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EFFECT OF INCREASING LITERACY SKILLS TO IMPROVE INMATE
BEHAVIOR: A QUANTITATIVE STUDY

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

to the faculty of the

DEPARTMENT OF EDUCATION SPECIALTIES

of

THE SCHOOL OF EDUCATION

at

ST. JOHN'S UNIVERSITY

New York

by

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ABSTRACT

EFFECT OF INCREASING LITERACY SKILLS TO IMPROVE INMATE BEHAVIOR: A QUANTITATIVE STUDY

Katie L. Millsap

This study examines the effect of increasing literacy skills during incarceration to improve adult inmate behavior, defined as a reduction in disciplinary reports received by participants. Male offenders, 18 years or older, housed in the Iowa Department of Corrections between July 1, 2017 – June 30, 2019 who completed two or more TABE Reading assessments met the inclusion criteria of the study. Multiple regression analyses were run to predict the correlation between the number of disciplinary infraction reports (dependent variable) each inmate received in a correlating timeframe of a TABE Reading assessment (independent variable). The results show that improved literacy skills are not significantly correlated to a decrease in disciplinary infraction reports.

DEDICATION

This dissertation is dedicated to my husband, Patrick, whose unwavering support and encouragement kept me going during the hardest days.

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CHAPTER 1

INTRODUCTION

Low-achieving students, who were classified as “at-risk” in their youth, are at a greater risk of being challenged by literacy difficulties in adulthood. These difficulties may lead to less opportunities for legitimate employment, thus increasing the likelihood of criminal activity involvement, which often results in a prison sentence (Tewksbury & Vito, 1994). While in prison, the lack of sufficient literacy skills becomes a hindrance when legal documents are sent from the court and they are unable to comprehend the meaning of the text, or struggle to correctly write and submit common legal forms, such as a habeas corpus. Per this author’s personal experience of working in a correctional library, those prisoners who wanted to prepare for their trial endeavored to utilize the law library provided by the prison but lacked the necessary comprehension knowledge, basic research skills, and computer literacy to locate and understand the laws of the United States. It was not uncommon to witness prisoners make a duplication of a legal form from a peer without updating pertinent information, such as the penal code for the charge against them, because their literacy and comprehension skills are not at a level which can process and submit the required information. Instances like this bring about frustration and anger, resulting in behavioral problems for the incarcerated. Using Lev Vygotsky’s (1978) Social Development Theory and Albert Bandura’s (1995) Social Learning Theory, this study will examine the effect of increasing literacy skills of prisoners and its correlation to improved behavior within the correctional environment and how the

literacy, or lack thereof, serves as a contributing factor to prisoner behavior and institutionalism.

Current rehabilitation programs that are available to prisoners, such as trade school opportunities, have proved beneficial for improving behavior for some who have been fortunate enough to participate in such programming. However, there are still many individuals who can benefit from solid foundational learning in literacy and information seeking skills. Adams and colleagues (1994) discovered in their research that inmates at the lowest level of educational achievement benefited the most from participation in academic programs and can reduce recidivism rates by about one-third. Increased literacy skills open new doors of possibilities for prisoners to make better life choices, thus improving behavior.

Starting with a background of the problem, statistical evidence of the wide-spread literate deficiency effecting prisons is reviewed. Current literature within this field of study is analyzed to determine the major influences that affect both low literacy and behavioral problems inside correctional institutions, which include: socioeconomic backgrounds, comprehension level of rehabilitative programming, the process of prisonization, and age.

Background of the Problem

Everyday across the county men and women walk the halls of correctional institutions never knowing if violence awaits them around the next corner. While violence in prisons will never be fully eradicated there are steps that can be taken to reduce prison violence towards other inmates, officers, and staff through improved behavior gained by increasing the literacy skills of those who are incarcerated.

There is a perpetual cycle of violent behaviors in prison (Arbach-Lucioni et al., 2012; Flanagan, 1983; French & Gendreau, 2006; Kuanliang et al., 2008) and it is going to require radical policy changes to see that the most basic needs of inmates are met. Basic needs extend beyond meals, sleeping arrangements, and medical care (Maslow, 1943). The ability to communicate effectively with others, through both written and oral expression can be considered a self-actualization need (Maslow's 5th level in his Hierarchy of Needs), which is frequently unobtained in the correctional environment because of the instinctual driving force of each inmate to meet their needs in each of Maslow's other categories: physical, safety, social, and esteem (Jones, 2004). Brunner (1993) stated that delinquent behavior is a result of frustration caused by reading failure. While Tewksbury and Vito's (1994) research highlights the fact that illiteracy is the link between lack of education, high crime rate, low employment rate, and incarceration. Therefore, it is imperative to successfully achieve fulfillment at the other four levels of needs so that improved literacy can be a focus to advance personal cognitive change in each individual.

In a 2001 study conducted by Foley that focused on juvenile offenders, the researcher determined that word recognition and reading comprehension skills averaged at a 6th grade level for delinquent youths, which was deemed to be a significantly lower level than non-delinquent peers of the same age. Because of this startling revelation that is plaguing the United States correctional system it is imperative that institutions need to prioritize increasing literacy skills in prisoners before they begin other rehabilitative programs. Despite the positive engagement that is associated with common institutional rehabilitative programs (e.g., HVAC technician, automotive mechanic, anger

management, behavior programs, etc.), these classes are primarily taught above the comprehension levels of many of the students (Davies et al., 2004; Moseley et al., 2006). Potentially, the reduced recidivism rate that is associated with rehabilitative programs is producing lower numbers than it potentially could if institutions focused on literacy first so that students could receive the full benefit of total comprehension of the program. In addition, Verbal IQs are higher in non-recidivists than they are in recidivists (Katsiyannis & Archwamety, 1999), which ultimately means that no matter the type of technical skills individuals receive, they are more likely to succeed outside of prison and not recidivate if their oral and written comprehension skills are increased.

Gordon and Weldon's (2003) study reviewed the benefits of career and technical education programs inside correctional institutions, which were found to create environments of opportunity for inmates to change their behavior. However, in a study published by Davies and colleagues (2004) it was determined that rehabilitation programs generally require reading competency at either Level 1 (expected competency of an 11 year old) or Level 2 (expected competency of a high schooler earning grades C or better) and speaking and listening demands at Level 2 or higher; yet, 57% of offenders read below a Level 1 while 35% of offenders speak or listen below a Level 1. Without comprehension on the students' part, educators are putting forth a great amount of effort and energy to improve the life skills and behavior of learners, yet the information is not able to be processed in its entirety due to lack of comprehension. Hopkins et al. (2016) reviewed perspective on literacy and communication skills of youth offenders and discovered that these young offenders struggled to understand verbal communication by the teachers and were unable to read their assignments, consequently resulting in work

avoidance. When learners don't understand the information, the natural behavior of humans is to become frustrated. This results in behavioral problems, prompting violence, which leads to disciplinary infractions on the inmates' records, thus perpetuating the cycle of unsafe environments associated with prisons (Arbach-Lucioni et al., 2012). If frustrations can be met at the source where the comprehension difficulties start to begin then there is a chance to circumvent situations that promote violence.

In part, behavior problems are a result of compensation for lack of literacy abilities (Bryan et al., 2007; Cunningham et al., 2005; Kuanliang et al., 2008). This includes behavior that is externalized with physical or verbal aggression and is perpetuated with previous and continued experiences in the classroom from peers and teachers who have put struggling learners down because of their lack of language abilities (Hopkins et al., 2016). In a study conducted by Hopkins et al. (2016) participants were asked to describe what they believe is good communication, they didn't elaborate on comprehension effectiveness or grammar, but instead described good communication as polite and respectful, "It's like sat here now, like good body posture, eye contact good attitude;" yet, poor communication was described using aggressive terms like swearing, shouting, and fighting, "I don't like, like my response aint right good. Like, I just like, argue more, put it across" (p. 100). Language plays an important role in behavior and it is time that correctional institutions make language skills a priority to create safer environments and provide a true foundation for rehabilitative programs.

Inmates do not enter the correctional system and suddenly forget how to read. Literacy, as defined for this study is a combination of the definitions taken from the National Assessment for Adult Literacy (n.d.) and Alberta Education (n.d.). Literacy is

thusly defined as the ability, confidence, and willingness to engage with and use printed and written information to acquire, construct, and communicate meaning to function in society, to achieve one's goals, and to develop one's knowledge and potential in all aspects of daily living. Literacy issues are a long-standing problem within these individual's lives well before they enter the correctional system. Some of the staggering statistics that reflect this incarcerated group of people include: 46.5% of adult American inmates do not have a high school diploma or GED, 67% of inmates are unable to read a bus schedule, map, or write a letter to explain a billing error (Berridge & Goebel, 2013), 75% of Florida's inmate population read at or below a ninth grade level (Brown & Rios, 2014), and more than half of the adults incarcerated in America have less than an 8th grade education (Vacca, 2004).

The lack of literacy in this environment is not a new phenomenon. In fact, historical records dating back to 1789 from the Philadelphia Walnut Street Jail document attempts at rehabilitation through correctional education (Gordon & Weldon, 2003). There has been a long-standing dilemma in the correctional environment and without significant changes to the nation's educational system, the problems associated with lack of literacy will be perpetual. The information presented here is an effort to bring positive changes to the behavior of inmates during their sentence of incarceration through improved literacy skills.

Significance of the Problem

Literacy is more than the ability to read and comprehend text, it can also be linked to one's communication ability, or lack thereof. Communication problems are commonly assessed as conduct problems; thus, a perpetual cycle of maladaptive behavior becomes

associated with an inmate. Hopkins et al. (2016) support this idea in their research when they estimated that 60% of offenders have "difficulties associated with speech-language and communication" (pp. 95-96). This lack of comprehension is directly associated to literacy levels, therefore, if programming focused on literacy, delinquent behavior (physical and/or verbal aggression towards others) might be avoided because repetitive failure leads to frustration and frustration leads to behavioral problems (Cox, 1987; Spira et al., 2005; Torgesen et al., 1999).

Berridge and Goebel (2013), state that educational programs in prison reduced criminal behavior and disciplinary problems during incarceration; however, this is not to say that it will prevent all delinquent behavior, but it does have the potential to alleviate some of the current problems that institutions face (Duwe & Clark, 2014; Lahm, 2009a). If prisons first focused on improving literacy, instead of rehabilitation programs, programs would be more successful because the participants have an increased potential for greater understanding.

Purpose of the Study

The purpose of this study is to determine if inmate behavior improves, which is defined as a reduction in disciplinary reports received, as a result of improved literacy skill development during incarceration. Prisoners who are enrolled in an Adult Basic Education (ABE) program must take the Tests of Adult Basic Education (TABE) assessment tests. For this study, literacy skills, as determined through the test's Reading scores, will be the independent variables that will be reviewed and analyzed using four Reading test scores taken from each participant between the years 2017 – 2019. The dependent variable will be defined as the number of disciplinary infractions received

from their first day of incarceration through the date of the last Reading assessment. The results of the data will be explored using a multiple regression analysis to predict the value of disciplinary infractions based on the value of Reading scores.

Theoretical Rationale

In the early twentieth century the world of psychology was split between the belief and study of environmental influence or man's consciousness. Lev Vygotsky put forth the notion of a bridge between these two schools of thought in his conceptual framework of Social Development Theory by suggesting that culture becomes a part of a person's nature (Vygotsky, 1978). His theory addresses themes including social interactions, the more knowledgeable other, and the zone of proximal development which is, "...the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). In many ways, behavior is influenced by an individual's surrounding community, which establishes social learning patterns. Taylor et al. (2003) research on collaborative practices in adult literacy programs was framed using Vygotsky's zone of proximal development and identified that a deprivation of cultural situations creates a lack of literacy growth. Vygotsky states that a person's cognitive development process is developed after social learning. Simply said, it is the community that sets the foundational process to make meaning (McLeod, 2014). "From this perspective, an educator's goal is to aim instruction in advance of development; to approach instruction with attention to fostering development through learning" (Vadeboncoeur, 2017, p. 56). Therefore, it is essential for educators, particularly in the correctional classroom, the

design learning environments that foster social collaboration and personal cognitive development by working with a more knowledgeable other.

Another framework of social learning is credited to Albert Bandura who conceptualized the development of Social Learning Theory in the 1960's. His research focuses on behavioral development and children's ability to learn from others (Bandura, 1977). His theory has continued to develop over the last 40 years, which included a name change to Social Cognitive Theory and now includes elements of self-efficacy in learning and a prominence in the field of literacy, as it is believed that observational learning and modeling is essential in the development of literacy (Tracey & Morrow, 2017). Bandura has narrowed the development of self-efficacy down to four sources of influence: (1) mastery experiences, (2) vicarious experiences, (3) social persuasion, and (4) physiological and emotional states (Bandura, 1995).

Vygotsky's and Bandura's learning theories apply to this study because of the interconnectedness of personal learning and the elements that are infused with the best ways to see that completed; an increase in self-efficacy because of improved literacy skills and the behavioral change that occurs in an individual because of the social, cognitive, and language development over time. Social learning theories provide the framework for this study because humans by nature are social creatures and this is especially obvious when witnessing the behavior of inmates and their reliance on peer approval, which was observed through the author's personal experience when working as a correctional librarian.

By applying Vygotsky's and Bandura's theories to prisoners, researchers can view topics of behavior and literacy skills through a narrow lens in an attempt to

determine if behavioral patterns of inmates are a consequence of their social surroundings. Being that the prison environment houses predominantly low literate individuals, there is a possibility for behavioral change in the environment if a portion of inmates increase their literacy ability, for this improvement would eventually affect change in others resulting in improved behavior for the majority. For this study, literacy skills are defined as the ongoing practice to communicate, comprehend, produce, and interact with a variety of mediums including print and aural information.

Personal Interest

As a prior correctional librarian, the author of this paper witnessed the struggles of correctional educators, the frustrations of prisoners who were mandated to attend ABE/GED classes, correctional officers who were indifferent to rehabilitative programming, and individuals who were frequent visitors of the library because they were looking for a way to escape reality for a short time. Unfortunately, low reading ability limited the types of resources that were accessed, and comic books became the acceptable reading material for users of all reading abilities despite the attempt by some correctional libraries to offer specialized resources, such as Hi-Lows (High Interest, Low Readability). These attempts to provide diversified reading at a comfortable comprehension level were thwarted due to institutional peer pressure to refrain from displaying weakness, or insecurities, stopped potential users from ever looking at material that was suggested by trained library staff. The facility where the author worked did not attempt to build collaboration between the educators and the librarians and because of that there was a missed opportunity to increase the literacy skills of those who were incarcerated.

Research Questions

This study will be guided by the following research questions:

- 1) Do disciplinary infractions decrease when literacy skills increase?
- 2) Does the safety and security of the prison increase with more literate inmates?

| <i>Research Question</i> | <i>Means of Data Collection</i> | <i>Means of Data Analysis</i> |
|--------------------------|---|---|
| 1 | <ul style="list-style-type: none"> a) TABE Reading assessment scores collected four times between 2017-2019 b) Number of disciplinary infractions collected over the same time period | Multiple regression analysis to determine if the number of disciplinary infractions decrease when TABE Reading scores increase |
| 2 | Use existing data collected from Research Questions 1 | Review and analyze the multiple regression results and common trends evaluated using demographic data to determine if there is a decrease in disciplinary infractions (which jeopardizes the safety and security of prisons), thus creating safer environments if there are less infractions with an increase in literacy skills. |

Hypothesis

H₁ = An increase in Reading scores of TABE assessments will be significantly correlated to a decrease in the number of disciplinary infractions for inmates participating in Adult Basic Education.

H_0 = An increase in Reading scores of TABE assessments will result in no change in the number of disciplinary infractions for inmates participating in Adult Basic Education.

Assumptions

Since the study is designed to use blind data and the results of this study can prove to be beneficial for both correctional staff and prisoners, it is assumed that the facility will allow researcher access to test scores and the number disciplinary infraction reports given to each participant within a specified window of time.

Limitations

The limitations that will affect this study vary in levels of difficulty but despite the challenges the benefits that can be gained with this research make the journey worth the struggle. ABE classes are at the mercy of modified programming (meaning that if there are any safety concerns, inclement weather, or staffing issues, inmates may not be released to class for a variety of reasons) which can result in less ABE classroom time that is essential for the development of literacy skills. Delays in access to the classroom prolong the time it takes for participants to achieve the necessary 40 hours of instruction that are required before they are allowed to take another Reading assessment of the TABE test. This results in a fluctuating time period to accommodate for a large enough sample size but also creates inconsistencies between the amount of time participant complete four Reading assessments.

Using incarcerated individuals for this study means that participants may have received their initial assessment test at an intake facility and then transferred to a different facility for the remainder of their sentence, or were transferred once again at a later date to a different facility based on inmate or staff needs. This has the potential to create

inconsistency with the frequency and type of education instruction they have received while enrolled in the ABE program.

Lastly, because of the unprecedented pandemic of the Corona Virus (COVID-19) this study has to be adapted to use data prior to the year 2020 because of the significant impact health and safety measures had on incarcerated classrooms and the widespread lack of instructions students received during this time.

Despite these overwhelming hurdles the potential data knowledge that can be gained through this research has the potential to revolutionize the prison environment and create a safer place for individuals behind the walls.

Delimitation

To be considered for participation in this study the following parameters must be met:

- (1) All participants must be male offenders in the custody of the Iowa Department of Corrections between the years 2017 - 2019
- (2) All participants must be age 18 or older at the time of offender's intake TABE assessment
- (3) All participants must have completed and have scores reported for 4 TABE Reading assessment tests between 2017 – 2019

Summary

While violence is unfortunately a common occurrence in prisons, it does not mean that staff and inmates have to accept the current unsafe conditions. There is potential to change the very essence of disruptive behavior by spending more time focusing on the literacy needs of incarcerated individuals before rehabilitative programs begin. This research has the potential to influence policy changes ultimately creating safer

environments for all personnel associated with prisons. As an added benefit, the increased literacy skills will aid parolees with additional job skills upon release. This researcher recognizes that this is a complex topic and there are many variables and limitations that affect correctional institutions and those who are directly involved with the facility. However, the advantages that can be a result of such research outweighs the challenges that this type of study will face and it is the hopes of this researcher that groundwork will be laid for future studies to explore the relationship between increased literacy skills and overall improvement of correctional environments.

Definition of Terms

Adult Basic Education. *Adult Basic Education (ABE)* is a correctional education program that focuses on training students in basic math, reading, writing, and English as a Second Language (ESL) skills (Correctional Education, 2019).

Behavior Pattern. *Behavior Pattern* is a repeated way of acting by a group or individual in a given situation or toward an object (“Behavior Pattern,” 2020).

Correctional Institution. *Correctional Institution* is synonymous with prison and correctional facility. At this location individuals who have been convicted of committing a crime are detained and supervised until their court ordered sentence has been completed (U.S. Correctional System, 2019).

Disciplinary Infractions. *Disciplinary Infractions* refers to the violation of a rule that poses harm to a person, breach of facility security, or damage to property (Major Disciplinary Infraction, 2019). Inmates who are charged with a violation inside the facility have a formal disciplinary infraction report added to their personnel file and may be punished depending on the severity of the rule violation.

Literacy. *Literacy* is the ability, confidence, and willingness to engage with and use printed and written information to acquire, construct, and communicate meaning to function in society, to achieve one's goals, and to develop one's knowledge and potential in all aspects of daily living (Alberta Education, n.d.; National Assessment of Adult Literacy, n.d.).

Literacy Skills. *Literacy skills* are the ongoing practice to communicate, comprehend, produce, and interact with a variety of mediums including print and aural information.

Recidivism. *Recidivism* is a three-year time period following a prisoner's release where he/she with or without a new sentence is reconvicted, rearrested, or returned to prison for criminal behavior (National Institute of Justice, 2019).

Self-Efficacy. *Self-Efficacy* a person's perception of their capability to achieve or execute the action necessary to reach a desired goal (Gallagher, 2012).

Tests of Adult Basic Education. *Tests of Adult Basic Education (TABE)* refers to one of the comprehensive academic assessments that are an option for use in an Adult Basic Education program to measure reading, mathematics, and language (TABE, 2021).

CHAPTER 2

LITERATURE REVIEW

There are many elements of influence in the correctional environment that must be acknowledged for in this study. By first reviewing behavior, prisonization, and institutional safety statistics the foundation of this research is presented. Discussing the additional elements of rehabilitative programming and illiteracy in prisons highlights the necessity for continued research into these correctional areas. And lastly, broaching the subject of specific elements of literacy to include in correctional classrooms, as well as the importance of self-efficacy, establishes a knowledge base for the need of continued research into improved literacy skills in correctional environments.

Behavior

Misbehavior inside the correctional environment is a costly endeavor physically, emotionally, and financially (French & Gendreau, 2006; Lovell & Jemelka, 1996). Accurate reporting of misconduct in prison is difficult to assess because published studies typically focus on the number of incidents reported, yet lack essential information that could be used to assess a complete picture as to the reasoning why there was a misconduct problem in the first place. In 1996, Lovell and Jemelka released their findings about the cost associated with infractions inside one Washington state prison. Their research determined that within a six-month period there was 2,040 minor infractions and 792 major infractions which translated to approximately \$990,000 per year in costs associated with misbehavior inside that one facility and \$9 million annually throughout the state's prison system.

Infractions are influenced by a situation that usually involves an inmate, an officer, and a setting (Flanagan, 1983). French and Gendreau (2006) discovered that crowding, institutional climate, offender risk level, and misconduct histories were missing in more than 90% of the studies that were reviewed for their meta-analysis of the relationship between misconduct and treatment programs.

According to Bryan et al. (2007), adolescents who have a history of poor school achievement commonly find themselves involved with criminal activity later in life. In 2014, the U.S. Department of Justice released their prisoner statistics bulletin which identified 37% of the male prison population were black, 32% were white, and 22% were Hispanic (Carson, 2014). Lounsbury (2008) describes the correctional environment as “disproportionately black and brown” (p. 6). Foley’s (2001) analysis discovered that out of 105,000 juvenile delinquents, three quarters (86.5%) were young men from ethnic minority backgrounds. By comparing these statements, it can be concluded that individuals in the United States with poor school achievement and who come from minority backgrounds, are more likely to be incarcerated than their peers.

Once incarcerated these new prisoners are faced with an entirely new set of politics and social rules which may further influence behavioral adaptations, thus they become the predominate contributors of misconduct and create the greatest risk for the safety and balance of an institution (Camp et al., 2003). Those who are younger with shorter time periods of prison sentences, histories of disadvantaged socioeconomic conditions (both including and excluding psychological conditions), prior criminal transgressions, and have previously served a separate incarceration sentences engage in higher levels of misconduct in prison than other inmates (Arbach-Lucioni et al., 2012).

In the correctional environment, misconduct results in a disciplinary infraction being issued against an offender and depending on the severity of the infraction can result in privileges being removed, solitary confinement, or a longer prison sentence.

Disciplinary infractions can be issued for a number of reasons including more serious matters like drug offences, assaults, and weapons charges, but can also include minor infractions such as refusal to follow instructions, not being in a location they are told to be, or littering. Pompoco et al. (2017) identified that greater than 55% of inmates in their study (N = 92, 217) were ticketed for a minor infraction at least once during their incarceration.

It is speculated a reduction of only 10% of misconduct problems inside an institution can be the difference between a chaotic and more difficult prison environment, or a facility where there is adequate coping with the institutional situation (French & Gendreau, 2006). This difference between chaos or a well-run institution greatly affect the safety of inmates, officers, and staff. Therefore, a reduction in prison misconduct is an essential component that all institutions should consider when determining the most efficient and effective way a correctional environment should be run. With this study analyzing the improvement of adult inmate behavior with increased literacy skills, it will be one more study aimed at narrowing the focus of potential ways to reduce misconduct while incarcerated.

Pompoco et al. (2017) reviewed facility education programs and their ability to reduce misconduct and discovered that inmate participants who completed GED or college classes within their first year of incarceration had a significant reduction in violent misconduct rates (9% overall) compared to those who were enrolled in vocational

training or apprenticeship programs (p. 534). It is the author's belief that this is a direct result of the low levels of academic functioning, which would be more prevalent in vocational training or apprenticeship programs than in GED or college classes. This directly relates to an increase in behavior problems due to frustrations caused by lack of comprehension with teachers, correctional officers, and/or the rehabilitative programming.

Prisonization

Prisonization directly effects the probability of misconduct and is a credible threat to the safety and security of an institution, which effects not only inmates but officers and staff as well. According to Gillespie (2003), prisonization is when "prisoners adopt norms that are indicative of the inmate subculture" which include "self-mutilation, suicide, rebellion, and resistance" (p. 1). Those most easily influenced by prisonization, and have the highest correlation between prisoner and misconduct, are offenders who are 25 years or younger because youths are more susceptible to peer pressure and have a driving need to compete for dominance (Arbach-Lucioni et al., 2012; Ellis et al., 1974; Flanagan, 1983). Kerbs and Jolley (2009) studied the need for age segregation in their research and stated that because older prisoners are generally not building or attempting to maintain social status within the correctional environment, instead displaying more passive or avoidance behaviors, they become vulnerable and have an increased likelihood of victimization by younger inmates. In Lahm's (2009b) study it was calculated that offenders younger than age 25 accounted for 75% of assaulters in federal prison and 56% of assaulters in state prison.

A potential reasoning for this increase in youthful misconduct is because of the interrelated needs that youths face when entering the correctional setting which can include behavioral, emotional, social, academic and health related issues (Foley, 2001). Fear of victimization by younger, stronger inmates (Vito & Wilson, 1985) who look to exploit elderly inmates increase the safety and security risks of the elders (Kerbs & Jolley, 2007). Which is why it is crucial that educational programming begin immediately upon entry into the correctional environment for those without a high school diploma or high literacy abilities because once an inmate becomes institutionalized to the concept of prisonization they become resistant to participate in educational programming because it falls outside the established norms and daily routine of prison life (Berridge & Goebel, 2013). If an individual begins to build resistance towards programming it will be more difficult to bring about change in that individual's life no matter the type of rehabilitative programming offered.

Thus, age, low reading ability, and lack of previous academic achievements are all factors that influence the behavior of inmates. Kuanliang et al. (2008) found that youth and adult prisoners had similar levels of academic underachievement. These levels of underachievement correlate to the idea that those adults, who may have at one time been youth offenders, never received either enough, or any, academic support to increase their literacy ability to a functional level during their initial proceedings with the correctional system. If literacy improvements can be focused on during the initial prison sentence of a youth, the positive impacts associated with increased literacy has the potential to change the trajectory of an individual's life away from criminal activity and disruptive behavior and towards becoming a productive member of society. Increased literacy will provide

the knowledge and capability of those who are incarcerated to address issues of frustration in an articulate and rational manner instead of with physical force and violence.

Institutional Safety Statistics

Due to rising prison populations, longer sentencing, and loss of programming assaults within correctional facilities are rising (Lahm, 2009b). From 1995 to 2000 there was a 24% rise in staff being assaulted by inmates, a 28% rise in inmates assaulting other inmates, and a 66% rise in major disturbances, which are defined as incidents involving 5 or more people that results in any series injury or property damage (Stephan & Karberg, 2003). Yet thankfully, despite the rise in misconduct there was a reduction in the amount of assaults that resulted in staff fatalities from 14 in 1995 to 5 in 2000 and inmate fatalities from 82 in 1995 to 51 in 2000 (Stephan & Karberg, 2003). Using those same years (1995-2000), Useem and Piehl (2006) confirmed a rise in staff assaults from 13.2/1000 in 1995 to 15.3/1000 in 2000 and inmate assaults from 25.2/1000 in 1995 to 29.2/1000 in 2000. Though inmate-on-officer assaults are less frequent than inmate-on-inmate assaults it is still a constant threat due to the authoritative nature officers have in the prison environment and the potential of individual unwillingness to cooperate (Lahm, 2009b). One additional factor that has been shown to influence the number of inmate-on-staff assaults is the racial makeup of the institution. Institutions with greater non-white populations have an increased risk in staff assaults using a weapon (Gaes & McGuire, 1985).

Once again turning to young offenders it must be asked if they have higher rates of misconduct compared to their older peers because the officers have less patience with

youthful or new inmates. There is a possibility that correctional officers might be attempting to establish dominance in the correctional environment and are more willing to issue a disciplinary infraction to a young offender more than they would an older inmate. Flanagan (1983) posed the notion that depending on the person, or type of misconduct involved, correctional officers respond differently especially in regards to racial categories, violent or drug offenders, and youth offenders.

Completers of rehabilitation programs had a 9% reduction overall in violent misconduct when compared to those who did not complete a re-entry approved program and the higher the level of education that was completed correlated to a continual drop in misconduct rates (Pompoco et al., 2017). The lowest level of misconduct rates occurred for those who completed college classes (Lahm, 2009a; Pompoco et al., 2017). Yet the main underlying factor is this, inmates will not be able to take GED or college classes and improve their behavior if they cannot read. It is critical for institutions to realize that if they want to reduce behavioral problems they need to first focus on the basic needs of the individuals, such as reading ability, which affects a significant portion of the incarcerated population. If institutions and tax paying citizens really want to see inmates change their lives using the skills they can gain through rehabilitative programming, then teachers and policy makers need to recognize the literacy disadvantages these prisoners face on a daily basis and first work towards rectifying these foundational skills that will set the precedence for every other interaction they have in their life.

Rehabilitative Programming

Rehabilitation programs are designed to provide improved skills for inmates to reintegrate into society upon release through education, vocational training, or substance

abuse support. However, rehabilitative programming is regularly taught at a higher level of comprehension without making accommodations for those with low literacy levels (Hopkins et al., 2016). Ultimately, institutions are expecting inmates to modify their behavior and rehabilitate without being able to fully comprehend the information that is being given to them.

If prisons first focused on improving literacy, then on rehabilitation programs, I believe the programs would be more successful because the participants have an increased potential for greater understanding, which will avoid repetitive academic failure and frustration. Thus, improving the self-efficacy of the learners and reducing misconduct one classroom at a time. This is not to say that it will prevent all delinquent behavior, but it does have the potential to alleviate some of the current problems that institutions face.

Because recidivism is a common key component for correctional studies it is important to define recidivism as "... a return to criminal or delinquent activity after previous criminal or delinquent involvement" (Texas Legislative Budget Board, 2017, p. 1). Reviewing recidivism reports for the last 20 years identified a consistent percentage of reoffenders. The Arizona Inmate Recidivism Report (2005) identified 42.4% of inmates returned to custody between 1990 and 1999 out of the 54,660 inmates who were released, that means that over 20,000 people, just in Arizona, committed another crime after release and returned to the correctional environment. The Pennsylvania Department of Corrections Recidivism Report (2013) emphasized that the 2008 3-year re-arrest rate was 43%, which was the lowest it had been in the previous eight years. Lastly, Texas' Statewide Criminal and Juvenile Justice Recidivism and Revocation Rates report

(2017) identified that 46.4% of adults were rearrested within three years of release between 2011 to 2013 (p. 2). Clearly, if the recidivism rate is between 40-50% in each state, the current rehabilitation programs are not working. A dramatic shift in programs, resources, and services behind bars is needed before the current system becomes unsustainable in the United States.

Zamble and Quinsey (1997) conducted a mixed methods study, *The Criminal Recidivism Process*, in which they identified that recidivists had completed less schooling (average highest grade 9.5) compared to their non-recidivist peers (average highest grade 10.3) and only 42.1% of recidivists were employed prior to their re-offense compared to 61.1% of non-recidivists who were employed after release. Parolees are faced with the same hassles that affect the majority of the population on a daily basis, yet because of their recent release they are faced with additional difficulties like re-acculturation, unfamiliar fast changing societies, and social reintegration (Zamble & Quinsey, 1997). Without coping techniques, education, or clear directions of how to integrate those new skills, the perpetual reoffender cycle will continue.

The disconnect between rehabilitation programming and prisoners' cognitive abilities directly affects the recidivism rate because of the participants' inability to fully comprehend the information. It is critical to further the exploration of effective literacy improvement techniques to aid in the rehabilitation of the incarcerated, which is why this study is examining the effects of improved behavior with increased literacy skills.

Illiteracy in Prisons

Inmates do not enter the correctional system and suddenly forget how to read. Literacy issues are a long-standing problem within these individual's lives well before

they entered the correctional system. Education and literacy have been topics of correctional reform as far back as the late 1700s in the United States. In 1798, Caleb Lowmes, a prison inspector, argued that education of black and white inmates benefited not only the institution, but the inmate's lives as well (Schorb, 2014). Eastern State Penitentiary officials requested support to employ a moral instructor who could make the prisoner's time of incarceration "...as far as possible the means of their reformation, so that when restored to liberty, [prisoners] may prove honest, industrious, and useful member of society" (Schorb, 2014, p.183). These core ideas of correctional rehabilitation have remained the same from the 1700s until present. The methods by which rehabilitation is delivered has varied and adapted over the centuries to incorporate new ideas and technology but the foundational principles have remained constant; education has the ability to improve the lives of prisoners both during the time of incarceration as well as after release.

Because literacy is imperative to function in modern American society, it may be shocking to learn that a study conducted in 2008 revealed 75.5% of inmates housed in Florida's correctional facilities read at or below ninth grade level (Brown & Rios, 2014). Vacca's (2004) research found a similar statistic and expressed that more than half of the prisoners in both federal and state correctional institutions cannot read or write and have less than an 8th grade education.

Because this is a common trait among those who are imprisoned, deductive reasoning concluded that lack of literacy is a factor for an increase in criminal activity. Frequently, parolees have difficult times finding jobs because of their lack of literacy skills or experiences (Vacca, 2004). Low literacy levels contribute to the recidivism rate

of individuals because without the ability to communicate and comprehend advanced texts, jobs become more difficult to find and/or keep, resulting in individuals having to revert to a life of crime as a means of survival.

There have been advancements as to how literacy is addressed in select prisons, as all states have a standard test to assign inmates to literacy programs, but some states have different scoring thresholds by using either the reading and writings scores or the reading and math. There are arguments to use more specific normed tests that assess for fluency, vocabulary, and word recognition which are the key components of reading (Muth et al., 2017) but this has yet to be adopted as a standard across the correctional environment. Also, the components of personal motivation and prior academic experiences, has the potential to improve Adult Basic Education classrooms to see that the content being taught is relevant, but this type of data can only be gained through qualitative study. It is only then that correctional educators can understand how to best impact the lives of adult learners by understanding their perceptions to educational programming, literacy backgrounds, and each individual's driving factor behind self-improvement.

Elements of Literacy

Without social context and cultural understanding, reading and writing are no more than artistic symbols drawn on pages. A learner must be able to connect meaning to the shapes (letters) to induce comprehension that is directly tied back to a person's schema. McVee et al. (2013) reviewed 25 reading and language arts texts published between 1989 and 2004 and discovered that all texts associated the reading process, especially comprehension, as being related to a student's schema. The researchers

believed that schema is the link between culture and memory (McVee et al., 2013). An example of this can be seen when having students read ambiguous passages. Texts can be interpreted and have significantly alternative viewpoints based on the readers prior knowledge. A direct example of this phenomenon can be reviewed in Heath's seminal ethnographic research on the children from Roadville, Trackton, and Maintown (Heath, 1983). The variations in their homelife resulted in drastically different schemas that changed the way they interacted with classroom language, learning patterns, and texts.

In a correctional classroom, it is important for instructors to be able to invoke a cultural connection to the reading. If done successfully, this cultural connection will aid students in being able to retain the information and ultimately improve their literacy skills. Because correctional classrooms are unique environments that must cater to learners similar to those found in Heath's research, it is important for instructors to be able to invoke cultural connections to the readings to provide the best opportunities to improve literacy skills and use relevant stories for supplemental material to create purposeful transactions with the text.

When the environment is conducive to the learning needs of the students, learners are more likely to be engaged and motivated to continue their educational advancements (Hopland & Nyhus, 2016; Tatum, 2013). Vacca's (2004) research highlighted that inmates who successfully learned to read and write, and completed an educational program, were less likely to recidivate. And while the topic of recidivism is important, it is more important to recognize the steps that must be taken well before a person is

released from prison and what key elements of their life need to be recognized to reduce misconduct while they are serving their sentence.

Reading scores and program participation within the first year of incarceration were found to be significantly related to the reduction of misconduct (Pompoco et al., 2017). However, few studies that explicitly correlate literacy or educational programs with misconduct rates have been published. The majority of the available research on correctional education focuses on recidivism, not misconduct during incarceration.

Some other areas that appear to be significant factors in relation to prisoner misconduct are socioeconomic factors, dropping out of school, and unstable work history prior to incarceration (Arbach-Lucioni et al., 2012; Flanagan, 1983; Gaes & McGuire, 1985). Between researchers identifying large portions of the correctional population as having speech-language and communication difficulties (Hopkins et al., 2015) and misinterpretations of these direct communications as non-compliance (Bryan et al., 2007) there is a perpetual cycle of bad behavior that becomes associated with an inmate, when in reality it is a communication and comprehension problem. Therefore, if rehabilitative programming (i.e., academic, vocational, or behavior management classes) focused on literacy first, delinquent behavior, defined as physical and/or verbal aggression towards others, might be avoided because repetitive failure leads to frustration and frustration leads to behavioral problems.

A common argument is to stress the importance of behavioral programs to reduce misconduct above all other programs. French and Gendreau (2006) argue that behavioral programs produce a better result than educational programs 69% - 77% of the time. However, this study was biased because when they conducted their meta-analysis their

keywords were heavily weighted to reflect predominantly behavior modification, cognitive intervention, and group therapy programming. Because of this, their results reflect unfair statistical reporting towards educational programs. Furthermore, if the listening and speaking competency levels as described by Hopkins et al. (2015) are taken into account, then it is illogical to enroll participants in a program when they do not possess the comprehension abilities to fully understand the information they are being provided.

Because correctional environments house predominantly low literate individuals, it follows Vygotsky's (1978) and Bandura's (1977) theories that there are possibilities for social cognitive and behavioral change in the environment if a portion of inmates increase their literacy ability. This improvement would eventually affect change in others resulting in improved behavior for the majority causing a reduction in the number of disciplinary infractions. Ultimately, a safer environment is being created for inmates, staff, and correctional officers all because of improved literacy skills.

Unfortunately, despite the high demand of basic educational classrooms, there are long wait lists, lack of resources, and short sentence lengths that hinder those who are most in need from ever getting the educational assistance they require (Pompoco et al., 2017). Institutions should work harder to see that these needs are being met immediately because without an increase in literacy skills, and continual academic advancements, prisoners are more likely to be involved with misconduct during incarceration and eventually recidivate upon release.

Self-Efficacy and Improved Behavior with Increased Literacy Skills

Humans are by nature social creatures and the acquisition of literacy is not an exception to this behavior (Chomsky, 2002). From the dawn of the written language 5,000 years ago scholars, or those who could read, were set above other members of society and perceived as elite (Olson, 2020; Pownall, 2007). This elevated pedestal of readers above non-readers has continued into the 21st century. Children and adults become embarrassed when they are unable to read (Stygles, 2019) and the humiliation and shame grows from adolescences into adulthood until it reaches a point where an individual will go to extreme lengths to keep illiteracy a secret. The author of this study is a prior correctional librarian who witnessed convicted felons bow their head in shame and whisper to that they, “Don’t read good” so they avoided the library to prevent embarrassment. Because literacy is acquired through interactions between kids and parents, students and teachers, and peers, the impact of these reading and writing interactions either encourage and support learning or teardown and shame learners (Horowitz, 2000). Both instances reinforce a pattern, but one is a positive pattern of personal success and improved self-esteem towards reading, while the other is negative pattern and results in learners shying away from literacy activities (Paratore et al., 2011).

It should be noted that Vadeboncoeur (2017) stated that emotional ranges from frustration to elation to exhaustion are common experiences when learners are in a zone of proximal development, but it is through a trusting relationship between teachers and students that learners stay engaged throughout the range of emotions. So, while improving literacy will ultimately reduce frustrations in regards to literacy difficulties, getting to an optimal comprehension point will potentially be a tiresome and frustrating

journey both for students and teachers. Taboada et al. (2013) surmise that reading comprehension is strongly driven by internal motivation, which is influenced by the environment around the learner, but also supported by independent contributing factors including background knowledge and student questioning.

Gee (2013), supported by Vygotsky's theories, argues that reading and writing are interconnected with speaking and listening, which is also connected to the interactions of others, because language is about conveying perspectives through communication. According to Gee (2013), reading instruction requires an ability for the teacher to recognize that learners will have diverse perspectives which will continue to grow in complexity from their first stages of learning. Both fiction and non-fiction material will be shaped by the learner's known social world and no two students are alike. Teachers interject their own thoughts, feelings, and interpretations through literary behaviors to encourage a response (e.g., compassion, anger, intrigue, etc.) in others but the perception of the learners may be vastly different across a classroom because of each individual's perspectives (Diekema & Olson, 2012; Heath, 1982). It is also through this social language that others learn from us, or we from them, depending on an individual's Zone of Proximal Development (Vygotsky, 1978).

Anderson's (2013) ideas about the role of reader's schemas for learning, comprehension, and memory are directly tied to the sociocultural aspects that were previously addressed by Gee (2013) and Heath (1982). Social influences affect a reader's schema, which in turn will lead to interpretation variations of a given text by each new reader (Anderson, 2013). Ultimately, comprehension is the requirement of activating schema to define and conform objects and events that are discussed either orally or

textually. Anderson (2013) reported that because minority children are not predisposed to cultural perspectives that are found in classroom related stories, texts, and tests, these children are at a direct disadvantage than their peers.

Ruddell and Unrau (2013) researched motivation and its implications towards the meaning-construction process by exploring the processes and interactions between the reader, the text, and the teacher. The researchers describe the reading process as representations constructed through surface codes (literal representations of the letters and sentences on the page), text base (the meanings derived from the sentences), and the situation model (activated schemata to derive connections and meaning). Their work elaborates on the personal motivation to learn such processes by identifying that if individuals believe they can improve their literacy by putting forth additional effort, then they are more likely to take on the challenge and work their way towards mastery.

In a similar manner, Rogers' (2018) research study uses narrative inquiry with 15 adult literacy students to test the theory of differences in literate subjectivities across contexts in select groups of people. This study found that a sense of self shifted across domains and was influenced by prior learning experiences. It is these prior learning experiences that make the qualitative portion of this current research study so vital because it provides insight into both literacy and behavioral influences for adult inmate learners. Tighe et al. (2018) identified three influences that affect adult literacy education as (1) teacher-student interactions, (2) student views on testing, and (3) student motivational factors. As a result of the various influential factors, the definition of success is framed in different terms from the various stakeholders involved in the adult basic education setting.

Literacy extends beyond the social interaction behaviors researched by Anderson (2013), Gee (2013), McVee et al. (2013), and Taboada et al. (2013). Similar concepts and thoughts have also been explored by others who see that literacy is driven by the social influences of others in their environment. Lenski and Nierstheimer (2002) believe that learners need to have purposeful transactions with texts and meaningful participation in social groups to encourage the acquisition and development of literacy learning. If meaningful transaction occurred, the knowledge gained would spread like wildfire between this particular group of learners because that is prison culture. Once information like this spreads, it will generate more interest by others who want to learn, thus, change has been introduced and supported by the sociocultural interactions of the incarcerated learners.

Inmates who participate in literacy improvement programming have the potential to improve their self-esteem, which according to Trzesniewski et al. (2006) is important because low self-esteem in adolescents has been shown to be a predicting factor for an increased likelihood for a criminal conviction in adulthood. Tewksbury and Vito (1994) stated that the basic tool to establish and maintain a law-abiding lifestyle is the growth of self-esteem. Such growth also has the potential to decrease the number of disciplinary infractions, thus creating a safer atmosphere for all personnel inside the correctional institution.

However, because of this potential hesitancy towards reading, classroom socialization and the instructor's role should be closely examined for influential factors that either positively or negatively affect the literacy development of inmates in an effort to improve the behavior of those currently incarcerated.

Tatum's (2013) research is framed around a phenomenological ecological systems theory which looks at the external sociocultural barriers (structural and contextual) and their implications towards the psychosocial process about the experiences of African American men who racially make up the dominant population inside of the American prison system. Tatum suggests that schools are not teaching materials that cater to the experiences of young African American men and suggests that literacy instruction should be broken down into three parts: Theoretical Strands (head), Instructional Strands (body), and Professional Development Strands (legs) (Tatum, 2013). Yet despite the varied demographic compilation of ABE correctional classrooms across the country, it is imperative to incorporate Tatum's concept of using relevant texts, generating interest and spurring open dialog to increase motivation and a desire for greater understanding in all. Classrooms that foster diversified learning environments and teaching styles have the potential to provide the greatest opportunities for improving literacy skills, which then has the potential to improve behavior during incarceration.

A creative way to encourage and challenge the literacy abilities of these adult learners can be seen in Berry's (2018) attempt to broaden the discussion about prison education through the narratives of his students. As an instructor, he allows his students to produce their own literacy narratives in an attempt to inspire themselves and reflect on what has made them who they are. This allows learners to face their past and write about their academic experiences, which is not only cathartic for them but also provides an opportunity for an instructor to gain valuable insight into how best to support each learner.

Based on a culmination of academic readings on the subject, if enough inmates strive to improve their reading abilities, the results of their positive interactions with literacy will change their behavior and attitudes due to their increased motivation towards the acquisition of literacy and the new possibilities that are presented to them because of such knowledge. This will create a cultural shift inside an institution that will encourage even the most hesitant of learners to seek out a literacy program with a desire to increase their own skills. The cultural shift will be changed from a stigma that one must “save face” and hide their lack of literacy abilities from other inmates, to instead support and encourage each other to improve their reading and processing abilities to understand court documents, improve communication with their families, and ultimately prepare themselves for better employment opportunities upon release.

Wilson et al. (2000) also made an astute observation that there is a risk associated with increasing the problems solving skills of inmates as it may influence future offending, yet despite this possibility the benefits that will be gained by the majority of the incarcerated population outweighs the negative possibilities of the few. The benefits of correctional education programs extend beyond classroom learning because with knowledge comes an increase in self-esteem, a reduction in misconduct, and continued education after release (Vacca, 2004).

Conclusion

There is no denying that rehabilitative programs have proven to be an effective measure for some prisoners to learn new skills and decrease the likelihood of recidivism, yet it is not enough. Inmates, especially, young inmates, enter the prison environment

with limited language ability for listening, speaking, and writing comprehension. These limits affect every aspect of their life from potential job opportunities, to understanding directions, and interpreting their court documents. Lack of literacy abilities lead to frustration and frustration leads to misconduct. For prison environments to truly be successful at maintaining a stable environment and rehabilitating the incarcerated, an individual needs must be met at the most basic level, literacy. It is unfortunate that these basic needs have been neglected for large portions of the incarcerated population due to homelife situations, academic failures leading to school dropouts, and potentially undiagnosed learning disabilities.

The correctional environment is the last chance many of these individuals have to receive the education they need to thrive. While the effects can last a lifetime for the individual learner the prison system can benefit as well because of the potential decrease in misconduct, which directly affects the number of costly disciplinary infractions that are issued each year. Also, with increased literacy skills there is a greater likelihood to improve the recidivism rate of institutions because these skilled learners can take their newfound knowledge and apply it towards a meaningful job upon release.

If institutions recognized the impact that improved reading, writing, speaking, listening, and comprehension skills could have not only in rehabilitative programs, but in the day to day life of individuals housed inside a correctional facility, policies and funding could be adjusted to better meet the social, educational, and cultural needs of the incarcerated. Thus, improving the behavior of the inmates and creating the social change in the environment that is needed to influence others which will result in a safer environment for prisoners, staff, and officers.

CHAPTER 3

RESEARCH METHODS

The methods to conduct this study followed a detailed outline of the process so as not to deviate from the researcher's originally intention of the study as well as establish clear expectations and guidelines for the research. By first reviewing the positivism paradigm and research design this study is driven with the intent to gain scientific knowledge. Next, the participants, variables, and instruments are clearly identified followed by the research procedures and threats to validity. Lastly, the data analysis and risks and benefits of the study are discussed.

Positivism Paradigm

There is a conglomeration and unique melting pot of individuals, personalities, prior experiences, and offender types found inside a prison environment. By utilizing the positivist paradigm, reality of such prison environments can be revealed with scientific knowledge while supporting the four assumptions of the paradigm: determinism, empiricism, parsimony, and generalizability (Cohen et al., 2017). Through observation (determinism) and measurement (empiricism) this research analyzes statistical data utilizing one location (parsimony) while maintaining the belief that the study is applicable (generalizability) for other similar correctional institutions in the United States. Demographic data is also evaluated and used as supporting evidence of common trends found among the recorded reading scores and number of disciplinary infractions within the given date range.

The very nature of quantitative data requires a researcher to be objective and limits bias interference. By using a positivism approach, this study seeks to gain

knowledge through observable and quantifiable means to gather the most complete set of knowledge surrounding the idea of improving adult inmate behavior with increased literacy skills.

Research Design

This quantitative study utilizes a Quasi-experimental Single-Group Interrupted Time-Series design (see Figure 1). Using only de-identified data from the Iowa Department of Corrections, an electronic data file was sent to the researcher containing basic demographic data, TABE Reading scores, and the number of disciplinary infractions issued from the start of incarceration through the final Reading assessment date included in this study.

Demographic data was requested to include age, ethnicity, and the last educational grade level completed prior to the start of the current incarcerated term. TABE Reading scores are taken from the initial assessment given during offender intake and the subsequent three test scores with each test being given after 40 hours of educational instruction.

A multiple regression analysis was used to determine if the number of disciplinary infractions (dependent variable) decreased when TABE Reading scores (independent variables) increased. Demographic data was evaluated for common trends among participants.

Participants

To be included in this study, participants must have met the following criteria:

- (1) All participants must be male offenders in the custody of the Iowa Department of Corrections between the years 2017 - 2019

(2) All participants must be age 18 or older at the time of offender's intake TABE assessment

(3) All participants must have completed and have scores reported for 4 TABE Reading assessment tests between 2017 – 2019

Because the researcher has no control in randomly assigning participants to take, or not take, the TABE assessment, this study utilizes the quasi-experimental design. This study estimated to have 150 – 250 participants who meet the inclusion criteria. All data was de-identified by the Iowa Department of Corrections before being electronically sent to the researcher to protect the privacy of the offenders.

Variables

The independent variables in this study are the TABE Reading assessment scores. Starting with the initial assessment scores of each offender and the three subsequent Reading assessment scores taken by each participant, the variables were reviewed and analyzed to determine if there was an upward trajectory of the scores indicating improvement in each participant's literacy skills. Under normal circumstances, TABE assessments are given to each offender during intake processing into the Iowa Department of Corrections. The timeframe in which each subsequent test is taken depends on the individual and the educational programming schedule of the institution in which they are transferred to. ABE students must complete 40 hours of educational instruction before they qualify to retake a TABE assessment. Therefore, the timeframe to complete 4 TABE Reading assessment tests vary for each participant.

The dependent variables in this study are the number of disciplinary infractions received for each participant starting from their first day in custody for the current

incarcerated term through the date that the fourth Reading assessment test was given. For the purpose of this study, the type of infraction is irrelevant because no matter if it was a minor or major infraction it was financially costly to the prison system. Instead, it is more prudent to evaluate the number of infractions separated by segments of time, which is established between each Reading assessment date. The number of disciplinary infractions are individually categorized into four groups for each participant: the number of infractions between their first day of incarceration and their first TABE Reading assessment, the number of infractions between their first Reading assessment and their second Reading assessment, the number of infractions between their second Reading assessment and their third Reading assessment, and finally the number of infractions between their third Reading assessment and their fourth Reading assessment. These variables were reviewed and analyzed to determine if there was a downward trajectory of the number of disciplinary infractions for participants as their TABE Reading assessment scores progressed over the timeframe of four assessment tests.

Other variables that were measured in the study included demographic data: age, ethnicity, and the current highest grade level completed. These were reviewed to look for common trends among participants when compared to the Reading assessment scores and the number of infractions received from other participants.

Instruments

The TABE 9 & 10 Reading assessment was used to assess comprehension abilities of each participant to read academic content, work-related, and real-life materials. This instrument was chosen for this study because it is the current established assessment used by the Iowa Department of Corrections in their ABE programs. The

Data Recognition Corporation, the designer of the TABE assessment, has since published the new edition TABE 11 & 12, however, the Iowa Department of Correction predominantly used the TABE 9 & 10 during the parameter years of this study, 2017 – 2019. Therefore, more data was available to request and analyze scores from this prior version of the assessment test. All assessment tests were issued by correctional educators in their standard test taking environments.

The second instrument that was used for this study are Disciplinary Infraction Reports, which record the number of behavioral incidents of each inmate and can range from minor to major misconduct reporting. This instrument was also chosen because it is the established method that is currently used by the Iowa Department of Corrections.

Research Procedures

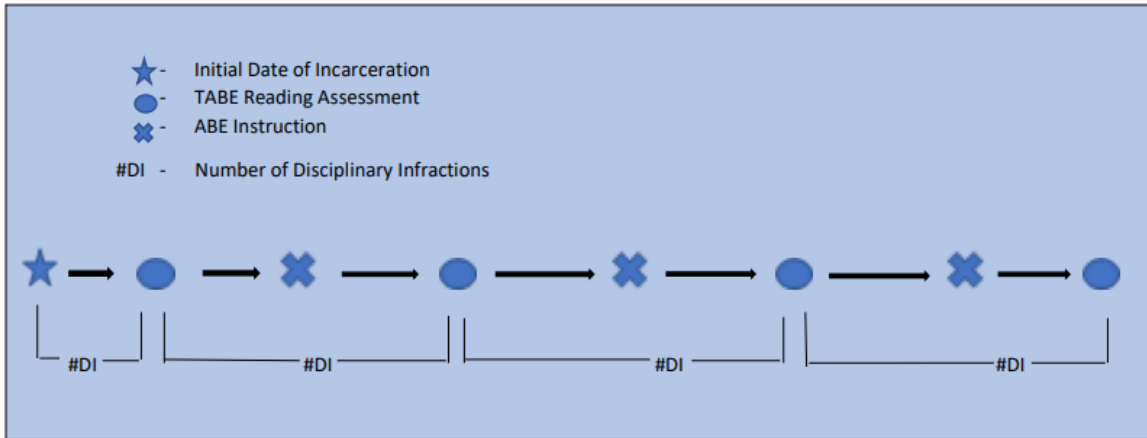
This study utilizes the Quasi-experimental Single-Group Interrupted Time-Series Design because it involves a single group of people within a specified timeframe who have all taken the same reading assessment. Participants were measured both before the treatment of educational instruction as well as three subsequent times following the pattern of 40 hours of educational instruction then reassessment. Approval from St. John's University's IRB was obtained through the submission process. After approval, a formal request for data was submitted to the Research Director of the Iowa Department of Corrections (IDOC). The IDOC Research Director approved the request and sent an electronic file containing de-identified information to the researcher of all offenders meeting the inclusion criteria for the study, which was stored on the researcher's password protected laptop. Quantitative data was input into a downloaded version of

SPSS on the researcher's secured device. Only the researcher had access to the laptop and data.

See Figure 1 for the research design flow chart.

Figure 1

Research Design Flow Chart



Threats to Validity

The internal threats of this study include timing of initial TABE Reading assessment, the differences in the amount of time it takes for each participant to complete 40 hours of instruction before they can retest, and modified programming that significantly delay or alter methods of instruction. Because TABE assessments are usually given to offenders during intake procedures there is a greater opportunity for the initial Reading score to be skewed and negatively impacted because of the stressful environment that an individual may find themselves in while adjusting to correctional custody. By designing this study to analyze four TABE Reading assessment scores it accommodates for participants to have adjusted to correctional custody and have received a minimum of 120 hours of education instruction before the fourth assessment, which by then should accurately reflect the literacy abilities of each individual.

The other threats to validity are the amount of time each participant has between assessment tests and modified programming. Even though ABE students are tested after 40 hours of instruction the time it takes to achieve those 40 hours can vary for each participant because of court dates, health appointment, time spent in an administrative segregation unit, or a plethora of other factors that would delay educational instruction (inclement weather, riots, staffing shortage, etc.). Students who completes 40 hours of uninterrupted scheduled instruction have an advantage to achieve better scores on an assessment test because the information is still recent in comparison to a student who may have missed several weeks of instruction because of placement into isolation following a disciplinary infraction or a group of students who had a classroom temporarily closed due to building maintenance. By the time 40 hours of instruction are reached students under these circumstances may have forgotten crucial points of information from the early days of their ABE instruction. To address this concern to validity, the design accommodates for the different lengths of time between Reading assessments, which is why 4 tests scores are included in the design. It is reasonable to expect a delay between one or two assessments over the given date range of the study but with the additional assessments a generalized overview of each participant's trajectory in advancing their literacy abilities through the ABE program can be observed.

An external threat to validity is the researcher drawing inaccurate conclusions from the sample data. While this study is designed to correlate improved literacy skills with a decrease in disciplinary infractions, it must be noted that there are a variety of other factors that can influence both the independent and dependent variables. While it would be impossible to account for all influential variables involved for each participant,

this study can be used as a baseline of scientific investigation into the reduction of disciplinary infractions by way of improving literacy skills. The researcher was reflexive in the data analysis and highlights the potential shortcomings of the study as well as provides possible avenues for future study that can build upon this design.

Research Procedure Steps

1. Obtain IRB approval from St. John's University.
2. Submit research request to the Iowa Department of Corrections Research Director outlining participant inclusion criteria and parameter dates.
3. Receive de-identified electronic file of offenders who met inclusion criteria.
4. Clean data file and remove any participants with missing information.
5. Electronically send cleaned data file back to Research Director to add final data element of the number of disciplinary infraction reports for each participant, which has been purposely left out of initial file due to the volume of recorded infractions.
6. Receive updated de-identified electronic file.
7. Input all data elements into the statistical software SPSS and run a multiple regression analysis.
8. Analyze results comparing findings with common trends observed in demographic data.

Data Analysis

The quantitative data that was gathered for each participant was age, ethnicity, last grade level completed, TABE Reading scores from 4 assessments taken between 2017 – 2019, and the number of disciplinary infraction reports over that same timeframe.

A multiple regression analysis was used to determine if the number of disciplinary infractions (dependent variable) decreased when TABE Reading scores (independent variables) increased. This statistical test was chosen because of its potential to predict and explain variables. This study was designed to investigate and understand how the dependent variables (disciplinary reports) change when the independent variables (TABE Reading scores) change. The statistical software SPSS was used to calculate the data after the information had been input. Other demographic data of age, ethnicity, and previously completed grade levels was analyzed to evaluate for any common trends.

During analysis, the researcher's experiences of working in a prison and witnessing first-hand low literacy skills and behavior problems of incarcerated men is discussed to identify potential biases. During the various stages of the research it was important to be reflexive and identify how the researcher's experiences shaped her interpretations.

Also, during the analysis phase the researcher's objectivity and reflexivity (Lichtman, 2013) is addressed to aid readers in identifying the researcher's beliefs and experiences that may have affected the interpretation of data. I anticipated observing similar trends for both TABE Reading assessment scores and the number of disciplinary infraction reports received among participants who share similar demographic information.

After analyzing the results of the multiple regression, any statistically significant predictors between the dependent and independent variables was noted and the research question, "Do disciplinary infractions decrease when literacy skills increase?" is discussed. Output tables for the multiple regression are embedded in the final write up for

readers to review the data. It was predicted that an increase in TABE Reading scores would correlate to a decrease in the number of disciplinary infractions. The results determined if I had to accept or reject the null hypothesis:

H_0 = An increase in Reading scores of TABE assessments will result in no change in the number of disciplinary infractions for inmates participating in Adult Basic Education.

The quantitative data was once again reviewed and analyzed to assess for the potential answer to the research question, “Does the safety and security of the prison increase with more literate inmates?”

Threats to validity that arose during the research are discussed. A review of the long-standing dilemma of low levels of literacy inside correctional institutions and the benefits of improving inmate literacy (which include self-esteem, safety, and the possibility of reducing recidivism) are discussed to synthesize the results and how they correspond to the problem. The numerical data gained through the multiple regression provide evidence to support the need for this research, thus supporting the argument that institutions should first focus on improving inmate literacy before they start any other rehabilitative classes. By starting with literacy instruction first, it will ease frustrations and allow participants to have a better chance to fully comprehend the topics that are addressed, thus reducing misconduct rates.

Risks and Benefits

The analysis of the gathered data is helpful in creating future recommendations for educators and policy makers regarding the learning needs of inmates and the increased safety of individuals that is gained because of increased literacy skills while

incarcerated. Such data aids future researchers who wish to further the exploration on topics related to institutional safety and increased literacy skills.

Summary

This research study is designed to investigate the problem of low literacy levels and increased misconduct levels inside correctional institutions. The purpose is to determine if improved literacy practices, assessed through TABE Reading assessment scores, improves inmate behavior as quantifiably recorded through disciplinary infraction reports inside an institution. This study will specifically address the following questions:

- 1) Do disciplinary infractions decrease when literacy skills increase?
- 2) Does the safety and security of the prison increase with more literate inmates?

The results were hypothesized to be that an increase in the TABE Reading scores will be significantly correlated to a decrease in the number of disciplinary infractions for inmates participating in Adult Basic Education.

This was a quantitative study using Quasi-experimental Single-Group Interrupted Time-Series Design. TABE Reading scores and the number of disciplinary infraction reports within the studies parameter dates of 2017 – 2019 were quantitatively examined using a multiple regression analysis to determine if there was a statistically significant correlation.

Ultimately, if improved literacy decreases behavior issues, and if a large enough influence of inmates improves their literacy and change their behavior, the social learning aspect as described by Vygotsky (1978) and Bandura (1995) will begin to transform the correctional environment as more inmates work to improve their literacy and the behavior problems found in the institutions will decrease. The current rehabilitative system is

broken, and it is time for researchers to dive in and locate a new solution that not only has the potential to help those currently incarcerated but create a long-lasting effect to reduce recidivism.

Despite the challenges associated with correctional environment research the knowledge that can be gained from this study can impact policies, classrooms, and individual's lives in a positive way and create a safer place for individuals inside the prison environment.

CHAPTER 4

RESULTS

Data Flow

After receiving approval from St. John's University's IRB and obtaining approval from Iowa's Department of Corrections Research Department the de-identified data file that was sent to the researcher included additional information that required modification to the analysis procedure steps. The requested information was for any inmate who had taken four TABE 9/10 Reading assessments between 2017 – 2019. What was provided was a data file of all adult inmates within the state's correction system who had taken any element of the TABE 9/10 assessment (reading, math computation, math application, language, spelling, vocabulary, and/or language mechanics) no matter the number of times each section was taken within their FY18-FY19, which was July 1, 2017 – June, 30, 2019. This resulted in the file containing 4,820 participants.

It is not feasible to clean and assess such a large number of data for the scope of this research. Therefore, because the datafile was given to the researcher in an excel spreadsheet the randomization formula was used to assign random numbers to each participant in the data file. The randomly assigned numbers were sorted to be listed in the order of smallest to largest value and the first 200 were selected to be the sample size for this research.

Because this sample now included participants who had taken other elements of the TABE 9/10 test it was essential to clean the sub-set of the data file and determine who met the additional research criteria. The researcher quickly discovered that very few participants in the sample had completed 4 TABE Reading assessments within that

timeframe, so the criteria for inclusion was updated to include anyone who had taken the TABE 9/10 Reading assessment two or more times within the date range, which resulted in 41 participants for the final randomized sample.

Another adjustment due to limitations of the research department's data retrieval system required a shift in the type of educational information that could be shared. Initially, the request was for the last grade level completed before the start of the current incarcerated term. Instead, Iowa's correctional research team provided the current highest education level listed for each participant.

Once the sub-set data file was cleaned and the 41 qualifying participants were determined their information was entered into the statistical software SPSS. The variables entered into the software were: (1) Participant ID, (2) Date of Birth, (3) Ethnicity, (4) Current Highest Education Level, (5) Infractions from Period 1, (6) TABE Reading Score 1, (7) Infractions from Period 2, (8) TABE Reading Score 2, (9) Infractions from Period 3, (10) TABE Reading Score 3, (11) Infractions from Period 4, (12) TABE Reading Score 4. The Date and Time Wizard feature in SPSS was used to calculate the given date of birth into its corresponding number of years from the date the analysis was ran in June of 2021. Ethnicity and Current Highest Education Level were dummy coded to better quantitatively assess the data and 999 was coded for missing data.

The multiple regression analysis was run four times through SPSS to reflect the four different TABE Reading assessment scores with their respective disciplinary infraction periods. The results of these four analyses were then analyzed to compare the regression line of each infraction period and score. In general, the data did reflect that

TABE Reading scores increased with each assessment for most participants which will be described in greater detail in subsequent sections.

Missing Data

Because some participants only took the assessment twice, while others took it up to four times, within the given date parameters there became more and more missing data with each time period of inquiry. The 4th TABE Reading score and 4th disciplinary infraction period had such few data elements to analyze that SPSS identified that statistics could not be calculated for the requested dependent and independent variables.

This caused a shift in the analysis to focus primarily on the output of the second TABE Reading assessment and infraction period 2, instead of a more comprehensive overview of all four analyses, because it provided a complete set of data for all 41 participants in the sample.

Statistics and Data Analysis

By first reviewing the correlation between the independent variables and the dependent variable (x, y) in the model summary output through SPSS of each of the three infraction periods and assessment scores, it is observed that there is a moderate correlation between the variables with $r = .374$ for the first period (see Table 1), $r = .431$ for the second period (see Table 2), and $r = .457$ for the third period (see Table 3).

Table 1

Model Summary for Infraction Period 1 and TABE Reading Score 1

Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .374 ^a | .140 | .042 | 9.345 |

a. Predictors: (Constant), TABE Reading Assessment Score 1, Current Highest Education Level, Age of Participant, Ethnicity

b. Dependent Variable: No. of Infractions from Period 1

Table 2

Model Summary for Infraction Period 2 and TABE Reading Score 2

Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .431 ^a | .186 | .093 | 1.462 |

a. Predictors: (Constant), TABE Reading Score 2, Ethnicity, Current Highest Education Level, Age of Participant

b. Dependent Variable: No. of Infractions from Period 2

Table 3

Model Summary for Infraction Period 3 and TABE Reading Score 3

Model Summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .457 ^a | .209 | -.017 | 1.180 |

a. Predictors: (Constant), TABE Reading Score 3, Age of Participant, Ethnicity, Current Highest Education Level

b. Dependent Variable: No. of Infractions from Period 3

Looking only at the output for the second period of disciplinary infractions and the second TABE Reading score, because it provides the most complete and consistent information for all participants, it shows that the regression for these variables is not

statistically significant because $p > .05$ with a value of .116 (See Table 4). The other regression models show $p = .247$ for period 1/TABE score 1 and $p = .477$ for period 3/TABE score 3, further solidifying that the results are not statistically significant in any time period of this assessment.

Table 4

Analysis of Variance for Infraction Period 2 and TABE Reading Score 2

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|----|-------------|-------|-------------------|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 17.091 | 4 | 4.273 | 1.999 | .116 ^b |
| | Residual | 74.809 | 35 | 2.137 | | |
| | Total | 91.900 | 39 | | | |

a. Dependent Variable: No. of Infractions from Period 2

b. Predictors: (Constant), TABE Reading Score 2, Ethnicity, Current Highest Education Level, Age of Participant

Even though the results are not statistically significant there is valuable information that can be extracted from the data. In Table 5, it can be observed that $\beta = -.136$ for the TABE Reading score 2, which is the greatest amount of change to the number of infractions between the different time periods. For the first period and TABE Reading score $\beta = -.120$, while the third period and TABE Reading score indicated $\beta = .018$. So while it might not be statistically significant, time period 2 and TABE Reading score 2 is the most consistent time period between reading assessments, and with the most amount of participants to analyze, this shows that for every one unit of increase of the TABE Reading score the number of disciplinary infractions are predicted to decrease by $-.136$ in raw score units.

By analyzing the standardized coefficients beta this table also shows that the TABE Reading score 2 was the second strongest predicted relationship to infractions ($\beta =$

-.228), preceded only by age ($\beta = -.404$), which is consistent with the literature that infractions are significantly influenced by age of the inmate with younger inmates displaying more violent behavior (Arbach-Lucioni et al., 2012; Lahm, 2009b). Given the date parameters of this study from 2017 – 2019, that establishes this sample’s mean age to 26 years old at the start of this research period further validating that highest correlation between prisoner and misconduct occur predominantly by those who are 25 or younger (Arbach-Lucioni et al., 2012; Ellis et al., 1974; Flanagan, 1983).

Table 5

Coefficients of Infraction Period 2 and TABE Reading Score 2, Part 1

| Model | | Unstandardized Coefficients | | Standardized | t | Sig. |
|-------|---------------------------------|-----------------------------|------------|----------------------|--------|------|
| | | B | Std. Error | Coefficients Beta | | |
| 1 | (Constant) | 4.831 | 1.675 | | 2.884 | .007 |
| | Age of Participant | -.059 | .024 | -.404 | -2.521 | .016 |
| | Ethnicity | -.156 | .259 | -.093 | -.604 | .550 |
| | Current Highest Education Level | -.067 | .097 | -.110 | -.691 | .494 |
| | TABE Reading Score 2 | -.136 | .094 | -.228 | -1.450 | .156 |

a. Dependent Variable: No. of Infractions from Period 2

In Table 6 it is observed that the null population regression slope of zero falls between the lower and upper bound of the confidence interval (-.326, .054) resulting in the need to accept the null hypothesis. However, using the semi partial correlation it is observed that the rank order of the independent variables in terms of their relative contribution to the regression model once again indicate that the TABE Reading score (-.221) is second only to age (-.385), followed by current highest level of education (-.105), and ethnicity (-.092). Lastly, it should be observed that there is no presence of multicollinearity because there are no values <.10 for Tolerance and the Variance Inflation Factors (VIF) are below 10.

Table 6

Coefficients of Infraction Period 2 and TABE Reading Score 2, Part 2

| 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
|---------------------------------|-------------|--------------|---------|-------|-------------------------|-------|
| Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |
| 1.430 | 8.231 | | | | | |
| -.107 | -.012 | -.338 | -.392 | -.385 | .904 | 1.106 |
| -.682 | .369 | -.099 | -.102 | -.092 | .985 | 1.015 |
| -.265 | .130 | -.039 | -.116 | -.105 | .919 | 1.088 |
| -.326 | .054 | -.157 | -.238 | -.221 | .944 | 1.060 |

Looking at the histogram in Figure 2 it is observed that there is a minor departure from normality from the results that were predicted for infraction period 2 and TABE Reading score 2 but displayed a closer reflection of the data when compared to the first regression analysis of infraction period 1 and TABE Reading score 1 (see Figure 3) and infraction period 3 and TABE Reading score 3 (see Figure 4).

Figure 2

Predicted Regression Line for Infraction Period 2 and TABE Score 2

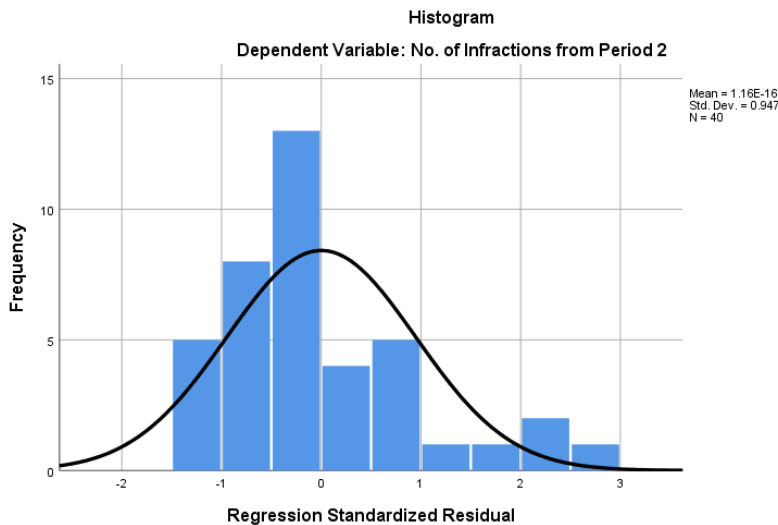


Figure 3

Predicted Regression Line for Infraction Period 1 and TABE Score 1

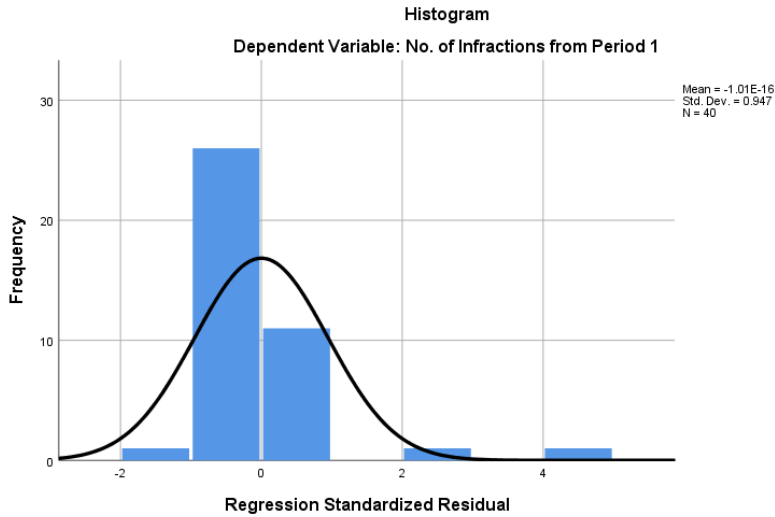
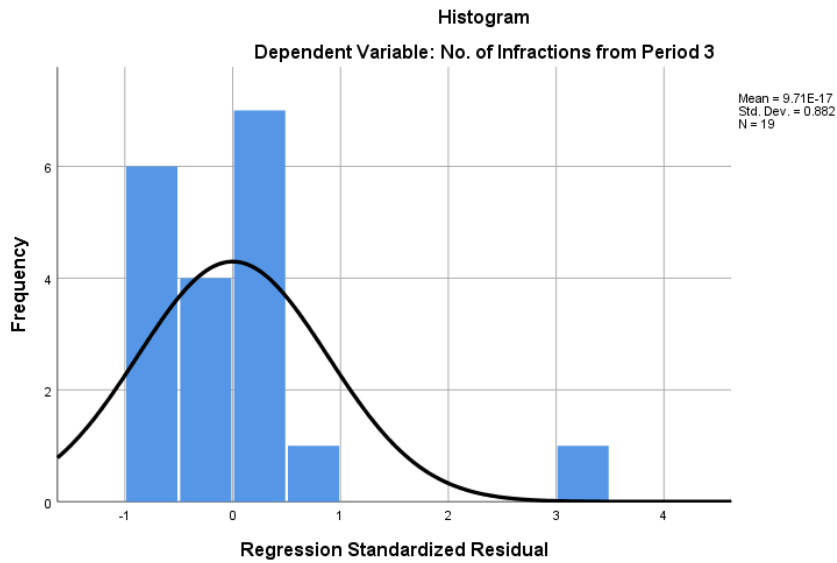


Figure 4

Predicted Regression Line for Infraction Period 3 and TABE Score 3



The relationship between the observed data against the regression line of what was expected under the condition of normality can be seen in Figure 5 for infraction period 2 and TABE Reading score 2. This output visually shows that there is more

evidence of infraction period 2 and TABE Reading score 2 as falling within more normal and consistent patterns than that of those observed with infraction period 1 and TABE Reading score 1 (see Figure 6) and infraction period 3 and TABE Reading score 3 (see Figure 7).

Figure 5

P-Plot of Regression for Infraction Period 2 and TABE Score 2

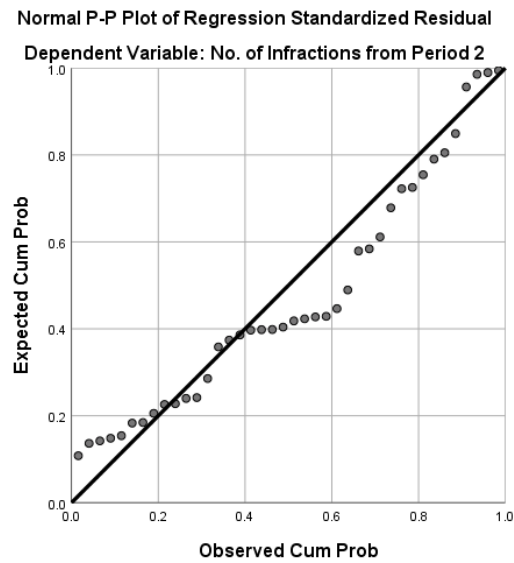


Figure 6

P-Plot of Regression for Infraction Period 1 and TABE Score 1

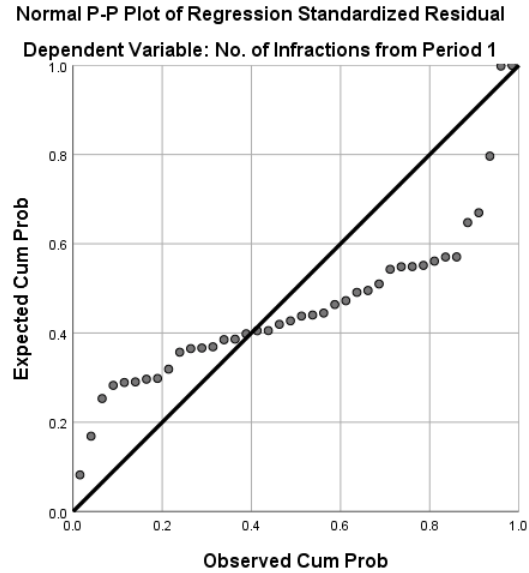
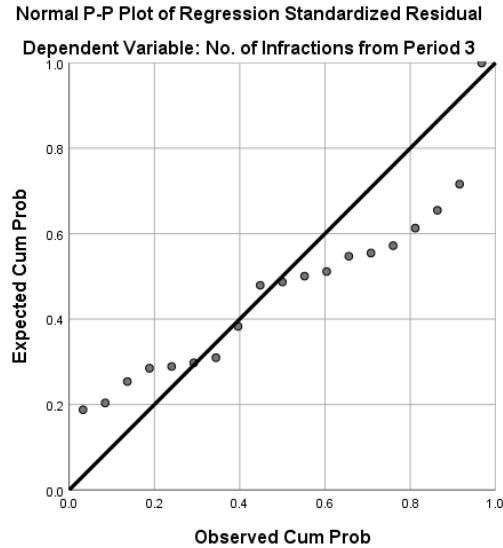


Figure 7

P-Plot of Regression for Infraction Period 3 and TABE Score 3

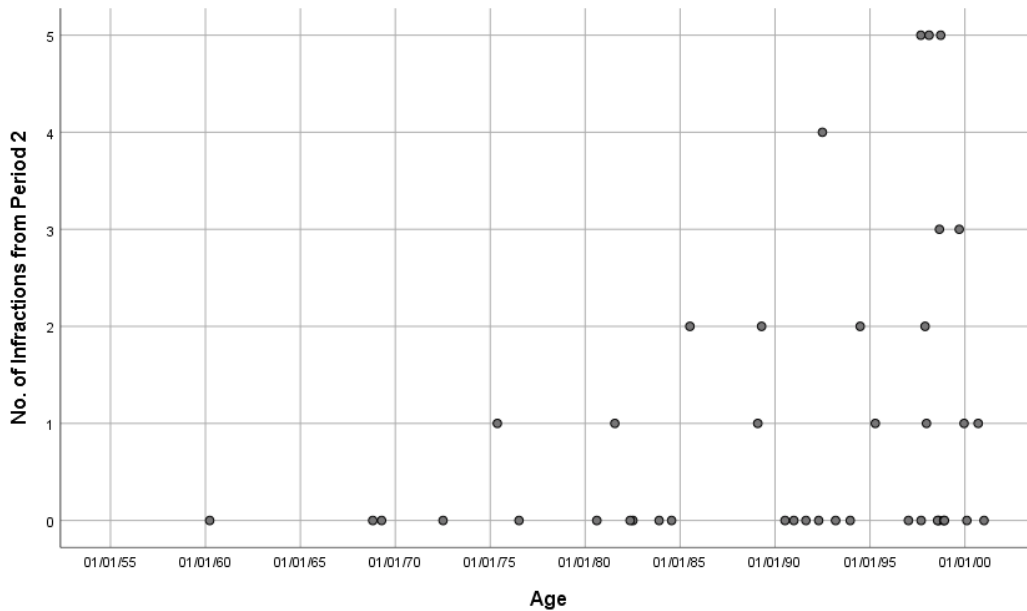


Three scatter plots that are of interest to mention are again taken from infraction period 2 and TABE Reading score 2 and provide a visual representation of the data. Age of the participants (see Figure 8) is observed in this second period to show that younger

inmates born between 1990 – early 2000’s had more infractions than older inmates and had the highest number of infractions in this given period. SPSS identified the mean age for this sample is 30 ± 10 from the date this analysis was run in June of 2021. Adjusting for the age of the participants at the start of this study in 2017, the mean age is 26 years old.

Figure 8

Scatter Plot of Age of Participants for Infraction Period 2



In Figure 9 the ethnicity of this sample is predominantly white and black, which is consistent with both ethnicities in the Midwest region of the United States, which is 75% white and 10% black (U.S. Census, 2019), as well as the research of others indicating a higher percentage of minority individuals being incarcerated (Foley, 2001). The data is coded for 1 = White, 2 = Black, 3 = Hispanic, 4 = American Indian or Alaska Native, and 5 = Asian or Pacific Islander.

Figure 9

Scatter Plot of Ethnicity for Infraction Period 2

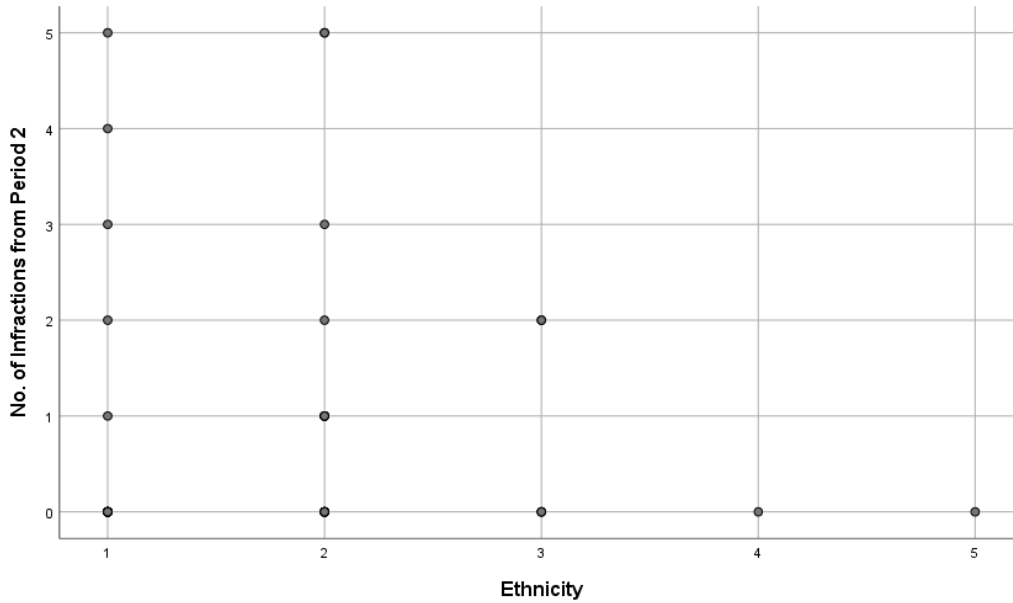
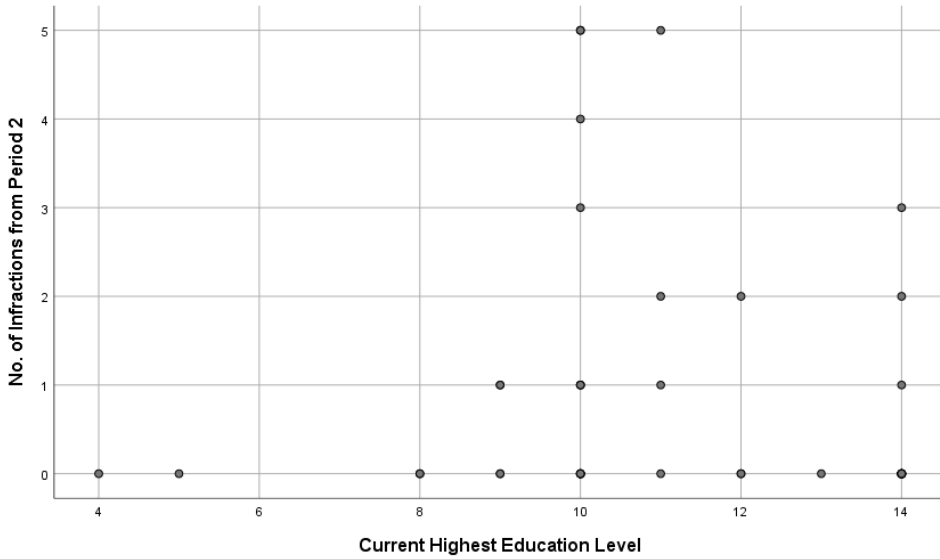


Figure 10 displays the current highest level of education for participants. With the mean level of highest level of education completed as 11th grade for this sample ± 2 grade levels, it is observed that a larger portion of infractions are perpetuated by those who have completed 9th - 11th grade. The data is coded to represent 1 – 11 to identify the matching grade levels 1st – 11th grade, 12 = High School Diploma, 13 = Pursuing HiSET/GED/High School Diploma, 14 = Completed HiSET/GED.

Figure 10

Scatter Plot for Current Highest Level of Education for Infraction Period 2



This analysis predominantly relies infractions from period 2 and TABE Reading score 2 because of the stark contrast in the amount of available reading scores. The validity of the findings is compromised for the first infraction time period and first recorded TABE Reading score because some participants took the reading assessment days to weeks from the start of their incarceration. This means that there is less time to potentially receive a disciplinary infraction, as well as be filled with more anxiety while adjusting to correctional custody, which could affect a TABE score. Yet in this same infraction period other participants were incarcerated years before their first recorded TABE Reading score, which means that some had larger number of infractions, thus skewing the data. Another threat to the validity of these analysis is that only a small handful of participants in the sample took the TABE Reading assessment three or more times, which created a smaller amount of data to assess and can potentially not accurately reflect the general population.

CHAPTER 5

DISCUSSION

Non-support of Hypothesis

This quantitative study used Quasi-experimental Single-Group Interrupted Time-Series Design to explore the possibility of improving adult inmate behavior with increase literacy skills by analyzing the number of disciplinary infractions each participant received between four TABE Reading assessments. The assessment is only taken after 40 hours of educational instruction and the time it takes to complete those hours varies for each participant. Also, the initial infraction period started with the first day of incarceration through the first TABE Reading assessment, which also varied for each participant from days to years.

The multiple regression analysis was used to analyze the independent variables and their potential to predict the dependent variable of infractions for the different time periods between the different assessment dates within the given date parameters of Iowa's Department of Corrections FY18-FY19, which was July 1, 2017 – June, 30, 2019.

With the results of the multiple analyses indicating that the prediction of the number of disciplinary infractions were not statistically significant when assessing TABE Reading scores, age, ethnicity, and the current highest grade level completed this research accepts the null hypothesis:

H_0 = An increase in Reading scores of TABE assessments will result in no change in the number of disciplinary infractions for inmates participating in Adult Basic Education.

Despite the results not showing statistical significance, the data does provide substantial findings further supporting the research of others regarding the influence of age (Arbach-Lucioni et al., 2012; Lahm, 2009b), the need for continued education in corrections (Berridge & Goebel, 2013; Vacca, 2004), and implications for pursuit of additional research in regards to prisonization (Camp et al., 2003; Gillespie, 2003).

Similarity of Results

Both Lahm's (2009b) study and Arbach-Lucioni et al. (2012) research ascertained that the age of an inmate is a significant factor with younger inmates more likely to partake in violent behaviors and assaults versus older inmate. Though not statistically significant, the regression analyses used in this research displayed results that are consistent with these other studies and indicated through the rank order of the independent variables in terms of their relevant contribution to the regression model that age was an influential predictor for both time period 1/TABE Reading score 1 and time period 2/TABE Reading score 2. Time period 3/TABE Reading score 3 was the only analysis which indicated that the TABE score was more influential, however, because of the smaller sample size for this time period I believe there is less potential to generalize the results and more weight should be placed on the other time periods, which have more consistent data.

These analyses also provide additional support for the continued need of education in corrections. While Vacca's (2004) research highlights the importance of education to reduce recidivism and Berridge and Goebel (2013) focus on educational programs reducing criminal behavior during incarceration the data in this research does indicate an upward trajectory of TABE Reading scores for the majority of participants in

this study. Out of the 41 participants in this sample 31 of them (75%) improved their reading score from their initial reading assessment to their second assessment. The third TABE Reading assessment was taken by 19 participants from this sample, and 14 of them (73%) continued to show improvement with increased reading scores from their second assessment. And even though there was not enough data to run a regression analysis for the 4th disciplinary infraction period and TABE Reading score 4, there was 5 participants from the sample who completed the assessment and 3 of these participants (60%) continued to improve their score from their third assessment. These results show that the process of education instruction inside corrections is valuable and the majority of participants are benefiting from the education they are receiving and improving their reading abilities, which has a plethora of implications of how increased reading abilities can assist them in navigating through many situations in life.

When comparing the number of disciplinary infractions each of the 41 participants received from time period 1 to time period 2, 19 of them (46%) had no change, 8 of them decreased (20%), and 14 of them increased (34%). For time period 2 to 3, 34 participants had the number of infractions recorded and the sample data showed a 10% increase in the number of infractions with 12 of them showing no change (35%), 7 decreased (21%), and 15 of the participants (44%) increased. Because of the 10% increase in the amount of infractions, despite the improvement of reading scores, these findings support the need for additional research into prisonization and the adoption of “inmate subculture” (Gillespie, 2003, p. 1). Camp et al. (2003) identified that the politics and social rules of correctional institutions influence behavioral adaptations, which contribute to misconduct. Because of the 40 hours of educational instruction that is

required before each participant can take a new TABE assessment, by the third TABE assessment each inmate had already served months to years of their sentence and has had the most amount of time to be influenced by prisonization. Further research into this subject is necessary to determine the statistical significance of the length of incarceration to the number of disciplinary infractions.

Interpretation

Inconsistencies in the data were observed for infraction period 1 and TABE Reading score 1 when analyzing the time between each participant's first day of incarceration to the day of their first recorded TABE Reading assessment. Some inmate took the TABE days to weeks after the start of their incarceration with the data showing 0 to 2 infractions for the first infraction period. Whereas for other participants in the sample, the first TABE Reading score was recorded years after their first day of incarceration. This allowed for variations in the amount of infractions a participant could acquire before their first TABE Readings assessment, which is an internal threat to validity. One participant is considered an outlier in the analysis because his first TABE assessment was recorded 2017 but he started his current incarcerated term 2008. This extended period provided ample time for him to acquire 47 disciplinary infractions in period 1 of the data. It must be noted that those participants in the sample whose first day of incarceration is years prior to the recorded TABE assessment date may have earlier TABE score that fall outside of the date parameters of this study.

Because of irregularities like this, it is important for this research to focus on and analyze the statistical output of infraction period 2 and TABE Reading score 2 more than the others because it has the most consistent time periods between assessment dates and

the largest sample size with 41 participants having recorded scores and the number of recorded disciplinary infractions. With only 19 participants taking the TABE Reading assessment for a third time, and only 5 participants taking it for a fourth time, the reduction in the amount of available data to analyze hinders the ability to generalize the results. With a larger percentage of infractions being observed after the second TABE Reading assessment in period 3, it leads this researcher to believe that prisonization was a contributing factor. Gillespie's (2003) research indicates inmates adopt patterns of behavior, such as rebellion and resistance, from other inmates and these adoptive behaviors become what is known as prisonization. This idea that individuals adopt these new patterns of social behavior is supported by Bandura's Social Cognitive Theory and the belief that self-efficacy is influenced in part by social persuasion and the physiological and emotional state of the individual (Bandura, 1995). Applying this theory to inmates, participants in this sample could be frustrated with the amount of time they have served by this third period and are starting to act out, or because they are not filled with the anxiety of being new they are more willing to misbehave because the threat of potential consequence does not have as much influence as it once did.

Because the TABE Reading score 4 did not have enough data to run a multiple regression this leads the researcher to believe that a longer window of study is needed. Especially, since there was an increase in the number of infractions in period three, potentially influenced by prisonization, further analyses supported by qualitative data would aid in determining if the increase in infractions continues or if it decreases past a certain point.

Another interesting observation that should be explored further in another study relates to the range of the highest level of education completed. The mean level of completed education for this subset of data was 11th grade ± 2 with the highest number of infractions occurring for those who had completed 9th, 10th, and 11th grade. Identifying this narrow sequential window of educational achievement to those who are issued the greatest amount of disciplinary infractions connects to Vygotsky's (1978) Social Development Theory. Using the themes addressed in Vygotsky's (1978) framework and observing the social interactions of the participants in and outside the educational setting, as well as analyzing who participants are partnered with in classrooms to determine the more knowledgeable other, will aid future studies in determining the degree of influence for social development and behavior. Additional exploration is needed to determine if an individual's mental development, classroom curriculum, or other measurable variables are influential to the amount of infractions an inmate receives for this narrowed educational development time period.

Being reflexive, this researcher's past of working in a correctional library and observing the behavior and personality changes of inmates from their first days of incarceration to months later, for some there is a shift of comfortability to correctional life. They have learned the severity of disciplines for various infractions and are more willing to risk an attempt at an infraction worthy offence because the benefit now outweighs the risk (i.e., contraband, fighting, stealing, etc.). Infraction period 3 of the data is a snapshot of behavioral rebellion that is influenced by their length of incarceration and social influences by other inmates. Further research should extend the given date range of the study to assess more TABE scores and determine if infractions

decrease with time either because of an increase in age and maturity, continued educational growth, or other measurable contributing factors. This future study would benefit from a mixed-methods design so that qualitative data could be gathered from participants to analyze in relation to the quantitative findings.

The data file for this study was not limited to reviewing participants from one correctional institution, instead information was retrieved from all institutions within Iowa's Department of Correction, which has the potential to be an internal threat to validity. While it is beneficial to see scores and demographics taken from across the state to better accommodate generalizability of the results it also allows for the potential of inconsistencies between the institution though the type of classroom instruction provided to the personalities of staff. It is possible that some of these institutions had modified programming during the date parameters of this research which has implications for limited classroom instruction, higher tensions among inmates at an institution, or staffing issues that directly affect the inmates. Such information is crucial for researchers and policy makers to fully account for the results of studies or rehabilitative programs. Any one of these elements is an internal threat to validity and has the potential to increase the number of infractions. But similar to the meta-analysis research conducted by French and Gendreau (2006) who identified essential contributing factors to misconduct such as facility crowding, offender risk level, and institutional climate were only addressed in 10% of the sixty-eight studies they reviewed this internal threat to validity can only be rectified in future studies by including information on those elements.

An external threat to validity was the Corona Virus (COVID-19) pandemic of 2020. Significant modifications were made in the delivery of correctional education

across the nation. In many classrooms across Iowa's Department of Corrections all in person instruction was stopped for the majority of the year, resulting in either a delay or a complete stop to all assessment testing. Because of the this, the data requested for this research ranges from 2017 – 2019 to reflect the population before the pandemic altered the educational environment.

Generalizability

The findings presented here can be applied to similar correctional environments across the United States. The results are consistent in supporting the work of others who identified that age is the predominate factor for acquiring infractions, with younger inmates receiving more than older inmates. The upward trajectory of TABE Reading scores for the majority of those in the sample further provides evidence that correctional education is beneficial for the self-improvement of the participants.

However, because the results of this research were not statistically significant it does address a gap in the literature by analyzing a potential link between reading ability and the number of infractions. It can be determined that improved reading on its own is not enough to deter an inmate from partaking in an activity that leads to being issued a disciplinary infraction. Yet, because the TABE Reading scores were ranked second in their order of influence of the regression model it is possible to assume that further exploration into other educational elements (e.g., math and writing), along with personal insight about self-esteem and self-efficacy through qualitative interviews, that a deeper connection between the dependent and independent variables can be drawn.

Implications

Currently, there is not enough evidence to suggest any shifts to policy or practice of correctional education. This study sought to address two research questions, the first of which was “Do disciplinary infractions decrease when literacy skills increase?” In short, no. The data was not statistically significant and it cannot be suggested that an increase in TABE Reading scores will reduce the amount of maladaptive behavior in participants at such a rate that they are less likely to engage in activities that lead to being issued a disciplinary infraction while incarcerated.

The second research question was, “Does the safety and security of the prison increase with more literate inmates?” Again, the answer to this question is no. There is actually a concern in the 10% upward trajectory of the number of infractions between the second TABE Reading assessment and third TABE Reading assessment that needs further study to evaluate the driving factors behind this increase. Future research should expand the date parameters of the study to observe a longer duration of the independent and dependent variables as well as include additional elements of a mixed methods study. This future study has the potential to gain valuable insight into the beliefs and influences of the inmate participants as well as utilize the experiences and observations of educational staff and correctional officers.

Delimitations

This study was limited in its findings because of the many restrictions that were put into place in 2020 due to the pandemic. The requested data was required to be older than initially intended because of the abrupt stop to educational programs in the spring of 2020. The date the researcher wanted to complete the study by required the request for

information to shift to an earlier timeframe instead of waiting for the pandemic to abate and classroom instructions to resume. The COVID-19 pandemic also restricted this research from including a qualitative portion because of the technology restrictions inside correctional institutions and social distancing guidelines that were put into place nationwide to prevent further spread of the virus. With face to face interview being halted and security risks associated with teleconference communication at all facilities the qualitative portion of this study designed to elaborate on the thoughts and feelings of participants to gain their perspectives on their behaviors and educational journeys was removed.

When selecting the 200 random participants from the original data file from the IDOC this researcher anticipated more inmates would have completed multiple TABE reading assessments within the parameter dates. With only 41 participants in the sub-set data sample meeting the revised inclusion criteria of 2 or more TABE Reading scores, this study is limited in both the power analysis of the multiple regression and the potential for generalizability for other correctional institutions.

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