
30	3	2	1		5/6 83%		
31	2	4			6/6 100%		
32	3	3			6/6 100%		
33	3	2		1	5/6 83%		
34	3	2	1		5/6 83%		
35	3	2	1		5/6 83%		
36	2	3	1		5/6 83%		
37	2	3	1		5/6 83%		
38	2	3	1		5/6 83%		
39	4	2			6/6 100%		
40	3	3			6/6 100%		
41	2	4			6/6 100%	MEAN CVI =	90.2
Section 3							
1	2	3	1		5/6 83%		
2	2	3	1		5/6 83%		
3	3	2	1		5/6 83%		
4	2	4			6/6 100%		
5	1	3	2		4/6 67%		
6	3	2	1		5/6 83%		
7	1	4	1		5/6 83%		
8	4	2			6/6 100%		
9	1	4	1		5/6 83%		
10	1	4	1		5/6 83%		
11	2	4			6/6 100%		
12	2	4			6/6 100%		
13	3	3			6/6 100%		

14	1	3	2		4/6 67%		
15	1	5			6/6 100%		
16	3	2	1		5/6 83%		
17	2	3	1		5/6 83%		
18	1	4	1		5/6 83%		
19	3	3			6/6 100%		
20	2	3	1		5/6 83%		
21	2	3	1		5/6 83%		
22	3	3			6/6 100%		
23	1	4	1		5/6 83%		
24	1	4	1		5/6 83%	MEAN CVI =	90.39130435

Appendix M

Interview Recording Approval

Question regarding a previous video

Inbox x

Jesse Buchholz [redacted] 8/2/16

to contact

Good afternoon,

My name is Jesse Buchholz and I am a doctoral student at [redacted] and I am going to be conducting research this fall and I would like to use some of the footage that you captured during our [redacted] project. I am researching the impact of technology in education and I was wondering if I could use the footage that you gathered from the prison in [redacted] for my dissertation. I have all of the HRRC approvals from [redacted] and I would need any possible transcripts you may have from those shoots so I could gather the questions that you asked to be able to document the entire interview process.

I would love to talk to you further about my research. If a phone call would work as a better means of communication, I can be reached on my cell phone at [redacted] or through this email. I can also call you if you would like. Thank you for your time and I look forward to talking with you soon.

Jesse Buchholz

Strength Finders 2.0 *Connectedness**Input**Strategic**Positivity**Learner*

[redacted] 8/2/16

to me

Hi Jesse-

My name is [redacted] and I'm one of the partners at [redacted] and also was the director of that project. Why don't we talk more about the usage sometime next week? I have a full schedule the rest of this week through next Monday but will have some time after that.

In the meantime, have you spoken with [redacted] at [redacted]? He was one of the key individuals that helped roll out the [redacted] system to the pilot schools.

Let me know if you'd have some time next week and we can get together sometime.

Thanks
[redacted]

--

[redacted]

[redacted]

Jesse Buchholz [redacted] 8/2/16

[redacted]

[redacted],

Thank you for responding to my email. I actually worked with [redacted] as part of the [redacted] team during that entire project and I was the project lead for the [redacted] implementation within the [redacted]. I would love the opportunity to talk with you next week. Let me know when a good time for you is and I will make it work with my schedule. I have a couple of things going on in the mornings on Tuesday, Thursday, and Friday. Other than those events, I am open.

Thank you again for your time.

[redacted] 8/2/16

to me

Sounds good, let's plan on next Wednesday. Do you want to come by my office or speak on the phone?

Jesse Buchholz [redacted] 8/16/16

[redacted],

Thank you again for meeting with me. It was great to meet you and thank you for helping me with this part of my dissertation. I am very appreciative of your help. Also, thank you for this link. It will definitely come in handy.

[redacted] 8/19/16

to me

Hi Jesse-

I'm sending you a WeTransfer link right now that's a zip file containing the audio files from the interviews. The last two are with the teachers, also a couple foley audio files (including the scary door slam) for your amusement. Let me know if I can help you with anything else.

thanks

Jesse Buchholz [redacted] 8/30/16

[redacted],

Thank you again for everything. I grabbed the files and I will begin transcribing them. I will keep you posted at things progress throughout the next few months and into next year. I would love to have you come to my dissertation defense if you are able. It is currently scheduled for April, but I will keep you posted as we get closer to that date and time.

Jesse Buchholz

Strength Finders 2.0 *Connectedness**Input**Strategic**Positivity**Learner*

Appendix N

Interview Protocol

Teachers:

- What are you hoping to see happen by using [redacted]?
- Do you have any examples of initial results/successes using [redacted]?
- How will this impact these students' lives?
- Why do you think this technology is more effective than other methods?
- What do these terms mean:
    - Individualized learning
    - Data-driven instruction
    - Student-led learning
- Has this been hard to implement?
- Has it been a shift from how you've taught in the past?
- Has this given you more or less time with students as a result?
- Are students gaining a deeper level of understanding or better comprehension of the foundations of math?
- Naysayers: It will remove the teacher from the classroom. Your response?
- Inspire me. (You're one of the few schools we are visiting)
- Advice for other teachers?
- Other thoughts?

Students

- Tell me about [redacted].
- How has it helped you?
- What has it helped you learn?
- Why do you think it's helped you learn?
- Compare it to when you were younger; why do you think it works so much better?
- What does tomorrow look like for you?
- What potential do you see for yourself down the road?
- Other thoughts?
- Favorite part of [redacted]?

Appendix O

Measure - The Self-Efficacy Questionnaire for Children

Entry Date: November 3, 2007

Description and Contact Information
Tool Name: Self-Efficacy
Questionnaire for Children (SEQC)
Author(s) or organizations that developed this tool: Peter Muris
Year Published: 2001
Description: The Self-Efficacy Questionnaire for Children (SEQC) taps three main areas of self-efficacy: social self-efficacy that pertains to children's capability to deal with social challenges; academic self-efficacy that refers to children's perceived capability to master academic affairs; and self-regulatory efficacy that has to do with children's capability to resist peer pressure to engage in high risk activities. In addition, SEQC scores correlated in a theoretically meaningful way with a measure of depression – that is, lower SEQC scores indicate a higher level of depression.

Cost, if any: N/A
This tool is available through:
Assessing Outcomes in Child and Youth Programs: A Practical Handbook, Revised Edition. 2005. Sabitelli, R., et al. (pages 5356)

For more information go to:
Instructions for contact or permission are:
No permission is required for the use of this scale.

To contact Peter Muris:
Email:muris@fsw.eur.nl
Postal Address: Peter Muris; Erasmus University
Rotterdam Institute of Psychology; Woudestein, T1337;
P.O. Box 1738; 3000 DR Rotterdam

Outcomes / Age Groups / Sample Questions
Age Group: Recommended for Youth Ages 14 - 18 (Grades 8-12)
Respondent: Youth
Number of items in this tool: 24 (8 for each subscale)
This tool contains the following scales or subscales: Social Self-Efficacy, Academic Self-Efficacy, and Emotional Self-Efficacy

This tool measures: Youth Personal Adjustment
Program that this tool applies to: Jefferson County
Type of measure: Questionnaire
Measure availability/sample questions:
Assessing Outcomes in Child and Youth Programs: A Practical Handbook, Revised Edition.

2005. Sabitelli, R., et al. (Social Self-Efficacy Scale is on pages 53-54,
Academic Self-Efficacy Scale is on pages 55-56)

Muris, P. (2001) A Brief Questionnaire for Measuring Self-Efficacy
in Youths. Journal of Psychopathology and Behavioral Assessment, (23),145-149
(questions for Emotional Self-Efficacy Scale is on page 147)

Testing and Other Features
Field Tested?: Yes
Reliability and/or validity tested?: Yes, Cronbach's Alpha was .88 for the total self-efficacy scale and between .85 and .88 for the subscale scores.

Comparative data?: Yes
Linked with an approach or curriculum:
Special Notes or Considerations: In addition to measuring a youth's self-efficacy, the SEQC can also be taken as a vulnerability factor that has predictive value for the development of depression and as a result, can also be used as a treatment evaluation measure.

Research related to this tool includes:
Muris, P. (2001) A Brief Questionnaire for Measuring Self-Efficacy in Youths. Journal of Psychopathology and Behavioral Assessment, (23), 145-149
Assessing Outcomes in Child and Youth Programs: A Practical Handbook, Revised Edition. 2005. Sabitelli, R., et al.

Appendix P

Survey Questions Focused on the Impact of Technology on Offender Mindset in the Correctional Education Classroom

Question Number	Question (Before / After using Technology)
13.1	Your intelligence is something you can't change very much.
13.2	It is very important to me that I don't look foolish in class.
13.3	I like an assignment best when I can do it perfectly without any mistakes.
13.4	To tell the truth, when I work hard at an assignment, it makes me feel like I am not very smart.
14.1	You have a certain amount of intelligence, and you can't really do much to change it.
14.2	An important reason why I do my assignments is so that I won't embarrass myself.
14.3	An important reason I do my work for my classes is so others won't think I'm dumb.
15.1	You can learn new things, but you can't really change your basic intelligence.
16.1	I like school work best when I can do it really well without too much trouble.
16.2	The main thing I want when I do my school work is to show how good I am at it.
17.1	No matter who you are, you can change your intelligence a lot.
17.2	An important reason why I do my assignments is because I like to learn new things.
17.3	When something is hard, it just makes me want to work more on it, not less.
17.6	I like math best when it makes me think hard.

Appendix Q

Explanation of Findings for Theory of Intelligence subsection

Question Number	Explanation of Findings
13.1	There was not a significant difference in the scores before using technology (M=3.17, SD=.975) and after using technology (M=3.21, SD=1.140) conditions; t(99)=-.373, p = .710, d= -0.04 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 20.50) was not rated more favorably than BEFORE using technology (mean rank = 17.01), Z = -.414, p = 0.679.
14.1	There was a significant difference in the scores before using technology (M=3.09, SD=.866) and after using technology (M=3.31, SD=.982) conditions; t(99)=2.492, p = .014, d= -0.25 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 26.80) was rated more favorably than BEFORE using technology (mean rank = 20.55), Z = -2.655, p = 0.008.
15.1	There was a significant difference in the scores before using technology (M=2.98, SD=.887) and after using technology (M=3.18, SD=.978) conditions; t(99)=2.378, p = .019, d= -0.24 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 29.50) was rated more favorably than BEFORE using technology (mean rank = 17.24), Z = -2.551, p = 0.011.
17.1	There was a significant difference in the scores before using technology (M=1.81, SD=.849) and after using technology (M=1.37, SD=.761) conditions; t(99)=5.363, p = .000, d= 0.54 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 19.17) was rated more favorably than BEFORE using technology (mean rank = 25.50), Z = -4.853, p = 0.000.

Appendix R

Explanation of Learning Goals Subsection

Question Number	Explanation of Findings
17.2	There was a significant difference in the scores before using technology (M=1.69, SD=.761) and after using technology (M=1.29, SD=.640) conditions; t(99)=5.519, p = .000, d = 0.55 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 18.00) was rated more favorably than BEFORE using technology (mean rank = 36.00), Z = -4.928, p = 0.000.
17.6	There was a significant difference in the scores before using technology (M=2.48, SD=1.010) and after using technology (M=1.89, SD=.898) conditions; t(99)=6.909, p = .000, d= 0.69 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 23.35) was rated more favorably than BEFORE using technology (mean rank = 15.50), Z = -5.717, p = 0.000.

Appendix S

Explanation of Effort Beliefs Subsection

Question Number	Explanation of Findings
13.4	There was a significant difference in the scores before using technology (M=2.96, SD=1.034) and after using technology (M=3.20, SD=.964) conditions; t(99)=-2.385, p = .019, d= -0.24 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 19.45) was rated more favorably than BEFORE using technology (mean rank = 18.83), Z = -2.488, p = 0.013.
17.3	There was a significant difference in the scores before using technology (M=2.08, SD=.837) and after using technology (M=1.65, SD=.796) conditions; t(99)=5.411, p = .000, d= 0.54 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 19.00) was rated more favorably than BEFORE using technology (mean rank = 13.00), Z = -4.829, p = 0.000.

Appendix T

Explanation of Performance-Approach Goals Subsection

Question Number	Explanation of Findings
13.3	There was a significant difference in the scores before using technology (M=2.19, SD=.895) and after using technology (M=1.96, SD=.909) conditions; t(99)=2.532, p = .013, d= 0.25 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 16.90) was rated more favorably than BEFORE using technology (mean rank = 15.31), Z = -2.811, p = 0.005.
16.1	There was not a significant difference in the scores before using technology (M=2.17, SD=.805) and after using technology (M=2.12, SD=.935) conditions; t(99)=.600, p = .550, d= 0.06 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 18.95) was not rated more favorably than BEFORE using technology (mean rank = 17.94), Z = -.799, p = 0.436.
16.2	There was not a significant difference in the scores before using technology (M=2.28, SD=.944) and after using technology (M=2.16, SD=1.032) conditions; t(99)=1.269, p = .208, 0.13 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 15.80) was not rated more favorably than BEFORE using technology (mean rank = 16.36), Z = -1.405, p = 0.160.

Appendix U

Explanation of Performance-Avoid Goals Subsection

Question Number	Explanation of Findings
13.2	There was not a significant difference in the scores before using technology (M=2.10, SD=.870) and after using technology (M=2.02, SD=.974) conditions; t(99)=.842, p = .402, d= 0.08 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 18.95) was not rated more favorably than BEFORE using technology (mean rank = 17.87), Z = -1.078, p = 0.281.
14.2	There was not a significant difference in the scores before using technology (M=2.97, SD=.834) and after using technology (M=2.93, SD=1.066) conditions; t(99)=.435, p = .665, d= 0.04 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 16.93) was not rated more favorably than BEFORE using technology (mean rank = 15.13), Z = -.125, p = 0.901.
14.3	There was not a significant difference in the scores before using technology (M=3.06, SD=.814) and after using technology (M=3.09, SD=.944) conditions; t(99)=-.365, p = .716, d= -0.04 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 13.65) was not rated more favorably than BEFORE using technology (mean rank = 11.68), Z = -.403, p = 0.687.

Appendix V

Survey Questions Focused on the Impact of Technology on Offender Resilience in the Correctional Education Classroom

Question Number	Question (Before / After using Technology)
18.1	When you read this story, pretend that it really happened and think about how you would feel and what you would do. You start a new class at the beginning of the year and you really like the subject and the teacher. You think you know the subject pretty well, so you study a medium amount for the first quiz. When you take the quiz, you think you did okay, even though there were some questions you didn't know the answer for. Then the class gets their quizzes back and you find out your score: You only got a 54, and that's an F.
19	What would you think was the main reason why you failed the quiz?
19.1	I wasn't smart enough
19.2	The quiz was unfair or too hard for the class
19.3	I'm just not good at the subject
19.4	I didn't really like the subject that much
20.1	I would spend less time on that subject from now on
20.2	I would try not to take more of these classes
20.3	I would try to cheat on the next test

Appendix X

Explanation of Findings for Resiliency: Helpless vs Mastery-Oriented Responses to Failure

Question Number	Explanation of Findings
19.1	There was not a significant difference in the scores before using technology (M=2.76, SD=.1.006) and after using technology (M=2.89, SD=1.081) conditions; t(99)=-1.354, p = .179, d= -0.14 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 20.86) was not rated more favorably than BEFORE using technology (mean rank = 19.52), Z = -1.422, p = 0.155.
19.2	There was not a significant difference in the scores before using technology (M=2.90, SD=.969) and after using technology (M=2.99, SD=1.030) conditions; t(99)=-.976, p = .331, d= -0.10 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 19.73) was not rated more favorably than BEFORE using technology (mean rank = 16.98), Z = -1.004, p = 0.316.
19.3	There was a significant difference in the scores before using technology (M=2.45, SD=.978) and after using technology (M=2.67, SD=1.083) conditions; t(99)=-2.525, p = .013, d= -0.25 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 22.50) was rated more favorably than BEFORE using technology (mean rank = 15.12), Z = -2.5503, p = 0.012.
19.4	There was not a significant difference in the scores before using technology (M=2.53, SD=1.058) and after using technology (M=2.59, SD=1.120) conditions; t(99)=-.631, p = .530, d= -0.06 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 18.41) was not rated more favorably than BEFORE using technology (mean rank = 13.82), Z = -.641, p = 0.522.
20.1	There was not a significant difference in the scores before using technology (M=2.92, SD=.961) and after using technology (M=3.01, SD=1.115) conditions; t(99)=-.933, p = .353, d= -0.09 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 25.68) was not rated more favorably than BEFORE using technology (mean rank = 16.17), Z = -1.083, p = 0.279.
20.2	There was a significant difference in the scores before using technology (M=2.85, SD=.857) and after using technology (M=3.16, SD=.950) conditions; t(99)=-3.338, p = .001, d= -0.33 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 32.50) was rated more favorably than BEFORE using technology (mean

	rank = 19.03), Z = -3.182, p = 0.001.
20.3	There was a significant difference in the scores before using technology (M=3.25, SD=1.140) and after using technology (M=3.44, SD=1.157) conditions; t(99)=-2.269, p = .025, d= -0.23 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER using technology (mean rank = 16.63) was rated more favorably than BEFORE using technology (mean rank = 11.03), Z = -2.228, p = 0.026.

Appendix Y

Survey Questions Focused on the Impact of Technology on Offender Self-Efficacy in the Correctional Education Classroom

Question Number	Question (Before / After Correctional Education
22.2	How well can you express your opinions when other classmates disagree with you?
22.3	How well do you succeed in cheering yourself up when an unpleasant event has happened?
22.6	How well can you become friends with other people?
22.8	How well can you have a chat with an unfamiliar person?
22.9	How well can you prevent yourself from becoming nervous?
22.10	How well do you succeed in finishing all your school related work every day?
22.12	How well can you control your feelings?
22.13	How well can you pay attention during every class?
22.16	How well do you succeed in understanding all subjects in school?
22.17	How well can you tell a funny event or story to a group?
22.18	How well can you tell a friend that you don't feel well?
22.19	How well do you succeed in satisfying your family with your academic accomplishments?
22.20	How well do you succeed in staying friends with others?
22.21	How well do you succeed in suppressing unpleasant thoughts?
22.22	How well do you succeed in passing a test?
22.23	How well do you succeed in preventing quarrels with others?

Appendix Z

Explanation of Survey Questions Focused on the Impact of Technology on Offender Self-Efficacy in the Correctional Education Classroom

Question Number	Explanation of Findings
22.2	There was a significant difference in the scores before participating correctional education (M=3.14, SD=1.083) and after participating in correctional education (M=2.64, SD=1.133) conditions; t(99)=4.415, p = .000, d= 0.44 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating in correctional education (mean rank = 26.88) was rated more favorably than BEFORE participating in correctional education (mean rank = 33.72), Z = -4.046, p = 0.000.
22.3	There was a significant difference in the scores before participating correctional education (M=3.03, SD=1.105) and after participating in correctional education (M=2.51, SD=1.059) conditions; t(99)=4.826, p = .000, d= 0.48 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating in correctional education (mean rank = 23.10) was rated more favorably than BEFORE participating in correctional education (mean rank = 22.33), Z = -4.472, p = 0.000.
22.6	There was not a significant difference in the scores before participating correctional education (M=2.44, SD=.988) and after participating correctional education (M=2.31, SD=1.089) conditions; t(99)=1.311, p = .193, d= 0.13 (small effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 18.48) was not rated more favorably than BEFORE participating correctional education (mean rank = 21.71), Z = -1.688, p = 0.091.
22.8	There was a significant difference in the scores before participating correctional education (M=2.89, SD=1.043) and after participating correctional education (M=2.35, SD=1.175) conditions; t(99)=5.103, p = .000, d= 0.51 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 23.26) was rated more favorably than BEFORE participating correctional education (mean rank = 43.17), Z = -4.887, p = 0.000.
22.9	There was a significant difference in the scores before participating correctional education (M=3.26, SD=1.011) and after participating correctional education (M=2.75, SD=.999) conditions; t(99)=5.320, p = .000, d= 0.53 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 23.86) was rated more favorably than BEFORE

	participating correctional education (mean rank = 37.88), Z = -4.775, p = 0.000.
22.10	There was a significant difference in the scores before participating correctional education (M=2.79, SD=1.122) and after participating correctional education (M=2.02, SD=1.119) conditions; t(99)=7.002, p = .000, d= 0.7 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 27.12) was rated more favorably than BEFORE participating correctional education (mean rank = 34.00), Z = -5.638, p = 0.000.
22.12	There was a significant difference in the scores before participating correctional education (M=2.79, SD=1.018) and after participating correctional education (M=2.30, SD=1.142) conditions; t(99)=4.851, p = .000, d= 0.49 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 25.02) was rated more favorably than BEFORE participating correctional education (mean rank = 28,43), Z = -4.412, p = 0.000.
22.13	There was a significant difference in the scores before participating correctional education (M=2.90, SD=1.068) and after participating correctional education (M=2.18, SD=1.114) conditions; t(99)=6.429, p = .000, d= 0.64 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 27.10) was rated more favorably than BEFORE participating correctional education (mean rank = 32.50), Z = -5.399, p = 0.000.
22.16	There was a significant difference in the scores before participating correctional education (M=3.01, SD=1.096) and after participating correctional education (M=2.47, SD=1.210) conditions; t(99)=4.734, p = .000, d= 0.47 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 24.96) was rated more favorably than BEFORE participating correctional education (mean rank = 35.60), Z = -4.724, p = 0.000.
22.17	There was a significant difference in the scores before participating correctional education (M=2.99, SD=1.227) and after participating correctional education (M=2.59, SD=1.280) conditions; t(99)=3.464, p = .001, d= 0.35 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 20.99) was rated more favorably than BEFORE participating correctional education (mean rank = 27.21), Z = -3.547, p = 0.000.
22.18	There was a significant difference in the scores before participating correctional education (M=2.52, SD=1.291) and after participating correctional education (M=2.27, SD=1.347) conditions; t(99)=2.343, p = .021, d= 0.23 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 15.67) was rated more favorably than BEFORE

	participating correctional education (mean rank = 23.00), Z = -2.657, p = 0.008.
22.19	There was a significant difference in the scores before participating correctional education (M=3.14, SD=1.247) and after participating correctional education (M=2.46, SD=1.314) conditions; t(99)=5.765, p = .000, d= 0.58 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 24.01) was rated more favorably than BEFORE participating correctional education (mean rank = 40.17), Z = -5.001, p = 0.000.
22.20	There was a significant difference in the scores before participating correctional education (M=2.67, SD=1.164) and after participating correctional education (M=2.44, SD=1.200) conditions; t(99)=2.092, p = .039, d= 0.21 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 14.04) was rated more favorably than BEFORE participating correctional education (mean rank = 21.33), Z = -2.195, p = 0.028.
22.21	There was a significant difference in the scores before participating correctional education (M=3.11, SD=1.205) and after participating correctional education (M=2.53, SD=1.201) conditions; t(99)=5.054, p = .000, d= 0.51 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 28.55) was rated more favorably than BEFORE participating correctional education (mean rank = 31.75), Z = -4.715, p = 0.000.
22.22	There was a significant difference in the scores before participating correctional education (M=3.00, SD=1.092) and after participating correctional education (M=2.46, SD=1.259) conditions; t(99)=5.247, p = .000, d= 0.52 (large effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 28.93) was rated more favorably than BEFORE participating correctional education (mean rank = 33.06), Z = -4.792, p = 0.000.
22.23	There was a significant difference in the scores before participating correctional education (M=2.94, SD=1.118) and after participating correctional education (M=2.43, SD=1.208) conditions; t(99)=4.274, p = .000, d= 0.43 (medium effect size) A Wilcoxon Signed-Ranks test indicated that AFTER participating correctional education (mean rank = 26.13) was rated more favorably than BEFORE participating correctional education (mean rank = 23.00), Z = -4.037, p = 0.000.

Appendix AA

Coding and Themes for Recorded Phenomenological Interviews

Tier One Initial Coding	Tier Two Coding	Tier Three Coding
Academic Support	I. Technology	I. Technology, Academics, and Growth Mindset
Academic Services	a. Help	a. Help that improves growth and enjoyment
Access	b. Pacing	b. Services that increase effort
Bored	c. Time	c. Time and improvement that creates a drive to learn
Career Readiness		
Cognitive Growth	II. Mindset	II. Technology, Academics, and Resilience
Employment Skills	a. Effort	a. Services that support recovery of learned information
Faculty	b. Enjoyment	b. Growth to come back from failure academically
Failure in Education	c. Driven to learn	c. Rise through help, time, and support
Failure Before		
Family	III. Resilience	III. Technology, Academics, and Self-Efficacy
Goals	a. Recovery	a. Success gained from Help and Support
Improvement	b. Come Back	b. Motivation gained from Growth
Needed Improvement	c. Rise	c. Increase in capability through Services and Technology
Reentry Skills		
Relationships	IV. Self-Efficacy	IV. Technology, Academics, and Success
Social Help	a. Succeed	a. Career Readiness through Technology and Success in Academics
Student Empowerment	b. Motivation	b. Family support and inclusion from Success in Academics
Student Growth	c. Capabilities	c. Increase in Social Skills through Goal attainment and Success
Student Leadership		d. Enhanced leadership through Technology, Support, and overall Growth
Success	V. GED	
Technology	a. Completion	
Time	b. Success	
	VI. Academics	

	a. Support	
	b. Services	
	c. Growth	
	VII. Students	
	a. Empowerment	
	b. Growth	
	c. Leadership	
	VIII. Employment	
	a. Career Readiness	
	b. Skills	
	c. Growth	
	IX. Family	
	a. Relationships	
	b. Social Skills	
	c. Goals	

Appendix BB

Dissertation Mindset, Resilience, and Self-Efficacy Survey

Q1 Hello. Thank you for taking the time to take this survey. I would like to hear from you about how technology use in your education classroom did or did not change your view of education and what a person can learn. You may choose not to answer these questions, but I hope you will so I can make the best suggestions to teachers and others in facilities, both in [redacted] and around the world. This survey will ask you a few questions about "intelligence". Intelligence is a person's ability to learn or understand things, such as dealing with a new or hard situation. Please answer the questions thinking about how the use of technology has changed your viewpoint. I ask for your offender number so that we can compile information. Once done, I will destroy the survey. Your name will not be in any reports and I will keep your information confidential. Thank you for your time!

Q2 If you don't want to take the survey. Choose, "I do not agree to participate in this survey." This will not hurt your progress in your correctional education classes and there will be no other consequences. You may choose to stop participating in the survey at any time.

Q3 Offender Number ([redacted] Number) _____ (Please print)

Q4 Please select your agreement

- ❍ I agree to voluntarily participate in this survey
- ❍ I do not agree to participate in this survey

If I do not agree to participate... Is Selected, Then Skip To End of Survey

Q5 What is the highest grade you have attained?

- ❍ 6th Grade
- ❍ 7th Grade
- ❍ 8th Grade
- ❍ 9th Grade
- ❍ 10th Grade
- ❍ 11th Grade
- ❍ 12th Grade

Q6 Have you completed a GED or attained a high school diploma?

- ❍ Yes
- ❍ No

Q7 I am a:
- ❍ Male
- ❍ Female
- ❍ I do not wish to self-identify

Q8 Please specify your ethnicity.
- ❍ White
- ❍ Hispanic or Latino
- ❍ Black or African American
- ❍ Native American or American Indian
- ❍ Asian / Pacific Islander
- ❍ Other
- ❍ I do not wish to self-identify

Q9 My mother has completed a high school diploma.
- ❍ Yes
- ❍ No
- ❍ Not sure

Q10 My father has finished a high school diploma.
- ❍ Yes
- ❍ No
- ❍ Not sure

Q11 My mother has finished a college degree.
- ❍ Yes
- ❍ No
- ❍ Not Sure

Q12 My father has finished a college degree
- ❍ Yes
- ❍ No
- ❍ Not Sure

Q13 For each of the following statements, please indicate how using technology has CHANGED your thoughts. Answer on the scale from Strongly Agree to Strongly Disagree.

	BEFORE Using Technology				AFTER Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
Your intelligence is something you can't change very much.	❍	❍	❍	❍	❍	❍	❍	❍
It is very important to me that I don't look foolish in class.	❍	❍	❍	❍	❍	❍	❍	❍
I like an assignment best when I can do it perfectly without any mistakes.	❍	❍	❍	❍	❍	❍	❍	❍
To tell the truth, when I work hard at an assignment, it makes me feel like I am not very smart.	❍	❍	❍	❍	❍	❍	❍	❍

If a subject is hard for me, it means I probably won't be able to do really well at it.	❍	❍	❍	❍	❍	❍	❍	❍

Q14 For each of the following statements, please indicate how using technology has CHANGED your thoughts. Answer on the scale from Strongly Agree to Strongly Disagree.

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
You have a certain amount of intelligence, and you can't really do much to change it.	❍	❍	❍	❍	❍	❍	❍	❍
An important reason why I do my assignments is so that I won't embarrass myself.	❍	❍	❍	❍	❍	❍	❍	❍
An important reason I do my work for my classes is so others won't think I'm dumb.	❍	❍	❍	❍	❍	❍	❍	❍
It doesn't matter how hard you work -- If you're not smart, you won't do well.	❍	❍	❍	❍	❍	❍	❍	❍

If you're not doing well on something, it is better to try something easier.	❍	❍	❍	❍	❍	❍	❍	❍

Q15 For each of the following statements, please indicate how using technology has CHANGED your thoughts. Answer on the scale from Strongly Agree to Strongly Disagree.

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
You can learn new things, but you can't really change your basic intelligence.	❍	❍	❍	❍	❍	❍	❍	❍
If you are not good at a subject, working hard won't make you good at it.	❍	❍	❍	❍	❍	❍	❍	❍

Q16 For each of the following statements, please indicate how using technology has CHANGED your thoughts. Answer on the scale from Strongly Agree to Strongly Disagree.

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
I like school work best when I can do it really well without too much trouble.	❍	❍	❍	❍	❍	❍	❍	❍
The main thing I want when I do my school work is to show how good I am at it.	❍	❍	❍	❍	❍	❍	❍	❍

Q17 For each of the following statements, please indicate how using technology has CHANGED your thoughts. Answer on the scale from Strongly Agree to Strongly Disagree.

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
No matter who you are, you can change your intelligence a lot.	❍	❍	❍	❍	❍	❍	❍	❍
An important reason why I do my assignments is because I like to learn new things.	❍	❍	❍	❍	❍	❍	❍	❍
When something is hard, it just makes me want to work more on it, not less.	❍	❍	❍	❍	❍	❍	❍	❍
If an assignment is hard, it means I'll probably learn a lot by doing it.	❍	❍	❍	❍	❍	❍	❍	❍
You can always greatly change how intelligent you are.	❍	❍	❍	❍	❍	❍	❍	❍

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
I like math best when it makes me think hard.	❍	❍	❍	❍	❍	❍	❍	❍
If you do not work hard and put in a lot of effort, you probably won't do well.	❍	❍	❍	❍	❍	❍	❍	❍
No matter how much intelligence you have, you can always change it a good amount.	❍	❍	❍	❍	❍	❍	❍	❍
I like subjects best when I am learning, even if I make lots of mistakes.	❍	❍	❍	❍	❍	❍	❍	❍
The harder you work at something, the better you are at it.	❍	❍	❍	❍	❍	❍	❍	❍

Q18 When you read this story, pretend that it really happened and think about how you would feel and what you would do. You start a new class at the beginning of the year and you really like the subject and the teacher. You think you know the subject pretty well, so you study a medium amount for the first quiz. When you take the quiz, you think you did okay, even though there were some questions you didn't know the answer for. Then the class gets their quizzes back and you find out your score: you only got a 54, and that's an F.

Q19 What would you think was the main reason why you failed the quiz?

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
I wasn't smart enough.	❍	❍	❍	❍	❍	❍	❍	❍
The quiz was unfair or too hard for the class.	❍	❍	❍	❍	❍	❍	❍	❍
I'm just not good at this subject.	❍	❍	❍	❍	❍	❍	❍	❍
I didn't really like the subject that much.	❍	❍	❍	❍	❍	❍	❍	❍

Q20 What do you think you would do next?

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
I would spend less time on that subject from now on.	❍	❍	❍	❍	❍	❍	❍	❍
I would try not to take more of these classes.	❍	❍	❍	❍	❍	❍	❍	❍
I would try to cheat on the next test.	❍	❍	❍	❍	❍	❍	❍	❍

Q21 What do you think you would do in the future?

	BEFORE Using Technology				AFTER Using Technology			
	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
I would spend more time studying for tests.	❍	❍	❍	❍	❍	❍	❍	❍
I would work hard in this class from now on.	❍	❍	❍	❍	❍	❍	❍	❍

Q22 For each of the following statements, please indicate how participating in correctional education has CHANGED your thoughts. Answer on the scale from Never to Every Time.

	BEFORE Correctional Education					AFTER Correctional Education				
	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)
How well can you get teachers to help you when you get stuck on schoolwork?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you express your opinions when other classmates disagree with you?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in cheering yourself up when an unpleasant event has happened?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you study when there are other interesting things to do?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in becoming calm again when you are very upset?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	BEFORE Correctional Education					AFTER Correctional Education				
	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)
How well can you become friends with other people?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you study for a chapter for a test?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you have a chat with an unfamiliar person?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you prevent yourself from becoming nervous?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in finishing all your school related work every day?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you work in harmony with your fellow classmates?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	BEFORE Correctional Education					AFTER Correctional Education				
	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)
How well can you control your feelings?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you pay attention during every class?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you tell other students that they are doing something that you don't like?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you give yourself a pep-talk when you feel low?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in understanding all subjects in school?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well can you tell a funny event or story to a group?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	BEFORE Correctional Education					AFTER Correctional Education				
	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)
How well can you tell a friend that you don't feel well?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in satisfying your family with your academic accomplishments?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in staying friends with others?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in suppressing unpleasant thoughts?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in passing a test?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
How well do you succeed in preventing quarrels with others?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

	BEFORE Correctional Education					AFTER Correctional Education				
	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)	Never (1)	Almost Never (2)	Occasionally / Sometimes (3)	Almost Every Time (4)	Every Time (5)
How well do you succeed in not worrying about things that might happen?	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q23 In the space below please add any additional comments you may have about your experience within correctional education. How has it helped you? What do you feel about your future now that you have had experience here within correctional education? How has your experience with technology and correctional education better equipped you for when you leave the correctional facility? **(Please write as neatly as you can. Thank you)**

Appendix CC

Cronbach's alpha

Question	Alpha
13.1.1	0.657
13.1.2	0.64
13.1.3	0.661
13.1.4	0.661
13.1.5	0.579
14.1.1	0.705
14.1.2	0.699
14.1.3	0.722
14.1.4	0.595
14.1.5	0.516
15.1.1	0.746
15.1.2	0.551
16.1.1	0.704
16.1.2	0.703
17.1.1	0.651
17.1.2	0.639
17.1.3	0.69
17.1.4	0.629
17.1.5	0.61
17.1.6	0.75
17.1.7	0.604
17.1.8	0.615
17.1.9	0.422
17.1.10	0.252
19.1.1	0.732
19.1.2	0.73
19.1.3	0.783
19.1.4	0.764

20.1.1	0.726
20.1.2	0.643
20.1.3	0.847
21.1.1	0.38
21.1.2	0.594
22.1.1	0.634
22.1.2	0.646
22.1.3	0.67
22.1.4	0.462
22.1.5	0.578
22.1.6	0.706
22.1.7	0.631
22.1.8	0.707
22.1.9	0.706
22.1.10	0.683
22.1.11	0.628
22.1.12	0.721
22.1.13	0.643
22.1.14	0.619
22.1.15	0.583
22.1.16	0.677
22.1.17	0.731
22.1.18	0.804
22.1.19	0.731
22.1.20	0.724
22.1.21	0.706
22.1.22	0.764
22.1.23	0.643
22.1.24	0.615

Appendix DD

Cohen's *d* Effect Size

Question	Pretest Mean	Posttest Mean	Std Deviation Difference	Cohen's d	Effect Size	**Key**
13.1.1	3.17	3.21	1.072	-0.03731343284	Small	**Small = 0 - .2**
13.1.2	2.1	2.02	0.95	0.08421052632	Small	**Medium = .2 - .5**
13.1.3	2.19	1.96	0.908	0.2533039648	Medium	**Large = .5 +**
13.1.4	2.96	3.2	1.006	-0.2385685885	Medium	
14.1.1	3.09	3.31	0.883	-0.2491506229	Medium	
14.1.2	2.97	2.93	0.92	0.04347826087	Small	
14.1.3	3.06	3.09	0.822	-0.03649635036	Small	
15.1.1	2.98	3.18	0.841	-0.2378121284	Medium	
16.1.1	2.17	2.12	0.833	0.0600240096	Small	
16.1.2	2.28	2.16	0.946	0.1268498943	Small	
17.1.1	1.81	1.37	0.82	0.5365853659	Large	
17.1.2	1.69	1.29	0.725	0.5517241379	Large	
17.1.3	2.08	1.65	0.795	0.5408805031	Large	
17.1.6	2.48	1.89	0.854	0.6908665105	Large	
19.1.1	2.76	2.89	0.96	-0.1354166667	Small	
19.1.2	2.9	2.99	0.922	-0.09761388286	Small	
19.1.3	2.45	2.67	0.871	-0.2525832377	Medium	

19.1.4	2.53	2.59	0.952	-0.06302521008	Small	
20.1.1	2.92	3.01	0.965	-0.0932642487	Small	
20.1.2	2.85	3.16	0.929	-0.3336921421	Medium	
20.1.3	3.25	3.44	0.837	-0.2270011947	Medium	
21.1.1						
21.1.2						
22.1.1						
22.1.2	3.14	2.64	1.133	0.4413062665	Medium	
22.1.3	3.03	2.51	1.078	0.4823747681	Medium	
22.1.4						
22.1.5						
22.1.6	2.44	2.31	0.991	0.1311806256	Small	
22.1.7						
22.1.8	2.89	2.35	1.058	0.5103969754	Large	
22.1.9	3.26	2.75	0.959	0.5318039625	Large	
22.1.10	2.79	2.02	1.1	0.7	Large	
22.1.11						
22.1.12	2.79	2.3	1.01	0.4851485149	Medium	
22.1.13	2.9	2.18	1.12	0.6428571429	Large	
22.1.14						
22.1.15						
22.1.16	3.01	2.47	1.141	0.4732690622	Medium	
22.1.17	2.99	2.59	1.155	0.3463203463	Medium	
22.1.18	2.52	2.27	1.067	0.2343017807	Medium	
22.1.19	3.14	2.46	1.18	0.5762711864	Large	
22.1.20	2.67	2.44	1.1	0.2090909091	Medium	
22.1.21	3.11	2.53	1.148	0.5052264808	Large	
22.1.22	3	2.46	1.029	0.5247813411	Large	
22.1.23	2.94	2.43	1.193	0.4274937133	Medium	
22.1.24						