2015

The Role of Online College Courses in Rehabilitating Offenders

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Walden University
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Abstract

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BA, Saint Louis University, 1994

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Research and testimonial evidence indicate the importance of postsecondary education in the rehabilitating inmates and in decreasing reoffending. However, limited research exists on improving critical thinking skills and cognitive processing among inmates. The purpose of this quantitative study was to (a) examine the influence of a psychology course on the critical thinking scores for individuals who took an online psychology course and to (b) analyze how the scores of inmates and other students in the course differed. Using a social cognitive theoretical framework, pretest and posttest scores were compared using a paired *t* test of statistical analysis of secondary, archival data (*n* = *25*).Secondary data analysis using ANOVA was used to examine the effect of the course on inmates' test scores after course completion. Results indicated that critical thinking skills improved for all students; there was no significant difference based on incarceration status. The outcomes of this study, as well as future data on graduation and recidivism rates, need to be integrated into policy and programs developed for correctional facilities, collegiate classrooms, and for other professionals. It is recommended that correctional facilities, colleges, legislators, and other organizations with direct impact on inmates should collect and analyze these specific variables in a longitudinal study. The results can be used to improve the delivery of online courses offered to inmates, thereby improving opportunities for inmates, easing reentry into society at large, and resulting in positive social change.

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Dedication

I dedicate this paper to my husband, Jonathan, and my three sons, Jonathan II, Joshua, and Jadon. They were the wind beneath my wings that kept me going. They provided strength and motivation to finish this journey, with the focus of providing the best possible future for our family.

To my grandparents (Robert & Virginia and Horace & Ethel), tears of joy flood my eyes when I think of you. Words cannot express my gratitude. You are my favorite and only grandparents; I appreciate every piece of advice, encouragement, prayers, and financial support.

I also would like to make a special dedication to my mother, Marsha, who encouraged me from the day I was born to go as far as I can in my educational pursuit. At 15, she became my mother, the one who nurtured, cared for, and educated me like no one else could.Mom, you are simply the best!

Acknowledgments

There are so many people that I would like to acknowledge and express my sincere gratitude to for their support, encouragement, guidance, and patience, as I have endured on this journey. I would like to thank my parents (Marsha, Dennis, and Geno Sr.), to all my family, especially my sister Geminia and my brother Geno II, and friends. There are many of you who have supported me along this journey: Aunt Rethel and Uncle Eddie, Bishop Paul and Lady Helen, Kenneth Sr. and Betty, Gerald Sr. and Evelyn, and Pastor Donnie and Lady Bonita. Your prayers of support meant the world to me when I needed them most.

I would like to express a special appreciation for my dissertation chair, Dr. Carla Lane-Johnson. I appreciate your driven leadership style and ability to get things done. I appreciate you accepting the challenge mid-stream as the chair. Dr. Lane I appreciate your tremendous patience, hours of editing, feedback, phone calls, and fireside chats. You are simply the best mentor and chair that I have had the pleasure of working with.

Thank you to my methods expert, Dr. Asoka Jayasena, who continued to ask the hard questions that never, crossed my mind. Your thought provoking yet meaningful explanations and feedback assisted me in formulating better research questions to collect better data. Thank you to my other methods expert, Dr. Edward Graham, who was so willing and amazingly stepped in at the very end to serve as the quantitative expert and provide wonderful insight on how to strengthen my statistical analysis for this project.

Finally, I would like to thank my colleagues, past and present—Tawana, Tunisia, Quaneshala, just to name a few—there are many others. Your support and encouragement have helped make this journey possible.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

With recidivism rates on the rise and incarceration costs rising, the department of corrections is looking for solutions to halt the number of offenders returning to prison. McKinney and Cotronea (2011)and the U.S. Department of Justice (2007)stated that social policies now focus on correctional education to provide rehabilitation and reintegration by offering classes in adult basic education, vocational education, and postsecondary education. These classes assist inmates, because without training and marketable skills, the inmate recidivism will continue (Owens, 2009). Furthermore, researchers have demonstrated that postsecondary education improves critical thinking, problem solving, and cognitive abilities (Baust, Murray, McWilliams, & Schmidt, 2006;Harer, 1995; James, 2001; Klein, Tolbert, Bugarin, Cataldi, & Tauschek, 2004; Marks, 1997; Pai, Kelley, & Bellebaum, 2009; Seybert& Kane-Gill, 2011; Steurer & Smith, 1994; Untapped Potential, 2005). As a result, Hill and Rivera (2001) and Winterfield, Coggeshall, Burke-Storer, Correa, and Tidd (2009) asserted that researchers should encourage policymakers and social justice advocates to revisit and rethink the issue of postsecondary education to incorporate technology in the educating of inmates as they would be unprepared to re-enter the workforce without the relevant technological knowledge in a technologically advanced society.

Background of the Study

Correctional facilities have provided a number of opportunities for inmates to gain postsecondary education. Knowles (1962) and Linton (2011) stated that inmates can receive postsecondary education through informal professional development and training

from formal and traditional college courses. Without these skills, according to Anders and Noblit (2011) and Veneri (1999), inmates are not prepared to compete professionally for jobs to remain out of prison or to support themselves economically. Furthermore, according to Ligorio and Loperfido (2012), formal and informal learning are important to life-long learning in Western society. Although correctional education facilities may have provided a diploma to those who had not completed high school, permitting them to obtain higher education through correspondence courses using the U.S. mail provides a means to support their ability to remain out of prison by finding gainful employment and money to support themselves. McKinney and Cotronea (2011) and Smith, Aker, and Kidd (1970) asserted that a high school diploma alone has become obsolete as society becomes more technologically sophisticated and more education and skills are needed. In response to the need for more advanced learning, community colleges have been effective in equipping inmates with marketable job skills in a short period of time (Meyer, Fredericks, Borden,& Richardson, 2010).

With the new terminology of reform rather than punishment being applied to corrections, innovative policies and programs should include higher education as a component for rehabilitation. Ryan and McCabe (1993) asserted that over 20% of states in the United States have mandatory literacy programs for inmates. These states also provide incentives in pay for completion of correctional education programs. According to Esperian (2001), Glover (2002), and Lahm (2009), who conducted studies of Nevada and Arkansas, the department of corrections mandated education because it has been shown to increase productivity, improve critical thinking, and reduce the number of

conduct violations. As Alewine (2010) and Searcey (2000) maintained, these types of incentives are among efforts to initiate mandatory prisoner education in all states.

Mandatory prisoner education is important because the inmate has to address challenges such as substance abuse, vocational needs, counseling, and other mental, physical, emotional, psychological, and educational needs to be ready to return to society. Bracey (2006), Burke and Vivian (2001), and Owens (2009) asserted that higher education is essential to rehabilitation, and they presented empirical evidence to support incorporating higher education into offender treatment and exit goals. In addition, researchers have argued that the goal of correctional education or any educational outcome is to produce graduates who are critical thinkers and problem solvers (Hatcher, 2011; Ricca, Lulis, & Bade, 2006).However, an important question is what tools, factors, or key elements in any correctional program can enhance offender skills, improve critical thinking, and develop characteristics that lead to more productive lives. Each inmate has diverse needs that the department of corrections must attempt to fulfill to aid them in leading more productive lives and improve critical thinking skills before departure (Eggleston & Gehring, 1986; Krontiris & Watler, 2010). Krontiris and Watler (2010), McKinney and Cotronea (2011), Owens (2009), and Thomas (2003)stated that inmates' success and improved cognition, critical thinking, and communication skills rest on internal factors such as motivation, mental capacity, morals, and other cognitive attributes as well as on external factors and services provided by the department of corrections. The inmate's essential need fora support network and education places the department of corrections in a peculiar situation; inmates must be punished and deterred from

committing more crimes as well as corrected in terms of faulty thinking and behavior through rehabilitation programs. However, corrections can only fulfill this goal by addressing the needs of the inmates. Ryan and Woodard (1987) asserted,

> Correctional education is that part of the total correctional process of changing behaviors of inmates through purposely contrived learning experiences and learning environments. . . . [It] should provide a balanced approach that emphasizes equally the need for personal growth and adequate preparation for life in households, in the marketplace, and in contributing to enrichment of community life. (p. 2)

Given this situation, McKinney and Cotronea (2011) and the U.S. Department of Justice (2007) contended that social policies now focus on correctional education to provide rehabilitation and reintegration by providing classes for adult basic education, vocational education, and postsecondary education. Thus, to improve correctional education outcomes, Batchelder and Rachal (2000) and Bekele (2009) asserted that the course curriculum, whether online or through computer-assisted instruction, can improve critical thinking, problem solving, and communication skills among the inmates. In addition, Boghossian (2006) asserted that teaching critical thinking using the Socratic method is less expensive and more effective than other forms of cognitive treatment that correctional facilities currently offers because faulty reasoning and thinking often leads to criminal behavior, and many inmates have difficulty with problem solving, reasoning, and understanding. For example, Waxler (1997) asserted that criminals often commit criminal acts to fulfill needs on the Maslow hierarchy of needs and because they operate

from a value system that gives priority to emotions and primal instinct, rather than to reason and critical thinking. However, the online course used in this study was intended to provide guided instruction through the six stages of unreflective thinking to advanced and matured thinking.

Problem Statement

Critical thinking skills are an essential element of the postsecondary education experience(Gabr& Mohamed, 2011), and evidence of improved critical thinking skills among inmates is important in order to support additional funding for inmate postsecondary education opportunities. McKinney and Cotronea (2011) and the U.S. Department of Justice (2007) indicated that social policies for offender rehabilitation and reintegration focus on correctional education through adult basic education, vocational education, and postsecondary education. These programs are needed because there is a positive relationship between postsecondary education and decreased rates of inmate recidivism (Boulard, 2010; Unruh, Povenmire-Kirk, & Yamamoto, 2009). However, most available data on improvement in critical thinking skills among inmates are qualitative, and the quantitative data that do exist have not included a control group for comparison.

Nature of the Study

In order to understand the role of online courses in improving critical thinking among inmates, I examined the effect of an online psychology course on critical thinking skills at a Midwestern community college with minimum-security correctional center inmates enrolled in a psychology class. Using a social cognitive theoretical framework, I

compared quantitative pretest and posttest scores of inmates to those of other students using a paired *t* test of statistical analysis of secondary, archival data of those who enrolled in the same online psychology course designed using collaborative online tools for increasing critical thinking skills. Secondary data analysis using ANOVA was also used to examine the effect of the online psychology course on inmates' test scores after the course was completed. I compared the scores of the inmates and students to determine (a) is there a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment? and (b) is there a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment? Data for the study were gathered through a Midwestern community college with four campuses where the counselors taught psychology classes and gathered standardized assessment data from students. The inmates took an online4-week psychology class along with other students. The course content covered the basis of human growth and development and included an analysis of emotional, mental, physical, and social needs of children, adolescents, and adults and how multiple factors influence and shape human behavior and personality.

In addition to the required coursework, the students and the inmates took a pretest and posttest. The participants in this study were referred to as students for those who were not incarcerated and inmates for those who were incarcerated throughout the remainder of this study. A paired *t* test was used to determine whether the course had an

influence on critical thinking skills and to test the hypothesis that an online college course improves critical thinking for inmates. Secondary data analysis using ANOVA was also used to examine the effect of the online psychology course on inmates test scores after the course was completed. The research questions focused on whether an online psychology course affects critical thinking skills as measured by differences between pretest and posttest questions on a critical thinking assessment. Inmates were included as the target population because researchers have indicated that recidivism is reduced by increased education and critical thinking skills. My goal for the research was to contribute to the literature on improving the post incarceration experience of inmates. As such, it was important to include inmates in the study in order to understand whether online secondary education is an effective tool for increasing critical thinking skills and subsequently reducing the risk of recidivism. The scores and changes in scores of the two populations were examined in order to understand whether the online learning environment had the same impact on inmates as on students.

Research Questions and Hypotheses

There were two research questions for the study:

1. Is there a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment?

H_{01} There is no significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as

measured by pretest and posttest scores on a community college critical thinking skills assessment.

H_{A1}: There is a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment.

2. Is there a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment?

H_{02}: There is no significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment.

H_{A2}: There is a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment.

The independent variable for Research Question 1 was participation in an online psychology class, and the dependent variable was improvement in critical thinking skills. The independent variable for Research Question 2 was incarceration status (inmates vs. students), and the dependent variable was improvement in critical thinking skills.

Purpose of the Study

The purpose of this quantitative study was to examine the influence of a psychology course on the critical thinking scores for individuals who took an online

psychology course and how the scores of inmates and other students in the course differed. The goal of the study was to fill the gap in the literature with regard to quantitative data about the levels of improvement in critical thinking skills among inmates who participated in an online psychology course. These interests are expressed in the two research questions for this study.

Theoretical Framework

Using a social cognitive perspective, the study included participants who enrolled in an online postsecondary education course that used collaborative learning technology. The impact of the course on the development of critical thinking skills was measured using a pretest and posttest critical thinking assessment. A social cognitive perspective using the psychology course content was used to demonstrate that the course would lead to improved critical thinking skills over the duration of the 4-week course. Elder and Paul (2013) ascribed to a stage theory in which critical thinking was developed over a process of time through systematic subjection of self-assessment. According to Elder and Paul, this process develops through six stages of critical thinking, which was a part of the design of the online psychology course. The students enrolled in the course began with Stage 1: the unreflective thinker, then progressed through Stage 2: the challenged thinker, Stage 3: the beginning thinker, Stage 4: the practicing thinker, Stage 5: the advanced thinker, and matured to Stage 6: the accomplished thinker.

Using Elder and Paul's (2013) stage theory as a conceptual framework, the online psychology course used pretest and posttest questions to assess how students were unreflective thinkers who lacked the ability to improve their thinking and were unaware

how faulty thinking has caused problems in their lives. The assumption was that unreflective thinkers have not developed the skills to improve thinking and are unaware of the appropriate standards of assessment of thinking such as clarity, accuracy, precision, relevance, and logic. The assumption is that students are not aware that they possess skills to be a reflective thinker due to prejudices and misconceptions.

After the initial and introductory phase in the online psychology course, students were challenged to begin thinking and realizing that they may have some skills, but the skills need to be perfected through self-assessment and rigorous study. This stage in the course allowed the online instructor and course developer to shape the cognitive processes through implicit course design to improve critical thinking skills through systematic course instruction. For example, Lange and Baylor (2007) found that using a journal was an instructional activity that provides students with the ability to be retrospective and more cognitively aware of their thinking processes and encourages multiple perspectives.

Definition of Terms

For the study, the definition of corrections, postsecondary education, and technology are provided, although these terms can carry complex meanings. For example, using the term *corrections* rather than *penitentiary* can be problematic because these are not concepts that have not completely transitioned and faded away even within the department of corrections.

Cognitive skills: Any type of mental activity and higher order processes that include thinking, perceiving, understanding, and remembering. In this study, I measured

the application and transfer of these skills in a value added assessment (pretest and post testing).

Corrections: The form of justice that intends on rectifying or curing faults through discipline, reproof, and restoration (Bureau of Justice Statistics, 2012; Cullen, 1986; U.S. Legal, 2012). In this study, I used *corrections* in terms of restoring and disciplining members of society who become incarcerated because of faulty thinking and behavior.

Courseware: Textbooks and other materials such as software programs or school websites such as science textbooks, Algebra Blaster software, Microsoft Word, journal articles, or any other learning software. For the purpose of this study, courseware incorporated all materials the instructor used to facilitate learning with students, whether an online textbook, online software program, or multimedia software.

Critical thinking: A cognitive process developed over a process of time through systematic subjection of self-assessment by integrating elementary skills through application, synthesis, analysis, and evaluation to complicated and multidimensional issues through clarifying and transferring insights into new contexts and situations. Within these new contexts and situations, transfer of knowledge is refined through generalizations and evaluations of sources of information, which include central forms of communication. For a critical thinker, the transfer of knowledge is informed, disciplined, and guided through reflection and thought (Paul & Nosich, 2013).

Distance learning: Any approach to learning in which (a) the majority of the instruction occurs while the educator and the learner are at a distance from each other; (b) the ability to teach or communicate with large or small groups of people, dispersed across

a wide geographical area, is provided through the use of single or multiple telecommunication services; and (c) instruction is taken to the student through technology rather than the student to the instructor (Wolahan, 2003).

Educational technology: The improvement and facilitation of learning by creating, using, and managing technology processes and resources (Association for Educational Communication and Technology, 2008).In this study, I incorporated educational technology and instructional design resources such as the Blackboard Learning Management System and Blackboard Collaborate to improve the online cognitive psychology course.

Hardware: The operating systems on computers that run the courseware. This includes elements such as MS-Windows, MS-DOS, modems, or other devices that assist computers in facilitating, storing, and retrieving information for individuals. As used in this study, hardware included the learning platforms, MS-Windows, and modems that the institution of higher learning used to engage students in online courses.

Penitentiary: The form of justice that convicts people of serious crimes by punishment and discipline. In this study, *penitentiary* was used as old terminology that the department of corrections used when inmates did not receive services to assist with rehabilitation and returning them to society as reformed individuals but instead focused on deterring offender from more criminal and deviant behavior. It is in contrast to the newer term, corrections.

Postsecondary correctional education: Any type of education beyond high school or its equivalency that has inmates of prisons or jails for students. This includes

vocational, academic, undergraduate, graduate, certificate, and degree programs. For the basis of this study, postsecondary correctional education was provided to inmates who wish to go beyond a high school diploma and take a college course.

Technology: Equipment and tools such as personal computers, compact discs, television, VCR, DVD, Internet, computer program, e-mail, World Wide Web, and software (Serdiukov, 2000). In this study, I incorporated personal computers, tablets, smartphones, compact discs, Internet, e-mail, and software to facilitate learning for inmates with specific interest focused on Internet or Web-based courses.

Assumptions

All studies have assumptions that must be considered and accounted for to make certain that the aim of the research and its findings are understood in its entirety. Studies often include participants with diverse traits to produce multifaceted data analysis (Babaria, Bernheim, & Nunez-Smith, 2011; Dion, Berschied, & Walster, 1972; Hatfield & Sprecher, 1986). Thus, the underlying assumptions of the study were the following: (a) prison overcrowding has placed a burden on correctional facilities to reduce the number of inmates who are incarcerated, (b) gender imbalance will be inevitable with a male-to-female ratio of 10:1 at the facility participating in the study, and (c) the findings of the study will not solve all the problems with correctional postsecondary education.

Limitations

One of the limitations of the study was the definition of cognitive skills and abilities. The definitions have varied throughout the literature; for example, Ashcraft (2005) and Bekele (2009) asserted that cognitive skills and abilities such as reasoning,

perception, memory, verbal and mathematical ability, and problem solving to apply to structured and ill-structured/authentic problems in daily life. Others such as Babaria, Bernheim, and Nunez-Smith (2011) and Shokrpour, Zareii, Zahedi, and Rafatbakhsh (2011) suggested that cognitive skills and ability include critical thinking, problem solving, and higher order thinking skills that have loose definitions as well. Even with these variations in definitions, not all agree on how cognitive skills and abilities should be used and implemented in college admissions, employment, or daily living skills. In this study, critical thinking skills were used to refer to the participants' ability to think and transfer information to structured and ill-structured authentic problems in daily life.

Additionally, working with an incarcerated population carried its own limitations. These limitations included the recruitment of participants who may not be representative of the population because the community college limited enrollment to 15 individuals per online class. The study included two sections of the course for a total of 25 students. Thus, not all individuals who were eligible or interested in participating in the study were able to. As a result, the findings cannot be generalized across populations. The research design was specifically developed to shed light on the type of educational environments needed to support postsecondary education and the development of critical thinking among inmates. By investigating whether inmates' critical thinking skills were improved through online learning environments, the data provided support for correctional facilities to provide more online learning opportunities for the incarcerated.

The research design was intended to provide information about the effects of online learning environments on critical thinking skills. In this study, I found that

participation in an online course does improve critical thinking skills among inmates, although the small sample size did not provide enough statistical power generalize the findings to a broader population of inmates.

Another limitation of this study was due to the conventional definition of online education. Online education has been defined as learning that occurs asynchronously when it is convenient for the student to access e-mail, discussion boards, and learning materials (Burnett, 2003; Watts, 2010; Wicks, 2010).Due to the participants being incarcerated and Internet access not being allowed, participants in the study did not have access during a time that was convenient for them. Instead, the participants only had access to the online course content when they were allowed to go on campus, off-premises at a local library, or out of the correctional facility in order to use their smartphones to access online content.

Scope and Delimitations

In this study, I focused on the role of educational technology and instructional design of an online college course in improving critical thinking among inmates compared to students. Specifically, the research included an examination of(a) whether participation in a psychology course influenced critical thinking skills scores for students and inmates and (b) how performance in a psychology course differed between inmates and students.

The scope of this research was limited to participants selected from a Midwestern community college with inmates enrolled from a minimum security facility in the Midwest. The total sample included a population of 15 students per online course taking

an online psychology course. There were two sections of the course resulting in a total of 25 students and inmates participating in the study. I examined the impact of online learning on critical thinking skills, which are necessary for individuals seeking employment following re-entry into society.

Significance of the Study

Research into how the critical thinking skills among inmates can be developed is significant in order to better meet the educational needs of inmates. According to the McKinney and Cotronea (2011) and the U.S. Department of Justice (2007), social policies focus on correctional education to provide rehabilitation and reintegration by providing classes for adult basic education, vocational education, and postsecondary education. However, despite research to support improved critical thinking, problem solving, and cognitive abilities among inmates who complete postsecondary education programs (Harvey, 2010; James, 2001; Pai et al., 2009; Seybert & Kane-Gill, 2011; Untapped Potential, 2005;Wheeldon, 2010), the literature has not provided detailed information about how inmates' cognition, critical thinking, and communication skills can be improved. In this study, I found an increase in the critical thinking skills of inmates' equivalent to that of the other students. Thus, the argument can be made for increasing inmate access to postsecondary online learning using technology such as Blackboard Collaborate. The need for prison reform is essential to how society approaches social justice and provides equitable educational services. The study has provided direct input into future efforts toward shifting the focus of prison rehabilitation to postsecondary and vocational education.

Summary

In this chapter, I presented the problem addressed by the research study, the purpose of the study, and the research questions. Postsecondary education has improved cognitive abilities in inmates; however, no quantitative research has been conducted that measures the improvement in critical thinking skills using a pretest and posttest design for inmates. Foremost of interest, according to Burke and Vivian (2001) and Wheeldon (2011) is that those inmates who participate in a college course have demonstrated improved critical thinking, cognitive processing, and communication better than those who did not participate in postsecondary education.

In Chapter 2, I examine the concepts related to correctional education, secondary education, and postsecondary education with a focus on offender rehabilitation and improved critical thinking. Postsecondary education improves critical thinking skills of inmates who complete at least one postsecondary education course as well as those who complete a postsecondary education degree. However, a gap exists in the literature that explains and quantifies the amount of improvement in critical thinking skills using the pretest and posttest scores of inmates enrolled in an online psychology course, which this study provided. Chapter 3 contains the methodology and study design for the study. Specifically, Chapter 3 includes a description of the participant sample selection, data collection methods, and data analysis process. Chapter 4 contains the pretest and posttest results, and Chapter 5 includes a discussion of the results in light of the literature reviewed in Chapter 2, implications of the research for social change and for educational

and correctional leaders and policymakers. Chapter 5 also includes recommendations for future research. A summary section covers the purpose of the study and a brief overview.

Chapter 2: Review of the Literature

The purpose of this quantitative study was to examine the influence of a psychology course on the critical thinking scores for individuals who took an online psychology course and how the scores of inmates and other students in the course differed. In this study, I answered two interrelated questions about the role of postsecondary education as a positive influence on improved cognitive, critical thinking, and problem solving skills. The purpose of the literature review was to examine the available research on postsecondary education and its influence on inmates. The literature review was developed to provide more in-depth knowledge on the influences of postsecondary educational programming and its success in improving cognitive, critical thinking, and problem solving skills. Thus, the literature was gathered from meta-analysis data and from refereed journals using the ERIC database system and Boolean searches. The filters used to determine which journal articles would be incorporated into the study were terms such as *college programming for the incarcerated, critical thinking, problem solving,* and *postsecondary*. Searches emphasized positive programming for inmates once they were released from prison. Research was also gathered on the history of postsecondary education in correctional settings.

Federal Pell Grant funding for inmates was eliminated in the mid1990s due to the Violent Crime Bill and shifts in societal beliefs toward enacting stiffer penalties for violent crimes; as a result, studies on postsecondary education for inmates decreased (Arungwa & Osho, 2012; Taylor, 2005a, 2005b). The authors of these three studies focused on how influential postsecondary education was in rehabilitating inmates,

reducing conduct violations, improving critical thinking and problem solving, and preventing crime. In the review of the literature, qualitative evidence was discovered to support a change in criminal behavior, conduct violations, and critical thinking and problem solving skills. However, quantitative data that provide measurable outcomes have been lacking in the research and thus became the focus of the study.

In the literature review, I examine the elements that build a clear research study format and highlight the importance of critical thinking, social cognitive theory, and problem solving in education. The latter are presented to illustrate the importance of lifelong learning and critical thinking, as discussed by Henschke (2011) and Knowles (1962), who focused on adult learning. Correctional educators focus on educating adults who are incarcerated; therefore, assistance with achieving goals and career planning must be developed differently than in other educational settings that students might encounter. This review of related literature contains four sections: (a) correctional education, (b) secondary education, (c) postsecondary education, and (d) online education. Each of these sections has embedded the overarching theme of critical thinking in relation to correctional education and educational technology.

Correctional Education

The 1995 Violent Crime Act brought notoriety to correctional education (Arungwa & Osho, 2012; Taylor, 2005a, 2005b). Taxpayers have paid a high price for increased incarceration rates and sentences and now look for alternatives, particularly to improve inmate cognition, critical thinking, and communication skills (Arungwa & Osho, 2012; Taylor, 2005a, 2005b; Yamatani & Spjeldnes, 2011). Gehring (1997) suggested

programs that are rehabilitative in both cognitive and moral development, such as those found in spiritual, educational, psychological, and psychiatric programs. Therefore, in this study, I focused on providing descriptors of those elements of an online course that impact inmate critical thinking, cognition, communication, and problem solving skills. Anders and Noblit (2011), Harvey (2010), Owens (2009), and Yan and Fischer (2004) asserted that when students have the opportunity to think about information and internalize it, behavior and cognition is changed. According to Kiboss (2002), Krontiris and Watler (2010), Macomberet al. (2010), and Spalding (2001),the inmate learns problem-solving skills or prosocial skills; these skills can be practiced outside of class, reinforced inside the prison, and can be transferred to everyday life after release from prison. Cantrell (2012) also asserted that for inmates' lives to be transformed, they must also learn to internalize the locus of control so that they can be responsible for the past, present, and future. For example, when women at the Bedford Hills Correctional Center were allowed to take college courses, the most notable change was with inmate behavior and cognition (Kaplan, Leonard, & Shanley, 2010; McKinney & Cotronea, 2011; Untapped Potential, 2005). Also those enrolled in the book club at Stillwater Correctional Facility applied the readings and the discussion group information to their own experiences and everyday lives as they explored the books assigned. Geraci (2003) stated that it was through group discussion dialogue that the inmates developed their critical thinking skills through discourse on others' points of view. Furthermore, Steurer and Smith (1994) asserted that the recidivism rate dropped from 60% to 12% when inmates pursued a postsecondary degree. This decrease in recidivism means that postsecondary

education works as rehabilitation program. It also means that critical thinking should be a component of a postsecondary education program designed to prevent recidivism.

The single most important consideration in the minds of most poorly educated, young inmates in custody concerns their future domestic life, or what will remain of it, outside prison (Arungwa & Osho, 2012; U.S. Department of Justice, 1997). Kiser (1987); Merenstein, Tyson, Tilles, Keays, and Ruffolo (2011); and Meussling (1984) maintained that a loss of a link to the outside world can lead inmates to lose sense of an identity or role outside of prison. Prison culture unites people solely because of their criminal activity (Alewine, 2010; Harer, 1995). Structured programs can assist inmates in achieving vocational, academic, and critical thinking skills. However, Farabee, Zhang, and Yang (2011) and Karaim (2002) claimed that if the department of corrections fails to prepare inmates for a return to society, then these inmates might as well have been sentenced to a lifetime of punishment. They are not provided with opportunities for jobs (Rogensues, 2006), housing, or continued education because of their previous mistakes.

Correctional education is important for preventing recidivism because incarceration is expensive. Goodman and Feser (1988), Yamatani and Spjeldnes (2011), and Wheeldon (2011) provided financial data showing the cost of incarceration: $20,000 - $25,000 annually to house one inmate and $50,000 - $60,000 to educate and rehabilitate one inmate to no longer be dependent on the government, department of corrections, and society. Henrichson and Delaney (2012) reported that the cost of prison in each state can vary. This disparity is important because the cost varies based on the number of inmates and the length of stay, which can be changed through preventive and correctional and

rehabilitative services that educate and prevent a return to prison. According to Linton (2011) and Owens (2009),through training, the inmate can become independent, confident, and self-sufficient. Such rehabilitated inmates may go on to contribute to society with tax revenues. In addition, the empowerment of education builds their self-esteem and confidence in their ability to succeed when they return to society.

Education has been a key factor in upward mobility in society. Medel-Anonuevo (1993) and Reddy and Narayanappa (2012) maintained that empowerment through education is a continuous, holistic process, with cognitive, psychological, economic, and political dimensions needed in order to achieve emancipation. However, educational access may be limited for those who are inmates. Moreover, Cassell, Chow, Demoulin, and Reiger (2000) and Rose, Reschenberg, and Richards (2010) asserted that assisting inmates with obtaining an education is useless without a plan. Finch (2005) and Rose et al. claimed that inmates must come into prison or any program with a set of goals and build on entry-level skills. Wheeldon (2011) and Zaro (2007) disagreed with placing the responsibility on the inmate, instead placing it on the correctional educator, who possesses the strategies and tools that the inmate needs to be successful on the outside.

The role of the correctional educator is important in preparing inmates for reentry into society. Klevins (1972) and Rose et al. (2010) noted that the inmate cannot be expected to be successful upon re-entry to society without proper preparation. Anders and Noblit (2011) and O'Connor (2006) noted that individuals lacking self-esteem and opportunities are frustrated because they see no way out of their current dilemma except through a life of crime. Crime becomes their means of survival.

The outcomes for inmates, however, can be changed. Alexander (n.d.), Freud (1963), Jolivette and Nelson (2010), and Skinner (1953) supported the ideological perspective that an individual's actions can be influenced by cognitive conditioning or behavior modification. For that reason, in a correctional setting, an instructor would impart knowledge using what Freire (1970) and Galloway (2012) called the banking system. With this learning model, the correctional staff claims to be in possession of all knowledge, whereas the inmate is seen as knowing nothing. It is called the banking model because those within the correctional setting, such as educators, caseworkers, chaplains, medical staff, correctional officers, and all individuals involved in the rehabilitation of the inmate, deposit information into the inmate. The deposited information is retained by the inmate through reinforcement and rote learning. As a result, the inmate can make a withdrawal in each situated experience as needed.

However, educators who do not support behaviorism in education have criticized this type of rote learning and behaviorist methods of education. Educators in the nurturing camp or functionalist perspective have asserted that humans are not robots or laboratory mice who are controlled by one set of stimuli; instead, learners are multifaceted individuals who are by various circumstances (Moran, 2009; Vilhauer, 2004). Thus, a student presenting discipline problems may be influenced by external factors, such as parents, siblings, and other teachers. Therefore, teachers should consider the complex factors that influence cognition and behavior. For instance, Moran (2009) and Vilhauer (2004) cited Kant when they said that each sane adult is a free moral agent who possesses intellectual prowess to choose between right and wrong. Therefore, each

inmate possesses the intellectual and cognitive abilities needed to choose live according to the laws of society or to disobey the laws and accept the consequences.

When applied to correctional centers, educational approaches must provide avenues and teach mechanisms to assist with manifest and latent functions that inmates will encounter once they return to their community. For example, transitional programs operating in correctional centers assist an inmate with preparatory skills for returning to the community. Such programs help inmates with the manifested functions of recognized, intended, and expected consequences of incarceration. In these programs, inmates receive coaching on how to handle latent functions throughout their tenure with the department of corrections. Arungwa and Osho (2012), Meyer (2011), and Uggen and Wakefield (2003) asserted that inmates need assistance with the transition as they know it will be difficult to locate housing, employment, and have a stable financial status immediately. Proficient planning skills can assist with a good transition by providing information about housing opportunities, employment skills or training, interviews prior to exiting the prison, and financial help until employment can be attained.

Secondary Education

Several model programs throughout the United States have supported correctional higher education by initiating funding from various sources besides federal and state funding (Ambrosio & Schiraldi, 1997; Mercer, 2009). Ohio, Texas, and Maryland have model programs (Gardner, 2011; Tolbert, 2002). Each of these programs has focused on a different aspect of correctional education and rehabilitation (Table 1). Each of the programs has a mandatory goal-setting component that requires the inmates, upon

entrance into the department of corrections, to establish how they plan to repay their debt to society through educational, personal, psychological, and other treatment plans along with an action plan to remain as a productive citizen upon release from prison.

For example, Ohio requires all inmates who do not have a high school education to participate in the education program, which is a traditional classroom setting. Within the Ohio program, upon entry into the correctional system, each inmate must set educational and occupational short-term goals to be met while they are incarcerated and long-term goals to be met when released; these goals are tracked by the school system (Iorizzo, 2012; Tolbert, 2002). Legislators' initial resistance to the program was decreased by demonstrated benefits of the program.

Furthermore, Ohio established distance-learning programs through two-way interactive systems. Texas built on this model to provide even more for the state's 700,000-plus inmates (Meyer, 2011; Tolbert, 2002). The Texas program has used the same concept as the Ohio program, with a tracking system for the inmates' educational progress and an individual treatment plan from the moment that they arrive in prison. In Texas and Ohio, once their treatment plan is established, inmates receive pre and pos release employment training and vocational skills after they have obtained their high school diploma or its equivalent. In Texas and Ohio, inmates must remain in compliance with their individual treatment plan in order to participate in the program. Table 1 shows the large number of degrees awarded to inmates during the 2000–2001 school year. The Texas program set the precedent for programs such as the one in Maryland.

Table 1.

Model Postsecondary Education Programs for Inmates in Ohio, Texas, and Maryland

Program element	Ohio	Texas	Maryland
Secondary education enrollment	Mandatory	Mandatory	Mandatory
Goal setting	Educational and short-term goals	Individual Treatment Plan	Educational goals
Vocational training	Set long-term goals for inmate's release from prison	Pre- and post-release vocational training once inmate has met educational goals	Vocational training programs and postsecondary education
Academic setting	Traditional classroom and two-way interactive (videoconference)	Traditional classroom	Online academic program
Tracking	Goals tracked by educational system	Must be > 3 months post releaseand must have an exit/release date of <3.5 years; recidivism tracked by educational system	Goals and recidivism rate tracked by educational system
Success rate	> 6,000 certificates for academic and vocational achievement since 1998	>5,000 General Educational Development certificates (2000-2001) 8,500 career and technology certificates 400 associate's degrees 61 bachelor's degrees 6 master's degrees 3,400 college vocational certificates	753 occupational training certificates 1,336 literacy certificates 951 high school diplomas >2,000 postsecondary certificates and degrees since 1999

Note. Adapted from "State Correctional Education Programs: State Policy Update," by the National Institute for Literacy, 2002.

The Maryland Department of Public Safety and Corrections has provided not only adult basic education, GED preparation, and vocational-skills training to inmates, but also a peer-tutoring or Adult Basic Education Certification to those qualified to be peer tutors (Gardner, 2011; Tolbert, 2002). Most remarkable, however, is Maryland's development of an online college for inmates in conjunction with Maryland Community College Tele-

Consortium. This program was made possible by designing online courses that used servers, software management programs, and facilitators between the student and the online college professor. The program required approval from the Maryland Department of Public Safety and Corrections for the hardware requirements, network configuration, on-site computer lab security, and computer management software.

Training and curriculum development were particularly challenging (Meyer, 201l;Tolbert, 2002). The instructional designer or educational technologist had to train the online instructors, provide the details about the communication tools, develop a course syllabus, and manage the course. Ertmer (1999, 2005) and Meyer (2011) asserted this can be a barrier to online education because many educational entities lack funding to support such efforts as well as with the collaborative support of educators in the outside academic community. James (2001), Kovalik (2003), and Lahm (2009) found that this work was time consuming and not as successful as hoped. James made several recommendations for other educational technology specialists developing an online college course for inmates.

In this study I extended James's (2001) research regarding the cognitive and behavioral changes experienced by the inmate who attended an online college course. More data have been provided to support and change legislation allowing inmates to attend online college with measurable quantitative data from pretest and posttest scores. Inmates could be provided with access to educational programs and educational opportunities via distance learning or correspondence courses that provide marketable diplomas and job skills. My study can provide data for policy makers and social justice

advocates considering postsecondary education as a means to prevent crime and improve inmate cognition.

Postsecondary Education

The secondary education programs displayed in Table 1 have been an instrument of crime prevention and have provided a positive outlook for improving inmate cognition, critical thinking, and communication; additional evidence has demonstrated the effectiveness of a postsecondary education certificate or college degree in deterring inmates from returning to prison. Postsecondary education for inmates dates to 1923 at Sing Sing Prison in New York (Martinson, 2012; Silva, 1994; Worth, 2001). Courses were offered by Columbia University to prepare inmates for post incarceration work. Rockview Prison in Pennsylvania had the first inmate-faculty contact in 1924, as the educational course work was supervised by a faculty member from the Pennsylvania State University.

The Department of Rehabilitation and Correction (2010) and Williford (1994) noted that in 1924 the Ohio State Penitentiary had 200 inmates enrolled in correspondence courses that included poultry training, advertising, and commercial art. The Ohio program was the first to document that those who participated in a postsecondary correctional education program were less likely to recidivate and had improved cognition. Garrett and MacCormick (1929) noted that in 1928 the San Quentin Prison had 438 inmates enrolled in the University of California Extension Division Courses, and according to Hall (2012) the program has since lost funding but has continued to focus on offender re-entry programs to help inmates succeed in the area of

cognition, critical thinking, and communication skills through the programs it offers once the inmate has been released.

Despite early successes demonstrating postsecondary education as an effective tool for improving inmate cognition, critical thinking, and communication skills, the idea has received criticism. Gehring and Wright (2003) and Rose et al. (2010) maintained that prisoners had difficulty perceiving ideas, so education was not needed. This idea was further expounded upon by Lahm (2009) and Warner (2007), who asserted that prisons have been designed to deter and punish not to educate. Many do not support using tax dollars to educate criminals who have broken the law; instead, they argue that funds should be used to help law-abiding students (Lahm, 2009; Prison Break, 2002). When considering how educating inmates would benefit the public or coincide with the mission of prisons, Brockway (1995) and Krontiris and Watler (2010) argued that the ideal prison system would protect society against crime and not punish. This stance coincided with the newer terminology of corrections and prison reform. However, Boulard (2005) and Lahm (2009) asserted that lawmakers oppose prison education because they believe prison should be an arduous experience resulting from committing a crime and that nothing works.

However, statistical evidence has supported the financial and crime-reduction aspects of educating inmates. For example, Baust et al. (2006), Beck (2001), and the Bureau of Justice Statistics (2012) reported that 1 million dollars spent on correctional education has prevented 600 crimes compared to incarceration alone, which has prevented just 350 crimes. Bazos and Hausman (2004) and Yamatani and Spjeldnes

(2011) reported that incarceration costs over $25,000 a year, while educating the inmate during that time prevents nine crimes at a rate of $1,600 per crime. Educating inmates provides marketable skills and results in lower recidivism rates, ranging from 5.0%–25.4% after the first 3years of release (Klein et al., 2004). Rearrest rates for inmates with 2years of college have been cited at 10%, compared to a national rate of about 60% for inmates with no college participation (Harer, 1995; Marks, 1997).Moreover, Bettendorf (1996), Boulard (2010),Tracey and Johnson (1994) conducted studies in Indiana, Maryland, Massachusetts, and New York, and demonstrated that the more education inmates possess, the less likely they are to recidivate; participant recidivism rates ranged from 1.0%–15.5% for postsecondary education participants.

Online Education

The postsecondary education programs discussed in the previous section have made strides in the realm of correctional education. It is ironic that just as the shift begins to provide alternative programming to encourage postsecondary education instead of incarceration, the standards have changed. While those at the Department of Correctional Education contemplated and delayed action on whether to include postsecondary education as a part of its curriculum, education outside of the correctional facility continued to move forward. Postsecondary institutions that once had correspondence and distance education courses have moved online. According to Rowley, Lujan, and Dolence (1998); Sims and Jones (2003); and Watts (2010), online education drastically has

changed the practices and policies of higher education. The result is that the shift to distance education further restricts inmate access to higher learning.

Online education has a history in distance education. Distance education began with the development of television courses, correspondence courses, CD-ROMs, cassette tapes, and computer-mediated courses that later evolved into online courses with the emergence of the World Wide Web in the mid-1990s. Researchers (Berge & Collins, 1995; Gilbert & Moore, 1998; Santoro, 1995; Sankey& St. Hill, 2009) have stated that the World Wide Web provided a medium for educational institutions to deliver education at a distance via computer technology.

According to Patrick and Powell (2009); Roblyer, Davis, Mills, Marshall, and Pape(2010); and Scott, Chenette, and Swartz (2002), online education opened opportunities for the adult learner as well as those with diverse learning styles and unique needs. Online education grew rapidly because of its ability to provide remedial instruction and problem based learning that adults encounter daily (Paiet al.,2009; Seybert & Kane-Gill, 2011). Online education also can provide synchronous and asynchronous learning based on learning preferences.

However, pedagogical issues as well as instructional design factors must be considered when developing online education. Baylor (2002a), Chickering and Ehrmann (1996), and Meyer (2011) maintained that although the content of the curriculum has not changed, the delivery method and modes of communication among learners, instructors, and content must be considered. Leppisaari and Lee (2012) and White (2000) noted that human communication is vital. In the traditional classroom the instructor, students, and

peers communicate regularly through discussion and interaction. If the instructor or peer states something that is unclear to a classmate, students can either raise their hands to receive immediate feedback, or the instructor can see that a statement was not well received by viewing facial expressions or body language. However, with online education the instructor loses the ability to see student needs because the learning occurs asynchronously and there is no way to view the students' facial expressions or body language. With the loss of face-to-face interaction comes restriction of the educator's role online. Cooper, Perez, and Rainey (2010); Palloff and Pratt (2003);and Sims, Dobbs, and Hand (2002) asserted that the educator is no longer a teacher or instructor but becomes a coach, guide, and facilitator of knowledge.

The role of facilitator has potential to influence learners, especially through the design of the curriculum. For an instructor to be successful as a facilitator, guide, and coach, the design of the curricula must include some value-added assessment such as pretest and post testing to measure student growth over time. For example, Baylor (2001, 2002a, 2002b), Ginsburg and Gal (2000), and Cooper et al.(2010) stated that the curricular content should influence and develop the learners' thoughts, logic, decision making, and ability to solve problems. The curriculum should be designed to achieve long-range goals in all domains—social, emotional, cognitive, and physical—to prepare students to function as fully contributing members of a democratic society (Grayson & McDermott, 1996; Lockard &Rankins-Roberson, 2011).

Likewise, adult education curricula, especially those in correctional facilities, should focus on long-range goals that include social, emotional, cognitive, and physical

domains. For example, in a study conducted by Barab, Thomas, and Merrill (2001), the online course content had an introductory component that focused on creating a timeline of adult students' personal events so that the students could develop, design, and establish long-range goals by looking at their social, emotional, cognitive, and physical needs to help them excel in the class and complete the course. Thus, they created their personal learning and needs assessment for completing the online course. Therefore, course content was designed to influence the adult learners' social, emotional, cognitive, and physical needs based on their learning styles and personal time lines. This helped the learner embrace and accept change as they traveled through the adult lifecycle and through the course because they were aware of their learning styles and what they needed to excel and complete the course.

Likewise, when students actively participate in their own learning and how content is delivered, learning cognition is improved as well as critical thinking and problem solving skills. For example, Oderda et al.(2010) found that students prefer to learn content by doing, problem solving, or through games. Learners prefer this method of instructional delivery in an online environment because problem-based learning, which involves problem solving, is linked to personal and civic lives. Illogical or ill-structured problems correlate to the daily analytical, judgment, and decision-making skills students encounter in the classroom as well as in the community. This finding correlated with what Wang and Wang (2011) found in their research of an introductory course; students must develop critical thinking, problem solving, and higher order thinking skills to meet the challenges of the world. Researchers have also found that students must be able to

deal with the unknown, solve life's daily problems, and become innovators to solve problems that may not yet exist (Thomas, 2011).These are skills first year students, college graduates, and life-long learners must develop and evolve as they continue their educational journey.

Effective learning involves a number of facets. Baylor and Ryu (2003), Keegan (1996), and Meyer (2011) claimed that the interaction in the online course, whether content, collaboration, or overall presentation of the course, is a key to effective learning and improving critical thinking skills. Meyer (2011), asserted that effective learning is knowledge that facilitates a change in cognition, attitude, and behavior, temporary or permanently. Moore (1998) and Owens (2009) stated that effective learning also facilitates change in the learners' understanding, perspective, and cognition through stimulation and motivation. Thus, according to Earle (1998) and McKinney and Cotronea (2011), the instructional design of the learning content, presentation, and interface is an essential element in online education. Sundarajan (2010) and Vygotsky (1978) also maintained that these elements are essential because learning is a social activity that encourages students to acquire knowledge and understanding through collaborative interaction with others. According to Brookfield (1990) and Kitsantas and Dabbagh (2011) collaborative learning and discussion boards support cognitive and affective ends by encouraging analysis, investigation of theories, and attitude change.

However, this type of learning does not happen by chance; the instructor must design an active learning environment. Active learning occurs when learners make decisions by setting goals, planning, and monitoring how they will learn along while

being challenged by a set of mental activities to encourage and stimulate lifetime thinking and lifelong learning (Burgstahler, Comden, Lee, Arnold, & Brown,2011; Fox, 2009;Irlbeck, Kays, Jones, & Sims, 2006; Simons, 1997). In essence, this becomes self-directed learning where students take ownership of their education.

However, according to Meyer (2011),Moore (1994), and Seamon (2001) the instructor must construct this special learning environment of teaching and learning so that it can influence learner behaviors; thus, the instructor needs to change how instructional content is delivered so that the learners' behavior and cognition is changed (Beaver & Moore, 2004; Branch, 1994; Meyer, 2011; Young, Reiser, & Dick, 1998). The course structure and learner autonomy are crucial components that affect the success of teaching and learning at a distance. For example, Shashaani (1997) and Terleckiet al. (2011) claimed that men have more experience with computer skills than women, thereby affecting their social and interactive behaviors. This experience does not shape cognitive and metacognitive learning but does influence how students communicate in an online learning environment. In addition, Barrett and Lally (1999) found that men sent more messages and made more socioemotional contributions than women and therefore sent more interactive messages.

Research Methodologies

The researchers in the studies I reviewed identified the importance of postsecondary education to improve the critical thinking skills of inmates. In this section, I review the research methodologies used to investigate the critical thinking skills of inmates.

Changes in critical thinking among inmates taking postsecondary coursework has been studied using qualitative methods. In a study conducted by Kaplan et al.(2010), 10 students from Vassar College met weekly for 2.5 hours at the Taconic Correctional Center with 10 other inmates at a medium security prison. The selection process was conducted by the Director of College Connections at the Taconic Correctional Center. The selection process was based on standardized test scores, writing samples, and the interview of 20 of the 40 applicants. Of those who applied, 10 were selected based on gender, social problems, and social change course. The course format was a 15 minute lecture, small group discussions, a short video presentation. Short oral reports and a reflection paper were the grading mechanisms for the course. Although the correctional staff reported that the course provided maturity, growth, and responsible behavior and responses from the inmates, the process was informal. The researchers did not use any quantitative or measurable data to demonstrate growth from the inmates before or after the course; they used only what the correctional staff reported about the inmates.

Other researchers have used quantitative measures to determine the growth of critical thinking skills resulting from online learning. In a study conducted by Fox (2009), 160 students were studied to determine whether online learning using multimedia and instructional design principles improved student learning outcomes in areas such as behavior and cognition. The study used a quantitative static analysis using ANOVA and a pretest-posttest design with20 question test items. The test items were presented to an experimental group versus the control group that received and textual information only. The results were determined by subtracting the individual's pretest score from their

posttest score. However, this methodology was not appropriate for my research because there was no control or experimental group. In the Fox study, the participants were given a pretest and posttest at the beginning and end of the course to see if the psychology course improved critical thinking skills for students only; however, Fox did not include inmates as part of the study population.

Experimental research designs also have been used to study inmate performance in Adult Basic Education courses. Batchelder and Rachal (2000) conducted a quantitative study using the test scores, interviews, and educational records of 71 inmates at a maximum security prison. Inmates who lacked a high school diploma were able to volunteer for the prison education program and were placed on a waiting list. Upon placement into the program they were tested using the Test of Adult Basic Education (TABE), and if they scored above eighth grade level on the test, then they were placed in the General Educational Development (GED) course. However, if they scored below the eighth grade level, then they were placed in the Adult Basic Education (ABE) class. A random digit table was used to assign each offender to an experimental group or control group. If their number was even, then they were assigned to the control group, and if the number was odd they were assigned to the experimental group. Over a 4-week period, the experimental group received 3hours of classroom instruction and 1hour of computer assisted instruction per day for a total of 80 hours; the control group received 4hours of classroom instruction per day for a total of 80 hours. The researchers used as an analysis of covariance (ANCOVA) to analyze the pretest and posttest of the inmates' reading and

math scores. The researchers found that the experimental group had a slightly higher posttest score in reading and math than the control group.

Batchelder and Rachal's (2000) study differed from my study in several ways. Although they used a pretest and posttest design and a quantitative analysis, they used an experimental group and a control group. My study did not have an experimental and control group, and the data were not analyzed using ANCOVA (analysis of covariance) to determine whether the online psychology course pretest and posttest scores differed. Instead, I subtracted the pretest and posttest scores using ANOVA to determine whether the psychology course participants, inmate or student, had shown a regression, improvement, or remained the same with their critical thinking skills. In the Batchelder and Rachal study, there was only one item being measured; in my study, I measured the critical thinking skills of the inmates based on pretest and posttest scores and overall critical thinking scores of all students. There was no control group or experimental group. The study population also differed in that Batchelder and Rachal included inmates pursing a secondary education diploma, and my study included inmates pursuing postsecondary education.

After reviewing the literature, I determined that a paired *t* test data analysis should be conducted. This analytic approach was used because it addresses the research question about a specific group of inmates to students' pretest and posttest scores. For example, if the focus were a comparison of all students' pretest and posttest scores regardless of incarceration status, an instructor could measure instructional and teaching strategies using a *t* test (Holmes, 2011). However, if the instructor had incarcerated students in the

class, as was the case in my study, and if the instructor wanted to compare inmates to the students to see whether there was an increase in critical thinking skills based on pretest and posttest scores, an ANOVA analysis would be needed (Fox, 2009; Monalisa-Karekezi-Kemirembe,2009). In my study both an ANOVA and paired *t* test were used to strengthen the support that inmates test scores did improve once they completed the online psychology course.

Thus, the dependent variable for my study was the critical thinking skills as represented by the participants' learning improvement scores derived from subtracting an individual participant's pretest score from posttest score. The independent variable was inmates enrolled in the online psychology course. A paired *t* test was conducted to determine whether the offenders pretest scores were higher once the online psychology course was completed and to determine the level of significance. A secondary analysis was conducted using an ANOVA to determine whether any significant learning had taken place by comparing learning improvement scores of the students and inmates as well as improvement of critical thinking skills regardless of incarceration status.

Summary

In this literature review, I have provided insight about the influence of postsecondary education on inmate cognition, critical thinking, and communication skills. Researchers have demonstrated consistently that the more education an inmate attains before departure from prison, the less likely that individual is to recidivate and will improve critical thinking and communication skills (Porporino & Robinson, 1992; Wheeldon, 2011). However, previous researchers have addressed the qualitative

measures on improvement of critical thinking skills; there is a lack of quantitative data on those postsecondary courses that influence the inmates' ability to improve cognition, critical thinking, communication, and problem solving skills. With approximately 46% of inmate college participants not recidivating, and inmates demonstrating improved cognition (Baust et al., 2006), research is needed to delineate and measure quantitatively what has contributed to inmates' success.

Chapter 3 contains a discussion of the elements of an online college course designed to stimulate critical thinking using Blackboard Collaborate. In Chapter 3, I explain the method of research, the rationale for selecting a pretest-posttest study design, and procedures for data collection and analysis.

Chapter 3: Methodology

The purpose of this quantitative study was to examine the influence of a psychology course on the critical thinking scores for individuals who took an online psychology course and how the scores of inmates and other students in the course differed. Pre and posttest data were used to determine how the online psychology course influenced inmates' cognitive, critical thinking, and problem solving skills.

This chapter includes a discussion of the methodology used to conduct the study and the rationale for the study. I also delineate the methodological rules related to the study; the participants in the study; and a description of the data collection, management, and analysis.

Design of the Study

I chose the inmate population due my focus on the improved critical thinking of inmates. Inmates who take postsecondary education classes show an improved ability to communicate effectively along with improved critical thinking and cognitive abilities. In this study, I analyzed the difference between pretest and posttest scores on a critical thinking assessment taken by both the inmates and students taking an online psychology course. I compared the inmates' pretest and posttest scores to other students' scores to determine whether participation in the course affected critical thinking skills and to determine whether there was a difference in the changes in critical thinking skills between the two populations. The analysis showed that participation in the course improved the inmates' critical thinking, which leads to implications for further investigation into how postsecondary education can assist with prison re-entry programs.

Context of the Study

The course format was a stand-alone, 4-week course, delivered on a learning management system platform. There were two sections of the course. The curriculum for the course was psychology, and each section had an online classroom capacity of 15 students. A total of 25 students had enrolled in the course at the time of the study. The students attended3 hours of classes online at a time that was convenient for them as long as they submitted the course assignments as prescribed by the instructor. Learners interacted with the instructor and peers via chat, e-mail, Blackboard Collaborate, and discussion boards contained within the learning platform. Students enrolled in the course took a pretest and posttest previously designed by the Midwestern community college.

The psychology course used for this study included problem-based learning in which participants collaborated with peers in an online learning environment. Gabr and Mohamed (2011) asserted that problem-based learning encourages critical thinking and self-directed learning, which is what all students need in their educational experience. A valid and reliable critical thinking assessment was used to assess the changes in critical thinking skills.

The participants earned college credit that could be used in the pursuit of postsecondary education. Moreover, all matriculated students were required to take a general psychology course in order to earn a degree at the Midwestern community college where the study took place. Thus, the course that was offered to the participants enabled them to move forward in their goal of earning a college degree.

The course was designed based on the findings of Pai et al. (2009) and Seybert and Kane-Gill(2011), who found that course management and instructional design systems enhanced both teaching and learning processes in students' ability to think critically and improve their problem solving under rigorous time constraints and daily challenges. This type of course design supports learning because the instructor and instructional designer combine self-directed, web-based technology with immersion into problem-based learning, realism, and simulation, which improve learners' critical thinking and cognitive skills. This improvement occurs because learner's cognitive abilities and skills are used as strategies to manipulate the material to be learned through reading, interacting, and application (Shokrpour et al., 2011).

The course was delivered online using Blackboard Collaborate. Blackboard Collaborate is an inclusive and thorough online and collaborative learning platform designed specifically for education unlike Webex, Go To Meeting, and other platforms that are used primarily for meetings that are held online and often referred to as webinars. Blackboard provided robust, interactive, and engaging learning activities via online, hybrid, blended, or mobile learning through a whiteboard, graphing calculators, emoticons, and other tools that students and instructors used to interact in a closed academic learning environment. It was an excellent tool for inmates because it provided an academic learning environment where the instructor controlled inmates while they attended online. The inmates also collaborated with other students enrolled in the course for the purpose of online discussions and peer interaction on discussion questions assigned by the instructor.

Sample and Population

The research population for the study included archival data from 25 students at a Midwestern community college enrolled in an online psychology course from August 2014 to September 2014. The 25 students came from a combination of two different sections of the same course. The college capped enrollment at 15 students for each section of the course. Because the archival data had never been collected that would allow for the comparison of the pretest and posttest scores of the 10inmates and 15 students enrolled in the course, the college permitted a special start date for the course. The dependent variable for this study was critical thinking skills, and the independent variable was status of students (inmates or other) enrolled in the online psychology course. There was no control or experimental group.

Data Collection

Data for this study were gathered through a Midwestern community college. The college had four campuses where the counselors taught psychology classes. The course instructors agreed to gather standardized assessment data from their students. Students enrolled in the course completed the 20-item pretest upon enrollment. An archival, secondary data analysis of the data was initiated to pool de-identified, anonymous data gathered between August and September of 2014, from participating psychology and counseling centers, essentially representing the fall semester. A total of 25 students contributed data. Of these students, the same 25 were administered the 20-item posttest. To be included in the study, students must have provided a response to at least one initial demographic on the enrollment form, which was whether they were presently an inmate.

Instrument

The instrument used in this online course was a modified pretest and posttest from the textbook for the class entitled *Critical thinking skills: Success in 20 minutes a day*, 2nd Edition (Skill Builders) by Lauren Starkey and the editors of Learning Express LLC (Appendix B). The Learning Express, LLC is responsible for developing placement test and college entrance exams for the SAT, ACT, ACCUPLACER, COMPASS, CLEP, and other standardized tests. Stickler (2007) and ProCon (2004) have provided evidence-based research that standardized tests like the SAT are reliable and valid.

Ethical Issues and Evidence of Quality

I obtained Walden IRB approval for this study (07-22-14-0017411). With any research inquiry, the researcher's task is to identify and clarify the researcher's assumptions, beliefs, aspirations, and lifestyle that may interfere with the research study (Creswell, 2006; Yin, 2011). A faculty member at the Midwestern community college served as the instructor of the online psychology course, and I was the liaison who was a recipient of the data collected by the college. There was no conflict of interest because I had no interaction with the participants prior to or after the course was completed.

Although other significant risks were not foreseen, arrangements were made by the college to have a career and professional counselor available from the college for each participant throughout the study. The counselor would have provided intervention, crisis counseling, or professional counseling in areas such as careers should the participant become stressed or fatigued from their participation in the online course. However, the counselor's professional services were not required.

Consent and Confidentiality

An administrator from the community college signed a Data Use Agreement form to release the gender, incarceration status, and pretest and posttest scores of the students in the online psychology course. The signed data agreement was stored in a locked location along with all other data (Appendix A). The confidentiality of all participants was protected through the use of an identification number assigned by the college (Wheeldon, 2010). I did not have access to information that would identify any student. All data collected from the study were kept in a locked file cabinet in my home, and I am the only person with a key. Data will be retained in the secure location for 5years after which time they will be destroyed. All identifying information was removed from the pretest and posttest results received from the community college, and the only information provided included the gender, incarceration status, and pretest and posttest scores of the participants. Only the identification number assigned by the college was used to link the demographic data to the pretest and posttest critical thinking assessment scores.

Potential Benefits and Risks

A potential benefit of the research was the opportunity for the inmates to earn college credit and to contribute to prison reform. Potential risks included the psychological stress of taking the critical thinking pretest and posttests. Any stress experienced throughout the course was due to the nature of college coursework and was not associated with the research. Although other significant risks were not foreseen, the instructor teaching the online psychology course was a career and professional counselor.

The counselor could provide intervention or crisis counseling should the participant become stressed or fatigued from their participation in the online course. The results of the study were shared with the community college administration through an executive summary.

Data Collection Procedures and Instruments

I received the archival data after the approval letter was received from the community college and the inmates and students completed the online psychology course. I compared the pretest scores of the inmates and students to their posttest scores using an ANOVA analysis and a paired *t* test analysis, which is explained later in this chapter under data analysis.

Data Analysis

The data collected from the quantitative pretest and posttest were analyzed using the paired *t* test and ANOVA. The course content was designed to encourage and support higher-order thinking skills. The data collected during this process were used to organize, interpret, and compare archival data according to the categories already employed by researchers such as Merriam (2002), Lieblich, Tuval-Mashiach, and Zilber (1998), Livingstone (2001), and Yin (2011). These studies identified the importance of postsecondary education to improve the critical thinking skills of inmates. After reviewing the literature, a paired *t* test and ANOVA were identified as the appropriate statistical tool. I used this analysis because it addressed the research question about the specific group of inmates compared to students' pretest and posttest scores (ANOVA);

and the level of significance of the change in pretest and posttest scores for the inmates (paired *t* test).

For example, if the focus were a comparison of all students' pretest and posttest scores regardless of incarceration status, a *t* test could be used (Holmes, 2011).However, if the instructor had incarcerated students in the class, as was the case in my study, and if the instructor wanted to compare inmates to the students to see whether there was an increase in critical thinking skills based on pretest and posttest scores, an ANOVA analysis would be needed (Fox, 2009; Monalisa-Karekezi-Kemirembe,2009).

Thus, the dependent variable for my study was the critical thinking skills as represented by the participants' learning improvement scores derived by subtracting an individual participant's pretest score from the posttest score. The independent variable was inmates enrolled in the online psychology course. A paired *t* test was conducted to determine the level of significance in the inmates' pretest and posttest scores. A secondary analysiswas conducted using an ANOVA to determine whether any significant learning had taken place by comparing the learning improvement scores of the students and inmates.

Summary

The purpose of this quantitative study was to examine the change in critical thinking as measured by comparing the difference between the pretest and posttest scores of students enrolled in an online psychology course. Through this study, I also determined whether there was a difference between the inmates' and students' pretest and posttests scores. Based on the results of the analysis, I argue that the online psychology

course influenced inmate critical thinking skills. Chapter 4 presents the findings of the study.

Chapter 4: Results

The purpose of this quantitative study was to examine the influence of a psychology course on the critical thinking scores for individuals who took an online psychology course and how the scores of inmates and other students in the course differed. I used quantitative data to measure how the online psychology course improved inmates' cognitive, critical thinking, and problem solving skills. This chapter provides a discussion of the methodology used to conduct the study and the rationale for the study. I also delineate the methodological rules related to study and specific to the data analysis procedures, analysis of research questions including test results, and a summary of the chapter.

Inmates who take postsecondary education classes have shown an improved ability to communicate effectively and have improved critical thinking and cognitive abilities. In this study, I analyzed the differences between pretest and posttest scores on a critical thinking assessment taken by the inmates and students enrolled in an online psychology course. I compared the inmates' pretest and posttest scores to those of the students' to determine whether participation in the course affected critical thinking skills and whether there was a difference in the changes in critical thinking skills between the two sets of participants. The results indicated that participation in the course improved inmate critical thinking, thus implying that further investigation into how postsecondary education will assist with correctional education and rehabilitation re-entry programs.

Data Analysis Procedure

Inferential statistics were used to draw conclusions from the sample tested. The Statistical Package for the Social Sciences (SPSS) was used to code and tabulate scores collected from the survey and provide summarized values where applicable, including the mean, central tendency, variance, and standard deviation. Analyses of variance (ANOVA) and paired *t* tests were used to evaluate the two research questions. The research questions were the following:

RQ1: Is there a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment?

RQ2: Is there a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment?

The dependent variables for the questions were overall critical thinking scores and change in critical thinking, respectively. The independent variables for the research questions were test type (pre versus post) and student status (inmates versus students), respectively.

Prior to analyzing the raw scores, data cleaning and data screening were undertaken to ensure the variables of interest met appropriate statistical assumptions. Thus, the variables were first evaluated for univariate outliers, normality, and

homogeneity of variance. Subsequently, a paired *t* test and ANOVA analyses were run to determine whether any significant differences existed between variables of interest.

Demographics

The Midwestern community college counseling center provided archival data of the enrolled students' scores. The participants came from two sections of a psychology and counseling course at the community college. The information received from the community college was limited to archival data and having all identifying information excluded; names, ethnic background, and age were removed from the data set. The archival data received were the results of the pretest and posttest scores of a pre-existing test with 20 questions administered to the students before and after the 4-week psychology course. The data provided by the community college contained the pretest and posttest scores for the 25 students enrolled in the course; gender for each student was also included in the data corpus. Ten sets of scores were for the students who self-identified as inmates on their enrollment form. Fifteen sets were associated with the students.

Analysis

Research Question 1 was evaluated using an ANOVA to determine whether significant differences in students' critical thinking skills existed after participating in an online psychology course. It was also evaluated using a paired *t* test to determine the level of significance between the inmates pretest and posttest scores. The dependent variable for Research Question 1 was participants' critical thinking skills scores (overall critical thinking skills), regardless of student status (incarcerated or

nonincarcerated).Students' critical thinking skills were measured by a 20-item assessment at two separate times. The scale for the pretest and posttest was from 0.00% for no correct answers and 100% for all correct answers. Higher scores on the pretest or posttest indicated higher critical thinking scores. The independent variable for Research Question 1 was the time the critical thinking skills tests were administered: upon course enrollment (pretest) and after course completion (posttest).

Research Question 2 was evaluated using an ANOVA to determine whether significant differences in students' critical thinking skills existed between inmate and students as measured by pretest and posttest scores on the same 20-item assessment. It was also evaluated using a paired *t* test to determine the level of significance between the inmates pretest and posttest scores. For the paired *t* test and ANOVA analysis of Research Question 2, the dependent variable was the difference in critical thinking scores from pretest to posttest (change in critical thinking).Differences in test scores were calculated by subtracting participants' posttest scores from their pretest scores, and the results were used as the dependent variable. The independent variable for Research Question 2 was students' status: inmates and students.

Data Cleaning

Before the raw scores were analyzed, the data were screened for missing data, univariate outliers, and multivariate outliers. Missing data were investigated using frequency counts, and no cases were found within the distributions. The data were screened for univariate outliers by transforming raw scores to *z*-scores and comparing *z*-scores to a critical value of +/- 3.29, $p < .001$ (Tabachnick & Fidell, 2007).*Z*-scores that

exceed this critical value are more than three standard deviations away from the mean and thus represent outliers. The distributions were evaluated, and no cases with univariate outliers were found within the dependent variables. Using the paired *t* test for the research questions, 10 valid data points were received and 10 were evaluated. Table 2 shows the inmates' paired statistics for the critical thinking pretest, posttest, and change scores for the inmates and the paired *t* test (Table 3). In addition, for the research questions, 25 valid data points were received and 25 were evaluated by the ANOVA models (n = 25). Table 4 shows descriptive statistics for the critical thinking pretest, posttest assessment, and change scores for the inmates and students.

Table 2.

Inmates Paired Statistics t test

Critical Thinking	*n*	*M*	*SD*
Pretest			
Inmates	10	54.00	12.81
Posttest			
Inmates	10	79.75	13.56
Change			
Inmates	10	25.75	0.75

Table 3.

Inmates Paired t test

Critical Thinking	Min	Max	*df*1	*df*2	*t*	*Sig.(2-tailed)*
Pretest – Posttest						
Inmates	-38.22	-13.27	1.00	9.00	-4.668	.001

Table 4.

Descriptive Statistics for Critical Thinking Pretest and Posttest Scores

Critical Thinking	*n*	Min	Max	*M*	*SD*
Pretest					
Inmates	10	30.0	72.5	54.00	12.81
Students	15	35.0	82.5	59.33	14.74
Overall	25	30.0	82.5	57.20	13.98
Posttest					
Inmates	10	62.5	97.5	79.75	13.56
Students	15	65.0	100.0	77.33	8.74
Overall	25	62.5	100.0	78.30	10.72
Change					
Inmates	10	7.5	55.0	25.75	17.44
Students	15	0.0	35.0	18.00	11.31

Test of Normality

Before the data were analyzed, basic parametric assumptions were evaluated.For the dependent variables (overall critical thinking scores and change in critical thinking scores) assumptions of normality and homogeneity of variance were tested. To test whether the distributions were significantly skewed, the skew coefficients were divided by the skew standard error, resulting in a *z*-skew coefficient. This technique was recommended by Tabachnick and Fidell (2007).Specifically, *z*-skew coefficients exceeding the critical range of -3.29 to +3.29 may indicate non-normality ($p <$ .001).Kurtosis was also evaluated using the same method. Based on the evaluation of the *z*-skew and *z*-kurtosis coefficients, no distributions exceeded the critical value for skewness (Table 5) or kurtosis (Table 6) statistics of inmates and students' critical thinking pretest, posttest, or change scores. Thus, the distributions were assumed to be normally distributed.

Table 5.

Skewness Statistics for Critical Thinking Pretest, Posttest, and Change Scores

Critical Thinking	*n*	Skewness	Skew SE	z-skew
Pretest				
Inmates	10	-0.55	0.68	-0.80
Students	15	-0.38	0.58	-0.66
Overall	25	-0.30	0.46	-0.65
Posttest				
Inmates	10	0.11	0.68	0.16
Students	15	1.03	0.58	1.79
Overall	25	0.53	0.46	1.15
Change				
Inmates	10	0.75	0.68	1.10
Student	15	-0.15	0.58	-0.25

Table 6.

Kurtosis Statistics for Critical Thinking Pretest, Posttest, and Change Scores

Critical Thinking	*n*	*Kurtosis*	*Kurtosis SE*	*z-kurtosis*
Pretest				
Inmates	10	-0.13	1.33	-0.10
Students	15	-0.89	1.12	-0.79
Overall	25	-0.73	0.90	-0.81
Posttest				
Inmates	10	-1.92	1.33	-1.44
Students	15	2.08	1.12	1.86
Overall	25	-0.61	0.90	-0.68
Change				
Inmates	10	-0.67	1.33	-0.50
Students	15	-1.36	1.12	-1.21

Homogeneity of Variance

Levene's Test of Equality of Error Variance was used to determine whether the error variance of the dependent variables (overall critical thinking skills and change in critical thinking skills) were equal across levels of the independent variables (test type and student status).Results indicated that both distributions met the assumption of homogeneity of variance (overall critical thinking skills $p = .137$, and change in critical

thinking skills $p = .158$).Therefore, the results suggested the variances were equally distributed across levels of the independent variables and the assumption of homogeneity of variance was not violated. Table 7displays the details of the Levene's tests.

Table 7.

Summary of Levene's Tests of Error Variances

Research Question	Dependent variable	Independent variable	*F*	*df*1	*df*2	Sig. (*p*)
1	Overall critical thinking	Test type	2.29	1	48	.13
2	Change in critical thinking	Student status	2.14	1	23	.15

Note. Critical value of $p = .05$. Values greater than the critical value indicate equality of variance.

Results for Research Question 1

Research Question 1 was, is there a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment? Using SPSS 22, ANOVA was conducted to determine if any significant differences in students' critical thinking skills existed after participating in an online psychology course. Results indicated that a significant difference did exist between test periods (pretest and posttest), $F(1, 48) = 35.853$, *sig.*< .001, *partial eta-squared* = .428.Students' critical thinking posttest scores ($M = 78.30$, $SD = 10.72$) were significantly higher than pretest scores ($M = 57.20$, $SD = 13.98$).Figure 1 includes a means plot of pretest and posttest scores.

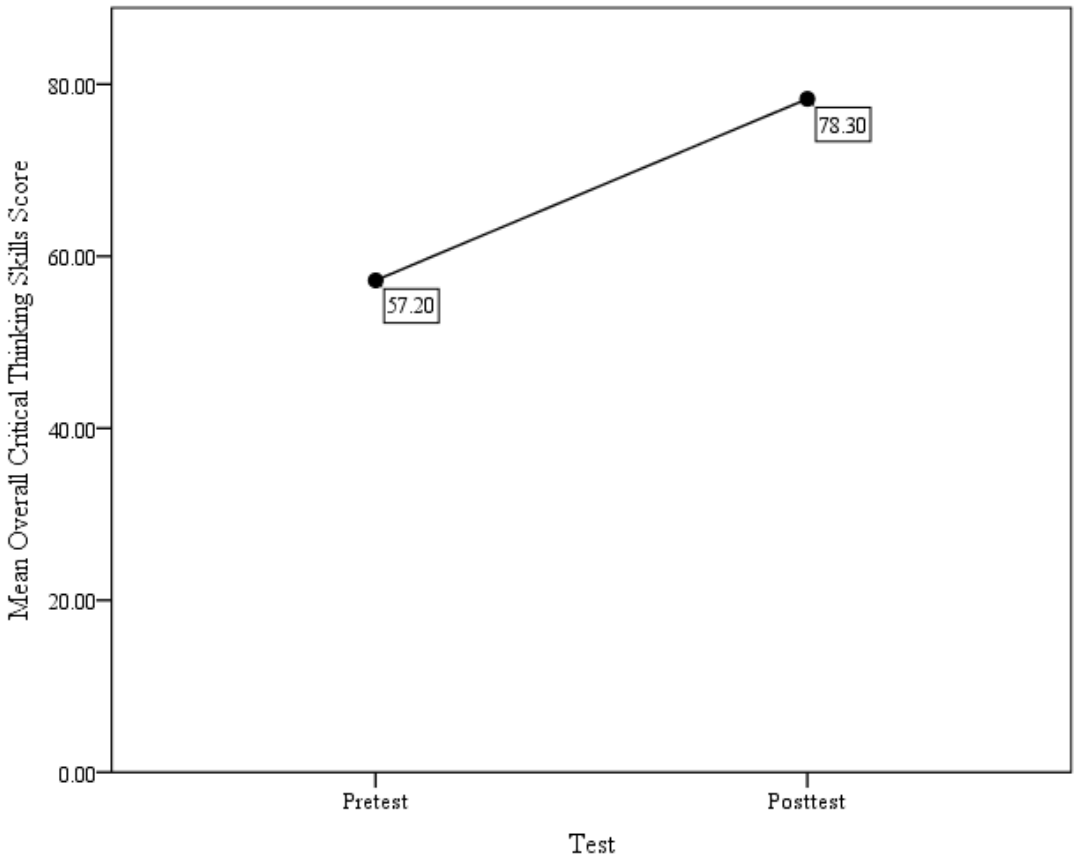

*Figure 1.*Means plot of students' overall critical thinking scores from pretest to posttest.

Thus, the null hypothesis for Research Question 1, that there are no significant changes in critical thinking skills scores, was rejected. A model summary of the ANOVA analysis is displayed in Table 8 including Type III sums of squares, degrees of freedom, mean square, *F* coefficient, significance value (*sig.*), effect size (*partial eta-squared*), and observed power.

Table 8.

Model Summary of ANOVA Analysis for Research Question 1 (Overall Critical Thinking)

Source	Type III *SS*	*df*	*MS*	*F*	Sig. (*p*)	η_p^2	Observed power
Corrected model	5565.13	1	5565.13	35.85	< .001	.428	1.000
Intercept	229503.13	1	229503.13	1478.58	< .001	.969	1.000
Test	5565.13	1	5565.13	35.85	< .001	.428	1.000
Error	7450.50	48	155.22				
Total	242518.75	50					
Corrected total	13015.63	49					

Results for Research Question 2

Research Question 2 was, is there a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment? ANOVA was used to determine whether any significant differences in students' critical thinking skills existed between inmates and students' pretest and posttest scores. Results indicated that a significant difference did not exist between students' status (inmates, students), $F(1, 23) = 1.83$, $sig. = .189$, $\eta_p^2 = .074$. The increase in critical thinking scores from pretest to posttest (change in critical thinking) was not significantly different between inmates ($\Delta M = 25.75$, $\Delta SD = 17.44$) and students ($\Delta M = 18.00$, $\Delta SD = 11.31$). Figure 2 shows a means plot of inmates and students change in critical thinking scores.

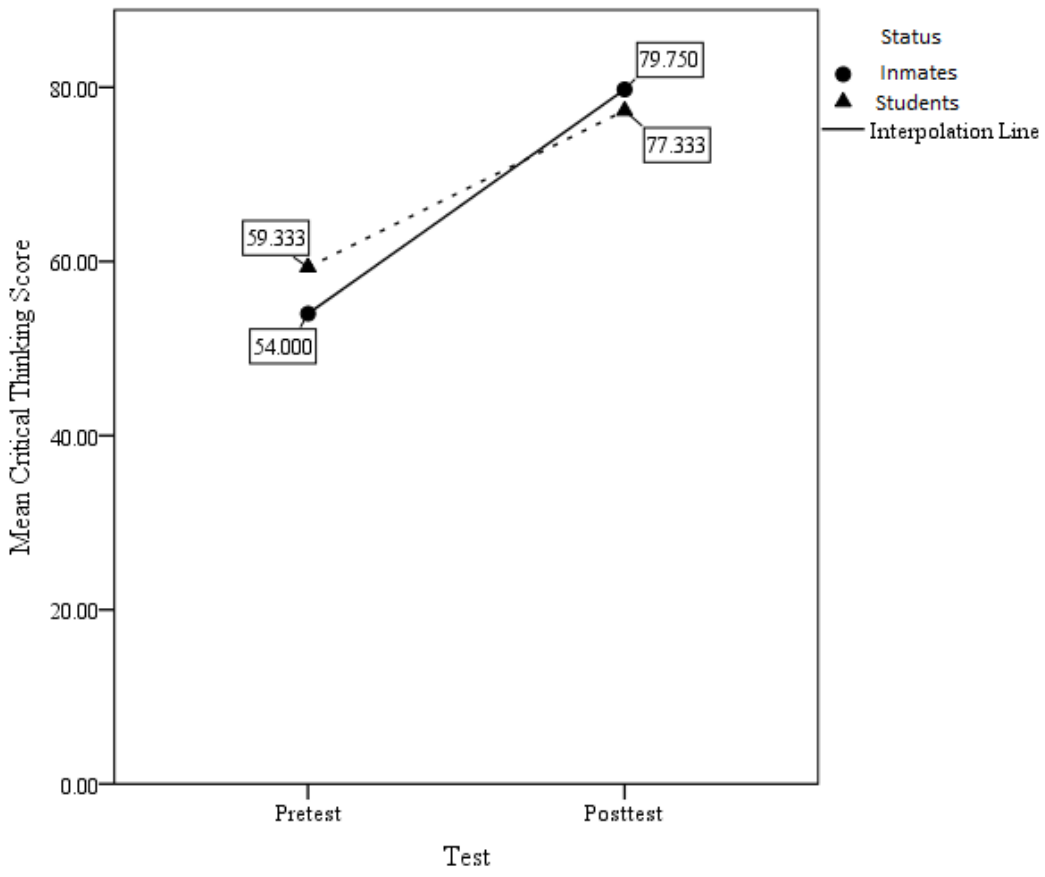

Figure2.Means plot of inmates and students pretest and posttest critical thinking scores.

Thus, the null hypothesis, that there are no significant differences in change scores across students and incarceration status, was retained for Research Question 2.A model summary of the ANOVA analysis is displayed in Table 9.

Table 9

Model Summary of ANOVA Analysis for Research Question 2 (Change in Critical Thinking)

Source	Type III *SS*	*Df*	*MS*	*F*	Sig. (*p*)	η_p^2	Observed power
Corrected model	360.38	1	360.38	1.83	.189	.074	.25
Intercept	11484.38	1	11484.38	58.33	< .001	.71	1.00
Test	360.38	1	360.38	1.83	.189	.074	.25
Error	4528.13	23	196.88				
Total	16018.75	25					
Corrected total	4888.50	24					

As shown in Figure 3, although no significant difference in participants' change of critical thinking skills was found (p = .189), inmates did have a slightly larger increase in scores compared to students. Inmates had lower scores than students on the pretest (M = 54.00 and 59.33 respectively) but inmates' posttest scores were higher than students' posttest scores (M = 79.75 and M = 77.33). This indicates that inmates' critical thinking skills may have improved at a greater rate than those of students. In conclusion, the results of ANOVA testing for Research Question 2, change in critical thinking, indicated that there was a change in the students' critical thinking scores from the pretest to the posttest for both inmates and students. However, there was no statistically significant difference between the two groups (p = .189). The findings indicate that the statistical differences for growth in critical thinking skills were significant. The critical thinking skills of inmates improved upon the completion of a college course, which was consistent with the hypothesis for this study. The statistical findings for change in critical thinking skills between inmates and students were not statistically significant.

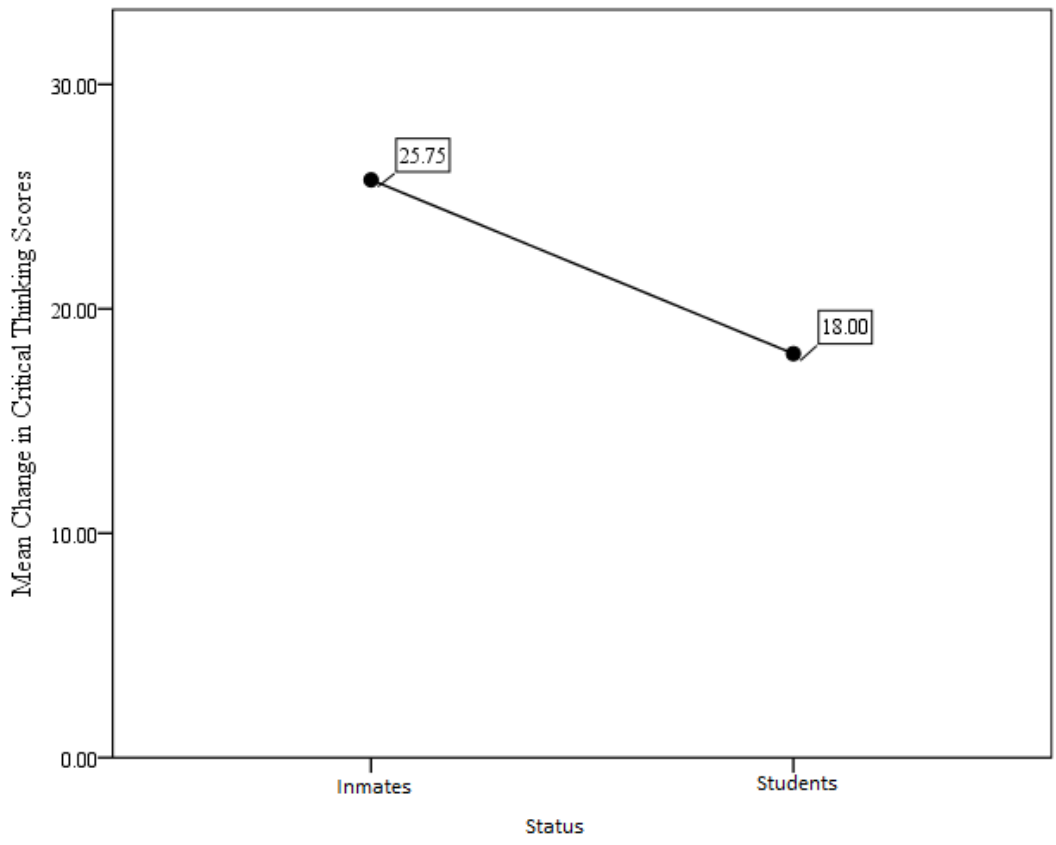

*Figure 3.*Means plot of inmates and students change in critical thinking scores from pretest to posttest.

Summary

The purpose of this quantitative study was to examine the influence of a psychology course on the critical thinking scores for individuals and how the performances of inmates and students differed as a result of the course. The results of the study showed increased critical thinking skills for inmates enrolled in a 4-week online psychology course. As a result of these findings, I argue that further research is needed to improve opportunities for the inmates, thereby potentially improving opportunities for the prison population and easing reentry.

The Midwestern Community College counseling center provided archival data. The participants were enrolled in a psychology and counseling courses at the community college. The archival data included the results of the pretest and posttest scores of a20-itemassessmentgiven to 25 students enrolled in two sections of a 4-week long online psychology course.

Results of the paired *t* test and ANOVA testing for Research Question 1, critical thinking skills, indicated that the students taking the psychology course achieved better scores (higher scores) on the posttest at the end of course ($p < .001$), which are displayed in Figure 1. These results indicate that the overall critical thinking skills for both inmates and students improved significantly ($p < .05$ on the posttest). Likewise, results of ANOVA testing for Research Question 2, change in critical thinking, indicate that there was a change in the students' critical thinking scores from the pretest to the posttest for both inmates and students, but there was no statistically significant difference between the two groups ($p = .189$). However, the paired *t* testing for Research Question 2, change in critical thinking scores, indicated that there was a change in the students critical thinking scores from the pretest to the posttest for the inmates.

The findings indicate that the statistical differences for growth in critical thinking skills were significant; therefore, the null hypothesis was rejected in favor of the alternative hypothesis. The critical thinking skills of inmates improved upon the completion of a college course, which was consistent with the hypothesis for this study. The statistical findings for change in critical thinking skills between inmates and students were not statistically significant; therefore, the null hypothesis was not rejected. Chapter

5 summarizes the study and presents conclusions about the findings. Chapter 5 also discusses the social change implications of these findings, the limitations of this study, and future recommendations for continued research in this area.

Chapter 5: Discussion, Conclusions, and Recommendations

This chapter is divided into three main sections: overview, conclusions, and implications and recommendations for future research. The summary section covers the purpose of the study and a brief overview. The conclusion section provides a summary of the findings as they relate to the research questions and literature review. Finally, the chapter concludes with recommendations for future action and research as well as a discussion of the implications for social change for educational and correctional leaders and policy makers.

Overview of the Study

Despite statistical evidence regarding the role of postsecondary education in preventing inmates from returning to prison, there is a lack of formal data and quantitative data employed by postsecondary education programs to improve critical thinking skills and cognitive processing (Baust et al., 2006; Harer, 1995; James, 2001; Klein et al., 2004; Marks, 1997; Steurer & Smith, 1994; Untapped Potential, 2005; Unruh et al., 2009).According to the McKinney and Cotronea (2011) and the U.S. Department of Justice (2007), social policies focus on correctional education to provide rehabilitation and reintegration by providing classes for adult basic education, vocational education, and postsecondary education. However, little quantitative information is available regarding how online courses improve critical thinking skills and cognitive processing among the inmate population.

The literature reviewed provides evidence on the influence of postsecondary education on inmate cognition, critical thinking, and communication skills. Researchers

have demonstrated that the more education an inmate attains before departure from prison, the less likely that individual is to recidivate, and the more likely the individual will improve critical thinking and communication skills (Porporino & Robinson, 1992; Wheeldon, 2011). However, previous researchers have not addressed the elements such as pretest and posttest scores in a postsecondary education course that influences inmates to improve cognition, critical thinking, communication, and problem solving skills. With approximately 46% of incarcerated college participants not recidivating, and inmates demonstrating improved cognition (Baust et al., 2006), research must be developed to delineate what elements contribute to their success. Thus, the purpose of this quantitative study was to examine the measurable results of a psychology course on the critical thinking for individuals and how the performances of inmates and students differed.

Summary of Findings

In this study, 25 students at a community college in the Midwest were evaluated using a reliable and valid instrument supplied by the college. Data were entered into the SPSS 22 and were tested using a paired *t* test and an ANOVA to test the hypotheses associated with the two research questions. The counseling center at the community college provided archival data of the students' pretest and posttest scores. The participants were enrolled in two sections of an online psychology course at the college. The information received from the community college was limited to that which was stored in the archive, and all identifying information had been removed; excluded information included name, ethnic background, and age; however, gender was included in the dataset but excluded from analysis. Of the 25 students whose data were

examined,10 were inmates and 15 were students. The students enrolled in the course self-identified as inmates on their enrollment form. The archival data received were the results of the pretest and posttest scores of a 20-item assessment administered to the students before and after the 4-week psychology course.

Research Questions

RQ1: Is there a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment?

H_{01} There is no significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment.

H_{A1}: There is a significant improvement in adult students' critical thinking skills after participating in an online cognitive psychology course as measured by pretest and posttest scores on a community college critical thinking skills assessment.

RQ2: Is there a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment?

H_{02}: There is no significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment.

H_{A2}: There is a significant difference in levels of improvement in critical thinking skills between inmates and students, as measured by pretest and posttest scores on a community college critical thinking assessment.

Using SPSS 22, ANOVA was conducted to determine whether any significant differences in students' critical thinking skills existed after participating in an online psychology course. In addition, a paired *t* test was conducted to determine the level of significance of change in the inmates' pretest and posttest scores after taking the online psychology course. According to study results, a significant difference did exist between test periods (pretest and posttest), sig. < .001.That is, students' critical thinking posttest scores ANOVA (M = 78.300) were significantly higher than pretest scores ANOVA (M = 57.200), and *t* test (M = 79.75) were significantly higher than pretest scores *t* test (M = 54) as well. Thus, the null hypothesis, that there are no significant changes in critical thinking skills scores, was rejected for Research Question 1.

An ANOVA was conducted to determine whether any significant differences in students' critical thinking skills existed between inmates and other students' pretest and posttest scores. According to study results, a significant difference did not exist between students' status (inmates, students), *sig* = .189.That is, the increase in critical thinking scores from pretest to posttest (change in critical thinking) was not significantly different between inmates (ΔM = 25.75) and other students (ΔM = 18.00).Thus, the null

hypothesis, that there were no significant differences in change scores across students and incarceration status, was retained for Research Question 2.Although a significant difference was not found, inmates' critical thinking skills improved at a greater rate than did those of students when analyzed using the paired *t* test with pretest scores ($M = 54$) and after course completion posttest scores ($M = 79.75$).

Interpretation of Findings

Students who participated in an online psychology course, regardless of incarceration status, improved their critical thinking skills, a finding consistent with Griff and Matter (2013). Griff and Matter found that online learning improved students' posttest scores when using the LearnSmart system (an online learning system) versus the web-based Connect system. The findings from the study are also consistent with a study conducted by Lewis (2003) who demonstrated that computer-assisted learning improved student performance in comparison with other forms of teaching. The LearnSmart system (Griff & Matter, 2013) was designed to improve online learning outcomes based on an individualized approach, while the Connect system was an online learning management system. This is consistent with findings that students in general improve their online learning posttest scores after completing an online learning module or online course. This finding is also consistent with Ruey (2010), who offered an 18-week online graduate level course for adult learners. The 32 cases in the Ruey study demonstrated an improvement in a constructivist-based online course.

The findings from my study are consistent with evidence that online learning improves critical thinking skills. Whereas I provided quantitative data on the outcomes of

a course focused on developing critical thinking skills through an online platform, the other researchers have provided qualitative data self-reported by the online learners. Prasad (2009) also found that students in an online course had an increase in critical thinking. In the Prasad study, the pretest score of $k = .79$ compared to the posttest score of $k = .82$.Harrell (n.d.) conducted a similar study with 139 students (46 women, 93 men), and found a pretest score of $k = .59$ and posttest score of $k = .78$ once the course was completed. These studies are consistent with the findings from my research.

Likewise, Sendag, and Odabası (2009) conducted a study where the experimental group's pretest mean (18.20) increased to 29.95 in the posttest condition, and the control group's pretest mean (18.30) increased to 27.40. That is, both groups had higher scores in the posttest, which demonstrated that when students receive online instruction via chats, discussion board, or any online learning platform, their critical thinking skills are improved upon completion based on the pretest and posttest scores.

For this study, an ANOVA was conducted to determine whether there were any significant differences existed in students' critical thinking skills between inmates' and students' pretest and posttest scores. In addition, a paired *t* test was conducted to determine the level of significance in the change of inmates' pretest and posttest scores after completing the online psychology course. I found that a significant difference did not exist between the two groups (inmates, students), $sig = .189$.That is, the increase in critical thinking scores from pretest to posttest (change in critical thinking) showed that inmates scored ($\Delta M = 25.75$) and other students scored($\Delta M = 18.00$).However, even though a significant difference was not found, results indicated that inmates' critical

thinking skills improved inmates' pretest scores ($\Delta M = 54.00$) and inmates' posttest scores ($\Delta M = 79.75$) at a greater rate than did that of the students' pretest scores ($\Delta M = 59.33$) and students' posttest scores ($\Delta M = 77.33$). This demonstrates that inmates have the ability to learn and apply critical thinking skills just as well as other students.

There is a paucity of literature available comparing inmates to students in any college course even though there are several programs in the United States that offer classes to both inmate students and other students at the same college, either online or through mail correspondence. However, despite the limited research, literature was found that demonstrated when inmates are enrolled in critical thinking classes or programs they perform better on posttests when compared to the control group. For example, Simpson (2008) found that one of the reasons one group, such as inmates, may perform better than the control groups is due to being motivated to overcome barriers of situation and time. As a result, they develop skills and learn to deal with the stress of study with little extra external support. Simpson's finding supports the independent learner concept.

Batchelder and Koski (2002) also found that inmates might excel over another group because they are motivated by the extrinsic desire for success and the need to be able to be employable after leaving prison. Lundahl and Burke (2009) and Miller and Rose (2009) further expounded on this concept in their analysis of motivational interviewing, which found that knowledge times motivation divided by resistance equals change. This means that if the motivational interviewing therapist, coach, or instructor has a positive relationship with the student or client and provides positive self-talk,

encouragement, and support to the student or client; they are motivated and encouraged to change behavior.

Furthermore, Fournier, Geller, and Fortney (2007) and Contardo and Tolbert (2008) conducted a study using a pretest and posttest model to demonstrate overall improvement from an 8to 10-week class intended to improve behavior, psychosocial, and critical thinking skills in preparation for inmates' return to society. According to the researchers, a simple class on content such as dog training illustrated that offering an inmate informal or formal training to assist in cognitive rehabilitation provides great potential. Another example was that of Redondo, Sanchez-Meca, and Carrido (2002) who investigated the effects of training 48 adult male inmates. Redondo et al. stated that correctional educators believe that any program that teaches inmates to think is beneficial in reducing recidivism and increasing critical thinking skills. Hatcher (2006) also found that critical thinking skills improve if faculty intentionally integrates critical thinking into all disciplines rather than presenting a stand-alone course such as the cognitive psychology course used for my study. As such, the research indicates that critical thinking skills improve in both the stand-alone and integrated college courses, but the skills improve even more when critical thinking is integrated into all disciplines or subject areas in the college curricula.

Likewise, Bickle (2013) found that inmates who participated in the Thinking for a Change (TFAC) program performed better on posttests than those not in the treatment program. All those in the TFAC program were inmates, so the findings cannot be generalized. However, the findings do indicate that further research should be conducted

between inmates and students enrolled in TFAC, psychology, or other online/distance education classes.

In sum, the findings from the research are consistent with the extant research on the effects of college coursework for increasing critical thinking skills. The evidence indicates that critical thinking increases among all students engaged in the coursework whether the students are inmates or not.

Conclusions and Implications

The findings indicate that inmates who completed a postsecondary online course improved their critical thinking skills (*sig*< .001). All students' critical thinking posttest scores (*M* = 78.300) were significantly higher than pretest scores (*M* = 57.200) and a significant difference did not exist between students' status (inmate, students)(*sig* = .189).Specifically, the increase in critical thinking scores from pretest to posttest (change in critical thinking) was not significantly different between inmates (ΔM = 25.750) and other students (ΔM = 18.000).Research Question 1 supports the literature reviewed (Porporino & Robinson, 1992; Wheeldon, 2011), which asserted that the more education inmates have, the less likely they are to recidivate and will also improve their critical thinking skills before departing the correctional facility. However, the findings do not support the null hypothesis associated with Research Question 2, which asserted that a significant difference exists between inmates and students' critical thinking skills. The findings from Research Question 1 are consistent with the literature reviewed, but the results from Research Question 2 were unexpected because it was assumed that students would have a larger skill set and more educational knowledge than inmates.

Implications for Social Change

In attempting to determine whether there is a relationship between the independent and dependent variables, the study found that despite any statistically significant findings, the quantitative data identified a number of factors that should be taken into consideration by correctional facilities, community advocates, and the governmental agencies that write the policies and laws that govern correctional facilities and communities. Correctional facilities can boost postsecondary teacher morale, even when they are not in control of specific criteria due to legislative requirements. Instructors feel more supported when dealing with a situation such as educating inmates when legislation and communities support positive reentry programs for inmates. According to Simpson (2008), teachers may carry this positive energy into the classroom and will reflect that positive energy onto the students. When inmates find that correctional facilities, communities, and the government support their efforts in being rehabilitated, they will be more likely to complete the course with a successful outcome and will put effort into their education.

The government and correctional facilities that regulate and operate correctional facilities need to set the tone for the correctional facility on how to matriculate inmates through the rehabilitation and restorative programs offered as postsecondary education at the facility. Cassell et al. (2000) and Rose et al. (2010) asserted that assisting inmate students with obtaining an education is useless without a plan; therefore, upon being transferred to the correctional facility, inmates should develop exit goals. Finch (2005)

and Rose et al. (2010) also claimed that inmates come into prison or any program with a set of goals and build upon entry-level skills.

Therefore, the inmate's administrative team (case worker and parole officer) should collaborate with the inmate to review and set realistic goals about how to prepare for the return to society. Inmates should be required to sign a letter of agreement each year that acknowledges their progress toward exit goals. The letter of agreement should include educational goals because the literature has shown that inmates who complete educational programs are less likely to recidivate and tend to improve their critical thinking skills and scores. Hatcher (2011), Lundahl and Burke (2009), and Miller and Rose (2009) all asserted that the goal of post-secondary education is to change critical thinking skills, and when knowledge gained from a college course, motivational interviewing or therapy, and self-talk are included with motivation, there is a change in behavior. Thus, when progress is being acknowledged and documented, neither the offender, family, or parole board are surprised with the outcomes and decisions.

Implications for Research

Legislators and government agencies play an important role in conducting research and being a voice for those such as inmates, who have no voice or voting rights. Colleges, correctional facilities, and legislators need to continue to collect and monitor graduation rates of inmates within secondary and postsecondary education programs along with recidivism rates. The outcomes of this study, as well as future data on graduation and recidivism rates need to be integrated into policy and programs developed for correctional facilities, collegiate classrooms, and for other professionals. The findings

developed in this research can be shared at conferences, workshops, in-services, and college classrooms that specifically deal with instructional strategies and correctional facility reentry programs. It is within these informational settings that the needs of the inmates, postsecondary educators, and correctional advocates who are leaders in building citizens and communities can be heard. These stakeholders can then collaborate on ways to improve inmate graduation and recidivism rates.

Implications for Policymakers

Likewise, the United States Congress must provide inmates with financial aid to continue postsecondary education. It should be taken into consideration by Congress that the current correctional education legislation as it stands is not producing the positive results as intended. Multiple studies demonstrating a continual decrease in graduation rates have been conducted (Child Trends Databank, 2014; Datamasher, 2014; The Chronicle of Higher Education, 2014; Tsai & Scommegna, 2012). This trend demonstrates that more students are not pursuing higher education due to lack of financial aid; however, inmates are willing and desiring to pursue higher education with successful graduation rates.

Congress can improve correctional education by providing legislators with the following information: (a) stronger research designs that identify effective curricula for correctional education, (b) a clear and inclusive definition of recidivism(re-arrest, back to prison, or parole violation), (c) characteristics of effective programs such as those that include higher order thinking skills, (d) a clear definition of critical thinking that includes all disciplines and how it is to be measured, (e) a database of correctional education

programs, and (f) a database of correctional education graduates to track recidivism. These actions would encourage Congress to take note of the negative impact the lack of funding and vision has had on correctional education. At the time I conducted this research study, existing correctional policy had created a situation in which inmates would return to prison soon after release because they were undereducated and lacking skills needed for employment. Thus, if the goal of the United States Department of Education (2014) is to have students acquire a college degree and have the skills needed for employment, then all populations need to be considered—including inmates.

Many inmates will not pursue postsecondary education if financial aid is not available. These are the individuals who have learning disabilities, are minorities, and are limited English speakers. They come from communities that are at or below the poverty level. They are struggling readers. They are influenced by other negative factors that make them less likely to make postsecondary education a priority when compared to more privileged individuals. Given this set of social realities, laws should be written that are inclusive of all individuals regardless of race, gender, or incarceration status in order to achieve the goal of a college educated society (Nelson, 2010; United States Education Dashboard, 2014; White House, n.d.).

Limitations of the Study

The study has limitations. One of the limitations was the difficulty of inmates' willingness to self-identify. Students are not required to self-identify incarceration status even if it is on the enrollment application. Inmates do not have to self-identify

unless they are applying for financial aid. Without the willingness to self-identify, there would be no knowledge of which students enrolled in the course had a criminal record.

There were also methodological limitations in this study such as the small sample size and lack of controlled conditions. The sample size was small due to the class size being restricted to 15 online students per section. This restriction limited the number of inmates who could enroll in one online class because the college only hires teachers based on student enrollment. In order to have a larger sample or to have a control group, the inmates would have to be in multiple sections of the course, and data collection would have to span those course sections. This would have created a problem because each section would have been assigned a different instructor and each instructor may have taught differently. Thus outcomes may vary. Therefore, there was lack of control of the conditions of the study including how many sections would be offered as well as who the instructors were.

Recommendations

In this section, I make recommendations for action and further studies. Based on the findings I suggest several recommendations for action. Specifically, the results should be distributed to correctional facilities, postsecondary educators, communities, and legislators in the government. The rationale is that even though postsecondary educators and communities were not included in the study, they are affected by the influences of the 1995 Violent Crime Act. Thus, the recommendations provided are delineated based on policy, practice, and research.

Recommendations for Policy

In the state within which the study was conducted, the department of corrections, correctional education, and the department of probation and parole are separate entities, and all have numerous policies governing how inmates are educated and the restrictions they must adhere to. Often those policies conflict, and the department of corrections, which has the sole duty to deter and correct, often enacts policies that hinder rehabilitation and efforts to reform inmates. Hence, the department of corrections, correctional education, and the department of probation and parole need to reframe correctional education as a part of the inmates' accountability plan with exit goals. When an offender enters the department of corrections, a process should be in place that every offender will complete a thorough needs assessment that includes but is not limited to the following: (a) educational goals, (b) work/apprenticeship goals, and (c) treatment goals to assist with rehabilitation and reentry.

Educational goals for the offender should include enhancing what the offender already has and setting goals to move beyond their current level of attainment. Thus, every offender should be working on a high school diploma or postsecondary education training or degree that assists with gainful employment upon departure from the department of corrections. The needs assessment received when entering the department of corrections should assess the offender's academic abilities to facilitate achieving academic goals and documenting progress. Because Congress has enacted mandatory literacy laws with high standards, there should also be an increase in correctional education funding to assist inmates in achieving educational goals. Because few inmates

qualify for Pell Grants due to the 1995 Violent Crime Bill, there should be an increase in funding for Spector Funds. These funds are grants offered to support higher education courses for inmates.

The Spector Funds are named after Senator Arlen Spector, who was a correctional education advocate. Just as Senator Spector was an advocate of correctional education and worked to provide support for inmates to improve their educational outlook, the same effort needs to be provided for work and apprenticeship goals. Inmates need to pursue educational goals and complete training programs that assist them with finding gainful employment upon departure from the department of corrections and reentry into society. Congress should provide legislation that decreases barriers to employment for individuals with criminal histories and provide work-to-release programs with apprenticeships under correctional supervision. Such opportunities include road construction and highway engineering, correctional educators, nurses, or other jobs needed in the current economy.

Part of being prepared for reentry into society includes working to repay any financial debts an individual has and completing a treatment program for rehabilitation and reform. All treatment programs are educational, whether formal or informal. All treatment programs should provide behavior modification and cognitive training to change the offender's attitude, actions, and cognition. Without an inclusive corrections program that corrects and changes the offender's educational attainment, cognitive abilities, work ethics, and actions, no single entity or program will have an impact on rehabilitating inmates.

Therefore, once inmates have completed their sentences within the department of corrections and have completed their educational, work, and treatment programs, the Department of Probation and Parole policies must be well-organized and effective when implementing discharge plans and post-release services to inmates. Like someone with alcohol, drug addiction, and other maladaptive behaviors requires lifelong treatment, rehabilitation, and programming, an individual who has lived as a criminal also needs life-long support. The department of corrections agencies along with its collaborators in the prison reentry program must have support groups outside of the department of corrections to support inmates' efforts to continue positive life changes such as postsecondary education pursuits. Additionally support should be provided for employers that hire ex-inmates in order to find support groups similar to those inside the correctional facility. These include organizations such as Alcoholics Anonymous, Restorative Justice, and Prison Fellowship, which support inmates and their families as they are reintegrated into society.

Recommendations for Practice

Once the key components are in place to implement effective policies to rehabilitate inmates through education, practices must be implemented that support offender rehabilitation through correctional education. One of the essential facilitators in this process is the correctional educator who has a direct influence on inmates. An educator's influence on the curricula design and learning outcomes that prepare students, especially inmates, for realistic challenges in life, are more powerful than government legislation. Therefore, correctional educators need the following to be successful in their

role of educating and rehabilitating inmates: (a) annual training on best practices on how to educate adults and inmates, and (b) correctional education rubrics and evaluations for continual improvement.

Correctional educators can only improve and enhance their skills set when they are required to attend trainings and ongoing professional development that specifically target inmates. Correctional educators need to develop exit goals or a professional development plan for inmates and for motivating student performance. Currently, correctional educators who work in the department of corrections have a degree in secondary education with a specialization in a discipline such as math, science, English, or history. There are no specific courses or trainings offered at colleges and universities targeted for those who work in correctional facilities. Similarly, other college instructors who teach postsecondary education courses to inmates may not have been adequately trained. These instructors typically are professionals from the business sector who have little or no training in andragogy or adult education practices. Thus, correctional educators, whether secondary or postsecondary, all need a mandated annual training of 40 hours or more directed to teaching incarcerated individuals. There also needs to be college degree programs in correctional education with a practicum at a correctional school. This type of training would better prepare correctional educators to have updated information and preparedness for equipping inmates with the knowledge and training needed when reentering society.

In addition, correctional educators need annual evaluations and rubrics to evaluate their teaching and to measure student achievement of learning outcomes. The

Correctional Education Association (CEA) has outlined their mission for both correctional educators and correctional students. Their mission is to equip correctional students with academic, career/technical, and personal/social skills for a successful reentry into society while supporting correctional educators with quality educational programs that include professional development, personal growth, networking, publication, and leadership opportunities. However, more needs to be done beyond the CEA standards for correctional educators. The standards also need to include performance standards for instructors in hybrid, online, and traditional face-to-face teaching (Correctional Education Association, 2008).

Postsecondary education programs need to go beyond the CEA standards for correctional educators because one of the most important attributes of any online evaluation programs is the ability to evaluate student interaction with one another, the teacher, and the text (Maryland Online, Inc., 2014).The evaluation standard should also include an appraisal of the technology or equipment used to deliver the learning content. This standard has become especially important because the GED and other correctional education content has become computer based. Because education is always evolving and progressing, rubrics are updated periodically; this should be a part of the correctional educators' evaluation standard as well. Requiring the most up-to-date evaluation standards would ensure that inmates are receiving the most current training and educational skills available and that the correctional education system has innovative and quality educators equipped with relevant training and information.

Recommendations for Research

There are many entities that interact with inmates throughout their incarceration. However, their encounters with correctional educators, correctional officers, and other correctional staff who interact with inmates on a daily basis have not been tracked. It is recommended that more support be provided so researchers can conduct rigorous longitudinal studies of well-designed correctional education programs. These programs need to demonstrate the effectiveness of correctional education programs in reducing recidivism. A set of criteria to determine what programs are effective and well-designed would include information such as (a) research designs that identify effective curriculum for correctional education, (b) a clear and inclusive definition of recidivism (re-arrest, back to prison, parole violation, etc.), (c) identification characteristics of effective programs such as those that include higher order thinking skills, (d) a clear definition of critical thinking that includes all disciplines and how it is to be measured, (e) a database of correctional education programs, and (f) a database of correctional education graduates to track recidivism.

A database that includes these criteria would be effective in assisting postsecondary educators, correctional facilities, communities, and government policymakers in designing and implementing evidence based research to inform policy and programmatic decision making. Such a database would assist in the progression of the correctional education in the following areas: (a)research, (b) development, and (c) evaluation of postsecondary education courses.

Pearson, Lipton, Cleland, and Lee (2002) and Rotter and Carr (2013) asserted that programs are effective because they include education, behavior modification, and cognitive therapies. Effective programs also apply instructional methods informed by the theory of andragogy, which allows students to learn by doing, problem solving, and using game-based activities interwoven with behavior medication, cognitive strategies, and educational theories. Combined, these efforts influence offender behavior and cognition.

With programs being identified that include such criteria, researchers are able to collect data that will add to the extant research literature. For example, having a clear definition of recidivism and critical thinking would have provided a point of reference for my study. A proposed definition of recidivism is when an offender returns to prison for a parole violation or is convicted on a new offense. A definition of critical thinking is the ability to solve problems using Bloom's Taxonomy to transfer and apply learning to ill-structured and authentic problems in daily life. Given these definitions, re-arrest with nonconvictions would not be considered recidivism, and memorization with the ability to recall facts would not be considered critical thinking. If researchers had this information available, research into and development of best practices for post-secondary education for inmates could be better developed.

Researchers need to continue to collect data on graduation rates for inmates, recidivism rates for inmates, and critical thinking scores from students who complete college courses. Research is needed into the relationships between the significant variables, postsecondary education, and critical thinking scores. This needs to be an ongoing longitudinal research agenda. Doing so would allow researchers to explore and

develop ways to continually improve the postsecondary educational opportunities for inmates. The information and data should be stored in a database accessible to educators, government leaders, and researchers. Because there is strong evidence based research that demonstrates inmates do not return to prison after completing college courses, more courses need to be evaluated and funded.

My study was intended to evaluate whether an online psychology course improved critical thinking skills among inmates and students. There is a need to replicate this study with additional inmates, correctional facilities, and colleges. Additionally, there is a need to document recidivism rates for inmates who complete postsecondary programs and correlate those rates with their pretest and posttest scores from critical thinking assessments associated with college courses. Though the analysis I conducted took place at one community college, documenting these changes in locations throughout the United States could provide more applicable and relevant findings.

The study results indicate that inmates and students critical thinking skills were similar upon completion of the course. Although the critical thinking scores increased slightly for inmates, it showed that inmates scored*(*ΔM = 25.75) and students scored*(*ΔM = 18.00).This demonstrates that inmates have the ability to learn and apply critical thinking skills just as well as nonincarcerated students.

There was insufficient information to establish whether there was a relationship between prior knowledge of content and incarceration status. In addition, my study was limited due to the fact that correctional facilities and colleges are not mandated to report critical thinking skills, recidivism rates, and college graduation rates to their

communities, educational entities, correctional facilities, and legislators. Therefore, there are limited amounts of data available.

Conclusions

This study has contributed to the research literature by being one of the first to focus on critical thinking skills and course completion rates in conjunction with incarceration status. The independent variables, inmates, and the dependent variable, critical thinking scores, were unique to this study. The study results indicated that critical thinking skills improve upon the completion of a college course, and there was no significant difference in critical thinking scores based on incarceration status.

Based on an understanding of these variables, correctional facilities, colleges, legislators, and other organizations with direct impact on inmates should collect and analyze these specific variables in a longitudinal study. These stakeholders might talk directly to postsecondary educators and inmates about their attitudes toward correctional education programs. Doing so would encourage the development of positive reentry programs for inmates.

According to Bracey (2006), Burke and Vivian (2001), Dewey (1916), and Owens (2009), education is a fundamental means for social progress and reform. Citizens, including inmates, are influenced by many situations, and each person responds differently. Policies should be implemented that encourage inmates to be successful as they work to be rehabilitated during their periods of incarceration.

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Appendix A: Data Use Agreement

DATA USE AGREEMENT

This Data Use Agreement ("Agreement"), effective as of8/1/2014 ("Effective Date"), is entered into by and between Niares A. Hunn ("Data Recipient") and [redacted] ("Data Provider").The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research **in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.** In the case of a discrepancy among laws, the agreement shall follow whichever law is more strict.

1. Definitions. Due to the study's affiliation with Laureate, a USA-based company, unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the USA "HIPAA Regulations" and/or "FERPA Regulations" codified in the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.

3. Data Fields in the LDS. **No direct identifiers such as names may be included in the Limited Data Set (LDS).** In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research: Incarceration Status, Pretest Scores, Posttest Scores, and Gender for every student enrolled in the [redacted] Psychology/Counseling class.

4. Responsibilities of Data Recipient. Data Recipient agrees to:

Use or disclose the LDS only as permitted by this Agreement or as required by law;
Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;
Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;
Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and
Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS **for its Research activities only.**

6. Term and Termination.

Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.

Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in

applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER **DATA RECIPIENT**

Signed:_____ Signed:_____

Print Name:_____ Print Name:_____

Print Title:_____

Print Title:_____

Appendix B: Pretest/Posttest Instrument

Directions: The next portion of the test is designed to assess your critical thinking skills.

1. Upon graduation (high school or college) and/or release from the correctional center, you begin your job search and now have been requested to attend 3 job interviews. In preparation, what can you do to thoroughly investigate potential employers? (Choose all that apply).

a. visit the company website

b. watch a news broadcast to gather the latest information about the company

c. research their financial status and stability

d. talk to current employees

2. Which is NOT an example of a persuasion technique?

a. If you really love animals, then give a donation to the Humane Society.

b. "I have been eating candy since I was a kid," says Kevin the Kandy King. "It gives me energy to stay awake in all day…and it will do the same for you!"

c. Chicken Toss Rings for kids are available at your local grocery store.

d. Elect me as your president if you want to see change. I will make things better in our country.

3. You want to get a new cell phone contract. So you make a chart to compare cell phone contracts (post-paid), no contract (pre-paid), or pay as you go (pay for only what you use). Which would not be a suitable category?

a. per minute charges

b. data plans

c. roaming fees

d. screen size on the phones

4. You are trying to decide which category is a top priority on your budget this month. Which items should you really pay this month first on your budget?

a. Kids Christmas toys

b. Past due medical bills

c. Electric bills that is about to be disconnected

d. Past Due Cell phone bill

5. Which item below is better to research in the library than on the internet?

a. Writing a report on slavery

b. Current Prices of Stock

c. Credit Card Interest Rates

d. Location of bicycle trails and parks in your city

6. Which scenario shows an emotional response only?

a. Mike loves to travel, so even though he can't afford it, he takes a trip to Las Vegas.

b. The school closes after a sniper shooting.

c. Baseball attendance at last night's game was higher than expected.

d. Tiffany needs a new living room set, so she checks the newspaper ads to buy one when there is a sale that meets her price range.

7. When you have to make a decision which items below is not a good choice to use?

a. past experience

b. gossip

c. common sense

d. intuition

8. Which situation does NOT require problem solving?

a. After you get your new cell phone, you find that there is no battery in the box.

b. When you unpack your groceries at home, you realize that you have the wrong bags.

c. Everyone keeps saying your car is dirty so you took it to the car wash.

d. You have a final exam tomorrow, but your friend just broke up with her boyfriend, and you promised to keep her company tonight.

Read the following paragraph and answer questions 9 and 10.

I always wanted to be a lawyer so when I nine, my aunt let me go to work with my Uncle Ray who was an attorney and I was hooked. But it was in college, where I joined the

debate team and we took a trip to the juvenile detention center that I found my passion. I decided to be a defense attorney to help defend those unjustly jailed. The trip was sponsored by our local Police Departments Juvenile Division.

Our goal was to visit the incarcerated juvenile and collect as much evidence as possible to keep them out of the juvenile detention center. Our group was divided into two groups for the juvenile's defense or prosecution. We quickly learn that there were different types of evidence. We learned that some evidence was circumstantial and others could make you liable. Often times the words we speak or our actions can make us look guilty because of people that we associate with or misinterpreted conversations. But as we continued our fact finding mission by interviewing witnesses, family members, and friends, we quickly learned that some of them just needed a second chance. Once we were done, we had a tough time debating each juvenile's case and we were excited to learn that later, some of the judge's decisions were in favor of the way we decided in class.

9. What is liable?

a. exempt

b. another name for accountable

c. exemplary

d. immune

10. The goal of the debate team was to investigate and gather evidence to keep:

a. them out of prison

b. them off the streets

c. them locked up at the detention center

d. them out of the juvenile detention center

11. Mark's trainer at the General Motors plant gives an assessment every Monday on the chapters that were assigned on Friday. The assessments are becoming more difficult as the training progresses, and Mark has not been doing well on them. What can he do to troubleshoot the problem and get better scores on assessments?

a. skim the pages on Monday before class

b. look for a new suit to wear

c. prepare on Sunday to read and review the new chapters

d. spend an hour on Saturday looking over what he missed on the last quiz

12. Evidence has shown that Aldi's employee's score higher on happiness survey's than Wal-Mart employees. Which is the best conclusion that can be drawn from this data?

a. Wal-Mart employees would be happier if they worked for Aldi's

b. Retail employees are happier than fast food employees

c. There are only happy employees at Aldi's

d. Those employed at Aldi's probably scored higher on the happiness survey they like their job.

13. What is wrong with the following assignment?

"Chocolate cake – love it, or leave it!"

a. There is nothing wrong with the argument.

b. It implies that if you eat another dessert, you do not love it.

c. If does not tell you how to love it.

d. It presents only two options, when in fact you have many more options.

14. Which is NOT a likely cause of this situation?

"I can't start my car in the cold Alaskan weather."

a. The car has not ever started in cold weather.

b. We bought a car the color of the snow.

c. The freezing temperatures in Alaska made it difficult for cars to start.

d. The care is out of gasoline.

15. What is wrong with the logic in this statement?

"How can you believe their testimony; when they just got out of prison?"

a. The fact that the person just got out of prison should not make them a liar.

b. An ex-offender can't vote.

c. The writer is prejudiced against ex-offenders.

d. The writer is unfamiliar with the laws pertaining to ex-offenders.

16. Which explanation is weakest?

a. I have sunburn because I stayed in the sun too long.

b. Jennifer did not rider her bicycle because it was in the shop for repairs.

c. We can cancel our gym membership because we can't afford it.

d. Jack missed the school bus because he overslept.

17. What is the real problem, as opposed to being the result/outcome of the problem?

a. Your bank charges $35 in overdraft fees.

b. You wrote a check at the nail shop, but did not have enough money to cover it.

c. Every month, you spend more money than you earn.

d. Last month, you paid $200 in overdraft fees.

18. What is the most important reason for evaluating information found in a magazine?

a. Publishers who submit to the magazine are less knowledgeable than journal writers.

b. Magazines are usually biased due to paid advertisements.

c. Anyone can publish in a magazine; there is no guarantee that the information is truthful or objective.

d. Information found in the books are always more accurate than those found in magazines.

19. No one who works in first shift like the supervisor. My brother works on first shift. Therefore, my brother:

a. does not like working on 1st shift

b. is trying to transfer to 2nd shift

c. does not like the supervisor on 1st shift

d. loves the supervisor on 1st shift

20. You child woke up with a headache, chills, fever, and stomach cramps. Therefore, you should:

a. lay down and rest

b. call the doctor and take them to see the doctor immediately

c. give the child cold and flu medicine

d. treat the child for food poisoning

Curriculum Vitae

NIARES HUNN

PROFESSIONAL PROFILE

An educational professional who is dedicated to actively engaging learners in cognitive instructional opportunities that lead to critical thinking, self-improvement, and diploma or certification attainment; along with planning, organizing, designing, and delivering instructional opportunities in a traditional classroom setting as well as in an online environment.

KEY QUALIFICATIONS

- Excellent public speaking, writing, and communication skills
- Experienced and familiar with working with groups of diverse populations
- Eleven years supervising & administrative experience in criminal justice & education industries
- Over eleven years of exceptional customer service experience
- Knowledgeable in training, curriculum development, and supervision of educational systems

EDUCATIONAL PHILOSOPHY

Teaching is a dynamic entity that allows one to empower and inspire those encountered. As a teacher, my goal is to enhance student learning using an eclectic approach. Although I ascribe to the constructivist learning theory, I believe that individuals are constantly bombarded with information that they transpose to fit into their schema. When the new information is presented, the individual can accept or reject the information based on the existing body of knowledge currently possessed. Even though they accept or reject the knowledge, this information can easily be challenged based on the preponderance of evidence and knowledge one already possesses. Hence, my goal for the students is to process new knowledge with critical thinking skills that allows them to deconstruct and reflect on ideas. It is through this process that learning takes place and lifelong learning can continue.

Furthermore, my role as an educator is to promote life long learning through sharing my life experiences in various occupations as well as allowing students to share. It is through sharing that our community of trust is built to facilitate transmission of knowledge through both subjective and objective means. In addition, this sharing of knowledge allows the student to accept responsibility for their own learning as well the role of the teacher. Thus, these are the tools that I engage and use to facilitate a community of life long learner that empowers them. This in conclusion, allows me to see that I am

successful when lives are transformed because they are capable of deconstructing knowledge and thinking critically about the world with a different perspective.

ACHEIVEMENTS

- Four years as a high school mathematics teacher
- Increased passing rate of students from 60% to 98% on standardized test
- Maintained a 98% passing rate for students on standardized tests
- Met and attained department goals with over 90% success in recruitment and retention of nursing, dental, and medical students
- Published, designed, and created a monthly pre-health newsletter for nursing, dental, and medical students
- United States Army, Certificate of Honor Graduate September 1996
- St. Louis University Academic Achievement Award 1991-1994
- Salutatorian (2nd Ranking Senior) of the Class of 1990
- U. S. Marines Female Athlete of the Year 1990
- National Honor Society 1988-1990
- Scholastic Honor Society 1986-1990

PROFESSIONAL EXPERIENCE

Instructional Designer 4/2012 – Present

Park University – Center for Distance Learning Kansas City, MO

- Engages Instructional Design principles to collaborate with Course Developers and Subject Matter Experts to develop learning objectives and training content, and ensure that the information is current, accurate, complete, and meets Quality Matters standards.
- Collaborates within the Center for Distance Learning to outline the scope of instructional media needs for online faculty and student development programs.
- Develops training that is aligned with the organization's goals and mission.
- Designs and develops interactive learning content including learning objectives, simulation scenarios, graphical art/media, and valid/reliable assessments.
- Develops and maintains assessment processes that monitor and evaluate performance skills based on outcomes tied to organizational effectiveness.
- Maintain and revise materials developed as needed.
- Independently design moderately complex training programs and topics that meet the needs of the organization and institutions.
- Develop, promote and maintain knowledge of adult learning theory and practice.
- Determine appropriate blend of traditional learning approaches with existing and new technologies in order to create and deliver best in faculty training programs.
- Evaluate learning programs and instructor effectiveness through the collection of data and feedback from participants using established tools.

- Maintain current knowledge of learning systems and methodologies, as they become available.
- Support faculty performance by providing training materials and faculty support as needed.
- Collaborates with Information Technology experts and multiple constituent groups, including teaching faculty, students, staff, administrators, and personnel in university centers for faculty and student support.
- Proficiency with eCollege Learning Platform, Study Mate, McGraw Hill Connect, Respondus, My Math Lab, Microsoft Office Suites: Microsoft Word, PowerPoint, Excel and Publisher and Adobe eLearning Suites: HTML, Captivate, Dreamweaver, Soundbooth, Photoshop, and Flash.
- Experienced in the development and programming of interactive, computer-based multimedia training materials using a variety of off-the-shelf software.
- Excels in a fast paced, information driven environment where productivity of the workforce is mission critical.

Project Manager/Senior Instructional Designer 2008 - 2012
St. Louis Community College, Florissant Valley Ferguson, MO.

- Supervises and coordinates the activities of others who participate in the design, production, delivery or management of instruction products and programs.
- Consults with client organizations regarding their organizational development, training and productivity/performance needs. Develops specific strategies to meet those needs.
- Conducts training needs analyses and develops comprehensive design documents.
- Translates training needs into program and instructional objectives and develops criterion-referenced evaluation items.
- Using subject matter experts, designs and produces instructional products such as instructor's guides, slide-tape programs, videotapes, computer based instruction modules, and job performance aids.
- Identifies and obtains external resources (specialized training vendors, equipment, materials, etc.) for the project.
- Provides training in the form of classroom instruction or on-the-job coaching as needed.
- Designs, develops and carries out formative and summative evaluations of programs and products that have been developed.

Adjunct Faculty 2008 - 2012
St. Louis Community College, Florissant Valley Ferguson, MO.

- Provides competency-based education
- Designs/delivers class instruction
- Enables student exit competencies
- Delivers learning-centered instruction
- Promotes student success
- Manages the learning environment

- Contributes to the a culture of learning
- Relates professional/life/industry experience to learning.
- Facilitate, teach, and guide the Elementary Algebra Course and the Intermediate Algebra Course

Instructional Designer/Adjunct Faculty 2008 - 2009
Drexel University, Philadelphia, PA

- Collaborate with Distance Education directors and Instructional Design Services project leads to create Web-based systems and applications
- Create innovative online learning materials for Distance Education courses using XHTML, Javascript, Flash, and CSS
- Construct complete fully online courses within major Learning Management Systems such as WebCT, Blackboard, and Moodle.
- Contribute to idea generation for DE courses and related IDS projects.
- Assist instructional designers in the assessment and evaluation of the usability and effectiveness of Web sites, educational materials, and learning objects
- Facilitate, teach, and guide the History of Math Online Course

Consultant/OCEP Reviewer 2008 - 2009
Monterey Institute for Technology and Education, Online Course Evaluation Project Monterey, CA

- Review and become familiar with all pertinent documents as background information on the Online Course Evaluation Project (OCEP), including the OCEP description and evaluation criteria.
- The Consultant may act as the Academic Evaluator and review online course(s) as designated by the Company's liaison (Basic Computer & Information Literacy) and provide information for the Scope & Scholarship section of evaluation categories in the OCEP course evaluation form.
- Performs the needs analysis, learning objectives, and learner analysis.
- The instructional consultant works in partnership with interested faculty, departments, and administrators to promote effective teaching strategies and improve student learning outcomes.
- The instructional consultant assists faculty with course design, course development, learning objectives, classroom management, active learning, learning theory, assessment methods, documentation of teaching, multicultural course transformation, and other topics related to teaching.
- Designs and conducts programs and workshops about teaching and learning
- Conducts applied research and evaluation; conducts teaching consultations, assists in the development, implementation, and evaluation of grant programs and grant-funded projects, collaborates with other units on initiatives, and researches the effectiveness of various teaching strategies and instructional technology

Adjunct Instructor/Instructional Technology 2004 - 2012
Grace University, St. Charles, MO.

- Taught Math, English, Instructional Technology, Reading, and Writing courses
- Perform all aspects of classroom management and assessment for courses in Education, Technology, and Mathematics.
- Conduct and complete academic advising, traditional and non-traditional student recruitment and curriculum design.
- Responsible for development and presentation of educational materials.
- Using subject matter experts, designs and produces instructional products such as instructor's guides, slide-tape programs, videotapes, computer based instruction modules, and job performance aids.
- Provides training in the form of classroom instruction or on-the-job coaching as needed.

Math Teacher 2007 - 2007
Riverview Gardens School District, Riverview Gardens High School St. Louis, MO

- Demonstrated proficiency in math curriculum including, but not limited to pre-algebra, algebra, geometry, calculus and trigonometry
- Demonstrated knowledge of various routine tasks, duties, and procedures and the ability to follow specific instructions with little or no previous experience
- Establish and maintain efficient classroom management procedures and standards of pupil behavior
- Establish a system of student evaluation within the guidelines prescribed in state law or adopted by the school district; continually evaluate and record various aspects of students' progress and report to parents as needed and required
- Understand and plan lessons leading to subject area objectives and assume the responsibility for written lesson plans for substitutes
- Provide a variety of planned learning experiences using a variety of media and methods in order to motivate students and best utilize available time for instruction
- Be available for counseling students and parents before and after school
- Perform basic attendance accounting and administrative tasks as required

Health Careers Educator 2006 - 2007
Phelps County Regional Medical Center, Mid-Missouri Area Health Education Center Rolla, MO

- Coordinate recruitment activities, developing a health careers recruitment program with special emphasis on minority and underserved populations in the Mid-Missouri AHEC area
- Design and develop marketing and other brochures, posters, etc to facilitate recruitment and increase public awareness
- Build educational portfolios for pre-med, pre-dental, and nursing students

Part-Time Math/Reading Online Instructor 2005 - 2007
Educate, Inc., eSylvan Learning Baltimore, MD

- Lead the learning with curriculum specific goals, lessons, and tasks, and present them to the student for grades 3-12
- Set the pace and encourage higher order thinking
- Monitor the learning process, constantly moving forward on the continuum from guided to independent practice (and to problem solving and mastery tests in math).

Chaplain 2004 - 2006
Missouri Department of Corrections, South Central Correctional Center Licking, MO

- Administrated, coordinated, facilitated, religious programming and correspondence courses
- Recruited and supervised religious volunteers for all faiths
- Managed budgetary and fiscal funds, request chapel facility repair and modifications

Acting Reserve Chaplain 2002 – 2003
Herzog Memorial United States Army Reserve Center, HHC 493rd Engineer Group, Dallas, TX

- Developed and administered chaplain service policies and procedures, including plans and operations, readiness management
- Engineered peacetime and wartime plans and policies relative to organization and management of chaplain activities such as manpower, chaplain readiness teams (CRT), deployments, ministry strategies, training, chaplain materiel, and chaplain funds
- Conducted worship services, liturgies, and rites

Math/Reading Teacher 2000 – 2003
Dallas Independent School District, Justin F. Kimball High School, Dallas, TX

- Taught math, reading, writing, and critical thinking skills
- Prepared students for the TAAS, TAKS, and other state assessments
- Advocated for the Math Department on the Site Based Decision-Making Committee
- Demonstrated proficiency in math curriculum including, but not limited to pre-algebra, algebra, geometry, calculus and trigonometry.

Math Teacher 1999 – 2000
Wilmer-Hutchins Independent School District, Wilmer-Hutchins High School Dallas, TX

- Prepared students for TAAS and other state assessments
- Monitored student progress towards mastery of instructional goals and objectives
- Demonstrated accurate and current knowledge in subject field
- Developed appropriate lessons to teach instructional objectives

Physical Education and Music Teacher 1999 - 1999

Charter Schools Administration Services, Academy of Austin Charter School
Austin, TX

- Trained students in physical education, health, substance abuse, and physical fitness training
- Taught students voice, diction, sound, and movement
- Planned a balanced music program and organizes daily class time so that preparation, rehearsal and instruction can be accomplished within the allotted time
- Encouraged and aids students to develop individual musical skills to the greatest extent possible
- Utilized repertoire of all types of music literature, including traditional and contemporary, that are appropriate for the ages and skill levels of students.

APS Specialist 1998 - 1999
Texas Department of Protective & Regulatory Services, Adult Protective Services
Austin, TX

- Performed advanced social work related to protecting the elderly and adults with disabilities who are unable to protect themselves.
- Conducted assessments of clients and their living conditions, developing service plans and providing or arranging for services to remedy problems.
- Interviewed and obtained written statements from potential witnesses, staff, and clients concerning the allegation of abuse, neglect, or exploitation of clients
- Documented data for reports summarizing the facts obtained during the investigations including findings as to whether abuse, neglect, or exploitation could be confirmed.

Chaplain Assistant 1996 – 1998
United States Army, U.S. Army Air Defense Artillery Center (6^{th} and 11^{th} Brigade)Ft. Bliss, TX

- Knowledgeable of principles of interpersonal relationships, screening and interviewing techniques, and suicide and crisis intervention skills; inspection and evaluation procedures
- Erudite of appropriated fund resource management, chaplain fund oversight and management, and religious facility management; communications and computer resource security; and personnel readiness, force protection of chaplains, war planning, and mobilization procedures
- Formulated plans and prioritizes the use of available resources to support chaplain professional ministry including: worship services, liturgies, rites, and ceremonies

Substitute Teacher 1994 - 1996
Jennings School District, St. Louis, MO

- Taught grades K-12 in the absence of their teacher
- Responsible for carrying out the lesson plans of the teacher in their absence
- Met the duties of teaching as outlined in laws and policies

- Assembled and instructed assigned classes in the locations and at the times designated
- Maintained a classroom environment conducive to effective learning

EDUCATION & CERTIFICATIONS

Doctor of Education, Walden University, Anticipated Graduation 02/2015
- Concentration: Educational/Instructional Technology GPA: 4.0

Doctor of Divinity, Christian Bible College & Theological Seminary, 6/1997
- Concentration: Theology GPA: 4.0

Masters of Education, American InterContinental University, 4/2004
- Concentration: Educational/Instructional Technology GPA: 4.0

Masters of Theology, Logos Christian College, 6/1996
- Concentration: Theological Studies GPA: 3.8

Bachelor of Arts, St. Louis University, 51994
- Concentration: Criminal Justice/Sociology GPA: 2.4

Adult Basic Education Certificate, 2006
Missouri Department of Elementary and Secondary Education, Jefferson City, MO

Private Academic School Teaching Certificate (Elementary and Secondary Education), 2005
Pennsylvania Department of Education, Harrisburg, PA

Preschool Director's Certificate, 2003
Preschool Administrator's Credential (PAC, Inc.), Benbrook, TX

Math/English Education Certificate, 2003
Jarvis Christian College, Hawkins, TX

Secondary Education Certificate, 2001
St. Joseph's College, Standish, ME

CertifiedNurse's Aid Certificate, 1990 and 2001
Texas Department of Human Services Nurse Aid Registry, Austin, TX

TRAINING AND DEVELOPMENT

- Missouri Department of Corrections Basic Training (MDOC)

- I.N.S.I.G.H.T.S. Training at MDOC
- Adult Protective Services
- Cultural Diversity
- Preschool Director Continuing Education Units
- Survey and evaluation research techniques
- Microsoft Office Suites (Excel, PowerPoint, Word, etc.)
- Utilized Blackboard, WebCT, E-Learning, Module Learning Platforms
- Utilized the ADDIE model and Minimalist Design to systems design

PRESENTATIONS

- A Prison Industrial Complex Educational Forum – 2006
- Nurse Entrance Test Preparation - 2006
- Culturally Responsive Care – 2005

SOFTWARE AND RESEARCH SKILLS

- Utilized SPSS statistical programs extensively
- Survey and evaluation research techniques
- Microsoft Office Suites (Excel, PowerPoint, Word, etc.)
- Utilized Blackboard, WebCT, E-Learning, Moodle Learning Platforms
- Utilized the ADDIE model and Minimalist Design to systems design

RESEARCH STUDIES

Hunn, N. A. (2006). *Facility planning and educational technology for correctional environments*. Minneapolis, MN: Walden University.

Hunn, N. A. (2006). *Educational technology, higher education, and inmate students.* Minneapolis, MN: Walden University.

Hunn, N. A. (2006). *Cognitive effects of limiting internet access to inmate students*. Minneapolis, MN: Walden University.

Hunn, N. A. (2005). *Educating the inmate with technology*. Minneapolis, MN: Walden University.

Hunn, N. A. (2003). *Algebra one online: Theory and practice*. Hoffman Estates, IL: American Intercontinental University.

Hunn, N. A. (1996). *Unregenerate man is dead in sin*. Independence, MO: Christian Bible College & Seminary.