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I, Amanda Pompoco, hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Criminal Justice.

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Identifying Dimensions of Prison Education Programs Most Effective for Reducing Deviance During and After Incarceration

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Identifying Dimensions of Prison Education Programs Most Effective for Reducing Deviance During and After Incarceration

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by

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ABSTRACT

Empirical evidence favors the effectiveness of correctional education for reducing an individual's odds of recidivism (Davis et al., 2014). However, the literature in this field has yet to determine the characteristics or dimensions of effective correctional education programming. Identifying the features of prison education and vocation programs could improve policies related to correctional education services. Informed by theories of adult education and correctional rehabilitation, this dissertation sought to identify the dimensions of effective prison education programs that reduce an incarcerated person's (IP's) subsequent deviance both during confinement and after release. Over 200 education and vocation programs serving IPs in the State of Ohio were examined to (a) identify the general dimensions of these programs that might impact subsequent behaviors (using exploratory and confirmatory factor analyses), and (b) test whether and how these dimensions are related to subsequent rule violations during incarceration as well as the odds of returning to prison after release (using multilevel modeling with IPs nested within facility-specific programs). Results of the factor analyses revealed a fairly comprehensive factor structure relevant to prison-based literacy, general education, vocation/apprenticeship, and college programs. Although the effects of these factors on the odds of misconduct and prison returns were primarily mixed and sometimes counterintuitive, certain dimensions of these programs corresponded with lower deviance rates across multiple types of programs. Implications of these findings for knowledge on key dimensions of correctional education programs and their relevance for reducing crime are discussed, and directions for future research on prison education programs are provided.

DEDICATION

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CHAPTER ONE
INTRODUCTION

Education programs have been a fundamental part of offender reform/rehabilitation in the U.S. for over a century. While conventionally education in prison has been viewed as reading and writing, correctional education has evolved into vocational and apprenticeship training as well. In the early days of the "reformatory", education was viewed as an essential element for reform. Skidmore (1948) suggested that teaching incarcerated persons (IPs) to read and write was closely tied to teaching them to read the bible during these early years. Today, much of prison education programming focuses on literacy and high school diploma equivalency (GED) preparation while vocation and apprenticeship programs focus on teaching IPs useful skills that will help them seek gainful employment upon release. Although the goals and the extent of what is offered to IPs has changed over time, the availability of *some* type of education program in prison has been consistent since the late 1800s.

During the renunciation of rehabilitation and the beginning of the "get tough" era, educational programming was still generally available in prisons across the country (Phelps, 2011). In other words, in the late 1980's and early 1990's, at the height of the "get tough" era, academic programs were consistently available although participation in these programs decreased after 1990 (Phelps, 2011). This was especially true for college courses in prison. In 1994 President Bill Clinton signed the Violent Crime Control and Law Enforcement Act banning Pell Grant funding for IPs (Hrabowski & Robbi, 2002). Although participation in college programs decreased after this bill was signed, general education and vocational programs were still largely available in U.S. state and federal prisons. In short, although academic program participation decreased during the "get tough" era, this decrease was not substantial. For example, 25% of IPs participated in some academic program in 1979, and by the year 1990 this

percentage only decreased to 21% (Phelps, 2011). Today, many prisons offer general education, vocation, and college courses. Recently, these programs have been the focus of many studies exploring what works in reducing future criminal behavior.

The current study is based on data collected for a larger study of all prison programs in Ohio (Latessa, Lugo, Pompoco, Sullivan, & Wooldredge, 2015). The study explored the effectiveness of the prison programs in Ohio by comparing misconduct, or crimes committed while incarcerated, and return to prison rates of IPs who participated in programs to a matched group of IPs who did not participate in programs. The results of the study were promising and showed that participation in education and vocation programs lowered an IP's odds of engaging in several types of misconduct including returning to prison. The data used for the current study was collected during the site visits conducted for that larger statewide study of all prison programs. The current study expands on the results of the larger study to identify specific dimensions of education and vocation programs that might be useful for assessing their overall quality, and to investigate the relevance of these dimensions for reducing offenders' the odds of institutional misconduct as well as their odds of returning to prison after release.

There are at least two reasons to explore the characteristics of effective education and vocation programs. The first reason to explore this "black box" is related to the substantial educational needs presented by IPs. IPs have lower education levels than the general population, and they often present a "crime-producing" need in the area of education and employment. Second, evidence for the effectiveness of education programs for offending populations are promising across multiple reentry outcomes but the characteristics of the effective programs are unknown. In order to establish specific recommendations and best practices for prison education

programs, the aspects of effective correctional education programs must be identified. Each of the reasons will be briefly discussed below.

The Need for Education Programs in Prison

IPs need academic programs that can most effectively help them avoid future contact with the criminal justice system. In 2004, 64% of state and federal IPs had a GED or high school diploma at intake versus 82% of the general population (Crayton & Neusteter, 2008; Greenberg, Dunleavy, & Kutner, 2007). Although many IPs have educational aspirations, they tend to experience barriers to obtaining more education (Delaney & Smith, 2019). For example, the inmate population has lower average literacy rates than the general population (Greenberg, Dunleavy, & Kutner, 2007) and 17% of IPs have been diagnosed with a learning disability at some point in their lives, compared to 3% in the general population (Greenberg, Dunleavy, & Kutner, 2007; Brazzell, Crayton, Mukamal, Soloman, & Lindhal, 2009). In short, this population exhibits a higher proportion of barriers to educational attainment, among other factors.

Education and employment are important for the risk of future criminal behavior in at least three ways. First, about 31% of state IPs reported that they were unemployed at the time of their arrest (Petersilia, 2003). Having stable, legal means of earning a living might reduce incentives to participate in illegal ways to earn money. Specifically, reduced financial means may lead to residing in high crime neighborhoods, increasing opportunities for criminal or other risky behavior. Second, employment and/or enrolling in educational programming provides structure and prosocial leisure activities. Employment and education endeavors also provide opportunities to engage with prosocial peers and reinforcement of prosocial activities. Finally, the two factors, education and employment, are strongly interconnected. In other words, educated offenders are more likely to acquire higher paying, full-time employment. There is a substantial amount of

research, for juvenile and adult offenders, demonstrating the relationship between education/employment and future criminal behavior (Gendreau, Little, & Goggin, 1996; Lipsey & Derzon, 1997; Loeber & Stouthamer-Loeber, 1987; Simourd & Andrews, 1994).

The education and employment domain is considered a criminogenic need area. The designation of a criminogenic need is based on the results of studies exploring the strength of the relationship between the need area and future criminal behavior. Criminogenic needs are correlated with future criminal behavior and the needs include antisocial thoughts and beliefs, antisocial peers, antisocial personality traits, education/employment, substance abuse, family/marital, and the lack of prosocial leisure activities (Andrews & Bonta, 2017). The education and employment domain has been found to be a moderately good predictor of recidivism (Gendreau, Goggin, & Gray, 2000). Through relatively low-cost ways, targeting education and employment in prisons can add to the overall number of targeted criminogenic needs and prepare offenders for release. The reality of institutional corrections in the United States is that 93% of all IPs will eventually be released (Petersilia, 2003). If targeting the education and employment domain provides another cost-effective alternative to reducing recidivism, even marginally, it is worth exploring what characteristics make these programs most effective. Also, the provision of education and job training in prisons might make these environments safer by reducing rule violations, assuming these programs are effective in addressing the education/employment domain.

Today, the focus of most correctional treatment in prison has shifted to reentry programs that prepare IPs for their return to the community (Petersilia, 2003). When backdoor approaches (e.g. parole and “good time”) were viewed as an effective technique aimed at reducing prison populations, many correctional professionals were faced with a large number of IPs who were

released and returned to communities. This reality sparked the boom in the availability of reentry programming, aimed at preparing IPs for their release (Listwan, Cullen, & Latessa, 2006). Reentry programming is focused on reducing, or eliminating, many of the barriers that IPs will, inevitably, face upon their release. Some examples of reentry initiatives include connecting IPs with community agency referral sources to help them identify housing options, finding support groups for those who have substance abuse or other addiction needs, connecting them with mental health services, and, most important to this study, helping them find education or employment opportunities.

In addition to the needs presented by the IP population, the general public also supports the notion of education as a form of rehabilitation for IPs. Generally, the public supports rehabilitation as a major goal of incarceration (Thielo, 2017). In public opinion surveys, responses tend to be in favor of providing treatment, vocational skills, and educational opportunities to IPs (Cullen et al., 2002). Although the respondents to the survey by Cullen et al. (2002) tended to have punitive views on how the court system should treat offenders, they still believed that corrections should be focused on reform. Furthermore, education programming in prison has been demonstrated to reduce overall criminal justice costs, beyond what has been spent upfront.

The Washington Institute of Public Policy periodically explores the available correctional programs and initiatives to estimate their cost-effectiveness. In their most recent analysis, Aos and Drake (2013) found that participation in basic education and college courses in prison saves taxpayers $19.62 for every dollar spent on these programs (Aos & Drake, 2013). Similarly, vocational programs in prison are associated with an average savings of $13.21 for every dollar spent (Aos & Drake, 2013). According to state corrections agency's reported budgets, an average

of $12 million is spent every year on prison education programs (Brazzell, Crayton, Mukamal, Soloman, & Lindahl, 2009). Based on these figures, it appears that educating IPs can save taxpayers a significant amount of money in the long run. In addition, research on education programs in prison has further demonstrated the practicality of offering these services to IPs.

Effectiveness of Correctional Education

Education and vocation programs will likely remain a staple in rehabilitation strategies for offenders due the low cost of providing such programs and the research supporting their benefit for IPs upon release. For example, there are several meta-analyses demonstrating that participation in all types of educational programming result in lower recidivism rates. Most of these meta-analyses include studies that explore the influence of vocation, basic education, and college education programs on recidivism. The results vary widely ranging from vocational programming reducing recidivism by 9% (Aos, Miller, & Drake, 2006) to college program participation associated with reductions of 46.3% (Chappell, 2004). One of the more recent meta-analyses conducted by Lois Davis and colleagues at the Rand Corporation found that, on average, IPs who participated in education or vocation programs had 43% lower odds of recidivism compared to IPs who did not participate in these programs (Davis, Bozick, Steele, Saunders, & Miles, 2013). The meta-analyses conducted to date provide substantial evidence that education and vocation program participation results in several beneficial outcomes for IPs. However, there are still several gaps and limitations remaining in related research.

Limitations & Gaps in Correctional Education Research

Over the last few decades there have been many advances in research to assess the effectiveness of education and vocation programming although gaps in this area still exist. For example, there have been no advances related to the identification of specific characteristics of

these programs that are most effective for reducing deviance. Few studies have gone beyond examining the relationship between program participation and outcomes, such as institutional misconduct or recidivism (Batchelder & Rachal; 2000; Diem & Fairweather, 1980; McKane & Greene, 1980). The recent trends in correctional education research involve using more rigorous evaluations of education and vocation programs (e.g., random assignment and propensity score matching) (Batchelder & Rachal, 2000; Duwe et al., 2015; Lattimore, Witte, & Baker, 1990; Pompoco et al., 2017; Winterfield et al., 2009). Current research has demonstrated that participation in these programs results in positive outcomes for IPs while they are incarcerated, such as reducing misconduct, but also when they are released (e.g. arrest, conviction, return-to-prison, employment) (Davis et al., 2013; Duwe & Clark, 2014; Duwe et al., 2015; Lattimore, Witte, & Baker, 1990; Pompoco et al., 2017; Winterfield et al., 2009; Wilson et al., 2000). This tends to be a common result of most studies in this area, across varying samples, programs, and study designs.

The current research on correctional education programming generally demonstrates its effectiveness in reducing recidivism, however, the existing research does not provide much insight into specific characteristics that make an education or vocation program effective. This information can inform education departments in state and federal prisons across the country. It can also assist departments of corrections in making policy decisions on where resources should be allocated and how education and vocation programs should be designed. The findings from this dissertation provide new insights into how education and vocation programs work to reduce recidivism.

Purpose of the Current Study

The purpose of this dissertation was to identify meaningful dimensions of prison education and vocation prison programs, and to test whether these dimensions are relevant to reducing subsequent deviance. Specifically, this dissertation seeks to explore the following research questions:

1. What is the factor structure of education and vocation program characteristics?
2. What program characteristics of education and vocation programs are significantly correlated with outcomes? Specifically,
    a. which program characteristics are significantly correlated with reductions in the odds of engaging in various forms of misconduct?
    b. which program characteristics are significantly correlated with reductions in the odds of returning to prison?

Summary

Research has indicated that correctional education and vocation programs vary in terms of their ability to reduce criminal behavior. One of the major gaps in this literature is related to the characteristics of the effective education and vocation programs (Davis et al., 2013). The current study addresses this gap with a sample of 261 education and vocation programs across 28 prisons in Ohio. Currently, existing research does not provide much information on the specific program characteristics of effective education or vocation programs. The present study will explore the characteristics of education and vocation programs in prison and their influence on institutional misconduct and return to prison.

The foci of chapter two is to discuss how research on "what works" in correctional treatment can inform correctional education, and to review the adult education literature to explore

effective practices in that field. Additionally, chapter two reviews the existing research that examines the relationship between education and vocation programs on several outcomes, including institutional misconduct and recidivism. Chapter three describes the methods used in this analysis including sampling methods, data, measurements, and the methods of the statistical analysis of facility-specific program measures. Chapter four presents the results of the analyses, and chapter five provides discussions of the results, implications for knowledge and policy, and limitations of the study that should be addressed in future research.

CHAPTER TWO
DIMENSIONS OF PRISON EDUCATION PROGRAMS AND THEIR RELEVANCE TO DEVIANT BEHAVIOR

This chapter provides a description of current knowledge on "effective" adult education practices and the principles commonly discussed in this literature (i.e., motivation, environment, collaboration, and feedback). Next, the applicability of these principles to prison education programs is then discussed. An overview of the principles of effective intervention (PEI) is presented to provide additional context for the current study, given the role of PEI for effective correctional treatment more broadly. Finally, the potential importance of prison education programs for reducing deviance during and after an individual's incarceration is discussed.

What Works in Adult Education

The education literature demonstrates that there are effective practices that can influence academic outcomes. Research in this area has evolved and enhanced in rigor over time and there appears to be a great deal of agreement across education scholars related to "what works" to achieve academic goals. This research illustrates the ability of educators and the overall institution to increase skill acquisition and academic outcomes by incorporating certain practices and creating an environment that is conducive to learning. This section will review these common principles of effective education programs and review the empirical support for each principle. The studies reviewed in this section range from research on academic practices and principles that can apply to both juvenile and adult populations.

Over the years, many education scholars have theorized that adult education is fundamentally different from education for juvenile populations. These scholars have studied and observed the learning processes for many adults to examine the differences in effectiveness

among adults compared to youth. The results of these efforts have demonstrated that there are several important differences in relation to how adults learn in comparison to young students. First, adults have more responsibilities and there is more emphasis on maintaining typical adulthood responsibilities (e.g. maintaining employment, paying bills, childcare) (Birkenholz, 1999). Additionally, they often serve as the economic support for a family, they have some responsibility to maintain stability, and are expected to teach their children values and skills (Birkenholz, 1999). Another major difference between adults and juvenile learners is motivation. Most adults are engaged in the learning process because they have decided to pursue additional education. In general, adults that are participating in educational endeavors are more motivated than youth (Birkenholz, 1999). Mocker (1975) discussed the major differences between adult and juvenile students and emphasized that adults begin their education with experiences that differ from youth. Additionally, Mocker (1975) explained that adult learners have more specific plans for how they can use their newly acquired knowledge. Many scholars have recognized these differences and this has warranted an entire field of research specific to adults seeking learning opportunities. This field attempts to understand the characteristics, barriers, motivation, and effective practices specific to adult learners. The current study is based on the foundation of this literature.

Specifically, the adult education literature can be compiled into four general principles of effective practice. These principles include motivation, environment, collaboration, and feedback. Similar to the research on effective rehabilitation programs, this section will review each principle and then explore the empirical support for that principle. Within each principle's research support there is a combination of studies exploring the concept among juvenile and adult samples. Some of the principles are directly related to adults and other principles are

broader and can be understood in the context of any individual engaged in learning. In sum, the following sections provide the rationale for each principle and the associated research literature informed by the education field across adult and juvenile samples.

The Motivation Principle

The motivation principle is likely the most agreed upon principle among adult learning scholars. In the adult education literature, this principle is based on the underlying foundation that learning is a behavioral change (Birkenholz, 1999). One of the most important prerequisites for behavioral change is the recognition of the need for change. Motivation is an important first step in the direction of change and this holds true for learning as well. This principle is an important component of effective adult education for at least three reasons. First, motivation increases participation in academic activities, second, motivated students are more likely to take responsibility for their learning, and finally, motivation enhances understanding of concepts and may be related to long-term comprehension.

Birkenholz (1999) describes the principles that support effective practices used in planning, implementing, and evaluating adult education programs. One of the primary principles outlines the need for motivation. He discusses how the potential for learning is reduced when adults are forced to participate in educational activities (Birkenholz, 1999). Adults may feel a greater need for autonomy than youth who are forced to participate in school. Forcing adults to participate in education programming may decrease feelings of autonomy and further inhibit the learning process. Smith (1982a) explains that adults will be more likely to learn when they can identify a reason to learn and develop a responsibility for their learning.

Adult students who are motivated to learn are more likely to be active participants. Motivation is likely to encourage active participation in the classroom and beyond. This

motivation may be particularly important for adult learners since it is likely that they must seek out and pursue education on their own. Based on the theory of self-determination, a theory of motivation that seeks to explain how intrinsic and extrinsic motivation shape behavior (Deci, Koestner, & Ryan, 2001). This theory takes a dual-approach to understanding and explaining motivation. First, the scholars suggest that humans have the tendency to actively seek new experiences. Second, this theory emphasizes the importance of the context and that outside entities may influence this search for experiences and knowledge (Deci, Koestner, & Ryan, 2001). Through this lens, self-determination may predict the participation of adult learners. A motivated student will be more likely to participate generally but also more likely to discuss their experiences and analyze how techniques learned in the classroom will apply to their lives. This is an important component of learning for adults in particular and can potentially increase the intrinsic motivation to learn. When adult learners can see the relevance of content it may increase their motivation to learn. This motivation may also drive their tenacity and reduce the amount of attrition in adult education programs.

Additionally, motivation urges students to take responsibility for their learning. There are several reasons that this is an important concept. First, when students take on the responsibility of learning it makes for a more productive environment in the classroom. Birkenholz (1999) describes that motivated participants in a classroom simply make an educator's life easier, since there is less pressure on the educator to increase motivation. The willingness of adult learners reduces the chances that educators must fight resistance, like some may face while teaching juvenile populations (Birkenholz, 1999). Second, when adult learners are motivated they are more likely to voice their needs, work on tasks outside of the classroom setting, and plan for the future as it relates to their learning and academic achievement. Finally, when students are

motivated to learn there are less opportunities for misbehavior and fewer challenges related to behavior management in the classroom. When adult learners take responsibility for their learning they are more likely to stay focused and avoid distractions than when they view the learning process as the teacher's responsibility.

In addition, motivated individuals are also more likely to grasp concepts and they tend to have an enhanced understanding of content. Darkenwald and Merriam (1982) explain that intrinsic motivation toward learning creates more pervasive and permanent learning experiences. When an individual is motivated to learn something new, they may be more likely to initially learn the technique but also motivated to practice and increase the likelihood of long-term change (Darkenwald & Merriam, 1982). Motivated students can identify the reasons that they are learning new content or a new skill and have likely recognized that the learning will benefit or enhance some aspect of their life. Adult learners have a variety of factors that can potentially increase their interest in learning something new (James, 1983). The factors themselves are less relevant but the motivation itself is the most important component. Brookfield (1986) includes motivation as one of the first principles of effective practice in education. Also, the decision to learn may be prompted by external circumstances but, again, this prompt is less important than the ultimate decision (Brookfield, 1986). The reason for the adult learner's motivation is less important, the underlying principle is related more to the participant's motivation to learn or make some change (e.g., learn a new skill or vocation).

Research on the Motivation Principle

Empirical support for the motivation principle is the most comprehensive of all the principles. The first component of this research is specific to adult education and the motivation behind why adults seek educational opportunities. The second component, mostly tested in

younger populations, demonstrates how motivation influences academic outcomes (e.g. reading comprehension). Both of these bodies of research are reviewed below.

First, research focused on the goals that drive adults to seek educational endeavors dates back to the 1960's. For example, Houle (1961) studied adults seeking higher education goals and found that they were activity oriented, goal oriented, or learning oriented. These were the categories that he could identify among the adult learners participating in the study and placed them into one of the three categories. Testing Houle's theory and including ten other potential "types" of adult learners, Sheffield (1964) found five new typologies. These included learning, desire-activity, personal-goal, societal-goal, and need-activity orientations. Sheffield had a larger and more heterogenous sample with results that were consistent with Houle's study but also added typologies of adult learners not included in previous work. Boshier (1971) sought to test Houle and Sheffield's work among a larger sample in New Zealand. Using factor analysis, Boshier found fourteen specific factors related to adult education motivation. Some of these factors were congruent with Houle's theory and some factors consistent with Sheffield's theory (Boshier, 1971).

Additionally, Botsman (1976) found that varying age groups of adult learners had differing goals for their pursuit of education. Younger workers explained that the education would help them get a new job or meet new people while older workers felt that the education would help them "better serve the church" (Botsman, 1976). The participants in the study are stating reasons that fall within some of the orientations of adult learners studied by Houle (1961), Sheffield (1964), Boshier (1971), and other scholars. In sum, there are a variety of factors that influence the reasons that adults seek education and the most important component is the presence of motivation.

Much of the research exploring how motivation actually influences performance on academic tasks is focused on young student samples. Additionally, this research often explores the influence of motivation on reading comprehension. First, Gottfried et al. (2007) explored how classroom procedures, like increasing stimulating tasks to increase motivation, would influence reading comprehension among third-grade students. The researchers hypothesized that students who were given more stimulating tasks would have higher motivation and increased performance on reading comprehension tests. The results indicated that the stimulating tasks did, in fact, increase motivation and improved reading comprehension (Gottfried et al., 2007). Other studies have further defined the components of motivation related to reading comprehension. Chapman and Tunmer (1995) explored three "subcomponents of reading" including the perceptions of reading competence, perceptions of difficulty with reading, and attitudes toward reading. The results indicated by the fifth year of the study there emerged a significant relationship between attitudes toward reading and reading performance (Chapman & Tunmer, 1995). Taboada et al. (2009) also explored various dimensions of reading motivation that they claim captures the "internal motivation for reading". These dimensions include perceived control over reading related activities, interest or investment in reading, self-efficacy, involvement or time spent reading, and social collaboration among learners related to reading tasks (Taboada et al., 2009). They sought to test how these motivation variables, background knowledge, and student questioning influenced reading comprehension. The results indicated that the motivation constructs of involvement and interest predicted reading comprehension when controlling for students initial reading comprehension ability (Taboada et al., 2009). Other studies have also resulted in similar conclusions that motivation and reading self-concept can significantly

influence reading comprehension (Chapman, Tunmer, & Prochnow, 2000; Guthrie & Wigfield, 1999).

The Environment Principle

A second common principle identified by scholars in adult education is related to the environment in which the learning takes place. Creating an optimal learning environment for the students is an important concept that has been a fairly pervasive topic in this field (Birkenholz, 1999). The environment principle has several components including how formal or informal the learning process is, the climate in the classroom and overall climate of the larger institution, the environment matching with the individual's needs/perception of needs, and the extent of active participation elicited during the class.

The first way that environment plays a role in adult education is related to the experiences of adults and if the classroom appears formal or informal to students. Birkenholz (1999) explains that adults learn best in more informal environments. This may due to the contrast provided by an informal classroom compared to their experiences of formal education as children. Birkenholz (1999) discussed how a major barrier for many adults pursuing education is related to their memory of the formal learning environments from their childhood and adolescence. Many adult learners may associate school with prior experiences in classroom settings that were less than desirable. Birkenholz's recommendations for adult learning environments focus on creating classroom expectations as a collaborative activity where students are involved and providing periodic breaks during class time (Birkenholz, 1999). In addition, some scholars provide recommendations related to how an instructor interacts with their students to create a "learning climate". This includes being available for questions, calling students by their names, and allowing discussion and disagreement (Farrah, 1991). The goal is to create an environment

suitable for adults, in part, to differentiate the environment from what some may remember from their youth.

The second way that environment is an important principle to consider in understanding the effective characteristics of adult learning programs is related more generally to the climate factors in the classroom and beyond. Many scholars in adult education reference the learning context as an extremely important aspect of effective educational programs. The climate is one of the components that can significantly influence outcomes. Some scholars suggest that adult learners are more aware of larger climate-related factors (Galbraith, 1991). Galbraith (1991) also explains that there are two "educational climate" components, the first is the physical environment and the second is the psychological, or emotion, climate. The physical layout of the classroom and the features of the room (e.g., temperature, décor, lighting) can influence the ability to learn. The second educational climate factor, the psychological climate, is related to the tone set by the educator and the environment. This means that students feel a sense of support, openness, informality, and friendliness when they are in the classroom. Students should view the teacher as a form of support and the instructor should avoid threatening or demeaning students in any way (Galbraith, 1991). In addition, instructors must work to manage the classroom and the behaviors of students. Classroom management is another component contributing to the educational climate. This includes holding students accountable to the rules and expectations of the classroom but also ensuring that students are interacting with one another in a positive manner. Brookfield (1986) cautions that educators need to ensure that students do not belittle or antagonize one another.

Related, another important principle is the goals set by the educator and the student. Creating goals for the student to work toward is an effective strategy in adult education. The

underlying goals and the way that educators communicate those goals to their students can influence success in the classroom. Some scholars in education focus on mastery-oriented versus performance-oriented goals (Turner et al., 2002). This is related to the climate because teachers can set the tone of the classroom by communicating what is expected of their students. Studies demonstrate that students are less likely to seek help from the teacher when they perceive the goals of the classroom to be based on performance instead of skill acquisition or mastery (Turner et al., 2002).

An additional component of this principle is related to a more specific matching of the student to the environment. In the research on learning environment, this is often referred to as the person-environment fit (Hunt, 1975). For some, this context includes the physical, social, and individual characteristics involved in the learning process. Knox (1977) explains that these three areas determine the pace and quality of learning. Other scholars discuss more generally that an environment that is comfortable, nonthreatening, and supportive of mistakes is most beneficial in teaching adults (Darkenwald & Marriam, 1982; James 1983; Smith, 1982a). Brundage and Mackeracher (1980) explain that the most ideal settings for teaching adults is an environment that is supportive of change and value where the students stand in the learning process.

The final component of the environment principle is related to the active participation involved in the classroom. The environment in a classroom has an influence on the level of active participation elicited from the students. Making learning an active process where students practice the concepts being taught is beneficial for retaining information. Additionally, practicing in the classroom provides opportunities for instructors to provide corrective feedback and reinforcement. Active participation means that adult learners are not simply sitting in a classroom but are actively participating in their learning experience. Birkenholz (1999) explains

that adults learn best through direct participation and active engagement in the classroom. Some scholars explain this as a process where adult learners benefit most from being part of a process where they investigate, explore, act, and repeat this process (Brookfield, 1986). Additionally, some scholars in this area focus on the practice component of "active" participation. This means that students must be given opportunities to practice what has been taught during the class time (James, 1983; Knox, 1977; Mackie, 1981; Miller, 1964). Darkenwald and Merriam (1982) explain that this type of learning experience, where students are actively participating, increases the likelihood that content is retained long-term. Ames (1992) found that student engagement is truly shaped by the tasks assigned by the teacher. This engagement, however, is influenced by how the task is delivered by the teacher and how the task fits into the larger classroom structure.

Research on the Environment Principle

There is a substantial body of research on this principle and the influence of the environment on academic performance and engagement in the classroom. This research includes tests on the nature of the classroom discourse, the messages communicated by teachers related to goals, and the examination of how active participation influences outcomes.

First, the classroom discourse is a function of the teaching style, the classroom climate and, importantly, the messages sent by the instructor. Turner et al., (2002) discussed the importance of reviewing the messages conveyed by teachers and how those messages influence behavior. In their study, they explored the relationship between classroom learning environment and the influence on students' reported barriers to learning. Specifically, they explored the influence of the environment on avoidance techniques used by students. These avoidance techniques are associated with poor academic performance (Turner et al., 2009). The results of the study indicated that the student's perception of the discourse was significantly related to the use

avoidance strategies. Students in the study reported that they used avoidance strategies less when they perceived the classroom as a place that emphasized learning, effort, and enjoyment (Turner et al., 2007). There are many aspects of the classroom that could influence how students perceive the environment. Eccles and Roeser (2009) provide an innovative framework to understand the climate of an individual classroom. They discuss the need for academic outcomes and research in education to be framed through multiple levels of understanding including the classroom level, the school building level, the school district and larger social systems. All of those levels of analysis influence the larger climate of a classroom and, ultimately, the student's performance (Eccles & Roeser, 2009).

Additionally, there are some validated assessment tools that can be used to explore the classroom environment and the nature of the classroom discourse. These tools have been correlated with positive outcomes related to academic achievement. Deci et al. (1982) describes the development and validation of an instrument that measures the teacher's orientation toward students. While validating these instruments, the authors found that students had more intrinsic motivation and perceived themselves as competent when teachers focused more on autonomy and less on control (Deci et al., 1982). The messages communicated to students in a classroom setting can substantially influence their academic performance.

When teachers focus on increasing autonomy and less on controlling the environment, there is evidence that this improves several classroom outcomes. For example, Ryan and Grolnick (1986) tested how an autonomy-focused versus control-focused classrooms influenced student's perceptions of their ability and competence. They found that the student's perception of the climate (controlling or affording autonomy) influenced their perceptions of competence, their self-esteem, and their motivation to master new skills (Ryan & Grolnick, 1986). The classroom

environment is shaped by many factors, including the teacher's orientation and the cues or messages communicated to students. Ames (1992) described how "informational cues" can affect the students' goals and student's self-efficacy. These informational cues provide specific feedback on performance (e.g., comparing test scores to peers versus comparing outcomes to their own work) (Ames, 1992). One takeaway from these studies on classroom environment features is, one, student's performance is influenced by climate and, second, teachers have the ability to change the environment of the classroom.

The final set of studies related to the environment principle is focused on increasing active participation in the classroom. Pratton and Hales (1986) explain that active participation requires the teacher to make deliberate attempts to increase overt participation from students. In their study, the scholars investigated how active participation influenced student learning through a comparison of students in the treatment group who actively participated and the control group of students who were not required to actively participate in the class. The results of this study demonstrated, by pre and post testing both groups of students, that that active participation did in fact influence the degree of student learning (Pratton & Hales, 1986). More recent research in this area has further evolved to test the level, type, and amount of participation and the influence on demonstrated learning and course performance (Starmer et al., 2015). In their study, they found results consistent with Pratton and Hales (1986) that increases in overall participation are correlated with increased performance on classroom tasks (e.g., final exam). Additionally, Starmer et al. (2015) found that learning occurs beyond the classroom indicating that homework assignments, another way to increase active participation, can enhance academic outcomes. Other modern tests of active participation and the influence on student performance incorporate innovative classroom techniques. For example, Stowell and Nelson (2007) examined the

influence of electronic clickers that allow students to answer questions immediately and the information is shared with all students. The results of the study demonstrated that although the use of clickers did not significantly influence quiz performance, it did increase participation compared to traditional hand raising techniques (Stowell & Nelson, 2007).

The Collaboration Principle

It is important that students and teachers are collaborative in the learning process. The collaborative nature of the class adds to the environment in the classroom because it creates a sense of community and support for students (Tibbetts & Hector-Mason, 2015). The collaboration between students, teachers, and peers is an extremely important principle for effective education programs. This involves collaboration at the beginning stages of learning, when planning and assessment begins, and throughout the learning process. This principle is related to collaboration between the teacher and the student but collaboration is also an important component when applied to students working with one another. The student collaboration is arguably as important as the teacher-student collaboration. Zuo (2011) explains that cooperative learning allows students with different skills and levels of ability to work together to understand a subject or concept. This principle is important for three specific reasons emphasized in the education literature.

First, teachers and students work together to determine each individual student's needs. Learning objectives are individualized and while developing a plan for educating adult learners, the student should be included. Galbraith (1991) discusses the need for collaboration as it relates to assessing the need areas presented by the adult learner. He emphasizes that plans should incorporate "felt and prescribed needs". Felt needs cannot be identified without a discussion with the student (Galbraith, 1991). It is important to plan for obvious prescribed needs but felt needs

are more difficult to assess without collaborating with students. To understand and plan for these needs, it is important for instructors to use needs assessments and work with students to understand their felt needs. Assessing and creating a plan for both types of needs will enhance the learning process.

Second, scholars also suggest that teachers periodically check in with students throughout the class. Brookfield (1986) suggests that it is beneficial for students to have a say in the learning process in regard to activities and the priorities of the classroom. Brundage and Mackeracher (1980) discuss how more collaborative ways of teaching adults will enhance the student's self-concept. Galbraith (1991) discusses the importance of collaborating with adult learners to identify learning objectives and goals. This principle is related to how the students can provide useful feedback so that the best learning activities are chosen and practiced in the classroom (Galbraith, 1991). Finally, the literature related to collaborative learning in terms of students working together to learn concepts is extensive. Lai (2011) conducted a comprehensive review of this research and outlined the best strategies related to encouraging the development of collaborative skills with students. These skills are important for learning new concepts but also benefit students in the long-term by teaching them practical skills for working with peers (Lai, 2011).

Research on the Collaboration Principle

Research on the collaboration principle demonstrates the need for students and teachers to work together to achieve the students' goals. There is a great deal of evidence demonstrating that collaborative approaches to teaching are effective at improving student outcomes (Tibbetts & Hector-Mason, 2015). Lai (2011) explained that collaboration is linked to several important outcomes including increase motivation, critical thinking, and metacognition. Additionally,

collaboration between teacher and student is a key factor, or best practice of education (Tibbetts & Hector-Mason, 2015). A three-year study conducted by the American Institute for Research (2014) found that collaboration, among other dimensions, was significantly correlated with higher levels of engagement, increased motivation, and increase self-efficacy. Research on collaboration in the classroom has also demonstrated that it can positively affect English language learning, reading comprehension, and math (Tibbetts & Hector-Mason, 2015). Meta-analyses have also demonstrated that cooperative learning structures are correlated with academic achievement when compared to teaching strategies that are non-collaborative or encourage competition between students (Herrmann, 2013). Some scholars have outlined the process behind effective collaboration in education settings. For example, Uhl and Squires (1994) described the most effective collaborative strategies in a multi-stage model incorporating engagement, negotiation, performance, and assessment or evaluation. Again, the collaboration principle, including collaboration between teachers and students as well as students collaborating with one another, is an effective strategy in adult education.

The Feedback Principle

Feedback is an important part of all learning processes. Learning any new skill or concept requires feedback, both positive and negative, to progress toward skill acquisition. The lack of feedback during early learning can hinder this process because the student has little direction related to what they are doing well or where they could improve. Feedback is also especially important later in the learning process because the feedback is necessary to further improve and transfer the skill to other areas. The concept of "formative assessment" is an important component when considering the quality of feedback in the classroom. Nicol and Macfarlane-

Dick (2006) emphasize the need for adult education to shift the way that feedback is delivered to students and focus on the quality of the feedback rather than the presence of feedback.

In regard to adult learning, this principle includes three parts, first, students receive ongoing feedback on their progress, second, reinforcement is regularly incorporated into the learning process, and finally, the feedback builds self-efficacy. Brundage and Mackeracher (1980) describe that regular feedback on overall progress is beneficial for the student but also that periodic positive reinforcement will continue to motivate the adult learner to further pursue education. This feedback not only encourages further learning but it also assists in creating a positive environment for students and they can begin to associate learning with success.

Miller (1964) explains that reinforcement is an important condition of learning, especially from the behaviorist paradigm. In the behaviorist view, new behaviors will not be established without reinforcement. Other scholars in this area, whether they operate from a behaviorist perspective or not, agree that reinforcement aids in the learning process (Darkenwald & Merriam, 1982; Mackie, 1981). Scholars suggest that reinforcement is useful for skill improvement and acquisition, especially for complex skill building (e.g. learning a vocational technique) (Wlodkowski, 1991). Reinforcement is an important component of feedback. It has twofold benefits in that it may increase motivation and it assists in building self-efficacy.

Finally, feedback has the potential to build self-efficacy and confidence when learning new skills and techniques. When first learning new skills, it is important for the student to receive corrective feedback and reinforcements as a form of extrinsic motivation. This feedback during the early stages of learning a new skill is essential in increasing motivation to learn the skill and, ideally, continues to urge the student to continue practicing. In his book on effective adult learning, Birkenholz (1999) discusses the need to remove barriers such as the lack of confidence.

His recommendations include beginning with activities that will guarantee success to assist in overcoming barriers like the lack of self-efficacy.

Research on the Feedback Principle

Research in this area demonstrates the need and the benefits associated with feedback and in particular, the benefits associated with reinforcement. Early research in this area focused on testing different types of feedback. For example, Van Houten et al. (1975) explored the influence of feedback timing, the type of feedback, and public posting of academic outcomes on performance on writing tasks. The results of the study demonstrated that all of these components related to feedback significantly influenced the student's ability to complete the writing tasks (Van Houten et al., 1975). More recent research on the feedback principle focuses on a concept called "formative assessment" (Nicol & Macfarlane-Dick, 2006). This type of feedback is meant to improve and increase learning in a specific area with the focus on the quality of the feedback (Sadler, 1998). Nicol and Macfarlane-Dick (2006) emphasize the need for formative assessment with adult students and discuss that this type of feedback is especially important for attempts to increase self-regulated learning. Self-regulated learning is the ideal outcome for all students since this allows them to seek out learning opportunities and provide internal feedback without the teacher's presence. Feedback is an important component of self-regulating activities since students will begin to monitor their own progress (Butler & Winne, 1995). Nicol and Macfarlane-Dick (2006) also provide specific recommendations, based on the empirical evidence, related to good feedback practices. These principles of feedback include clarifying goals and "good" performance, developing self-assessment techniques, delivering high-quality information, encouraging dialogue between teachers and students, encouraging positivity and self-esteem, and assisting students in closing the gap between current and desired performance

(Nicol & Macfarlane-Dick, 2006). Sadler (1998) who also emphasized formative assessment and quality feedback approaches add to this discussion by explaining that the accessibility of the feedback is also an important component. This recommendation is related to how students receive feedback and framing the feedback message purposefully.

Some studies on the influence of different types of feedback have demonstrated the influence on academic performance. For example, Schunk (1982) tested the effects of "attributional feedback" on math achievement and self-efficacy. This type of feedback focuses on the student's past success and encourages them through messages about their effort. In this study students working on subtraction skills were placed into one of four groups, including those who were monitored and received attributional feedback, a group who were monitored and were told that they needed to work harder, a group monitored but did not receive feedback, and a group that was not monitored. The group of students who received the attributional feedback had significantly greater subtractions skills and had significantly higher confidence in their math ability than the other groups (Schunk, 1982). This is just one example of the many research studies conducted related to the feedback principle. Black and Wiliam (1998) conducted a thorough review of research on this principle and found over 250 studies related to feedback. The result of this summary was that feedback produced significant benefits in learning and performance across all content areas, varying skill types, and all levels of education (Black & Wiliam, 1998). Empirical evidence in the feedback principle demonstrates the ability of quality feedback to improve academic outcomes but feedback also has other benefits. For example, Ryan (1982) explored the influence of verbal feedback on intrinsic motivation. The results demonstrated that informational (versus controlling) feedback increased intrinsic motivation (Ryan, 1982).

The Application of the Principles of Effective Education Programs to Prison

The principles of effective adult education programming, explained above, demonstrate that there are empirically supported guidelines related to effective adult education. The question that this dissertation seeks to answer is how do these principles, along with those demonstrated in the correctional treatment literature, apply in a prison setting? This section will briefly describe how each principle applies to education and vocation programs in prison.

First, the motivation principle is based on the idea that motivation is an important factor in effective education programs. This principle applies well to the participants in correctional education programs. Most of the education and vocation programs offered in prisons are voluntary programs. This demonstrates that by and large the students participating in correctional education programs are somewhat motivated. However, there is one exception to this, in Ohio prisons, IPs who do not have a GED or high school diploma at admission are required to attend a number or timeframe of basic education programming. In the current sample in Ohio, IPs who did not have a high school diploma or GED at admission were required to participate in GED preparation courses for a minimum of six months. These particular students who are mandated to attend education programming for a period of time are unique and likely represent a large proportion of the sample focused on those who completed general education courses.

In many correctional education programs, some level of motivation was initially present due to the voluntary nature of most programs. For example, in vocational programs such as carpentry or welding programs the IPs have volunteered to participate in these programs and many times they have been waiting for acceptance into the program. Due to the high volume of interested IPs and the staff capacity to run these programs, in many prisons the waitlists for education and vocation programs are lengthy. Many of the components of the motivation principle are present

in the prison programs due to their voluntary nature. For example, given that the students in these programs have volunteered to participate they may be more likely to actively participant and take responsibility for their learning. The issue with motivation, and this population in particular, is that motivation levels and reasons for motivation vary substantially.

The second principle, the environment principle is focused on creating an optimal learning environment for students. This principle can also be applied to prisons but with several caveats. The environment, whether a class is conducted in a prison classroom or not, is still an important factor and can be modified within the classroom. One major barrier to this principle is that a classroom in a prison is certainly not the ideal learning environment. Again, there may be some potential modifications that teachers can make to create an environment that is still conducive to learning. For example, teachers can provide periodic breaks and attempt to create a productive "climate" in the classroom. Some teachers working in prison settings will decorate the classroom with artwork from students or place motivational posters on the walls in an attempt to create this climate. In addition, teachers will still communicate certain goals to the students. The goals emphasized by the teacher can influence the overall climate of the classroom. Finally, the last component of the environment principle is the fit between student and class. This can apply to prison settings because staff can work to match participants with the teacher and with the ability of the other students in the classroom. For example, if a specific math teacher works well with students who are illiterate, it would be appropriate to place those students into that teacher's class. Again, the environment where correctional education programming takes place is not ideal but teachers and prison staff can make efforts to reduce this barrier.

Next, the collaboration principle related to students and teachers working together to achieve goals and create learning objectives apply well to a correctional education setting. Similar to any

education program, it is important that teachers work collaboratively with IPs to determine their needs and how to best assist them in learning new skills or content. Additionally, teachers in correctional education settings should periodically assess student progress to measure and discuss progress and identify areas for improvement or content where the student is struggling. For example, IPs participating in a carpentry program will likely have a syllabus outlining the goals and objectives for the program. The carpentry teacher may still check in halfway through the program to assess how students are retaining the information and if they have needs outside of the planned activities (e.g., more hands-on practice, more modeling of skills). In sum, assessment and collaboration between students and teachers is an important feature of prison-based education programs.

The feedback principle emphasizes the importance of providing students with an evaluation of their progress and assisting them in learning new skills through the feedback process. This principle also applies well to a prison setting. Feedback, regardless of the setting, is an important feature of learning new skills. The students in prison-based education and vocation programs need feedback from the teacher to acquire new skills. For example, IPs participating in these programs are especially in need of feedback, reinforcement, and the building of self-efficacy through educational endeavors. The feedback, especially that which is reinforcing and increasing self-efficacy, is especially important in these settings. IPs do not have many opportunities to receive feedback on their performance and education settings provide more opportunities for them to build self-efficacy. In sum, feedback is an important component of correctional education programs.

In sum, the principles of effective adult education programs discussed above apply to education and vocation programs in a prison setting. Although there may be some unique

challenges faced by those conducting education programming in prison overall the adult education literature provides practical guidelines on how to conduct the most effective education programs. The gap in the literature is related to how, and if, these principles, along with the principles of effective intervention, apply to correctional education. This dissertation seeks to explore this notion and identify the effective characteristics of correctional education programs.

The Principles of Effective Intervention

In the early 1970's the state of New York commissioned Martinson and his colleagues to explore effective practices and programs in corrections (Martinson, 1974). Martinson and his colleagues reviewed over 200 studies and concluded that most programs did not work better than any others to reduce recidivism, and that programming in general was no more effective than doing nothing with offenders. This conclusion was widely accepted by practitioners and scholars due to the current state of correctional policy. This research further persuaded academics, policymakers, and practitioners to abandon rehabilitation (Cullen & Jonson, 2012). Not long after this study was published, other scholars began to review and question the validity and accuracy of the results (Gendreau & Ross, 1979; Palmer, 1975). For example, Palmer (1975) re-analyzed the data from Martinson's study and found that almost half of the studies resulted in positive outcomes demonstrating that some correctional interventions did work. Additionally, Lipsey (1992) conducted a meta-analysis exploring this notion. Lipsey (1992) and Lipsey & Wilson (1998) found that correctional programs were effective in reducing recidivism and, in addition, some programs were more effective than others. In his meta-analysis on programs for juvenile offenders, Lipsey (1992) asserted that one of the most important results of the study was the variability in effectiveness, and the challenge of future research was to understand why some programs were effective while others had no effect or increased recidivism.

To understand the variability in effectiveness, Andrews, Gendreau, Ross, and Bonta set out to study and identify the principles that differentiate effective from ineffective programs (Gendreau, 1996). They reviewed an exhaustive collection of narrative reviews, meta-analyses, and individual studies to identify several principles. This research resulted in the identification of the principles of effective intervention, which translated into the risk, need, responsivity (RNR) model. The research used to develop the RNR model as well as subsequent research demonstrated that correctional programs adhering to the principles are more effective in reducing recidivism than programs that do not adhere to them (Cullen & Gendreau, 2000). Additionally, the benefit of these principles is that correctional programs and agencies can translate the existing research into useful practice. The principles of effective intervention assist correctional programs in making more evidence-based decisions, specifically treatment, placement, and release decisions. They can be organized into four general categories including risk, need, responsivity, and fidelity. Each category is described below along with a review of the relevant literature supporting the principle. The principles of effective intervention are meant to provide context for the current study.

The Risk Principle

The risk principle provides guidance on the population that should receive the most intensive treatment services. Treatment programs are more effective at reducing recidivism when they are provided to higher risk offenders (Gendreau, 1996). The higher risk offenders have more needs, thus they will benefit more from more intensive services. Additionally, providing intensive treatment to low risk offenders will likely increase their risk for recidivism. There is a body of research providing support for the risk principle, relating to both the idea that moderate and high risk offenders should receive most services and that low risk offender's risk level can

increase when placed in these same programs. In addition, some studies examine treatment dosage hours and provide general recommendations for the number of dosage hours individuals should receive.

Research on the Risk Principle

The research on the risk principle demonstrates that intensive programs and services are most effective when provided to higher risk offenders (Andrews & Bonta, 2017; Dowden & Andrews, 2000; Lipsey, 2009; Lipsey & Wilson, 1998). In their study of community-based residential programs in Ohio, Lowenkamp and Latessa (2005) found that recidivism rates for low-risk offenders placed in these programs actually increased compared to a similar group of offenders who received parole supervision or were placed on post-release control. However, the same programs reduced recidivism for the higher risk offenders. A follow-up study on the same programs was conducted eight years later and the results remained consistent. The programs serving moderate and high risk offenders fared better than programs serving low risk offenders in terms of reducing recidivism (Latessa, Lovins, & Smith, 2010).

Additionally, the results of a study examining community supervision-based diversion programs revealed that programs targeting higher risk offenders and those that were longer in duration for high risk offenders resulted in reductions in recidivism (Lowenkamp, Pealer, Smith, & Latessa, 2006). Another study, conducted by Lowenkamp, Latessa, and Lemke (2006) examined community corrections facilities (CCF) for juvenile offenders in Ohio. They found significant differences in the treatment effects of programs that incorporated the risk principle compared with programs that did not. They compared the youth who went through a CCF program to those that were placed into the Department of Youth Services (DYS) and found that when CCF's provided treatment to more higher risk than lower risk youth the programs were

more effective in reducing recidivism (Lowenkamp, Latessa, & Lemke, 2006). Other studies examining how the risk principle applies to youth have found similar results (Latessa, Lovins, & Lux, 2014).

Recent trends exploring the risk principle have begun to measure the most effective amount of treatment hours, or dosage, for varying risk levels. The goal with this research is to identify how much treatment is appropriate for the varying risk levels. A meta-analysis demonstrated that the amount of treatment was an important factor in the risk principle Lipsey, Landenberger, and Wilson (2007). However, the study did not provide specific recommendations related to the number of treatment hours that would be most effective for the varying risk levels.

More recent studies on dosage add to this literature and provide specific treatment hour recommendations for different risk levels (Sperber, Latessa, & Makarios, 2013). For example, the results of one study demonstrated that less than 200 hours of treatment was insufficient to reduce recidivism among high risk offenders. When high risk offenders received upwards of 300 or more hours of treatment their recidivism rates dropped to 38% (Makarios et al., 2014). Equally important, this study revealed that low/medium and moderate risk offenders can receive too much treatment. For example, they found that when moderate risk offenders received 200 or more hours of treatment, their recidivism rates began to increase. This study provides support for the notion that low risk offenders do not benefit from the same "intensive" treatment that is provided to moderate and high risk offenders.

In sum, the risk principle provides guidance on who should be targeted with intensive services. The offenders with the most criminogenic need areas, the higher risk offenders, are those that should receive the most services. The treatment for moderate and high risk offenders is intended to reduce their risk by targeting those need areas.

The Need Principle

The need principle guides what characteristics or life circumstances should be targeted with treatment. This principle suggests that programs and interventions should assess and target the dynamic risk factors that make offenders more likely to commit crime in the future. By targeting the appropriate need areas for individual offenders, correctional programs can further reduce recidivism. When correctional interventions appropriately assess and target these areas, they can have the strongest effects on reducing recidivism.

The list of risk factors correlated with future criminal behavior contains both static and dynamic factors. Risk factors such as criminal history are static and cannot be changed. The risk factors that are dynamic, or amenable to change, called criminogenic needs, should be the focus of treatment programs and interventions. The need principle emphasizes that targeting the dynamic need areas is necessary in order to reduce recidivism. Each individual has a unique combination of need areas that require differential treatment services. In order for programs to adhere to the need principle, they need to assess and target the areas of need for the individuals in the program. By appropriately assessing these need areas and providing treatment to target the individual areas, programs can have the greatest influence on recidivism. It is also important to reevaluate offenders' needs to ensure that assessment results are up-to-date (Smith, Gendreau, & Swartz, 2009).

The first criminogenic need area is antisocial thoughts, attitudes, values, and beliefs. This is an example of a dynamic need area that can be targeted and changed through treatment. Antisocial thoughts are thoughts, or belief systems, that justify criminal behavior. Andrews and Wormith (1984) conducted a study measuring antisocial thoughts, or the "identification with criminal others", of probationers and found that these attitudes were correlated with future

offending. The results demonstrated that those probationers who continued to identify with criminals had higher recidivism rates than those who had decreased their identification (Andrews & Wormith, 1984). The second need area is antisocial personality traits that increase the likelihood of engaging in criminal behavior. These personality traits include lack of empathy, impulsivity, risk seeking behavior, lack of problem solving skills, and self-centeredness (Andrews & Bonta, 2017). The third dynamic risk factor is related to antisocial peers. If offenders surround themselves with people who engage in criminal behavior they are more likely to also engage in criminal behavior. Additionally, this need area includes having a lack of prosocial people in one's life. In a survey of parolees, split into two groups of those who successfully completed parole and those that were unsuccessful, the parole violator group was significantly more likely to associate with others who had a criminal background (Bucklen & Zajac, 2009). The next risk factor include low levels of educational achievement and/or risky employment patterns. In the Bucklen and Zajac (2009) study, researchers found that parole violators were more likely to report a monthly income of less than $1,000 and had more negative attitudes toward employment in general. The need factor of employment is related to a lack of employment, unstable employment, and it involves achievement and values related to work. For example, a need in this area may manifest itself by an offender by engaging in a pattern of interpersonal conflict with others or a boss at work and results in them losing the job. This need area is most relevant to the current study since the sample of IPs involved in the study completed an education or vocation program while incarcerated. The sixth risk factor is related to substance abuse. Offenders with a current substance use problem are more likely to reoffend. Offenders with a lack of support from family members or a significant other are also more likely to engage in future criminal behavior. Finally, the last risk domain is related to a lack of prosocial leisure

activities. Offenders with more free time and no prosocial recreational activities to fill that time are more likely to reoffend (Andrews & Bonta, 2017).

Research on the Need Principle

A meta-analysis conducted on the principles of effective intervention and their application to juveniles involved in the justice system demonstrated support for all principles in this population (Dowden & Andrews, 1999). Specifically, programs that addressed the need principle, meaning that they targeted a greater number of criminogenic needs than non-criminogenic needs, had a significant influence on reducing recidivism. Additionally, in community-based supervision programs the need principle has been found to correlate with lower recidivism rates compared to programs in the community that do not target criminogenic needs (Lowenkamp, Pealer, Smith, & Latessa, 2006). Other studies have resulted in similar conclusions that programs targeting criminogenic needs are more effective in reducing recidivism (Andrews & Bonta, 2006; Antonowicz & Ross, 1994; Dowden & Andrews, 2000; Dowden & Andrews, 2003).

There is also evidence demonstrating that targeting criminogenic needs can reduce misconduct while incarcerated (French & Gendreau, 2006). This study provided empirical support for prison programs that target criminogenic need areas. Focusing on reducing misconduct in prison is important for the safety and security of the institution but is also beneficial due to the correlation between misconduct and recidivism (Cochran, Mears, Bales, & Stewart, 2014; Trulson, DeLisi, & Marquart, 2011). Correctional interventions, regardless of the setting, should target criminogenic needs to increase effectiveness.

The Responsivity Principle

The third principle of effective intervention is the responsivity principle. This principle has two components, general and specific responsivity, and the principle provides guidance on how interventions are provided to offenders including both the general treatment approach and more specifically the barriers that may interfere with treatment. The discussion below begins with the general responsivity principle, covering the rationale and then the empirical support. Finally, this section reviews the rationale for the specific responsivity principle followed by the empirical support for this component.

General Responsivity

General responsivity guides the type of treatment that should be provided to offenders. For offender populations, this includes cognitive behavioral treatment (CBT) and structured social learning approaches (Andrews & Bonta, 2017). Additionally, the general responsivity principle states that in order for treatment to be most effective, staff must operate and interact with offenders in a specific way. The way that correctional staff talk to offenders, the behaviors modeled by staff, and the environment created by the consistency of these interactions are also considered general responsivity factors (Andrews & Bonta, 2017). This is a key component of education and vocation programs as well. The consistency provided by staff and the environmental features of the classroom have the potential to create an optimal learning environment for IPs. For this principle, both the type of treatment provided by the agency and the consistency of staff-offender interactions make up general responsivity.

Cognitive behavioral treatment aims to help offenders change their thinking, learn prosocial skills, and practice those skills (Spiegler & Guevremont, 2010). The foundation of cognitive treatment is related to cognitions that lead to criminal behavior. The theory behind this approach is related to the thinking that controls behavior and the notion that thoughts can be changed.

Therefore, when offenders have a pattern of antisocial thoughts they are likely to engage in criminal behavior. Cognitive behavioral treatment requires offenders to recognize antisocial thinking and practice cognitive restructuring. The behavioral component of cognitive behavioral treatment focuses on teaching new social and problem solving skills to help offenders avoid and manage situations that may tempt them to engage in criminal behavior. This is the "behavioral" approach to treatment where offenders are actively practicing new skills in role-play situations. Skills are taught with a social learning foundation in mind. This is based on Bandura & Walter's (1977) theory of observational learning.

In addition to using CBT as a treatment approach, the general responsivity principle also guides how and what collective practices correctional staff use when interacting with offenders. In part, the rationale for this principle is related to how correctional staff contribute to an environment and a climate that can either assist offenders in changing their behavior or hinder the learning process. The way that staff interact with offenders can shape the climate, create an environment conducive to learning and change, and increase brokerage. The set of skills commonly used in correctional settings are referred to as the core correctional practices (CCP). First identified by Andrews and Kiessling (1980), the core correctional practices are a set of skills and ways to interact with offenders that create an environment conducive to learning and change. Some examples of the core correctional practices include establishing a collaborative relationship with offenders, reinforcing prosocial behavior, using effective authority, and being a prosocial model (Andrews & Kiessling, 1980). In addition to the interactional skills, CCP also teaches staff the core techniques and tools from CBT. By using CCP, all staff can become change agents to facilitate behavior change among offenders. The consistent use of CCP is

particularly important because it creates a sense of predictability of how staff will interact with offenders.

Research on the General Responsivity Principle

The research on general responsivity demonstrates the effectiveness of CBT and the importance of using consistent, concrete skills like CCP to interact with offenders. In their meta-analysis, Pearson, Lipton, Cleland, and Yee (2002) identified 69 studies exploring behavioral and cognitive behavioral treatment for offenders in various settings. They found that cognitive behavioral treatment and treatment based on social learning theories have the potential to significantly reduce recidivism (Pearson et al., 2002). Other meta-analyses have demonstrated similar results that cognitive behavioral treatment is the most effective treatment for reducing recidivism among general offending populations (Antonowics & Ross, 1994; Dowden & Andrews, 2000; Henning & Frueh, 1996; Lipsey, Chapman, & Landenberger, 2001; Wilson, Allen, & MacKenzie, 2000; Wilson, Bouffard, & MacKenzie, 2005). Again, this captures one component of the general responsivity principle where treatment programs are encouraged to provide an approach that is effective for most individuals.

The secondary component of the general responsivity principle has also been empirically supported. There is a body of research demonstrating that the use of core correctional practices by staff is effective in reducing recidivism. Specifically, in probation samples, when probation officers incorporated CCP into their contact sessions, they had lower rates of failure among those on their caseload compared to a control group of officers who were not trained in CCP (Robinson, VanBenschoten, Alexander, & Lowenkamp, 2011). A similar result came from a study on the use of CCP among prison staff. In this study, French and Gendreau (2006) found that the use of CCP in prison was correlated with reductions in misconduct. Finally, in a meta-

analysis conducted on the use of CCP in community supervision, the authors found that offenders supervised by officers who were trained in CCP had significant reductions in recidivism compared to those who were supervised by officers who had not been trained (Chadwick, DeWolf, & Serin, 2015). The consistent use of CCP has been repeatedly found to improve outcomes and reduce recidivism, regardless of the correctional setting.

Specific Responsivity

The specific responsivity component guides the way treatment is delivered that will be most effective for offenders receiving the treatment. This is related to creating an environment that is conducive to learning and taking steps to remove or reduce individual barriers that may interfere with treatment. Specific responsivity factors become a barrier to treatment when correctional staff either do not identify them or when there are no steps taken to reduce these barriers. Removing individual barriers can ensure that treatment goals can be met. The barriers can include, but are not limited to, culture, cognitive abilities, literacy, motivation, and mental health issues (Andrews & Bonta, 2017).

Research on the Specific Responsivity Principle

There are varying amounts of research demonstrating that specific responsivity factors serve as barriers to treatment outcomes. Some of these specific responsivity factors have more evidence supporting them than others. In a study exploring how several responsivity factors influence probation outcomes, Hubbard (2007) found that gender served as an important barrier, but IQ and self-esteem did not appear to be barriers for participants. Additionally, mental health/illness is another important specific responsivity factor. The research on this factor demonstrates how these specific responsivity factors act as barriers but are not necessarily criminogenic needs. In a study on incarcerated males and females with mental health diagnoses,

the participants in this study scored similar to IPs who did not have a mental health diagnosis on two validated criminal thinking scales (Morgan, Fisher, Duan, Mandracchia, & Murray, 2010). This demonstrates that risky thinking is likely contributing more to their criminal behavior than the mental health diagnosis. Having a mental health diagnosis does not make someone more likely to engage in crime but mental health issues can act as a significant barrier for treatment.

There are two other specific responsivity factors that correctional staff and agencies should be aware of to avoid interference with treatment goals. These factors include matching staff appropriately based on their skills/expertise and creating a space for treatment programs that is conducive to learning (Andrews & Bonta, 2017). Additionally, Palmer (1995) described how the setting of a treatment program may potentially threaten the effectiveness of the intervention. Again, the efforts to adhere to the specific responsivity factor include removing barriers and creating environments that encourage change and learning.

The goal of this principle, though twofold, aims to provide treatment in a way that will increase the likelihood that offenders will respond to it. This includes all of the above suggestions on providing cognitive behavioral treatment, removing as many individual barriers as possible, and matching treatment providers with offenders receiving the treatment (Gendreau, 1996).

The Fidelity Principle

The fidelity principle drives how well the above principles are followed, within treatment programs, as well as a program's overall adherence to risk, need, and responsivity. This principle suggests that treatment programs should be implemented as they were designed (Lowenkamp, Latessa, & Smith, 2006; Holsinger, 1999). This requires several program characteristics to be in

place including the adequate hiring and training of staff, creating and implementing a quality assurance plan, and overall adherence to the other principles of effective intervention.

First, staff working in the program must be adequately trained, qualified for their positions, and competent. Initially, it is important to hire staff based on experience and qualities that are conducive to helping people change their behavior. After hiring decisions, staff must be adequately trained for their job positions. These are some of the important features of the fidelity principle where staff are hired for their competency, qualities, and once they are hired they receive training (Makarios, Lovins, Latessa, & Smith, 2016). Second, in order to adhere to the fidelity principle, it is important to ensure that quality assurance or continuous quality improvement (CQI) initiatives are designed, implemented, and supported. This infrastructure can potentially help to ensure that facilitators running treatment groups are following the manual as it was designed, interventions and risk assessments are conducted accurately, and the underlying theoretical foundation of the program is maintained. Effective treatment programs have continuous quality improvement, or quality assurance, plans to monitor fidelity (Landenberger & Lipsey, 2005; Lipsey, Landenberger, & Wilson, 2007).

Finally, fidelity is also related to alignment with risk, need, and responsivity. Without this alignment, and without fidelity monitoring, there is evidence demonstrating that programs will have little to no influence on recidivism. Berkel, Mauricio, Schoenfelder, and Sandler (2011) emphasized the importance of looking at several indicators of fidelity. In their article, they describe program implementation as the intersection of fidelity, or adherence to major program components, the quality of delivery, the extent of adaptation, and the responsiveness of participants (Berkel et al., 2011).

Research on the Fidelity Principle

The first important component of fidelity is related to staff working in the program. Staff should be qualified for their positions and receive adequate training. In a meta-analysis conducted by Dowden and Andrews (2004), they explored the influence of training and practice of the core correctional practices in correctional settings. The meta-analysis revealed that when staff regularly used CCP in their programs they enhanced the effects of treatment programs, especially those that adhered to the risk, need, and responsivity principles (Dowden & Andrews, 2004). This study demonstrates the importance of staff training and coaching to ensure that staff are practicing the skills they have learned.

Related, there is also evidence demonstrating the importance of staff competency. Beidas, Koerner, Weingardt, and Kendall (2011) define staff competence as the level of skill demonstrated by staff during treatment delivery. A study conducted by Barnoski (2004) provides evidence that this characteristic is important for correctional staff. Competent staff, using two different evidence-based treatment programs, reduced recidivism while those that were deemed "not competent" to run the program did not reduce recidivism among treated youth. The staff competency ratings were determined by the trainers (Barnoski, 2004). Additionally, the juvenile offenders in the groups run by those staff that were labeled "not competent" had higher recidivism rates than a control group of youth who received no treatment at all (Barnoski, 2004). Again, the characteristics of staff working in a program and their ability to understand and teach CBT concepts are one important fidelity measure.

Staff characteristics and training of staff were related to reductions in recidivism in a study of community corrections facilities in Ohio (Makarios, Lovins, Latessa, & Smith, 2016). The training and coaching provided during the study helped probation officers understand how

evidence-based practices, such as using CCP during their contact sessions with offenders, influenced outcomes such as reconviction. The coaching provided in the study is a good example of one attempt to ensure fidelity to the original training. Coaching staff as a follow-up to the initial training can increase understanding and use of the techniques or practices taught during the training.

In addition to training and coaching of staff to increase fidelity, other quality assurance or continuous quality improvement initiatives can also influence the effectiveness of programs (Lowenkamp & Latessa, 2002). These initiatives can include reviewing case file/case plans, observing and providing coaching related to risk assessment interviews, establishing inter-rater reliability with risk assessment scoring, and providing client satisfaction surveys to offenders at the completion of the program. The quality assurance initiatives can independently add to the efforts made to reduce recidivism. For example, Lowenkamp and Latessa (2002) found that programs with internal quality assurance, monitoring fidelity, reduced recidivism by 5% more than those programs without internal quality assurance. The 5% added to the overall influence on recidivism was related solely to the internal quality assurance.

In sum, there are many factors related to fidelity and several tasks that programs can incorporate leading to quality assurance and improvement. However, without adherence to the other principles of effective intervention, these efforts may be ineffectual. Research has demonstrated that the more principles that a program adheres to the larger the influence on recidivism (Andrews, 2006). In their study on 38 community-based facilities, Lowenkamp, Latessa, and Smith (2006), found a strong connection between program integrity and reductions in reoffending. Adherence to these principles as well as efforts to develop a range of quality assurance processes can influence the effectiveness of a program.

Summary of the Principles of Effective Intervention

The principles of effective intervention provide guidance on how correctional programs can use the evidence produced by the studies and apply them to real-world practice to enhance their effectiveness. These principles have been the foundation of efforts to align policies and practices with research. The current study and data collection efforts were informed by these principles and aimed to identify how the principles of effective intervention apply to education programs.

Individual & Environmental Influences on Behavior

This dissertation will explore the influence of prison-based education programs on behavior. The behavioral outcomes will include institutional misconduct, or crimes committed during incarceration, and behavior upon release, specifically criminal behavior resulting in a return to prison. When exploring these outcomes among the incarcerated population it is important to recognize and control for the institutional influences on behavior. There are multiple theoretical perspectives related to IP adaptation to incarceration (e.g., importation, deprivation, opportunity, social control) and approaches focused on prison management practices (e.g., administrative control, inmate balance). All of these theoretical perspectives serve a purpose in explaining behavior while incarcerated. The following discussion examines some of the significant predictors of misconduct and will be organized in two sections including (a) individual-level predictors or IP background characteristics, and (b) prison management and situational characteristics related to incarceration.

Individual-Level Predictors of Misconduct

Individuals enter the institution with pre-existing values, beliefs, and expectations. Importation theory is based on the notion that IPs enter the institution with characteristics that will influence their behavior while incarcerated (Irwin, 1980; Irwin & Cressey, 1962). These

characteristics and perceptions are unique to each IP and these preexisting factors likely shape their experiences while incarcerated. One important factor is the coping strategies that individuals have developed prior to incarceration. Coping strategies can include ways to manage difficult emotions (e.g., stress, anxiety, sadness), asking for help, or recognizing signs of distress. Coping strategies can also include fewer positive ways to manage discomfort or emotion deregulation (e.g., using drugs or alcohol to escape, aggression towards others, self-isolation). IPs enter prison with varying ways and abilities to cope with difficult situations and emotions. In previous research, scholars like Toch (1977) and Wright (1985; 1993) have examined IP needs and coping strategies. The interaction between the prison environment and individual needs, characteristics, and the ability to cope has implications for shaping IP behavior. Toch (1977) explored different dimensions representing IP perception of the incarceration experience. Although there are varying perceptions, Toch (1977) describes these varying needs and preferences while incarcerated. For example, some IPs may require more personal connections and emotional support, while others thrive off of structure and a regular schedule.

Additionally, IPs' psychological well-being has a major influence on their behavior an ability to cope with the incarceration experience. Wooldredge (1999) examined the psychological well-being among IPs in three Ohio state prisons. In the survey administered to IPs, psychological well-being included measures related to anxiety, stress, depression, and anger. The results suggested that IPs were more likely to feel stressed, anxious, and depressed when they had fewer visitors, spent less time involved in programming or other structured activities, or if they had recently been assaulted (Wooldredge, 1999). These results suggest that IPs adjust to prison in various ways and their experiences or decisions while incarcerated influence that adjustment. The IP's behavior and social support can significantly impact their psychological

well-being. Again, IPs enter prison with characteristics and life circumstances that will inevitably influence their behavior while incarcerated. These circumstances, coping strategies, and the routines they choose to engage in during their incarceration have a major influence on their behavior, well-being, and adjustment.

Scholars have made efforts to test various types of adjustment to prison while taking into account the well-being and coping strategies among IPs. MacKenzie, Goodstein, and Bluoin (1987) proposed various patterns of adjustment to the institution. The factor analysis conducted in the study demonstrated that stress, prisonization, misconducts, and withdrawal from activities represent independent patterns of adjustment. The other notable result involves the measures related to perceived or actual control. IPs have various levels of control that are dependent on several aspects of their situation and the prison. MacKenzie et al. (1987) discuss three components related to control. The first is related to the control they have over their activities, movement, and schedule. This is likely determined by the security level of the institution. IPs in lower security facilities will likely have more control than those in maximum security institutions. Second, IPs may have privileges or control based on their standing in a peer group or a gang. For example, participation in a powerful gang may provide more opportunities for control over certain aspects of day-to-day life in prison. Finally, IPs may enter prison with a perception of the extent to which they have control over the events in their life. This is called a locus of control. Some people have an "internal locus of control" and believe they generally control the things that happen to them and their decisions have led them to their current life circumstances. Others have an "external locus of control" and believe that the things that have happened to them are largely out of their control. In sum, MacKenzie et al. (1987) found support

for the notion that IPs with more control whether the source is external or internal adjust more successfully than those with less personal control.

These studies illustrate some of the evidence related to IP needs and coping strategies and how those individual differences influence their experiences and adaptation to the prison environment. Deprivation theory suggests that the difficult environment is the cause of these unhealthy coping strategies and misconduct (Clemmer, 1958; Sykes, 1958). Incarceration removes the freedom and humanity from the people who enter. In addition to the loss of freedom, the IPs influence one another. The IP subculture and system of norms serve as a source of antisocial networking that is largely unavoidable. The result of being surrounded by the IP subculture is often referred to as "prisonization" (Clemmer, 1958). Clemmer (1958) argues that the norms and the subculture are inevitable and all IPs experience prisonization to some degree. In sum, many of the individual-level characteristics, whether preexisting or developed during incarceration, are likely influencing their behavior while incarcerated (Camp, Gaes, Langan, & Saylor, 2003; Harer & Steffensmeier, 1996; Huebner, 2003; Steiner & Wooldredge, 2008; Steiner & Wooldredge, 2009).

General theories of criminal behavior have also been applied to the IP population (e.g., control theory, opportunity theory) to explain how these individual-level characteristics impact misconduct. For example, social control theory can be tied to several of the individual characteristics that may influence behavior while incarcerated (Wooldredge et al., 2001). Specifically, marital status and educational attainment may be indicators of ties, or lack thereof, to social constructs. When individuals get married or remain in school this may suggest that they conform to more of the social conventions, or bonds, in society. The lack of these life circumstances and choices may demonstrate an individual's disinterest in existing social

constructs or a tie to more deviant social norms. Previous studies have demonstrated that these individual characteristics are important predictors of misconduct (Cao, Zhao, & Van Dine, 1997; Wright, 1991). Additionally, age can also be a factor related to social control and stakes in conformity. Younger individuals may have less opportunities or involvement in social constructs that might limit their involvement in criminal activities (e.g., children, stable employment, education) (Wooldredge et al., 2001). Studies have demonstrated that age is an important predictor of misconduct (Camp et al., 2003, Griffin & Hepburn, 2006; Steiner & Wooldredge, 2008). While these individual-level characteristics are important to include in models examining misconduct, the environment is another important factor that must be included.

Environmental Influences on Misconduct

Although individuals enter the institution with their own prior experiences, coping skills, and perceptions, the prison undoubtedly has an influence on the well-being, adaptation, and the behavior of IPs. Prison management practices and other general crime theories provide valid reasons for how the environment in an institution will impact IP behavior.

There are several prison management strategies and these strategies have a direct influence on the how the institution operates as well as the behavior of IPs and staff. During a study comparing institutional practices across and within three states DiIulio (1987) recognized the impact of prison management. In addition, Useem and Kimball (1991) made similar conclusions about the importance of effective management and how collective misconduct is often the result of "administrative breakdowns". The research on prison riots demonstrates how these management theories influence behavior. There are patterns among prisons who have experienced collective misconduct where the management of the prison was an important factor leading up to a riot. There are several models of prison management practices along with

relevant, institutional characteristics (e.g., staff characteristics, crowding, security level) that have influences on the behavior of those housed in the institution.

One common management model includes the control model and, as DiIulio (1987) proposed, the most effective way to achieve order (DiIulio, 1987). This management style focuses on formal control and maintaining order and obedience while continuing work opportunities and education programs for IPs. Other models emphasize the importance of IP responsibility, the formal or informal nature of interactions between staff and IPs, and the "inmate balance theory" where collective misconduct is seen as the result of administrators reestablishing their authority (Useem & Reisig, 1999). The theoretical perspectives around prison management are relevant when examining IP behavior and the way that prisons are managed heavily influences the living conditions and the security aspects of the institution (Boin & Duin, 1995).

An important factor in prison management is related to the use of coercive and remunerative controls. Coercive control is focused on accountability and the use of sanctions to manage behavior while remunerative controls are focused on efforts to manage IP free time and provide rewards for appropriate behavior (Huebner, 2003). While both forms of control are necessary it is important for institutions to have a balance of the two. The remunerative controls, including opportunities for programming, rewards, and work assignments, are beneficial because they provide structured activities for IPs, reduce idle time, they have the potential to reduce feelings of frustration or stress, and may even provide social bonds. In a study exploring the impact of both coercive and remunerative controls on assault-related misconduct, Huebner (2003) found support for remunerative controls but not coercive controls. The results indicated that institutions with higher proportions of IPs working inside or outside the prison had lower rates of

assault. Additionally, the results demonstrated no support for the impact of coercive controls on the assaultive behavior of IPs (Huebner, 2003).

While this study appeared to support remunerative over coercive controls, both are important for effective prison management. Some institutions are well suited for more remunerative controls (e.g., lower security prisons) while others by nature depend more on coercive controls (e.g., maximum security prisons). Higher security institutions place more restrictions on IP activities and work opportunities since they are supervising a higher risk population. Additionally, higher security institutions may impact the negative experiences of IPs. This notion supports the deprivation theory in that the prison environment, in particular the environment of higher security prisons, may increase feelings of stress, anxiety, or frustration among IPs (Jiang & Fisher-Giorlando, 2002; Steiner & Wooldredge, 2008). Previous research demonstrates that the security level of the institution is a significant predictor of misconduct (Huebner, 2003; Jiang & Fisher-Giorlando, 2002; McCorkle, Miethe, & Drass, 1995; Steiner et al., 2014).

Also related to deprivation theory is prison crowding and its impact on IP behavior. Population density, and even the perception of crowding, likely influences behavior by creating frustration and anxiety due to the lack of physical space that IPs experience (Wooldredge, 1997). Overcrowded prisons are also more difficult to manage from a security perspective and tend to have fewer opportunities for programming both are likely to impact the ability to manage the prison in an effective manner (Steiner & Wooldredge, 2009). Past studies have demonstrated the importance of including some measure of crowding or population density in research examining misconduct (Gaes & McGuire, 1985; Ruback & Carr, 1993; Wooldredge et al., 2001).

One additional feature of prison management involves the staff working in the facility. In addition to professionalism, education, and appropriate training of prison staff, it may also be important to ensure that the racial composition of the staff matches the composition of the IPs. Scholars have proposed that more diversity among prison staff would reflect the reality of life outside the institution (Camp et al., 2003). Other benefits of diverse staff would include more positive informal interactions between IPs and staff, the perception of shared interests or experiences, and potentially the perception of a more just environment (Steiner & Wooldredge, 2009). Several studies have demonstrated the importance of heterogeneity among prison staff and the impact on misconduct (McCorkle, Miethe, & Drass, 1995; Steiner & Wooldredge, 2009).

Correctional Education Research

There now exists a large body of research demonstrating that participation in either an academic or vocational programming in prison can reduce the likelihood that offenders engage in future criminal behavior upon release. This research stems back at least two decades and began by focusing on individual educational programs. Some examples of commonly studied programs include literacy, general education, adult basic education, vocation, apprenticeship, and college programs. After researchers focused on whether some education or vocation programs were more effective than others, research in correctional education evolved by using rigorous research methods and statistical analyses. The research on education and vocation programs for offenders varies significantly in the design, sample characteristics, program characteristics, and statistical analysis. The outcomes examined in the vast majority of these studies are recidivism measures (e.g., rearrest, reincarceration) and there are few studies that examine how education and vocation training influences misconduct outcomes. In sum, the field of correctional education has accrued an immense amount of research demonstrating the effectiveness of these programs in

reducing the likelihood of criminal behavior upon release. More research is required to understand how education and vocation program participation can impact institutional misconduct. Additionally, what is still largely unknown and underdeveloped is how the quality of a correctional education program is related to outcomes like recidivism.

This section will provide a review of studies demonstrating the overall influence of participation in correctional education programs and is organized by outcome: beginning with institutional misconduct and moving to the post-release outcome of recidivism.

Influence of Correctional Education Participation on Institutional Misconduct

Understanding how IP participation in programs influences institutional misconduct is important for the safety of prisons as well as staff safety. In addition, behavior, or misbehavior, in prison can assist in predicting behavior upon release. There is a growing body of research demonstrating this relationship (Cochran, Mears, Bales, & Stewart, 2014; Trulson, DeLisi, & Marquart, 2011). The recent study conducted by Cochran et al. (2014) demonstrated that misconduct, especially violent misconduct, predicted recidivism of all types among adult offenders. Generally, research has demonstrated that behavioral treatment approaches most effectively reduce misconduct in prison (French & Gendreau, 2006). There is substantially less research on how education programs influence institutional misconduct.

Correctional Education and Misconduct Research

Previous research exploring the influence of education and vocation program participation on misconduct has resulted in mixed results regarding the effectiveness. However, there are few studies that explore this relationship. In one meta-analysis, conducted by French and Gendreau (2006), they explored the influence of different types of treatment on institutional misconduct to provide recommendations related to prison management. The result was that educational and

vocational treatments performed the worst in terms of reducing misbehavior in the institution (French & Gendreau, 2006). Several other studies have attempted to explore the influence of education or vocation programs on misconduct (Adams, Bennett, Flanagan, Marquart, Cuvelier, Fritsch, Gerber, Longmire, & Burton, 1994; Gendreau, Ross, & Izzo, 1985; Langenbach, North, Aagaard, & Chown, 1990). The results of this research did not support the notion that correctional education programs significantly influenced misconduct. However, these studies used less rigorous statistical analyses or research designs thus limiting the ability to make a definitive statement about the generalizability of their results. For example, in the Adams et al. (1994) study the comparison group of IPs was not matched based on important characteristics, they comprised of IPs who chose not to participate in any educational programming while incarcerated. Additionally, other studies may have matched on key characteristics (e.g., age, race, offense type) but were missing key indicators like previous educational attainment (Langenbach et al., 1990).

In contrast, there are several studies that demonstrate how participating in education or vocation programs can decrease the incidence of misconduct in prison. For example, Lahm (2009) explored the influence of GED, college, and vocation programs on self-reported misconduct for IPs housed in three states. The results demonstrated that participation in college courses resulted in lower odds of engaging in future misconduct (Lahm, 2009). Two recent studies have demonstrated, using propensity score matching, that participation in several types of education programs have resulted in lower odds of misconduct. One of these studies, focused on a post-secondary program, found that participation in the program resulted in significantly lower odds of minor and major forms of misconduct (Duwe, Hallett, Hays, Jang, & Johnson, 2015). Additionally, another recent study found that completion of a college class while incarcerated

significantly lowered the odds of IPs engaging in violent misconduct compared to a control group (Pompoco, Wooldredge, Lugo, Sullivan, & Latessa, 2017). The researchers used propensity score matching to identify an appropriate control group for the analysis. Pompoco et al. (2017) also found that completion of a general education program (e.g. GED) resulted in significantly lower odds of participants engaging in violent misconduct while incarcerated. This study also explored the influence of participation in vocation programs and found that participation in a vocation program did not significantly lower the odds of IPs engaging in any type of misconduct (Pompoco et al., 2017).

There are several studies that explore vocational programming and its' influence on institutional behavior. For example, Saylor and Gaes (1992) found that IPs who participated in vocation or apprenticeship programs received fewer disciplinary tickets than those who did not participate in these programs. In addition, two studies conducted in seven New York prisons found that IPs who participated in vocational training had lower misconduct rates than a control group of IPs who did not receive this training (Flanagan, Thornberry, Maguire, & McGarrell, 1988; Maguire, 1992).

In sum, the research on how prison-based education and vocation programs influence misconduct is mixed. The research in this area is quite limited, however, recent trends in this area are promising. First, scholars are examining the outcome of misconduct because there is empirical support that misbehavior while incarcerated is correlated with reoffending upon release (Cochran, Mears, Bales, & Stewart, 2012; Trulson, DeLisi, & Marquart, 2011). Second, the scholars exploring this topic are utilizing more rigorous methods to create comparison groups (e.g. propensity score matching) and exploring the influence of program participation on

different types of misconduct, an important distinction in institutional misconduct research (Steiner & Wooldredge, 2014).

Influence of Correctional Education Program Participation on Recidivism

Reducing recidivism is a particularly salient goal for any correctional intervention, for several reasons. First, the recidivism rate for IPs released from state institutions is high. About 75% of all IPs released from state custody are rearrested within five years. Additionally, 55% of released IPs had an arrest that resulted in a conviction and a prison sentence or were returned to prison because of a technical violation (Durose, Cooper, & Snyder, 2014). Not only are IPs being released and rearrested at a high rate but about half of those released are actually going back into prison as a result of the arrest. This cycle is not only expensive but it threatens public safety and disrupts community functioning. Most of the studies exploring the effectiveness of correctional education programs are focused on this outcome. The studies vary in how recidivism is measured, the types of programs examined, and the research methods employed.

Correctional Education and Recidivism Research

For over two decades, researchers have conducted numerous reviews, summaries, and meta-analyses attempting to synthesize the results of correctional education effectiveness research. To capture all the research exploring the influence of participation in correctional education programs on recidivism, this section will review the seven meta-analyses focused on adult offenders as the sample, followed by a discussion of the meta-analyses that incorporated inclusionary criteria related to the rigor of methodology used.

Most meta-analyses in the area of correctional education programming focus on all types of education programs, including basic education, college classes, vocational training, and apprenticeship programs, to identify the influence of participation on recidivism. One of the

notable meta-analyses does, however, focus on only "post-secondary" programs for offenders. Chappell (2004) reviews all the studies of education programs offered to IPs beyond high school education, including vocational training, conducted in this area from 1990-1999 in her meta-analysis. The meta-analyses identified 15 studies and the results demonstrated that participation in post-secondary education while incarcerated was significantly correlated with a reduction in recidivism (Chappell, 2004).

Other meta-analyses are more comprehensive in terms of the types of correctional education programs included in the analyses. For example, Aos, Miller, and Drake (2006) identified 21 studies and found that participation in academic programs was associated with a 7% reduction in recidivism. In this study, participation in vocational programming was associated with a 9% reduction in recidivism (Aos, Miller, & Drake, 2006). In their meta-analysis, conducted a few years earlier, Wilson, Gallagher, and MacKenzie (2000) identified 33 studies. Much like the Aos et al. study (2006), they found that participation in basic education and college courses while incarcerated resulted in 11% lower recidivism rate. However, the findings for vocational programs did not provide any evidence that participation in these programs significantly reduced recidivism. The researchers did find that participation in vocational programs was associated with higher odds of employment upon release (Wilson, Gallagher, & MacKenzie, 2000). In an expanded version of this study, MacKenzie conducted another meta-analysis years later. The results for academic program effects were similar. IPs who participated in education programs had a 16% lower recidivism rate compared to those IPs who did not participate (MacKenzie, 2006). The results for vocational programs in this updated analysis were quite different than those that the researchers found years earlier. MacKenzie (2006) found that participation in vocation programs was associated with 24% lower odds of recidivating. In another meta-

analysis, Wells (2000) identified 124 studies conducted between 1987 and 2000. The results were similar to other meta-analyses in that participation in correctional education programs resulted in 29% lower recidivism rates. A more recent meta-analysis was conducted by Davis, Bozick, Steele, Saunders, and Miles in 2013 and found similar results demonstrating that IPs participating in correctional education programs had 68% lower odds of recidivating compared to IPs who did not participate in these programs (Davis et al., 2013). Finally, the most recent and comprehensive meta-analysis, conducted by Bozick, Steele, Davis, and Turner (2018) included 57 studies of correctional education programs in the United States. They found that IPs participating in correctional education programs were 32% less likely to recidivate than IPs who did not participate in educational programming while incarcerated.

Several of these meta-analyses had important inclusionary criteria related to the rigor of the studies included. Aos, Miller, and Drake (2006), MacKenzie (2006), Davis et al. (2013), and Bozick et al. (2018) all used the Maryland Scientific Methods Scale and only included studies that rated at a level 3 or higher on the scale. This means that the studies included in these meta-analyses were either quasi-experimental designs with different treatment and control groups with appropriate control variables (Level 3), quasi-experimental designs with very similar treatment and comparison groups (Level 4), or a randomized control trial (Level 5) (Davis et al., 2013).

In sum, when reviewing the most rigorous studies, according to the Maryland SMS, exploring how correctional education influences recidivism the results tend to coincide. Generally, these studies demonstrate that IPs who participate in these programs are less likely to reoffend upon release than IPs who do not participate. This is an important finding since 93% of IPs will be released (Petersilia, 2003), education and vocation programming is just one of the promising options to reduce the likelihood that the IPs will return.

Summary

The research related to correctional education programming varies widely, in terms of the methods and the empirical support. The outcome studied most often is recidivism and the results of those studies and meta-analyses are quite promising. In terms of reducing recidivism, correctional education programs appear to have consistent, positive results. In regard to the other outcomes reviewed here, including misconduct, the results are somewhat mixed. One common recommendation across the meta-analyses and other studies on correctional education is related to the need for research on the effective characteristics of these programs.

Effective education programs have some basic principles in common, including, but not limited to, the principles outlined above. The principles related to motivation, environment, collaboration, and feedback, are very similar to the general responsivity principle from the PEI. This section will briefly outline how these principles fit within the framework of the PEI and other "what works" literature.

First, the motivation principle is aligned well with a specific responsivity barrier commonly experienced by correctional staff working with offenders. Motivation is a barrier to treatment and hence is a specific responsivity factor. Correctional staff are often frustrated by the lack of motivation along the clients in their treatment groups. Many staff, most often those working in the field of substance abuse treatment, are trained in motivational interviewing techniques to try and combat this issue (Madson, Loignon, & Lane, 2009).

Second, the environment principle is similar to the responsivity principle in that the learning environment created by the staff, the physical aspects of the classroom, and climate can all influence behavior. The environment in the classroom has an influence on the behavior of individuals as well as their ability to learn and process information. This is true for education,

vocation, and treatment programs. One example of this is related to how the group rooms are organized. Well-suited treatment group rooms are large enough to fit the participants, participants have room to get up in front of the group and conduct role plays, and there is chart paper available for writing down responses and content. Similarly, the classroom may have similar components needed in order to run an effective education program.

Third, the collaboration principle has elements related to the risk and need principles from RNR. The collaboration principle suggests that the student should be involved in the learning process. Similarly, when risk and needs assessments are conducted to determine risk for reoffending and the criminogenic needs targeted with treatment, the individuals should be involved in this process. First, their responses to questions on the risk and need assessments will help determine their risk level. After the completion of the assessment, the next step in quality case management in correctional settings is to create a case plan outlining their individual goals and objectives. Effective programs create case, or treatment, plans that are individualized and provide a roadmap for the offender to seek out programming and work on individual interventions to help reduce their risk (Andrews & Bonta, 2017). During the case planning process, the offender and the treatment provider/case manager work together to collaboratively decide on programs and interventions to target his or her needs.

The feedback principle is captured within the general responsivity principle. Specifically, the general responsivity principle states that CBT and social learning theories should guide treatment and interactions with offenders. One of the core components of social learning theory is the reinforcement, or feedback, provided by others. This feedback provides approval or disapproval of behavior or a new skill. In CBT treatment programs offenders are taught how to restructure their thinking or learn new social skills and a large component of the skill building is

focused on feedback. Additionally, the core correctional practices include "structured learning" or skill building which involves increasing buy-in for the skill, teaching of concrete steps, modeling, practice, and feedback. The core correctional practices are part of the general responsivity principle and guide the way that correctional professionals interact with offenders in an effective, prosocial way (Andrews & Kiessling, 1980).

Chapter 2 provided an overview of the literature on the important principles of adult education programming and effective treatment program characteristics. The "what works in adult education" reviewed the principles and empirical support for the areas associated with effective education programs for adults. The "principles of effective intervention" reviewed the literature on what works to reduce recidivism in correctional treatment programs. Additionally, the third relevant literature section reviewed the theories and research on various influences on IPs' behavior, at the individual and environmental levels. Finally, the "correctional education research" segment examined the literature available on correctional education programming and its influence on relevant outcomes. This review provided the background for the current study that examined the effective program characteristics, and what characteristics were significantly correlated with misconduct and recidivism.

CHAPTER THREE
METHODS

Introduction

This chapter describes the methodology for the study, including a review of the research questions, descriptions of the samples and data collection procedures, descriptions of key measures for the statistical analysis, and steps involved in the statistical analysis.

In 2010, the Ohio Department of Rehabilitation and Correction (ODRC) contracted with the Center for Criminal Justice Research at the University of Cincinnati to conduct a study to determine if reentry approved programs were effective in reducing institutional misconduct and the odds of returning to prison after release.[1] Data from this study were used for this dissertation to answer the research questions presented below. The original study examined samples of offenders admitted to Ohio prisons between 2008 and 2012, and who participated in reentry approved prison programs during the period. While the measures and methods of data collection are fixed, the nature of the project and data provide opportunities to examine important issues related to education and vocation program characteristics.

The programs in the study included all types of education and vocation/apprenticeship courses offered in Ohio prisons including adult basic education or literacy, pre-GED preparation courses, business management college courses, and carpentry apprenticeship programs, to name a few. In the original study, researchers evaluated all the prison programs, specifically treatment programs, using the Correctional Program Checklist (CPC) (Duriez, Sullivan, Latessa, & Lovins,

[1] In 2001, Ohio adopted a plan, titled "The Ohio Plan for Productive Offender Reentry and Recidivism Reduction", to create more programs focused on reentering the community after incarceration. The "reentry approved programs" are a category of programming that provides IPs with opportunities to reduce their sentences (e.g., IPs can earn from one to five days per month of participation). For a program to become "reentry approved" the program must target a criminogenic need, staff must be trained to facilitate the program, lesson plans must be structured, criteria for completion or removal must be outline, and an evaluation protocol must be in place.

2018). The CPC is a tool used to assess and provide feedback in relation to how programs are adhering to the principles of effective intervention and is discussed in more detail below.

Research Questions

As outlined in Chapter 1, this dissertation was designed to identify meaningful dimensions of prison education and vocation prison programs, and to test whether these dimensions are relevant to reducing subsequent deviance. The research questions included the following:

1. What is the factor structure of education and vocation program characteristics?
2. What program characteristics of education and vocation programs are significantly correlated with outcomes? Specifically,
    a. which program characteristics are significantly correlated with reductions in the odds of engaging in various forms of misconduct, and
    b. which program characteristics are significantly correlated with reductions in the odds of returning to prison?

Ohio Department of Rehabilitation and Correction

During the study period, the ODRC was running 28 institutions across Ohio, all of which were offering education and vocation programs. At the beginning of the study, a list of all state-run correctional institutions was provided by ODRC. The University of Cincinnati research team visited 28 institutions across the state. The institutions included all security levels as well as several camps that housed IPs outside of the main institution. At the time of the study, 23 of the institutions each housed between 1,050 and 2,700 IPs across a range of security levels. Additionally, there were two pre-release centers and one medical center that each housed around 500 IPs. In Ohio, there is one supermax institution (Ohio State Penitentiary) that houses about 570 IPs. Site visits began in late 2011 and were concluded by November 2012. Site visits to

institutions generally occurred weekly within the time frame and were conducted by 5 to 12 researchers. Data were collected at each institution while researchers were on site for two to five days. Follow-up phone calls were also used if additional program information was needed.

The programs evaluated at each institution included all of the education and vocation programs, including college and apprenticeship courses. The sample of programs was limited by the programs' dates of operation. To be included in the sample, the program had to be in operation during December 2011 through November 2012. In Table 3.1, the last column lists the types of education and vocation programs included in the sample at each institution. The programs listed in this column do not represent all programs available at the institution; this list includes the programs that were running at the time of the site visits for which the research team was able to collect data. All institutions offered general education programs and many institutions also ran a literacy program. All of the institutions ran at least one vocation and/or apprenticeship program with the exception of the supermax facility, OSP. At the time of the site visits, 15 institutions had at least one college class available to IPs who were eligible.

Table 3.1. Institution Demographics and Education Programs Evaluated

Institution Name	Year Opened	IPs Housed[2]	Security Level	Sex	Education Programs Evaluated[3]
Allen Oakwood Correctional Institution (AOCI)[4]	1987	1,550	1-4	Male	General education: Adult Basic Literacy Education (ABLE), Pre-GED, GED Vocation/Apprenticeship: Power Equipment Technology (PET), flooring, turf/landscape management, animal training, plumbing College: business administration (Sinclair University)
Belmont Correctional Institution (BeCI)	1995	2,670	1-3	Male	General education: ABE, Pre-GED, GED, Transitional Education Program (TEP), Title 1, Fast Track GED Vocation/Apprenticeship: Administrative Office Technology (AOT), barbering,

[2] Estimated number of IPs housed at the time of the site visit.
[3] Education programs listed here reflect the programs being offered at the time of the site visit.
[4] Institutions names have changed since the study. The institution names and programs included in this table reflect the time the data was collected.

Table 3.1. Institution Demographics and Education Programs Evaluated

Institution Name	Year Opened	IPs Housed[2]	Security Level	Sex	Education Programs Evaluated[3]
					plumbing, turf/landscape management, animal training, maintenance repair, janitor College: marketing, business law II, computer keyboarding (Zane State University)
Chillicothe Correctional Institution (CCI)	1966	2,643	1-3	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: construction technology/carpentry, heating, ventilation and air conditioning (HVAC), animal training
Correctional Reception Center (CRC)	1987	1,698	3	Male	General education: ABLE, Pre-GED, GED Apprenticeships: janitor, maintenance/building repair, painter, powerhouse mechanic, welding
Dayton Correctional Institution (DCI)	1987	869	1-5	Female	Vocation/Apprenticeship: AOT, HVAC, janitor, plumbing, animal training
Franklin Medical Center (FMC)	1993	487	1-2	Male & Female	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: animal training, cook, janitor, landscape management, building maintenance, material coordinator
Grafton Correctional Institution (GCI)	1988	2,600	1-2	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: welding/cutting College: business management, accounting, the Africans (history), general psychology (Ashland University)
Hocking Correctional Facility (HCF)	1982	417	1-2	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: horticulture, building maintenance
Lake Erie Correctional Institution (LaeCI)	2000	1,802	1-2	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: building maintenance, computer aided drafting, animal training, quartermaster/stitchery, computer repair
Lebanon Correctional Institution (LeCI)	1960	2,510	1-4	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: AOT, food management and production services College: legal business (Wilmington College)
London Correctional Institution (LoCI)	1924	2,303	1-4	Male	Vocation/Apprenticeship: automotive technology/mechanics, barbering, HVAC, interactive graphic media and web design, animal training, building maintenance, powerhouse operator College: business administration, accounting, finance, English, psychology, computer graphics (Columbus State & Urbana University)
Lorain Correctional Institution (LorCI)	1990	1,500	1-3	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: plumbing, HVAC, janitor, animal training
Madison Correctional	1966	2,350	1-2	Male	General education: ABLE, Pre-GED, GED, TEP, literacy

Table 3.1. Institution Demographics and Education Programs Evaluated

Institution Name	Year Opened	IPs Housed[2]	Security Level	Sex	Education Programs Evaluated[3]
Institution (MaCI)					Vocation/Apprenticeship: horticulture
Mansfield Correctional Institution (ManCI)	1990	2,516	3	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: horticulture, masonry, carpentry maintenance, electrical maintenance, HVAC, janitor, plumbing, welding, OPI car parts, OPI cardboard
Marion Correctional Institution (MCI)	1954	2,652	1-2	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: AOT, AOT career enhancement, agriculture, automotive mechanics, welding/cutting, animal training, baking/cook, janitor, farmer, horticulture College: basic business management, fundamentals of accounting, English composition, business communication, math prep, computer applications, organizational behavior (Marion Technical College)
North Central Correctional Complex (NCCC)	1994	2,705	1-2	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: automotive mechanics, culinary, animal training, horticulture, janitor, building maintenance, carpentry
Noble Correctional Institution (NCI)	1996	2,500	2	Male	General education: ABLE, Pre-GED, GED, literacy Vocation/Apprenticeship: carpentry, turf/landscape management, carpenter, plumber College: speech, marketing, accounting, economics, fundamentals of English, sociology (Columbus State & Urbana University)
Northeast Pre-Release Center (NePRC)	1988	540	1-2	Female	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: horticulture, animal training, building maintenance, horticulture (apprenticeship)
Ohio Reformatory for Women (ORW)	1916	1,200	1-3	Female	General education: ABLE, Pre-GED, GED, Youth Transition Program (YTP) Vocation/Apprenticeship: cosmetology, horticulture, web design, animal training, boiler operator, electrician, building maintenance, optician College: personal finance, business professional development (Columbus State Community College)
Ohio State Penitentiary (OSP)	1998	570	1-2 4-5	Male	General education: ABLE, Pre-GED, GED College: philosophy (Youngstown State University)
Pickaway Correctional Institution (PCI)	1984	2,032	1-3	Male	General education: Pre-GED, YTP, Title 1 Vocation/Apprenticeship: AOT, meat cutter, automotive repair, cook, print shop
Ross Correctional	1987	2,200	2-4	Male	General education: ABLE, Pre-GED, GED, Title 1 Vocation/Apprenticeship: baking/cook

Table 3.1. Institution Demographics and Education Programs Evaluated

Institution Name	Year Opened	IPs Housed[2]	Security Level	Sex	Education Programs Evaluated[3]
Institution (RCI)					
Richland Correctional Institution (RiCI)	1998	2,550	1-4	Male	General education: ABLE, Pre-GED, GED, applied math, applied English Vocation/Apprenticeship: AOT, auto collision repair, barbering, carpentry, drafting, turf/landscape management, visual communication art, food production College:
Southern Ohio Correctional Facility (SoCF)	1972	1,300	3-5	Male	General education: ABLE Vocation/Apprenticeship: janitor
Southeastern Correctional Institution (SCI)	1980	1,550	1-2	Male	General education: ABLE, Pre-GED, GED, TEP, YTP Vocation/Apprenticeship: carpentry, plumbing, HVAC, janitor, building maintenance, plumber (apprenticeship), welder, carpenter (apprenticeship), electrician, powerhouse College: Microsoft office, business ethics, marketing, small business management, orientation to college, keyboarding (Hocking College)
Toledo Correctional Institution (ToCI)	2000	1,330	3-4	Male	General education: GED Vocation/Apprenticeship: computer repair/electronics, animal training, stitchery, plumbing
Trumbull Correctional Institution (TCI)	1992	1,050	2-4	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: drafting College: economic geography (Youngstown State University)
Warren Correctional Institution (WCI)	1989	1,400	2-3	Male	General education: ABLE, Pre-GED, GED Vocation/Apprenticeship: computer repair/electronics, culinary arts College: accounting, business law, marketing, microeconomics, career development (Columbus State & Urbana University)

Samples and Data

This section describes the data sources, samples, and the data collection process. Two levels of data were compiled: The first level focused on IP characteristics and the second level included the program and institution characteristics.

Data for this study were collected as part of the larger project mentioned above. In order to assess effectiveness, official data were shared with the research team. Individual level offender

data were extracted from the Department's Offender Tracking System (DOTS) maintained by the ODRC. These data include demographic characteristics, offense information, prior incarcerations, services delivered, and program completion information. Additionally, data related to institutional misconduct were extracted from ODRC's Rules Infraction Board (RIB) database. ODRC combined all IP background and misconduct data and shared this with the research team.

Incarcerated Persons

For the larger project, ODRC provided data for 105,929 IPs admitted to an Ohio state institution between January 2nd, 2008 and June 30th, 2012 but this analysis focused on IPs who experienced no more than one movement after initial classification (see Figure 3.1) in order to ensure that an IP participated in and completed a program at the same facility. This selection produced 74,432 IPs who experienced limited movement during incarceration. From this pool, IPs were identified who completed education programs during their time at their parent institution. This second selection yielded a total of 11,283 IPs across 261 programs at 28 institutions. Univariate descriptive statistics for the demographic characteristics of the final sample are displayed in Table 3.2.

Figure 3.1. Sampling Frame

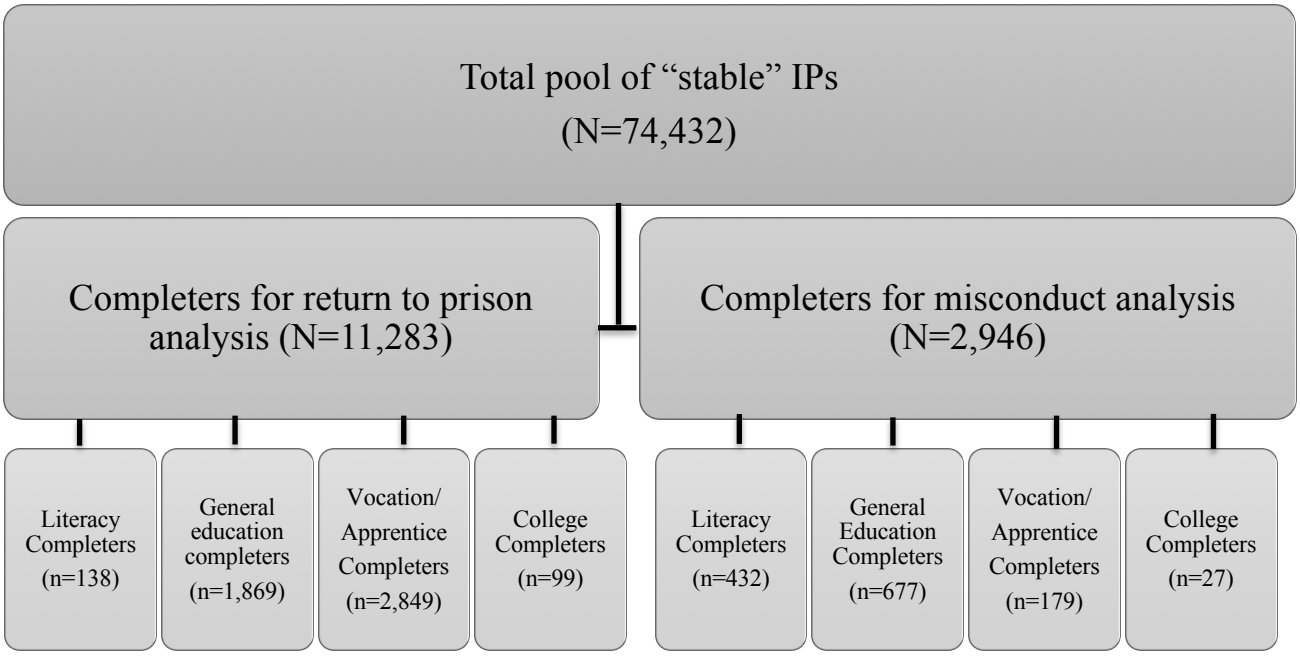

Table 3.2. Descriptive Statistics for Program Completers

Variable	Literacy % (N)	General Education % (N)	Vocation/ Apprenticeship % (N)	College % (N)
Gender				
Male	82.2% (1,731)	73.9% (3,102)	76.4% (3,530)	82.1% (293)
Female	17.8% (376)	26.1% (1,096)	23.6% (1,091)	17.9% (64)
Race				
African American	58.2% (1,227)	45.7% (1,917)	48.6% (2,244)	49% (175)
Other	41.8% (880)	54.3% (2,281)	51.4% (2,377)	51% (182)
Ethnicity				
Latino	3.7% (77)	2% (82)	1.1% (51)	1.1% (4)
Other	96.3% (2,030)	98% (4,116)	98.9% (4,570)	98.9% (353)
Marital Status				
Married	13.6% (260)	13.2% (491)	15.5% (641)	17.1% (55)
Not married	86.4% (1,647)	86.8% (3,220)	84.5% (3,485)	82.9% (266)
Average age in years (SD)	31.11 (11.18)	30.16 (10.11)	33.11 (9.64)	31.21 (9.29)
Security level				
1	40.5% (862)	55.2% (2,391)	53.4% (2,542)	47.8% (238)
2	49% (1,042)	38.3% (1,659)	41% (1,952)	28.1% (101)
3	10.3% (220)	6.3% (272)	5.4% (259)	5.8% (21)
4	0.1% (2)	0.2% (12)	0.1% (3)	-
5	-	-	-	-
Average Number of Prior Prison Terms (SD)	1.17 (1.85)	0.79 (1.46)	1.40 (1.88)	1.08 (1.54)

Education and Vocation Programs

Data collection related to education and vocation programs included the use of the Correctional Program Checklist for Vocation and Education Programs (CPC-VEP). The Evidence Based Correctional Program Checklist (CPC) was used to develop the data collection tools.[5,6] The CPC-VEP is not a validated instrument and it was designed to collect initial data on education programs for the larger evaluation (Latessa, Lugo, Pompoco, Sullivan, & Wooldredge, 2015). The programs in the current study included the education and vocation programs that were running at the time of the site visits. Across all institutions, the research team collected data on 25 literacy programs, 65 general education programs, 127 vocation/apprenticeship programs, and 44 college programs.

During site visits, researchers conducted observations and interviewed key staff in the education department. At each institution, the following individuals were interviewed (if available): the principal and/or assistant principal, teachers, any staff involved in program delivery, and program participants. Prior to the site visit, the principal was provided with a checklist of materials for review to help prepare for the data collection process. Materials included ethical guidelines, training documentation, assessments, lesson plans, written information on rewards/reinforcers and sanctions, and completion criteria. This information was reviewed during the site visits and/or copies were provided to research staff.

[5] The CPC measures the degree to which correctional programs follow the principles of effective intervention. The CPC was created as a result of a study of correctional programs across three states and the tool contains many items from the Correctional Program Assessment Inventory (CPAI). The CPAI, developed by Gendreau and Andrews in 1989, was the original assessment tool created to assess the effectiveness of correctional programs in terms of their alignment with the principles of effective intervention. The items included on the CPAI are correlated with recidivism in several studies (Holsinger, 1999; Lowenkamp, 2004; Nesovic, 2003). Additionally, research on the CPC has demonstrated strong relationships between the items and recidivism measures (Latessa, Lovins, & Smith, 2010; Lowenkamp, Latessa, & Smith, 2006; Ostermann & Hyatt, 2018).

[6] As a research project overseen by the University of Cincinnati Institutional Review Board (IRB), consents for participation in the research study were also used.

The data collection instruments and the process of data collection for the CPC-VEP were based on the CPC process. Six data collection tools were created for the study to collect data related to education and vocation programs at each institution including an interview guide, group observation form, a participant interview guide,[6] professional staff member survey, institution score sheet, and a teacher summary. Interview guides were designed so that researchers could conduct a semi-structured interview aimed at exploring how the program operated (see Appendix A for the instrument). The interview guide was used to interview both the principal, assistant principal, and the teachers. There were specific questions on the interview guide for the principal and assistant principal of the education department to measure leadership and program coordinator practices.

Similar to the interview guide for staff, the CPC-VEP interview guide for participants asked questions related to classroom practices, expectations, and behavior management procedures. The group observation form was used to track group facilitation practices for each class observed. The professional staff member surveys were provided to staff prior to the site visit to collect data on staff qualifications, experiences, and training. An institutional score sheet was completed for each institution to provide information related to the institutional layout, the number of staff working in each department, the total number of IPs, etc. Additionally, the institutional score sheet was used to produce average ratings across researcher observations using the available data collected during the site visit. The teacher summary was completed by all researchers who had collected data in the education department at each institution. This summary included any general observations or noteworthy teacher or classroom practices/procedures not captured by any other data collection materials.

Institutions

Institution-level data were derived from ODRC records and from interviews conducted with wardens, deputy wardens, and other administrative staff at each institution. At the time of data collection, there were a total of 28 institutions run by the ODRC. One institution was privately operated and 4 institutions housed female IPs. Many institutions had the ability to house a variety of security levels and many of the institutions run a "camp" where lower security-level IPs are housed. Every institution offers a variety of reentry-approved programs that fall into three categories including unit management, recovery services, and education. The three categories represent three separate departments in each institution focused on helping IPs with varying need areas.

The education departments across the state's institutions are run by the Ohio Central School System (OCSS). The education department in each institution had a principal, assistant principal, teachers, and incarcerated tutors. At the time of the study, the principal and assistant principal would oversee 2-4 institutions in a region of Ohio. For example, the principal and assistant principal overseeing the education department at Dayton Correctional Institution would also manage the education departments at Lebanon Correctional Institution and Warren Correctional Institution. However, each institution's education department differed in terms of the programs offered, management and oversight, and classroom practices.

Analytic Samples

There are eight total analytic samples for the analyses of misconduct and return to prison outcomes (see Figure 3.1). Four of the samples include IPs who completed one of the four types of education programs (literacy, general education, vocation/apprenticeship, and college) and were released during the target timeframe, and the other four samples are focused on those who

completed at least one of those programs but fit the criteria to be included in the analysis of misconduct. All samples included the IPs who experienced limited movements between institutions, as described earlier.

To explore the influence of the multilevel predictors on institutional misconduct, four samples consisting of only IPs who served a minimum of two years in prison were identified. This allowed an examination of the effects of education programs completed during the first year of incarceration on the odds of rule violations committed during the second year of incarceration (controlling for misconduct during the first year of incarceration). This limited the sample substantially since many IPs in Ohio state institutions spend less than two years incarcerated. In total, the sample for analyses of misconduct included 432 IPs who completed literacy programs, 677 IPs who completed a general education program, 179 IPs who completed an apprenticeship or vocation program, and 27 IPs who completed a college course.

For the analyses exploring the influence of program completion on return to prison, different selection criteria were employed. All IPs who completed an education or vocation program during any point in their sentence were considered for these samples, regardless of how long they served in prison. In order to be included, individuals had to be released during the study timeframe (by June 30th, 2012) to permit a 3-year follow-up period for return to prison. Additionally, any IPs who completed any other type of reentry approved program during their incarceration were excluded from the sample. Even with these exclusionary criteria, the samples for these models are larger in comparison to the models exploring misconduct as an outcome measure. In total, these sample included 138 IPs who completed literacy programs, 1,869 IPs who completed a general education program, 2,849 IPs who completed a vocation or apprenticeship program, and 99 IPs who completed a college course.

Measures

The individual- and institution-level measures were selected based on theoretical relevance. The current study included estimation of models at two different levels of analysis.[7] The models included individual-level characteristics at level-1 and the facility-specific program characteristics at level-2. The level-2 units reflect programs (x) facility, such as one of the literacy programs at Dayton Correctional Facility. Considering facility differences in the "same" program is important, consistent with how different staff may have different approaches and ideologies. The education programs at each institution may appear to be the same program (e.g., GED, welding) but these programs vary across facilities. This is likely due to varying leadership practices in the institution's education department, staff capacity, turnover, resources, available space, etc. For example, the carpentry program at Chillicothe Correctional Institution (CCI) was quite different than carpentry programs at other institutions. At CCI the program was located in a large room with equipment and space for training, where other institutions did not have a fully equipped, designated space for this type of program. Additionally, the college courses vary across facilities due to varying levels of investment from local colleges and universities.

Dependent Variables

Institutional misconduct data were collected by ODRC via the DOTS database. The misconduct data are limited to rule infractions referred to the RIB hearing where an IP was found guilty. Limiting misconduct to guilty rule infractions reduces the possibility that the data included incidents of staff writing up unnecessary violations or rule violations that were not supported by evidence.

[7] A bilevel model was chosen over a trilevel model (IPs nested within programs nested within facilities) because there are too few institutions (28) to support a model of program effects at the facility-level.

Rule violations were divided into four groups based on empirical support for examining different types of infractions separately (Steiner & Wooldredge, 2014). For the current study, misconduct was grouped into (a) violence, (b) drugs, (c) property, and (d) any infractions. Each misconduct measure is a binary measure of whether an IP was found guilty of the type of rule violation during their second year of incarceration. The sample focused on IPs who have been incarcerated for at least two years to examine their misconduct in the year following education or vocation program completion. All IPs were assessed for misconduct for a 12-month period.

Separate analyses will include recidivism, or return to prison, as an additional outcome measure. In this study, recidivism is defined as whether an IP returned to an Ohio correctional institution within three years of their release. The binary return to prison measure is defined as an individual returning to prison for either a technical violation or a new crime during the follow up period. The decision to use return to prison as a measure of recidivism was based strictly on the availability of re-incarceration data given the absence of data on re-convictions or re-arrests. Return to prison is a much more conservative measure of involvement in criminal behavior compared to arrest or conviction measures.

Individual-level Variables

Demographic measures were created for the analysis and included male, age, African American, Latino, and marital status. *Age* was coded as age in years at admission and *marital status* was coded as married versus other. Criminal history and current offense information includes the proxy risk measures described below along with any misconduct during the first year of incarceration (for the misconduct analyses) and any "serious" misconduct at any point during incarceration (for the return to prison analyses).

For all IP's included in the initial sampling frame many of them had participated in other reentry approved programs and even other education programs. In order to examine the impact of one specific program for each IP in the sample, the other program completers had to either be removed or their program participation had to be controlled for. In the sample of IPs involved in the return to prison analyses the IPs who had completed any other reentry approved program were removed from the sample. However, for the samples of IPs included in the analysis of misconduct the other program participation was treated as a control variable. If the IPs included in the misconduct analyses completed any other reentry approved treatment program (i.e., unit management, mental health, or recovery services) or other education program during their first year of incarceration, this was treated as a control variable.

Assessment of Risk

Risk of recidivism is an important individual level measure and research demonstrates that programming and services should be focused on moderate and high-risk individuals (Andrews et al., 1990). In order to control for risk at the individual level, a measure for risk needed to be developed. During the time of data collection, ODRC was experiencing a shift in their risk assessment measurement. The ODRC began using the Ohio Risk Assessment System (ORAS) widely in 2012. As a result, only a small portion of IPs had ORAS scores at the end of the data collection phase of the project. Prior to the use of the ORAS, ODRC used the Reentry Accountability Plan (RAP) to measure risk for recidivism. The RAP is based on static factors and questions tapping criminogenic and non-criminogenic needs. Due to the lack of uniformity in risk assessment data available for each IP, other measures were used as proxies for risk of subsequent deviance. Several potential static and dynamic measures were examined for inclusion in the analyses. The proxy measure of risk consisted of only static factors because these

measures predicted recidivism as accurately as the RAP assessment (available for a subset of IPs in the study). The static factors included the number of prior prison sentences, security level, and sentence length. The measure of sentence length was transformed into the natural log due to the skewed nature of this measure. These measures are consistent with previous research using these data (Lugo et al., 2019; Pompoco et al., 2017).

Program-level Variables

The programs fall into one of four categories including literacy, high school equivalency/general education, vocation/apprenticeship, and college. For each program, the CPC-VEP was used as a way to organize and collect data at the time of the site visit. Table 3.1 includes the original 261 education programs evaluated at each institution. Due to the structure of the data and the need to create one "type" of program at each facility (e.g., vocation at Lorain Correctional Institution) the scoresheets for multiple programs at each facility were combined to create an average program. Combining the data in this way provided a way to capture the "average" literacy, general education, vocation, or college program at each facility. After combining the data for similar program "types" at each facility, the result was 19 literacy, 25 general education, 27 vocation/apprenticeships, and 13 college programs.

The CPC covers five domains or categories of program characteristics including program leadership and development, staff characteristics, quality assurance, offender assessment, and treatment characteristics. These domains are separated into capacity and content areas. To develop the CPC-VEP, researchers used many of the items included on the CPC and added items related to educational practices. This section outlines each program domain that was examined in this study. The individual items within each domain were included in an exploratory factor analysis for the purpose of data reduction and to identify unique dimensions of prison education

programs, and confirmatory factor analysis was then used to test the fit of these domains to the data.

The first section of the CPC-VEP includes program characteristics that reflect leadership and support. Specifically, these include measures of the program coordinator's supervision strategies and institutional support for the program. The second section examines staff characteristics and training. The third section examines program characteristics determined by the use of assessments. These characteristics include the management of individual risk/needs and eligibility criteria for the program. The fourth section measures the use of core correctional practices and important educational features of the class. The final section explores quality assurance practices and completion criteria.

Program Leadership and Support

The program characteristics in this section measure leadership and overall support for the program. Specifically, there are nine items tapping into leadership and supervision strategies. Many of the items in this area have been previously identified as important program characteristics (Blair et al., 2016; Duriez et al., 2018). There are several Likert scales asking staff to rate support for the program, support for rehabilitation, and perception of rapport with individuals. All staff working in the education program were asked these questions and an average for the program was calculated for each Likert scale. Also included in this section are items related to funding and resources, including library access for IPs, services for IPs with special needs, and the educational materials (e.g., textbooks, computers) being up-to-date.

Table 3.3. Program Measures Related to Leadership and Support

Variable	Initial Measurement	Final Recode
Program Coordinator	No Yes	0=No 1=Yes
Program Coordinator involvement in the hiring of instructors:	No involvement	0=No involvement 1=Minimal involvement 2=Moderate involvement

Table 3.3. Program Measures Related to Leadership and Support

Variable	Initial Measurement	Final Recode
	Minimal involvement- occasionally interviews/reviews resumes or not the decision maker Moderate involvement- conducts interview/reviews resumes and shares decision making Significant involvement- conducts interviews/reviews resumes and is the decision maker	3=Significant involvement
Program Coordinator supervision of instructors:	No supervision or "open door policy"; only provide supervision when staff have questions Minimal- rarely attends staff meetings/conducts individual/group supervision sessions with staff Moderate- regularly attends staff meetings/conducts individual/group supervision sessions less than twice per month Significant- attends nearly all staff meetings/conducts individual supervision sessions at least twice per month	0=No supervision 1=Minimal supervision 2=Moderate supervision 3=Significant supervision
Supervision setting:	Group setting Individual setting Staff meeting	0=No 1=Yes
How many times per month are supervision sessions held?	# of sessions per month	# of sessions per month
On average, how many hours of formal supervision are conducted per month?	# of hours of formal supervision per month	# of hours of formal supervision per month
Program Coordinator highest level of education:	High school/GED Associate degree Bachelor's degree Master's degree PhD	1=Highschool diploma 2=Some college 3=associate degree 4=Bachelor's degree 5=Master's degree 6=PhD
Program Coordinator area of study:	List area of study	0=Other field 1=Education/Administration
Program Coordinator years of experience working with offenders full-time:	# of years	# of years
Program support by: Facility administration Facility staff stakeholders	Rate on a scale of 1-10	Rate on a scale of 1-10
Support for rehabilitation by: Facility administration Facility staff Security staff Unit management staff Recovery services staff Instructors/education staff	Rate on a scale of 1-10	Rate on a scale of 1-10
Rating of rapport with offenders by:	Rate on a scale of 1-10	Rate on a scale of 1-10

Table 3.3. Program Measures Related to Leadership and Support

Variable	Initial Measurement	Final Recode
Institution wide Administration Security staff Education staff Unit management staff Recovery services staff		
Ability of the current funding to sustain the program as designed	Funding completely inadequate- have had to cut several program/services or have had to let staff go or not replace staff who have retired/resigned due to funding limitations Funding issues- unable to operate the program as designed due to some funding issues While increased funding is desired, able to operate the program as designed Program has enough funding to introduce new services/programming	0=Inadequate funding 1=Issues with funding 2=Minimal problems 3=Desired funding
Stability of program funding over the past two years	Highly unstable- program has experienced major funding cuts over the past two years resulting in decreases/elimination of several program/services or one or two major programs/services Unstable- program has experienced some funding cuts over the past two years resulting in decreases or elimination of one or more minor programs/services Stable- program funding has been stable and has not changed over the past two years or minor decreases have not results in service/programming decrease Highly stable- program funding has increased in the past two years	0=Highly unstable 1=Unstable 2=Stable 3=Highly stable
Age of program	# of years	# of years
Library access	There is a schedule when participants can access the library Books are readily available in the library Materials are readily available in the library There is a budget for library materials There is a replacement schedule for these materials N/A (non-education program)	0=No 1=Yes
Services for offenders with special needs are available	Individuals with special needs are accepted into the program Physical space adapted for special needs Staff are certified to work with special needs Aides are available to assist with individuals with special needs Equipment/materials are adapted for individuals with special needs N/A	0=No 1=Yes
Computers/textbooks/materials up-to-date Textbooks	Year of copyright or development No materials	Year of copyright or development

Table 3.3. Program Measures Related to Leadership and Support

Variable	Initial Measurement	Final Recode
Materials Computers Operating system on computers		

Staff

The section related to staff characteristics measures the traits that staff are hired based upon, staff experience, and education. There are additional measures in this section related to the frequency and content of staff meetings, staff evaluations, initial staff training, and ongoing training topics. Previous research has demonstrated that staff characteristics and staff-client interactions are related to relevant outcomes for offender populations (Palmer, 1995).

Table 3.4. Program Measures Related to Staff

Variable	Initial Measurement	Recode
Education/certification level of all instructors	% with GED % with high school diploma % with some college % with associate degree % with bachelor's degree % with certification in the area they are instructing % with license in the area they are instructing	% with GED % with high school diploma % with some college % with associate degree % with bachelor's degree % with certification in the area they are instructing % with license in the area they are instructing
Instructors level of experience working with offenders	% with 1 year % with 2 years % with 3 years % with 4 years % with 5 years % with 6+ years	1=100% staff worked with offenders for 3 years or less 2=100% staff worked with offenders for 4 years or more
Common skills and values that instructors are hired for	Assertive/directive Good communication skills Good paperwork skills Good prosocial model for offenders Solution focused Believe treatment works for offenders Believes offenders should be punished Strict Good computer skills Good group facilitation skills Firm but fair Flexibility Teamwork Appearance Verbal communication skills	0=No 1=Yes

Table 3.4. Program Measures Related to Staff

Variable	Initial Measurement	Recode
	Teaching experience Wont' get walked on by offenders Ability to problem solve Little experience in corrections (so as not to burn out) Experience in a prison Experience in any correctional environment Licensure/certification Enthusiasm Trustworthy Subject knowledge Organization Patient Punctual Student centered Age Creativity Friendly	
How many times per month do you meet with instructors/staff in your area?	# of meetings per month	# of meetings per month
How long do meetings last?	# of hours	# of hours
Is an agenda used?	No Yes	0=No 1=Yes
Do staff have input into the agenda?	No Yes	0=No 1=Yes
Are new intakes reviewed?	No Yes	0=No 1=Yes
Are case reviews conducted?	No Yes	0=No 1=Yes
Are problems discussed?	No Yes	0=No 1=Yes
Are progress reports completed?	No Yes	0=No 1=Yes
Are terminations deliberated?	No Yes	0=No 1=Yes
Are trainings delivered?	No Yes	0=No 1=Yes
How many times per month do you meet with staff outside of your area?	# of meetings per month	# of meetings per month
How long do meetings last?	# of hours	# of hours
Is an agenda used?	No Yes	0=No 1=Yes
Do staff have input into the agenda?	No Yes	0=No 1=Yes
Are trainings delivered?	No Yes	0=No 1=Yes
Are staff required to attend meetings?	No Yes	0=No 1=Yes
Are problems discussed?	No Yes	0=No 1=Yes
Are staff able to modify the program?	No input into the program structure Limited input into the program structure	0=No input 1=Limited input

Table 3.4. Program Measures Related to Staff

Variable	Initial Measurement	Recode
	Moderate input into the program structure Significant input into the program structure	2=Moderate input 3=Significant input
Are performance evaluations completed?	No Yes	0=No 1=Yes
Is the evaluation the one from the state?	No Yes	0=No 1=Yes
Number of times per year staff receive evaluations:	# of times per year	# of times per year
Do staff receive a copy of their evaluation?	No Yes	0=No 1=Yes
Do all staff attend the academy?	No Yes	0=No 1=Yes
Do staff receive additional training at this specific institution?	No Yes	0=No 1=Yes
How were you trained to work in this department?	On the job training (OJT) Extra classes General training policies/procedures No training	0=No 1=Yes
How many hours of initial formal training do staff receive?	# of hours	# of hours
Did you receive training in the following areas:	First aid/CPR/Restraint (and other mandated non-service related topics) Training on facility policy and procedures Clinical topics (e.g., substance abuse, mental health, anger issues, etc.) Assessments used by the program Curriculum/materials used by the program Program specific training Theory and practice of correctional interventions Training on "what works" in corrections Restraint/De-escalation Other security related topics Relationship Skills Other	0=No 1=Yes
How long until new staff are working independently?	# of days	# of days
How many hours of ongoing formal training are staff required to attend per year?	# of hours	# of hours
How many hours do staff actually attend each year?	# of hours	# of hours
What are training topics for ongoing trainings?	First aid/CPR/Restraint (and other mandated non-service related topics) Training on facility policy and procedures Clinical topics (e.g., substance abuse, mental health, anger issues, etc.) Assessments used by the program Curriculum/materials used by the program Program specific training Theory and practice of correctional interventions	0=No 1=Yes

Table 3.4. Program Measures Related to Staff

Variable	Initial Measurement	Recode
	Training on "what works" in corrections Restraint/De-escalation Other security related topics Relationship Skills Other	
Are there ethical guidelines in place that cover staff/offender boundaries, behavior, interactions, etc.?	No Yes	0=No 1=Yes

Offender Assessment

The third section measures offender assessment. The items included in this section focus on offender selection and assessment procedures to determine the appropriate offenders for the program provided. The items in this section are related to the use of risk, need, and responsivity assessments and the instructor's ability to manage responsivity barriers.

Table 3.5. Program Measures Related to Offender Assessment

Variable	Initial Measurement	Recode
Eligibility criteria exist for the program	No Yes	0=No 1=Yes
Eligibility criteria are routinely followed	No Yes	0=No 1=Yes
There is a match between the service offered and the presenting offender problem	No Yes	0=No 1=Yes
Instructor has the ability to manage responsivity issues in class	No Yes	0=No 1=Yes
What are the eligibility criteria?	Time left on sentence Reading level Age CASAS/TABE score Experience Ability to work outside institution No GED/Highschool diploma No criteria exist GED/Highschool diploma Specific offenses are excluded Limited disciplinary problems Completed pre-requisite class Security level Grades Risk level Interest/motivation Test or interview Classified as student Special education student Housing unit	0=No 1=Yes

Table 3.5. Program Measures Related to Offender Assessment

Variable	Initial Measurement	Recode
	State mandated	
What is the percentage of offenders that are accepted into the program that are inappropriate for the services offered?	%	%
Is the program aware of the risk level of the offenders upon referral?	No Yes	0=No 1=Yes
Does the program take into account offender risk level for entry into the program?	No Yes	0=No 1=Yes
Are low risk offenders not typically placed in the programs with high risk offenders?	No Yes	0=No 1=Yes
What is the percentage of low risk offenders accepted into the program?	%	%
Instruments used to assess need	Assessment name: CASAS ORAS/RAP Instrument created by facility Voyager None	0=No 1=Yes
	Assessment purpose: Math/reading Risk level	0=No 1=Yes
	Assessment characteristics: Standardized Summary Score Validated Normed	0=No 1=Yes
Instruments used to assess responsivity	Assessment name: CASAS TABE	0=No 1=Yes
	Assessment purpose: Reading	0=No 1=Yes
	Assessment characteristics: Standardized Summary Score Validated Normed	0=No 1=Yes
What percentage of offenders in the group has a low need for service? Moderate need for service? High need for service?	%	%

Educational Practices

The fourth section on the CPC-VEP captures multiple classroom domains and classroom management techniques. This includes items related to education (e.g., lesson plans, learning objectives), core correctional practices (e.g., instructor has professional boundaries), and

behavior management (e.g., use of rewards/incentives, use of sanctions). Additionally, there are items related to length of the program, participant involvement, matching the participant to the program based on responsivity barriers, homework assignments, size of class/program, integration of materials, and attendance policies.

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
Number of clients admitted per group cycle:	# clients	# clients
Number of clients admitted per quarter:	# clients	# clients
Number of group cycles per year:	# clients	# clients
Total number of offenders admitted into the program each year:	# clients	# clients
Program has rolling enrollment	No Yes	0=No 1=Yes
Is the program equipped to accept ESL students?	No Yes	0=No 1=Yes
Does the program offer separate classes for ESL students?	No Yes	0=No 1=Yes
Are instructors ESL certified?	No Yes	0=No 1=Yes
Do instructors speak another language?	No Yes	0=No 1=Yes
Does the program translate materials into other languages?	No Yes	0=No 1=Yes
Does the program give ESL students additional time to complete work?	No Yes	0=No 1=Yes
Are instructor's knowledgeable?	No Yes	0=No 1=Yes
Are instructors comfortable?	No Yes	0=No 1=Yes
Can instructors answer questions?	No Yes	0=No 1=Yes
Can instructors explain concepts clearly?	No Yes	0=No 1=Yes
Can instructors provide clear examples and illustrations?	No Yes	0=No 1=Yes
Do instructors have a participation requirement?	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Are group participants actively involved in the class?	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Do instructors call on participants?	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Do instructors give everyone a chance to practice?	No Yes N/A (e.g., workshop only)	0=No 1=Yes

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
Do instructors ensure participants are paying attention/staying focused?	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Do instructors regularly assign homework?	No Yes N/A (e.g., maintenance program)	0=No 1=Yes
Do instructors regularly review homework?	No Yes N/A (e.g., maintenance program)	0=No 1=Yes
Do instructors provide feedback to participants?	No Yes N/A (e.g., maintenance program)	0=No 1=Yes
There is evidence that class norms/rules have been established:	No Yes N/A (e.g., workshop only)	0=No 1=Yes
There is evidence that class norms/rules are followed:	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Norms/rules are posted in the classroom:	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Do participants receive a copy of the norms/rules?	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Do participants formally agree to abide by norms/rules (e.g., sign a contract)?	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Classes consistently start on time:	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Classes consistently end on time:	No Yes N/A (e.g., workshop only)	0=No 1=Yes
Class time is used to provide instruction and give students time to practice:	No Yes N/A (e.g., workshop only)	0=No 1=Yes
If co-instructors are used, they actively participate in the class:	No Yes N/A	0=No 1=Yes
Are co-instructors staff or IPs?	Staff IPs N/A	0=IPs 1=Staff
What is the average class size at the start of the program?	# of participants	# of participants
What is the average class size at the end of the program?	# of participants	# of participants
What are reasons participants do not finish?	Disciplinary problems Early release Transfer Drop out Fall behind Medical problems	0=No 1=Yes

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
	Receive GED Conflicting schedule Poor attendance Age Fail Security level change Court Job change Time left on sentence Placement into wrong class Lose interest	
Are instructors aware of responsivity assessments?	No Yes	0=No 1=Yes
Do instructors address the different learning styles/barriers?	No Yes	0=No 1=Yes
If yes, how?	Increase individual time Tutors/aids Offer extra materials Use different teaching methods Adjust pacing Increase hands on practice Increase lecture Assign to new instructor Reassign client to new class Find help for learning disability Meet with team Encourage/reinforce Model skill/techniques	0=No 1=Yes
Instructors routinely integrate materials into the classes:	No Yes N/A	0=No 1=Yes
Instructors use books:	No Yes N/A	0=No 1=Yes
Instructors use workbooks:	No Yes N/A	0=No 1=Yes
Instructors use handouts:	No Yes N/A	0=No 1=Yes
Instructors use audio/visual equipment:	No Yes N/A	0=No 1=Yes
Instructors use films/movies:	No Yes N/A	0=No 1=Yes
Learning objectives are outlined/stated for each class:	No Yes N/A	0=No 1=Yes
Objectives are attainable:	No Yes N/A	0=No 1=Yes

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
Objectives are measurable:	No Yes N/A	0=No 1=Yes
Evidence that lesson plans are designed to achieve goals:	No Yes N/A	0=No 1=Yes
Lesson plans are developed for each class:	No Yes N/A	0=No 1=Yes
Plans have goals and objectives:	No Yes N/A	0=No 1=Yes
Plans outline the content of the lesson:	No Yes N/A	0=No 1=Yes
Plans outline the recommended teaching methods:	No Yes N/A	0=No 1=Yes
Plans include exercises and activities:	No Yes N/A	0=No 1=Yes
Plans include the accompanying homework:	No Yes N/A	0=No 1=Yes
Tutors/aids are available to assist participants who need extra help:	No Yes N/A	0=No 1=Yes
Attendance is recorded for each class:	No Yes	0=No 1=Yes
The number of absences is limited by policy:	No Yes	0=No 1=Yes
Are any of the following considered when matching offenders to groups?	Needs of the offender Level of offender motivation Offender personality Offender learning style Cognitive limitations of offender Gender Age Other None NA (all voluntary)	0=No 1=Yes
Are staff matched to groups or services they provide based on any of the following attributes?	Staff professional experience Staff personality Staff desire/motivation to provide a particular treatment/service Staff skill level in a particular area None- assignment based upon need for service and staff attributes not considered when assigning staff to work duties	0=No 1=Yes
Classes are monitored by staff from beginning to end:	No Yes	0=No 1=Yes

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
Rate the use of rewards/incentives used by the program:	Rewards are not used by the program Rewards are used sparingly- offenders should not be rewarded for expected behavior Moderate use of rewards- while the program believes rewards are important, they are limited in how liberally they use them Liberal use of rewards- staff are encouraged to use rewards frequently to shape offender behavior	0=Rewards are not used 1=Rewards are used sparingly 2=Moderate use of rewards 3=Liberal use of rewards
What types of incentives and rewards are used by the program?	None Verbal praise/recognition for prosocial behavior Increased privileges (e.g., bedtime, free time, phone calls, etc.) Certificates/awards Ceremonies Food/candy Points/level increase Gift certificates Early release Credit time/time for good behavior Increase in community passes/time on passes Other	0=No 1=Yes
Do rewards appropriately match behaviors?	No Yes	0=No 1=Yes
Is there written documentation outlining rewards?	No Yes	0=No 1=Yes
What is the approximate ratio of rewards to punishers?	List ratio rewards: punishers	0=Punishment heavy 1=Equal ratio 2=Reward heavy
What factors do the program employ in the administration of rewards?	Staff are consistent with rewarding offenders Rewards are seen as valuable in shaping behavior Rewards based on demonstration of a behavior Offender is told why he/she is being rewarded (tying reward to behavior) Rewards are individualized (no group rewards) Rewards are desired by the offender Rewards are varied Other	0=No 1=Yes
Rate the use of punishers/consequences by the program:	Punishers/consequences are not used by the program Liberal use of punishers- staff are encouraged to use punishers frequently to deter offender behavior	0=Punishers are not used 1=Liberal use of punishers 2=Moderate use of punishers 3=Punishers are used sparingly

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
	Moderate use of punishers- punishers are used regularly to deter offender behavior Punishers are used sparingly- punishers are used only when necessary to extinguish inappropriate behavior	
What types of punishers or consequences are used by the program?	None Verbal warnings/reprimands Conduct reports Dismissal from program Loss of privileges (e.g., bedtime, free time, phone calls, etc.) Shaming techniques (e.g., wearing signs, dressing up, singing, etc.) Typical therapeutic community techniques (client encounters) Physical interventions (push-ups, kneeling) Isolation/chair restriction Extra chores/duties Lengthen program stay Points/level decrease Take away community passes/time on passes Other	0=No 1=Yes
Do punishers appropriately match infractions?	No Yes	0=No 1=Yes
What factors do the program employ in the administration of punishers?	Staff are consistent with punishing offenders Punishers are seen as valuable in extinguishing unwanted behavior Punishers are based on demonstration of an antisocial behavior Offender told why he/she is being punished (tying consequence to behavior) Punishers are individualized (no group consequences) Punishers are individualized (no group consequences) Punishers are undesirable by the offender Punishers are varied Punishers appropriately match the infraction (not too harsh or lenient) Escape from punisher is impossible (offenders don't get out of punisher) Punishers are not spread out Alternative prosocial behavior is taught to offenders Punishers are immediate Other	0=No 1=Yes
Alternative behavior is offered after punisher is administered:	No Yes	0=No 1=Yes
Instructors consistently model skills and explain benefits:	No Yes	0=No 1=Yes

Table 3.6. Program Measures Related to Educational Practices

Variable	Initial Measurement	Recode
Skill training with corrective feedback is provided throughout the classes:	No Yes	0=No 1=Yes
Graduated practice with corrective feedback is provided:	No Yes	0=No 1=Yes
Instructors feel they have good rapport:	No Yes	0=No 1=Yes
Participants feel the instructors have a good relationship with participants:	No Yes	0=No 1=Yes
Respect is evident:	No Yes	0=No 1=Yes
Instructors have a good demeanor while instructing:	No Yes	0=No 1=Yes
Instructors have clear boundaries and maintain a professional relationship:	No Yes	0=No 1=Yes
Instructors do not engage in arguments with participants:	No Yes	0=No 1=Yes
Instructors use appropriate techniques to roll with resistance:	No Yes	0=No 1=Yes
Based on interview(s) and observations, summary of encouraging participants	Never encourages participation Sometimes encourages participation Always encourages participation	0=Never encourages participation 1=Sometimes encourages participation 2=Always encourages participation
Based on interview(s) and observations, summary of homework	Never gives homework Sometimes gives homework Always gives homework	0=Never gives homework 1=Sometimes gives homework 2=Always gives homework
Based on interview(s) and observations, summary of rules	Never applies rules Sometimes applies rules Always applies rules	0=Never applies rules 1=Sometimes applies rules 2=Always applies rules
Based on interview(s) and observations, summary of responsivity	Never addresses responsivity Sometimes addresses responsivity Always addresses responsivity	0=Never addresses responsivity 1=Sometimes addresses responsivity 2=Always addresses responsivity
Based on interview(s) and observations, summary of punishment process	Informal and/or formal process	0=Informal process 1=Formal process 2=Both
Based on interview(s) and observations, summary of modeling skills	Never models skills Sometimes models skills Frequently models skills	0=Never models skills 1=Sometimes models skills 2=Frequently models skills
Based on interview(s) and observations, summary of skill training and feedback	Never does skill training with feedback Sometimes does skill training with feedback Frequently does skill training with feedback	0=Never does skill training with feedback 1=Sometimes does skill training with feedback 2=Frequently does skill training with feedback
Based on interview(s) and observations, summary of graduated practice	Never does graduated practice Sometimes does graduated practice Frequently does graduated practice	0=Never does graduated practice 1=Sometimes does graduated practice 2=Frequently does graduated practice

Quality Assurance

The final section measures quality assurance practices. This includes the frequency of classroom observations, completion criteria, the use of satisfaction surveys, and information related to how the program tracks progress.

Table 3.7. Program Measures Related to Quality Assurance

Variable	Initial Measurement	Recode
How many times per year is each class/group observed by the program coordinator or supervisors?	# of times per year	# of times per year
How many times per year is each instructor given feedback on their performance in class?	# of times per year	# of times per year
Is participant satisfaction captured?	No Yes	0=No 1=Yes
Pre and posttests	Assessment name: CASAS Pre-GED/GED test Curricula/program test	0=No 1=Yes
	Assessment purpose: Math and reading level Skill/knowledge test Education level	0=No 1=Yes
	Assessment characteristics: Standardized Summary Score Validated Normed	0=No 1=Yes
What is the average successful completion rate?	% N/A (new program)	% N/A (new program)
Meets the established rates of the state department of education:	No Yes N/A (new program)	0=No 1=Yes
Completion criteria outline program completion:	No Yes	0=No 1=Yes
Progress in acquiring knowledge and skills are the main consideration:	No Yes	0=No 1=Yes
Performance measures that track skill acquisition are used:	No Yes	0=No 1=Yes
Hours are tracked:	No Yes	0=No 1=Yes
If yes, indicate #	# of hours	-
Program used an assessment instrument:	No Yes	0=No 1=Yes
Program uses exams:	No Yes	0=No 1=Yes
Program uses final project:	No Yes	0=No 1=Yes

Table 3.7. Program Measures Related to Quality Assurance

Variable	Initial Measurement	Recode
Program uses only attendance to determine completion:	No Yes	0=No 1=Yes
Program uses a subjective determination to determine completion:	No Yes	0=No 1=Yes
The program has objective measures to track progress over time:	No Yes	0=No 1=Yes
The program uses writing assignments:	No Yes	0=No 1=Yes
The program uses demonstration of skills:	No Yes	0=No 1=Yes
The program uses presentations:	No Yes	0=No 1=Yes
Participants receive formal feedback concerning their progress:	No Yes	0=No 1=Yes
Is the program accredited, licensed, or certified?	No Yes	0=No 1=Yes
Is the program well run: strong leadership/management?	No Yes	0=No 1=Yes
Organized?	No Yes	0=No 1=Yes
Organizational harmony?	No Yes	0=No 1=Yes
Turnover?	No Yes	0=No 1=Yes
Is the institution well run: strong leadership/management?	No Yes	0=No 1=Yes
Organized?	No Yes	0=No 1=Yes
Organizational harmony?	No Yes	0=No 1=Yes
Turnover?	No Yes	0=No 1=Yes

Institution-level Variables

In addition to program characteristics, the facility characteristics were additional predictors of interest at level-2. Drawing from prior literature and theory, all models included three institution characteristic variables that may influence misconduct and return to prison. The first is the proportion of IPs classified at level 4 (maximum) and 5 (administrative maximum). This was considered the proportion of IPs classified at maximum security in the institution. Due to the nature of classification and housing practices, the institutions in Ohio generally house IPs at

multiple security classification levels (see table 3.1). This variable was ultimately dropped from all models due to the limited education and vocation opportunities in facilities with large proportions of IPs categorized as high security. The education and vocation programs in Ohio are more common in the minimum and medium security institutions and this restricted the variance in the proportions of IPs housed in maximum security facilities. The second variable captured the racial heterogeneity of correctional staff at the institution. The final level-2 predictor captured crowding at each institution. This was measured as the ratio of IPs housed at the institution during the site visit to the institution's design capacity.[8]

Statistical Analysis

Multilevel modeling was used for the analyses due to the nested nature of the data (program participants nested within facility-specific programs). To address the first research question regarding the factor structure of education and vocation program characteristics, factors were explored using the items previously described from the CPC-VEP data collection tools. To this end, the analyses began with an examination of correlations between items and removal of any items that were heavily skewed and/or have limited variance. Some of the items had large proportions of missing values, contributing the very limited variance. An exploratory factor analysis (EFA) was then performed to examine the potential relationships between program characteristics and to identify the smallest number of constructs necessary to usefully explain the structure of the education and vocation program items. Next, using the factors generated through the EFA, a confirmatory factor analysis (CFA) was conducted to test the hypothesized factor structure for the program characteristics. The latent factors were then finalized by comparing

[8] These three institutional measures were collected during the study timeframe (2008) as a part of a separate research project.

improvement in model fit from the baseline model across models with varying numbers of factors.

After the factors were constructed, the next part of the data analysis focused on estimating multilevel logistic regression models of misconduct and return to prison. Multilevel modeling has been used to estimate individual- and facility-level effects on prison rule violations, and the utility of the method for knowledge on the topic has been described by Camp, Gaes, Langan, and Saylor (2003), Huebner (2003), Steiner and Wooldredge (2008, 2009) and Wooldredge, Griffin, and Pratt (2001).

While individual (IP level) differences are clearly important for understanding both misconduct and recidivism, facility-level factors also have an impact on behavior and should be included in models examining IP behavior. Steiner and Wooldredge (2008) noted that the focus on only individual-level characteristics does not provide useful results related to whether the individual or institutional characteristics are more important when creating policies related to misconduct.

Multilevel modeling techniques were also used to adjust for correlated error among IPs who completed education or vocation programs within the same facility. For example, education program completers housed within the same institution are not completely independent from one another due to similar experiences related to program/class expectations and similar rules within the institution, not to mention attributes linked to program eligibility.

Based on the dichotomous dependent variables, hierarchical logistic regression was used. The bilevel analyses were conducted in several stages with each step providing relevant information to inform the next steps. These steps were replicated for each program and outcome. First, an unconditional "null" model (with no predictors) revealed the variance in each outcome

at level-1 (IPs) versus level-2 (facility-specific programs). This provided information related to if there was significant variance in the outcome at level-2 to model program effects on misconduct and prison returns

In the second step, the "means as outcome" models were estimated for each level-2 variable separately and for all level-2 variables included simultaneously. The analysis of zero-order relationships was important for identifying significant zero-order effects and the magnitude of those effects for future studies, given the absence of related research, because they help to identify important control variables even though their effects can be rendered null in multivariable models. These estimates are also useful for informing future research questions related to mediation effects involving program factors (e.g., whether "better" education programs are capable of mediating any ill effects of facility environments). Level-1 predictors were not included at this stage in order to assess the general relevance of level-2 predictors prior to controlling for level-1 "compositional" effects.

The third step in each analysis was estimation of a series of one-way ANCOVA models for each level-1 predictor separately as well as a full model with all level-1 variables included simultaneously (similar to the level 2 models). In the zero-order models with level-1 predictors, the variables were grand mean-centered and treated as fixed to assess the proportion of variance explained at level-2. This provided information to make the final centering decisions for each level-1 predictor. The level-1 variables that explained a substantive amount of variance at level 2 (i.e., PRE $\geq$ .10) when grand mean-centered were then grand mean-centered in the subsequent models in order to provide adequate controls for compositional effects that might be correlated with the program factors examined.

The fourth step of the analysis involved estimation of whether the level-1 predictors from the last step varied significantly in magnitude across programs, or whether they should be treated as random (with significantly varying effects) or fixed (with the same effect) across programs in the multilevel model. Zero-order random effects were estimated for each of the level-1 predictors using the centering decisions from step 2. A multivariable model was then estimated with all level-1 predictors entered as either random or fixed, and as group or grand mean-centered (based on the previous analyses).

Step five entailed estimation of the "intercepts as outcome" model, with both level-1 and level-2 predictors included, to determine the main effects of program and facility attributes on misconduct or prison returns (i.e., the adjusted means of the dependent variables, as reflected in the level-1 intercepts). Finally, in step 6, "slopes as outcome" models were estimated to see if any of the program/facility attributes examined had significant impacts on the magnitude of significantly varying level-1 effects on misconduct or prison returns. These models were not estimated for an outcome if none of the "slopes" varied significantly across facility-specific programs.

In sum, multilevel modeling was used to explore how much of the variance in misconduct and return to prison could be explained by program and institution characteristics versus individual-level "risk" factors.

Summary

Chapter 3 provided a description of the methods used to collect and analyze data for this dissertation. Information and data on the sampling methods, data collection, data sources, measures, and statistical analyses were provided. The analyses conducted focused on answering

the research questions presented at the beginning of this chapter. The next chapter describes the results of the analyses outlined here.

CHAPTER FOUR
RESULTS

This chapter is organized by the stages of the analyses described in Chapter 3, including (1) factor analysis results for the characteristics of education and vocation programs, with exploratory and confirmatory factor analyses to identify final sets of factors, and (2) the results exploring how program characteristics influence institutional misconduct and return to prison.

Factor Analysis

To examine if program characteristics are statistically associated with criminal behavior, it was necessary to examine potential factors for data reduction purposes. As noted previously, the data collection tool, CPC-VEP, was initially created as part of a larger evaluation of Ohio's Prison Programs. The data collection tool tapped into multiple domains, including leadership and administrative support, staff characteristics, assessment, educational practices, and quality assurance. These domains are not presumed to be standalone factors but were used as a way to organize the categories of program characteristics for data collection purposes.

The exploratory factor analysis (EFA) was conducted using M*plus* 7.11. The original dataset included a total of 435 variables related to program characteristics. After the CPC-VEP program characteristics data were prepared for analyses, the distributions of values on the CPC-VEP items were examined. First, items with poor distributions were defined as those with (a) large proportions of missing values, and (b) visibly skewed distributions. After removing the variables identified as having poor distributions, an exploratory factor analysis was completed using maximum likelihood estimation and geomin rotation. After examining factors with eigenvalues greater than or equal to 1.5, the results indicated that an 8 or 9 factor solution could be extracted. Appendix B displays the factor loadings that resulted from the EFA.

A confirmatory factor analysis (CFA) was used to assess model fit for each of the 8-factor and 9-factor models, and to examine whether the 9-factor model was a substantive improvement in fit over the 8-factor model. Model fit was good for both models based on the Root Mean Square Error of Approximation (RMSEA < .05) and the Comparative Fit Index (CFI > .95). After conducting the difference of chi-square test between the two models, the 8-factor model was chosen. The factor that was dropped captured features of the program related to materials (e.g., use of handouts and books, materials translated into other languages). The 8-factor solution was slightly superior to the 9-factor solution based on model statistics. The 9-factor model produced a model fit chi-square of 457.97, while the 8-factor model produced a value of 411 ($\Delta\, x^2 = 46.97$, $p \leq .05$).

After review of the descriptive statistics and the alpha reliabilities for the group of items in each factor, an eighth factor was ultimately removed due to a heavily skewed distribution of factor scores and poor reliability ($\alpha = .491$) for the full sample of programs. The factor was called "class capacity" and it captured the number of students admitted to the program per year, the average class size, and two measures related to the educational attainment of instructors. This factor did not add to the overall model from a theoretical standpoint.

Next, a CFA was specified to test the final model and examine if the hypothesized latent constructs were supported. The final seven factors that resulted from the confirmatory factor analysis (described below) are displayed in table 4.1. Factor 1 can be considered a measure of "program support" and includes two items related to program support exhibited by the leadership and support of rehabilitation by the education staff, both rated on a 10-point scale where lower numbers reflect less support and higher numbers indicate more support. Factor 2, or the "institutional ongoing training" factor, consisted of items related to ongoing training for program

staff and included dichotomous measures for ongoing training in first aid/CPR, institutional policy and procedure, clinical topics (e.g., substance abuse), and restraint/de-escalation. Factor 3 was the "program ongoing training" factor and contained items related to ongoing staff training on assessments, curriculum/materials used by the program, and program specific training. Factor 4, measuring "instructor effort and ability", contained three items related to the instructor's ability to answer questions, explain concepts clearly, and provide examples and illustrations. Factor 5 was related to "class participation" and included items related to the instructor's efforts to increase participation during class. Factor 6, called "class time", contained two items related to the class beginning and ending on time. Factor 7 can be considered a measure of "behavior management" in the classroom and this factor included items related to evidence that rules are followed, norms/rules are posted, providing students with a copy of the rules, and students signing a contract agreeing to the rules of the class.

The confirmatory factor analysis was conducted using M*plus* 7.11 to test the 7-factor model. To assess the fit of this model, a robust weighted least-squares estimation was used (due to the ordinal scales) and multiple fit statistics were examined (see table 4.2). First, the chi-square test of model fit should not be significant to suggest a good model fit. The RMSEA suggests a good model fit when values are less than 0.05 (Brown, 2006; Byrne, 1994). The CFI and the Tucker-Lewis index (TLI) should exceed values of 0.95 for good fit. Additionally, the Weighted Root Mean Square Residual (WRMR) is a goodness of fit statistic that should have values close to zero for good fit. Applying these criteria, the 7-factor model manifested an acceptable fit to the data ($X^2_{(210)} = 261.922$, significant at the $p \leq .01$; RMSEA = .031; CFI = .952; TLI = .942; WRMR = .881). In the final model, all factor loadings were significant ($p \leq .01$) and range from 0.534 to 2.140. The chi-square statistic was significant but the model fit was improved relative to

Table 4.1. CFA Subfactors and Items: Full Sample

Indicator Label	Item	Full Sample *M*	*SD*
Factor 1		Alpha = 0.591	
V1	Rating of program support by the facility administration	7.55	2.15
V2	Rating of support for rehabilitation by education staff	8.45	1.61
Factor 2		Alpha = 0.625	
V3	Training topics for formal ongoing training: First aid/CPR	0.79	0.41
V4	Training topics for formal ongoing training: Facility policy and procedures	0.65	0.48
V5	Training topics for formal ongoing training: Clinical topics	0.45	0.50
V6	Training topics for formal ongoing training: Restraint/de-escalation	0.48	0.50
Factor 3		Alpha = 0.595	
V7	Training topics for formal ongoing training: Assessments	0.13	0.33
V8	Training topics for formal ongoing training: Curriculum/material used by program	0.18	0.39
V9	Training topics for formal ongoing training: Program specific training	0.18	0.39
Factor 4		Alpha = 0.812	
V10	Instructors can answer questions	0.89	0.31
V11	Instructors explain concepts clearly	0.85	0.36
V12	Instructors provide clear examples and illustrations	0.78	0.41
Factor 5		Alpha = 0.672	
V13	Instructors have participation requirement	0.53	0.50
V14	Participants are actively involved in the class	0.77	0.43
V15	Instructors call on participants	0.56	0.50
V16	Instructors give everyone a chance to practice	0.86	0.35
V17	Instructors ensure participants are paying attention/staying focused	0.63	0.49
Factor 6		Alpha = 0.784	
V18	Classes start on time	0.68	0.47
V19	Classes end on time	0.69	0.46
Factor 7		Alpha = 0.610	
V20	There is evidence that class norms/rules are followed	0.76	0.43
V21	Norms/rules are posted in the classroom	0.22	0.41
V22	Participants receive a copy of the norms/rules	0.40	0.49
V23	Participants formally agree to abide by the norms and rules (e.g., sign a contract)	0.48	0.50

Table 4.2. Final 7-Factor Model

	Full Sample (*n*=261)	
	Estimates	SE
Factor/Item No.		
Factor 1		
V1	2.140	0.116
V2	0.716	0.096
Factor 2		
V3	0.587	0.100
V4	0.722	0.082
V5	0.706	0.090
V6	0.748	0.092
Factor 3		
V7	0.623	0.140
V8	0.943	0.119
V9	0.708	0.115
Factor 4		
V10	0.890	0.060
V11	1.013	0.034
V12	0.903	0.039
Factor 5		
V13	0.549	0.085
V14	0.853	0.069
V15	0.593	0.085
V16	0.738	0.085
V17	0.799	0.062
Factor 6		
V18	0.959	0.097
V19	0.893	0.094
Factor 7		
V20	0.913	0.091
V21	0.534	0.116
V22	0.569	0.088
V23	0.743	0.072

$\chi^2_{(210)}$=261.922**; RMSEA=0.031 CFI=0.952; TLI=0.942

All factor loadings significant at $p < .01$

the baseline model. The baseline chi-square was 411.00 while the model chi-square was 261.92. Both the baseline and model chi-square statistics were significant. Additionally, the other goodness of fit statistics and the factor loadings demonstrated a reasonably acceptable fit to the data.

Facility-Specific Program Characteristics

Table 4.3 displays the means and standard deviations for all level-2 predictors considered for the models examining both return to prison and misconduct. When examining the level-2 measures, the program support factor is fairly consistent in values across all types of education programs and institutions. For the factor measuring ongoing training related to institutional practice, college programs were less likely than the other program types to score high on this factor. This makes sense given that college instructors and staff involved in college courses within institutions are often not required to attend the institution's ongoing training (e.g., first aid, CPR, restraint/de-escalation). Similarly, the scores for ongoing training on program related topics (F3) were higher for literacy, general education, and vocation programs compared to college programs. Instructor effort and ability (F4) was somewhat consist across all types of programs. The average score for F5, class participation, was highest in the vocation and apprenticeship programs (3.45) and lowest in the general education classes (2.94).

Analysis of Misconduct

Table 4.4 displays the univariate descriptives for the samples of inmates included in the analysis of misconduct. Most inmates included in the analysis of various types of misconduct were male and all inmates who completed college courses were male. The average age for the sample of inmates who completed literacy, general education, and college was

Table 4.3. Program Factors and Facility Attributes: Means and Standard Deviations

	Literacy (n= 19)		General Education (n=25)		Vocation (n=27)		College (n=13)	
Level-2 Predictors	$\overline{x}$	**SD**	$\overline{x}$	**SD**	$\overline{x}$	**SD**	$\overline{x}$	**SD**
Program Support	13.55	4.71	15.10	3.17	16.07	2.07	16.59	3.72
Institutional Ongoing Training	2.33	1.28	2.42	1.06	2.55	1.02	.54	1.06
Program Ongoing Training	.33	.59	.48	.71	.34	.37	.26	.68
Instructor Effort/Ability	2.47	1.02	2.33	.80	2.63	.46	2.47	.75
Class Participation	3.03	1.48	2.94	1.13	3.45	1.16	3.27	1.47
Class Time	.97	0.86	1.22	.77	1.58	.59	1.22	.69
Behavior Management	1.95	1.17	1.79	.99	1.89	.95	1.78	1.12
Proportion max security*	.05	.20	.02	.11	.03	.16	.04	.16
Staff racial heterogeneity	.26	.14	.30	.15	.29	.15	.29	.13
Crowding (population/capacity)	1.79	.38	1.69	.45	1.67	.42	1.69	.46

*removed from all analyses

Table 4.4. Sample-Specific Means and Standard Deviations for the Analysis of Misconduct

	Literacy (n=432)		General Education (n=677)		Vocation (n=179)		College (n=27)	
Outcomes	$\bar{x}$	**SD**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	$\bar{x}$	**SD**
Violence	.23	.42	.17	.37	.16	.36	.19	.40
Drugs	.10	.31	.11	.31	.09	.29	.11	.32
Property	.13	.33	.13	.34	.07	.26	.04	.19
Any misconduct	.42	.50	.42	.50	.33	.47	.22	.42
Individual-Level Predictors								
Male	.86	.35	.83	.38	.83	.38	1.00	.00
Age	27.34	10.78	26.11	9.73	31.10	10.54	27.82	7.51
African American	.69	.46	.55	.50	.45	.50	.52	.51
Latino	.05	.22	.02	.13	.03	.18	.00	.00
Married	.10	.31	.09	.28	.12	.32	.07	.27
# prior prison terms	.90	1.88	.50	1.12	.93	1.49	.89	.97
Sentence length (ln)	3.95	.21	3.94	.24	3.94	.24	3.99	.18
Security level	1.98	.66	1.79	.70	1.80	.78	1.44	.58
Any misconduct year 1	.44	.50	.39	.49	.34	.48	.26	.45
Completed RS program	.11	.31	.11	.31	.16	.36	.15	.36
Completed UM program	.13	.34	.15	.35	.26	.44	.26	.45
Completed MH program	---	---	.01	.09	.01	.11	---	---
Completed literacy	---	---	.11	.32	.07	.25	---	---
Completed general education	.33	.47	---	---	.13	.34	.07	.27
Completed vocation/apprentice.	.07	.25	.07	.26	---	---	.11	.36
Completed college class	---	---	.02	.13	.03	.18	---	---

RS = recovery services, UM = unit management, MH = mental health

approximately 27 years old while the sample of individuals who completed vocation or apprenticeships were slightly older, on average. The sentence length and security levels across the four samples were somewhat consistent but with the literacy sample having a slightly higher average security level than the other samples. The sample of inmates who completed college courses had fewer incidents of guilty infractions in their first year of incarceration compared to the other sample averages. In terms of the types of misconduct, the sample of inmates who completed literacy programs had more violent infractions than the other samples. The sample of inmates who completed college courses had the lowest odds of engaging in rule violations during the year after these courses were completed.

Literacy Programs

This section presents the results from the analysis of individual- and facility-specific program characteristics on various types of misconduct for the sample of IP's who completed literacy programs. Each set of results include the steps for multilevel modeling across the four types of misconduct examined in this study: violent, drug, property, and any misconduct.

Violent Misconduct

Null Model and Means as Outcome

The unconditional model revealed significant differences across facility-specific literacy programs in the proportion of literacy completers who engaged in violent misconduct. The results for the null model are displayed in table 4.5. The estimate for the between-group variance was .28 ($\chi^2 = 32.32$, $p \leq .01$).

Table 4.6 reports the unstandardized zero order relationships between violent misconduct and all level-2 predictors considered for the full models, testing each effect separately to examine changes from the null model. The coefficients, standard errors, and the estimated proportion of

Table 4.5. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=432)

Misconduct	Violent			Drug			Property			Any		
	***b* (se_b)**	x^2	VC	***b* (se_b)**	x^2	VC	***b* (se_b)**	x^2	VC	***b* (se_b)**	x^2	VC
Null Model	-1.28	32.32**	.28	-2.38	49.47***	.64	-2.09	37.00***	.49	-.31	44.64***	.35
Zero-order fixed effects												
Male	.27 (.56)			1.82 (1.16)			1.43 (.86)			.99 (.53)		
Age	-.06*** (.02)			-.06* (.02)			-.08*** (.03)			-.07*** (.01)		
African American	.71* (.29)			.12 (.37)			.47 (.36)			.51* (.23)		
Latino	-.71 (.65)			1.13 (.58)			-.54 (.77)			.55 (.46)		
Married	-.45 (.44)			.28 (.50)			.02 (.48)			.10 (.33)		
# prior prison terms	-.17 (.10)			.02 (.08)			-.11 (.12)			-.11 (.07)		
Sentence length (ln)	-.47 (.57)			-.12 (.80)			-1.80* (.75)			-.60 (.49)		
Security level	1.50*** (.30)			1.02** (.35)			.88** (.33)			1.18*** (.21)		
Any misconduct (year 1)	.97*** (.25)			.62 (.34)			.97** (.32)			.90*** (.21)		
Completed RS	-.07 (.39)			-.75 (.76)			-1.00 (.75)			-.41 (.35)		
Completed UM	.18 (.35)			.44 (.49)			.38 (.43)			.12 (.31)		
Completed GE	-.03 (.25)			.11 (.37)			.17 (.32)			.22 (.22)		
Completed voc.	-.19 (.49)			-.07 (.78)			.61 (.55)			.37 (.41)		

Table 4.5. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=432)

Misconduct	Violent			Drug			Property			Any		
	***b* (*se*$_b$)**	x^2	VC	***b* (*se*$_b$)**	x^2	VC	***b* (*se*$_b$)**	x^2	VC	***b* (*se*$_b$)**	x^2	VC
Zero-order random effects												
Male	.16 (.40)	.16	.32	1.81 (1.13)	.08	1.48	1.46 (.76)	.03	.37	.94* (.37)	.55	.40
Age	-.06** (.02)	11.07	.00	**-.07* (.02)**	5.58	.00	-.08** (.03)	3.15	.00	-.07*** (.01)	7.04	.00
African American	.74* (.31)	8.86	.05	**.20 (.38)**	5.38	.05	**.30 (.38)**	4.52	.10	.50 (.24)	9.10	.01
Latino	**-.70 (.66)**	5.12	.05	**.79 (.70)**	7.58	.47	**-.83 (.81)**	1.44	.13	**.56 (.51)**	7.00	.49
Married	**-.68 (.81)**	22.85*	3.68	**.38 (.50)**	11.26	.03	**-.41 (.58)**	9.05	.72	**.19 (.35)**	10.50	.10
# prior prison terms	-.20 (.10)	9.98	.01	**.04 (.09)**	3.59	.00	-.11 (.12)	3.32	.00	-.14 (.07)	7.36	.01
Sentence length (ln)	**-.60 (.60)**	9.67	.11	**-.32 (83)**	3.40	.04	**-1.66 (.92)**	13.83	2.06	**-.78 (.56)**	12.05	.66
Security level	---	---	---	1.05** (.35)	16.83	.01	**1.34* (.46)**	2.32	.03	1.20*** (.36)	24.29*	.27
Any misconduct (year 1)	.99** (.29)	19.95	.34	**.44 (.35)**	11.56	.06	1.22** (.38)	11.05	.47	.89* (.31)	27.32*	.70
Completed RS	**-.18 (.47)**	8.52	.46	**-.55 (.71)**	4.16	.04	-1.12 (.78)	6.58	.79	**-.35 (.36)**	7.20	.01
Completed UM	**.27 (.36)**	15.62	.04	**.63 (.51)**	18.11	.23	**.48 (.44)**	7.46	.04	**.36 (.35)**	15.36	.24
Completed GE	**-.19 (.29)**	8.56	.16	**.29 (.38)**	9.16	.02	**-.08 (.39)**	13.56	.41	**.22 (.25)**	20.06	.14
Completed voc.	**-.15 (.52)**	11.44	.18	**.12 (.83)**	6.56	.74	**.66 (.58)**	4.22	.15	**.42 (.42)**	9.70	.08

VC = variance component, RS = recovery services, UM = unit management, GE = general education; Null model reliability estimates = .524, .531, .524, .645, respectively; Bolded coefficient = group mean-centered; Zero-order random effects for security level would not converge.
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.6. Level-2 Zero-order Effects on the Proportion of Inmates Guilty of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=28)

Misconduct	Violent		Drug		Property		Any	
	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained
Predictors								
Program Support	-.02 (.04)	.00	-.07 (.05)	.26	-.09* (.04)	.59	-.05 (.04)	.00
Institutional Ongoing Training	-.04 (.14)	.00	-.63*** (.12)	.99	-.19 (.18)	.10	-.25† (.14)	.18
Program Ongoing Training	.14 (.31)	.00	-.38 (.47)	.10	-.49 (.43)	.15	.01 (.34)	.00
Instructor Effort & Ability	.36† (.20)	.31	-.52* (.24)	.45	-.16 (.27)	.07	.18 (.25)	.00
Class Participation	.00 (.13)	.00	-.06 (.18)	.03	-.28 (.14)	.32	.00 (.14)	.00
Class Time	-.04 (.23)	.00	-.72* (.27)	.54	-.49 (.26)	.32	-.28 (.22)	.04
Behavior Management	.09 (.16)	.00	-.59** (.17)	.76	-.06 (.20)	.00	-.09 (.17)	.00
Staff racial heterogeneity	-.97 (1.50)	.00	2.88 (1.98)	.22	-1.77 (1.91)	.10	-.40 (1.56)	.00
Crowding	.18 (.53)	.00	.15 (.81)	.02	-.47 (.69)	.01	-.03 (.58)	.00

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

level-2 variance in violent misconduct explained by each predictor are displayed in the table. Only instructor effort and ability was significantly and positively correlated with the odds of engaging in violent misconduct ($p \leq .10$).

The model with all level-2 measures included simultaneously is displayed in table 4.7. In this model, two of the nine variables were significantly associated with engaging in violent misconduct, including program support ($p \leq .05$) and instructor effort and ability ($p \leq .01$). The relationship between program support and violent misconduct was in the expected (inverse) direction. However, the positive relationship between instructor effort and ability and the odds of engaging in violent misconduct was not in the expected direction.

One Way ANCOVA

In the next step of the analysis of violent offending, each level-1 predictor was modeled separately in a one-way ANCOVA model. Each variable was grand mean-centered and treated as fixed. The results of these zero-order effects are displayed in table 4.5. Final centering decisions were based on the amount of level-2 variance explained when each level-1 variable was grand mean-centered. Level-1 variables that explained a substantive amount of variance at level 2 when grand mean-centered were grand mean-centered in all subsequent models. The level-1 variables that explained a substantive amount of variance at level 2 included male, age, African American, the individual's number of prior prison terms, and if s/he engaged in any misconduct in year one. These variables were grand mean-centered and all others were group mean-centered in all subsequent models.

Table 4.7. Multivariable Means as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)
Level-2: Facility-specific programs				
Intercept	-3.54	.44	-.71	-.61
Program Support	-.18* (.07)	-.12 (.13)	-.35* (.11)	-.20* (.06)
Institutional Ongoing Training	-.14 (.31)	.55 (.59)	.83 (.48)	.10 (.27)
Program Ongoing Training	.28 (.31)	-.04 (.52)	-.79 (.53)	.20 (.26)
Instructor Effort & Ability	1.74** (.41)	-.19 (.60)	1.61* (.52)	1.35** (.31)
Class Participation	-.27 (.17)	.71† (.35)	.08 (.26)	.08 (.14)
Class Time	.15 (.37)	-1.25 (.66)	-.81 (.58)	-.25 (.32)
Behavior Management	-.41 (.28)	-.83 (.52)	-.74 (.41)	-.58† (.24)
Staff racial heterogeneity	-.02 (1.92)	2.29 (3.09)	4.57 (3.13)	1.08 (1.54)
Crowding	.86 (.53)	-1.01 (1.10)	-.98 (1.06)	-.02 (.43)

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

When examining each estimate separately, four level-1 variables were significantly related to violent misconduct. Age was inversely related to the odds of engaging in violent misconduct ($p \leq .001$), African American was positively related ($p \leq .05$), and both the individual's security level and if s/he engaged in any misconduct in year one were positively related ($p \leq .001$).

Random Coefficients

The results for the zero-order random effects are also displayed in table 4.5. When examining each estimate separately, the slope for marital status varied significantly across facility-specific literacy programs ($p \leq .05$). Marital status was therefore designated as random in the multivariable model with all other level-1 variables treated as fixed.

Table 4.8 displays the level-1 multivariable model of the odds of engaging in violent misconduct where the nonsignificant varying slopes were fixed and the significantly varying slope was treated as random. Two variables were significantly related to the odds of engaging in violent misconduct including an individual's security level ($p \leq .001$) and whether s/he engaged in any misconduct during the first year of incarceration ($p \leq .05$). The higher-order estimates in this model differed from the zero-order effects reported in table 4.5, with age and African American becoming nonsignificant in the multivariable model. Additionally, the slope for marital status remained significantly varying across facility-specific programs.

Intercepts as Outcome

Table 4.9 displays the level-2 (facility-specific program) models with main effects only. This model included all level-1 predictors along with all level-2 predictors for proper model specification. The results indicated that instructor effort and ability was significantly related to violent misconduct for the sample of IPs who completed literacy programs ($p \leq .10$). Similar to the zero-order model, this relationship was not in the predicted direction. Additionally, the level-1 predictor for any misconduct in year one was not significant in the multilevel model.

Slopes as Outcome

Table 4.10 displays the results of the slopes as outcome model and the environmental effects on the level-1 estimates for marital status. None of the level-2 predictors included in the model had a significant effect on the slope of marital status.

Table 4.8. Multivariable Level-1 Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=432)

Misconduct	Violent	Drug	Property	Any
	b (se$_b$)	***b (se$_b$)***	***b (se$_b$)***	***b (se$_b$)***
Level-1: Individuals				
Intercept	-1.57	-2.88	-2.56	-.39
Male	-.31 (.46)	1.66 (1.24)	1.17 (.81)	-.15 (.40)
Age	-.04 (.02)	**-.10*** (.04)**	-.08* (.04)	-.06*** (.02)
African American	.47 (.34)	**.16 (.46)**	**.18 (.42)**	.46 (.28)
Latino	**-.48 (.75)**	**1.27 (.71)**	**-.64 (.90)**	**.82 (.54)**
Married	***-.38 (.77)***	**.59 (.55)**	**.27 (.55)**	**.47 (.39)**
# prior prison terms	-.09 (.12)	**.26* (.12)**	.12 (.14)	.06 (.08)
Sentence length (ln)	**-.18 (.68)**	**-.15 (.87)**	**-2.12* (.85)**	***-.54 (.57)***
Security level	**1.68*** (.45)**	.81* (.39)	**1.11* (.50)**	.76*** (.25)
Any misconduct (year 1)	.63* (.27)	**.35 (.36)**	.52 (.33)	*.48 (.31)*
Completed RS	**.34 (.46)**	**-.05 (.77)**	**-1.05 (.79)**	**-.10 (.40)**
Completed UM	**.14 (.41)**	**.61 (.53)**	**.73 (.49)**	**.16 (.35)**
Completed GE	**-.14 (.29)**	**.20 (.39)**	**.20 (.35)**	**.25 (.25)**
Completed voc.	**-.36 (.55)**	**-.06 (.83)**	**.79 (.60)**	**.64 (.46)**

RS = recovery services, UM = unit management, GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.9. Intercepts as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N_1=432, N_2=28)

Misconduct	Violent	Drug	Property	Any
	b (se$_b$)	*b (se$_b$)*	*b (se$_b$)*	*b (se$_b$)*
Level-1: Individuals				
Male	-.75 (1.11)	2.45 (2.41)	-.48 (1.19)	-.49 (.68)
Age	-.03 (.03)	**-.11* (.05)**	-.08 (.04)	-.05* (.02)
African American	.34 (.37)	**.11 (.46)**	**.15 (.43)**	.47 (.29)
Latino	**-.60 (81)**	**1.30 (.74)**	**-.57 (.85)**	**.81 (.54)**
Married	***-.88 (1.02)***	**.67 (.57)**	**.27 (.54)**	**.44 (.39)**
# prior prison terms	-.01 (.13)	**.29* (.13)**	.14 (.15)	.03 (.08)
Sentence length (ln)	**.07 (.75)**	**-.06 (.92)**	**-1.88* (.86)**	**-.44 (.23)**
Security level	**2.29** (.77)**	.92 (.53)	**1.14* (.52)**	1.24*** (.32)
Any misconduct (year 1)	.53 (.35)	**.38 (.38)**	.51 (.35)	.44 (.23)
Completed RS	**.16 (.47)**	**-.03 (.83)**	**-.81 (.83)**	**-.14 (.40)**
Completed UM	**.11 (.44)**	**.61 (.57)**	**.73 (.51)**	**.25 (.34)**
Completed GE	**-.05 (.30)**	**.22 (.41)**	**.18 (.36)**	**.26 (.25)**
Completed voc.	**-.00 (.56)**	**-.12 (.91)**	**.95 (.65)**	**.54 (.46)**

Table 4.9. Intercepts as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N_1=432, N_2=28)

Misconduct	Violent	Drug	Property	Any
	***b* (*se*$_b$)**	***b* (*se*$_b$)**	***b* (*se*$_b$)**	***b* (*se*$_b$)**
Level-2: Facility Specific Programs				
Intercept	-3.87	-.20	-.14	-.29
Program Support	-.12 (.11)	-.10 (.17)	-.30† (.14)	.02 (.09)
Institutional Ongoing Training	-.20 (.11)	-.29 (.69)	.92 (.58)	-.46 (.35)
Program Ongoing Training	.21 (.35)	-1.02 (.94)	-.84 (.58)	-.60 (.35)
Instructor Effort & Ability	1.45† (.57)	-.56 (.74)	1.03 (.69)	-.29 (.42)
Class Participation	-.24 (.42)	.35 (.39)	.21 (.30)	-.14 (.18)
Class Time	.21 (.42)	.05 (.84)	-.90 (.69)	.38 (.41)
Behavior Management	-.26 (.39)	.40 (.81)	-.62 (.58)	.72 (.37)
Staff racial heterogeneity	.05 (2.22)	6.63 (6.31)	4.62 (3.20)	-.01 (1.76)
Crowding	.79 (.78)	-1.52 (1.91)	-1.47 (1.18)	.09 (.68)

RS = recovery services, UM = unit management, GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.10. Slopes as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (se_b)	*b* (se_b)	*b* (se_b)	*b* (se_b)
Marital Status as Outcome				
Intercept	14.04	---	---	---
Program Support	.38 (.58)	---	---	---
Institutional Ongoing Training	-6.17 (4.06)	---	---	---
Program Ongoing Training	9.38 (6.78)	---	---	---
Instructor Effort & Ability	---	---	---	---
Class Participation	-2.71 (2.34)	---	---	---
Class Time	9.19 (7.07)	---	---	---
Behavior Management	.88 (2.15)	---	---	---
Staff racial heterogeneity	---	---	---	---
Crowding	-8.62 (8.36)	---	---	---
Sentence length as outcome				
Intercept	---	---	---	.21
Program Support	---	---	---	.41 (.32)
Institutional Ongoing Training	---	---	---	-.62 (1.50)
Program Ongoing Training	---	---	---	.32 (1.41)
Instructor Effort & Ability	---	---	---	-1.77 (1.80)
Class Participation	---	---	---	-.01 (.75)

Table 4.10. Slopes as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)
Class Time	---	---	---	.86 (1.77)
Behavior Management	---	---	---	.12 (1.50)
Staff racial heterogeneity	---	---	---	-7.96 (9.30)
Crowding	---	---	---	.34 (2.39)
Any misconduct (year 1) as outcome				
Intercept	---	---	---	1.36
Program Support	---	---	---	.32* (.13)
Institutional Ongoing Training	---	---	---	-.89 (.59)
Program Ongoing Training	---	---	---	.87 (.61)
Instructor Effort & Ability	---	---	---	-2.00** (.72)
Class Participation	---	---	---	-.16 (.31)
Class Time	---	---	---	.55 (.67)
Behavior Management	---	---	---	1.31* (.61)
Staff racial heterogeneity	---	---	---	-5.10 (3.94)
Crowding	---	---	---	.38 (.99)

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Drug Misconduct

Null Model and Means as Outcome

The null model of drug misconduct revealed significant differences across facility-specific literacy programs in the proportion of IPs who engaged in drug misconduct during the second year of confinement. The results for the null model are displayed in table 4.5. The estimate for the between-group variance was .64 ($\chi^2 = 49.47$, $p \leq .001$).

Table 4.6 reports the unstandardized zero order relationships between drug misconduct and all level-2 predictors. After testing each effect separately to examine changes from the null model, four of the factors were significantly related to drug misconduct and in the expected directions. Institutional ongoing training ($p \leq .001$), instructor effort and ability ($p \leq .05$), class time ($p \leq .05$), and behavior management ($p \leq .01$) were inversely correlated with the odds of engaging in drug misconduct.

The model with all level-2 measures included simultaneously is displayed in table 4.7. In this model, only one of the variables was significantly associated with the odds of engaging in drug misconduct. Class participation was positively correlated with drug misconduct ($p \leq .10$). This relationship was not in the expected direction.

One Way ANCOVA

Each level-1 predictor of drug misconduct was modeled separately in a one-way ANCOVA, with results displayed in table 4.5. The variables that explained a substantive amount of variance at level 2 included male and the IP's security level. All other predictors were group mean-centered in subsequent models. Additionally, two variables were significantly related to drug misconduct. Age was inversely related to drug misconduct ($p \leq .05$) and an individual's security level was positively related ($p \leq .01$). Both relationships were in the predicted directions.

Random Coefficients

The results for the zero-order random effects models are also displayed in table 4.5. When examining each estimate separately, there were no slopes that varied significantly across the facility-specific literacy programs. All the level-1 variables were treated as fixed in the subsequent models.

Table 4.8 displays the level-1 multivariable model of drug misconduct. In this model, three variables were significantly related to the odds of engaging in drug misconduct. The significant relationships included age, the individual's number of prior prison terms, and the individual's security level (p for age $\leq .001$; p for all else $\leq .05$). Some of the higher-order estimates in this model differed from the zero-order effects reported in table 4.5, with the number of prior prison terms becoming significant in the multivariable model. Additionally, all three of these relationships were in the expected directions.

Intercepts as Outcome

Table 4.9 displays the full facility-specific program models with main effects only. The results indicated that there were no significant level-2 predictors. The level-1 relationships were somewhat consistent with table 4.8 with the exception of security level becoming nonsignificant in the multilevel model.

Property Misconduct

Null Model and Means as Outcome

The null model of property misconduct revealed significant differences across facility-specific literacy programs in the proportion of inmates guilty of property misconduct in year two (see table 4.5). The estimate for the between-group variance was .49 ($\chi^2 = 37.00$, $p \leq .001$).

Table 4.6 reports the unstandardized zero order relationships between property misconduct and all level-2 predictors. The factor measuring program support was the only significant predictor of property misconduct rates across facility-specific programs ($p \leq .05$). This inverse relationship was in the expected direction.

The model including all level-2 measures included simultaneously is displayed in table 4.7. Two of the nine variables were significantly associated with property misconduct, including program support and instructor effort and ability ($p \leq .05$). The relationship between instructor effort and ability was positively related to the odds of engaging in property misconduct while program support was inversely related to property misconduct. The relationship between instructor effort and ability and property misconduct was not in the expected direction.

One Way ANCOVA

Table 4.5 displays the results when each level-1 predictor was modeled separately in a one-way ANCOVA model. The level-1 variables that explained a substantive amount of variance at level 2 included male, age, the number of prior prison terms, any misconduct in year one, and if the individual completed a recovery services program. The remaining variables were group mean-centered in all subsequent models.

When examining each estimate separately, four variables were significantly related to property misconduct. Age was inversely related to the odds of engaging in property misconduct ($p \leq .001$), sentence length was inversely related ($p \leq .05$), and both the individual's security level and if s/he engaged in misconduct in their first year of incarceration were positively related ($p \leq .01$). The inverse relationship between sentence length and property misconduct was not in the expected direction.

Random Coefficients

Table 4.5 also displays the results for these zero-order random effects. When examining each estimate separately, none of the slopes varied significantly across facility-specific literacy programs. Due to these results, all of the level-1 variables were fixed in the remaining models.

Table 4.8 displays the level-1 multivariable model of the odds of engaging in property misconduct in year two. Similar to the zero-order effects, three variables were significantly related to the odds of engaging in property misconduct. These included age, sentence length, and security level ($p \leq .05$). Again, the inverse relationship between sentence length and property misconduct was not in the predicted direction whereas the other significant relationships were consistent with the hypothesized directions.

Intercepts as Outcome

Table 4.9 displays the full multilevel model of property misconduct with main effects. The model included all level-1 variables and the level-2 predictors for proper model specification. Only one of the level-2 predictors was significantly associated with the odds of engaging in property misconduct for the sample of IPs who completed literacy. Program support was significantly and inversely associated with engaging in property misconduct ($p \leq .10$).

Any Misconduct

Null Model and Means as Outcome

The unconditional model of whether an individual engaged in any misconduct during the second year of confinement revealed significant differences across facility-specific literacy programs in the proportion of inmates who engaged in misconduct. The results for the null model are displayed in table 4.5. The estimate for the between-group variance was .35 ($\chi^2 = 44.64$, $p \leq .001$).

Table 4.6 reports the unstandardized zero order relationships between any misconduct and all level-2 predictors considered for the full models. Institutional ongoing training was inversely related to any misconduct and this relationship was in the predicted direction ($p \leq .10$). None of the other level-2 predictors were significant.

The model with all level-2 measures included simultaneously is displayed in table 4.7. In this model, three of the level-2 variables were significantly associated with engaging in any misconduct. Program support was inversely correlated ($p \leq .05$), instructor effort and ability was positively related ($p \leq .01$), and behavior management was inversely correlated with any misconduct ($p \leq .10$). Similar to the model examining property misconduct as an outcome, the relationship between instructor effort and ability was not in the expected direction.

One Way ANCOVA

Table 4.5 displays the results when each level-1 predictor was modeled separately in a one-way ANCOVA model. Based on the amount of level-2 variance explained when each level-1 variable was grand mean-centered, the grand mean-centered variables included male, age, African American, the individual's number of prior prison terms, the individual's security level, and if s/he engaged in any misconduct in year one. All other level-1 variables were group mean-centered. When examining each estimate separately, four variables were significantly related to any misconduct. Age was inversely related to the odds of engaging in any misconduct ($p \leq .001$), African American was positively related ($p \leq .05$), and both the individual's security level and if s/he engaged in misconduct in their first year of incarceration were positively related ($p \leq .001$).

Random Coefficients

In the models examining each estimate separately as a random effect, the slopes for two variables varied significantly across facility-specific programs (table 4.5). The slopes for security

level and any misconduct in year one varied significantly across facility-specific literacy programs ($p \leq .05$). Both of these variables were treated as random while the other variables were fixed in subsequent models.

Table 4.8 displays the multivariable level-1 model of any misconduct. An inmate's age and security level were significant predictors of the odds of engaging in any misconduct (p for both $\leq$ .001). In this model, the slopes for both security level and any misconduct in year one no longer varied significantly across facility-specific programs. Both variables were fixed in the subsequent models.

Intercepts as Outcome

Table 4.9 displays the level-2 (facility-specific program) models with main effects only. There were no significant level-2 relationships in this model. Similar to the random coefficients model, two level-1 variables remained significant in this model (age and security level).

Slopes as Outcome

Table 4.10 displays the results of the slopes as outcome model and the environmental effects on the level-1 estimates for sentence length. There were no significant relationships in the model where the slope for sentence length was the outcome. However, in the other slopes as outcomes model there were several significant and notable results. First, program support had a significant positive effect on the slope of any misconduct in year one ($p \leq .05$). An increase in program support was associated with stronger effects of an inmate having any misconduct charges in their first year of incarceration on the odds of engaging in any misconduct in year two. This result was not in the predicted direction. Program support should improve these outcomes and help to reduce the impact of past misconduct on future misconduct. Similarly, behavior management had a significant positive effect on this slope ($p \leq .05$). An increase in behavior management

practices in the classroom coincided with stronger effects of any misconduct in year one on the odds of engaging in any misconduct. Again, this is a counterintuitive finding. The assumption would be that behavior management in the classroom would help to weaken the effects of previous misconduct on future misconduct. Finally, instructor effort and ability had an inverse effect on the slope of any misconduct in year one ($p \leq .01$). An increase in the literacy instructor's effort/ability coincided with weaker effects of an individual's previous misconduct on the likelihood of engaging in any misconduct in year two of their incarceration.

General Education Programs

This section presents the results from the multilevel analysis of individual- and facility-specific program characteristics on various types of misconduct for the sample of IPs who completed general education programs. Each set of results include the steps for MLM across the four types of misconduct examined: violent, drug, property, and any misconduct.

Violent Misconduct

Null Model and Means as Outcome

The null model of violent misconduct revealed significant differences across facility-specific general education programs in the proportion of IPs found guilty of a violent misconduct (displayed in table 4.11). The estimate for the between-group variance was .23, indicating significant variance in violent misconduct rates at the level of facility-specific programs ($\chi^2 = 44.24$, $p \leq .01$).

Table 4.12 reports the unstandardized zero order relationships between violent misconduct and all level-2 predictors considered for the full models, testing each effect separately. The factor measuring instructor effort and ability was significantly (and inversely) correlated with the odds of engaging in violent misconduct ($p \leq .05$).

A means as outcome model was estimated with all level-2 measures included simultaneously, with the results displayed in table 4.13. Two of the ten variables were significantly associated with return to prison, including instructor effort and ability and behavior management ($p \leq .10$). The relationship between instructor effort and ability was inversely related to the odds of engaging in violent misconduct while the factor measuring behavior management was positively related to the odds of engaging in violent misconduct.

One Way ANCOVA

In the next step of the analysis of violent misconduct, each level-1 predictor was modeled separately in a one-way ANCOVA model. Each variable was grand mean-centered and treated as fixed. The results of these zero-order effects are displayed in table 4.11. The variables that were grand mean-centered, because they explained a substantive amount of variance at level 2, included male, age, the individual's number of prior prison terms, and if s/he engaged in any misconduct in year one of his/her incarceration. All other level-1 variables were group mean-centered.

When examining each estimate separately, six of the level-1 variables were significantly related to violent misconduct. Age ($p \leq .001$), the individual's number of prior prison terms ($p \leq .001$), security level ($p \leq .001$), the IP's sentence length ($p \leq .05$), and whether s/he completed a recovery services program ($p \leq .05$) were inversely related to violence, and if s/he engaged in any misconduct during year one was positively related ($p \leq .001$). Two of these relationships were not in the expected directions: an individual's number of prior prison terms and sentence length were both inversely related.

Table 4.11. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N=677)

Misconduct	Violent			Drug			Property			Any		
	***b* (se$_b$)**	**x^2**	VC	***b* (se$_b$)**	**x^2**	VC	***b* (se$_b$)**	**x^2**	VC	***b* (se$_b$)**	**x^2**	VC
Null Model	-1.67	44.24**	.23	-2.18	34.11*	.23	-2.03	49.20***	.29	-.33	37.66*	.09
Zero-order fixed effects												
Male	.33 (.28)			1.34*** (.21)			.77* (.30)			.34* (.15)		
Age	-.11*** (.02)			-.03 (.02)			-.11*** (.01)			-.08*** (.01)		
African American	.21 (.23)			-.32 (.32)			.25 (.24)			.28 (.22)		
Latino	---			.48 (75)			-.13 (1.16)			.60 (.57)		
Married	-1.08 (.58)			-.03 (.44)			-.30 (.51)			-.49 (.36)		
# prior prison terms	-.68*** (.15)			.03 (.09)			-.23* (.11)			-.25** (.09)		
Sentence length (ln)	-.98* (.46)			-1.12 (.60)			-.32 (.65)			-.53 (.40)		
Security level	.95*** (.15)			.43** (.16)			.51* (.22)			.82*** (.11)		
Any misconduct (year 1)	1.19*** (.23)			1.13*** (.21)			1.22*** (.27)			1.33*** (.16)		
Completed RS	-.61* (.28)			-.09 (.36)			-.25 (.30)			-.36 (.24)		
Completed UM	-.47 (.33)			-.07 (.26)			-.31 (.30)			-.16 (.27)		
Completed MH	---			---			---			-1.19 (1.13)		
Completed literacy	.31 (.27)			-.11 (.54)			.53 (.34)			.05 (.32)		
Completed voc.	-.30 (.34)			-1.11* (.55)			-.04 (.48)			-.42 (.28)		
Completed college	.77 (.43)			.20 (.24)			---			-.01 (.32)		
Zero-order random effects												

Table 4.11. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N=677)

Misconduct	Violent			Drug			Property			Any		
	b (se$_b$)	***x^2***	VC	***b (se$_b$)***	***x^2***	VC	***b (se$_b$)***	***x^2***	VC	***b (se$_b$)***	***x^2***	VC
Male	.41 (.21)	.21	.25	1.31*** (.20)	.05	.11	.65** (.23)	.10	.28	.29* (.13)	1.27	.12
Age	-.11*** (.02)	11.25	.00	**-.03 (.01)**	9.68	.00	-.11*** (.01)	4.44	.00	-.08*** (.01)	18.93	.00
African American	**.17 (.22)**	18.50	.00	**-.74* (.35)**	26.65	.73	**.28 (.23)**	10.70	.02	**.27 (.19)**	25.42	.16
Latino	**-1.16* (.48)**	.45	.49	**.24 (.78)**	5.69	.14	**-.04 (.89)**	7.90	1.05	**.73 (.58)**	6.87	.02
Married	**-1.21** (.40)**	8.90	.39	**.08 (.42)**	26.55	.13	**-.36 (.58)**	16.65	1.20	**-.60 (.37)**	26.30	.59
# prior prison terms	-.69*** (.13)	19.08	.02	**-.07 (.11)**	12.32	.02	-.23* (.11)	9.22	.00	-.24* (.10)	24.73	.05
Sentence length (ln)	**-.88* (38)**	13.66	.63	-1.05 (.63)	31.71*	1.02	**-.23 (.69)**	23.49	2.38	**-.46 (.36)**	27.59	.54
Security level	**1.26*** (.19)**	13.86	.01	.43 (.16)	11.53	.00	**.79*** (.19)**	10.55	.15	**1.01*** (.11)**	9.15	.01
Any misconduct (year 1)	1.20*** (.22)	20.92	.01	**.96*** (.24)**	19.59	.17	**1.12*** (.26)**	19.08	.17	1.33*** (.16)	26.07	.00
Completed RS	**-.62* (.29)**	8.16	.32	**-.12 (.28)**	8.02	.17	**-.22 (.27)**	8.42	.07	**-.31 (.25)**	16.70	.00
Completed UM	**-.36 (.35)**	14.13	.14	**-.05 (.27)**	11.53	.01	**-.22 (.28)**	9.49	.19	**-.19 (.30)**	23.29	.38
Completed MH	**-.97 (.48)**	.28	.63	**-1.57* (.64)**	.12	.05	**-1.23* (.54)**	.14	.17	**-.43 (1.00)**	5.15	1.71
Completed literacy	**.31 (.28)**	17.83	.04	**-.17 (.55)**	16.82	1.43	.29 (.36)	9.11	.19	**.09 (.32)**	22.86	.40
Completed voc.	**-.46 (.42)**	10.43	.89	**-1.27* (.55)**	9.76	.23	**.23 (.52)**	17.24	1.21	**-.39 (.28)**	13.31	.01
Completed college	**.75 (.46)**	4.28	.15	**-.25 (.20)**	.49	.13	**-5.00* (1.93)**	.02	28.93	**.03 (.36)**	3.53	.09

VC = variance component, RS = recovery services, UM = unit management, MH = mental health; Null model reliability estimates = .408, .331, .401, .346, respectively; Bolded coefficient = group mean-centered; Zero-order fixed effects for Latino and mental health program completion would not converge.
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.12. Level-2 Zero-order Effects on the Proportion of Inmates Guilty of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N=28)

Misconduct	Violent		Drug		Property		Any	
	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained
Predictors								
Program Support	-.01 (.06)	.02	-.08† (.04)	.30	-.10† (.06)	.17	-.05 (.04)	.13
Institutional Ongoing Training	-.01 (.15)	.01	-.27 (.16)	.35	-.12 (.14)	.10	-.08 (.09)	.08
Program Ongoing Training	-.12 (.20)	.05	.06 (.28)	.00	-.13 (.30)	.05	-.02 (.14)	.01
Instructor Effort & Ability	-.43* (.19)	.38	-.06 (.29)	.01	.01 (.28)	.00	-.17 (.18)	.28
Class Participation	.10 (.11)	.00	-.23 (.14)	.38	-.01 (.12)	.01	.02 (.09)	.00
Class Time	-.06 (.18)	.02	-.24 (.23)	.19	-.09 (.31)	.01	.02 (.15)	.00
Behavior Management	.20 (.17)	.26	.16 (.17)	.20	.40** (.14)	.36	.19† (.10)	.41
Staff racial heterogeneity	-.28 (1.26)	.02	-1.55 (1.18)	.00	-1.22 (1.81)	.13	-.14 (.95)	.03
Crowding	-.15 (.29)	.05	.13 (.45)	.00	-.66* (.31)	.38	-.20 (.17)	.17

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.13. Multivariable Means as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)
Level-2: Facility-specific programs				
Intercept	-.22	-.84	1.42	1.38
Program Support	.00 (.05)	-.04 (.06)	-.15* (.07)	-.05 (.04)
Institutional Ongoing Training	-.05 (.14)	-.19 (.16)	.39† (.20)	.01 (.10)
Program Ongoing Training	.16 (.18)	.17 (.21)	.23 (.19)	.20 (.13)
Instructor Effort & Ability	-.55† (.21)	-.17 (.28)	-.06 (.26)	-.29† (.16)
Class Participation	.16 (.13)	-.28 (.16)	.08 (.17)	.08 (.10)
Class Time	-.21 (.19)	-.28 (.22)	-.17 (.24)	-.05 (.13)
Behavior Management	.29† (.13)	.18 (.16)	.26 (.15)	.16 (.10)
Staff racial heterogeneity	-.71 (.99)	.19 (1.14)	-2.35 (1.44)	-.19 (.75)
Crowding	-.44 (.33)	.44 (.40)	-1.31* (.39)	-.48† (.25)

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Random Coefficients

Table 4.11 also displays the results for the zero-order level-1 random effects. When examining each estimate separately, none of the slopes varied significantly across facility-specific programs. All level-1 variables were then treated as fixed in all subsequent models.

Table 4.14 displays the level-1 multivariable model of the odds of engaging in violent misconduct. Seven variables were significantly associated with the odds of engaging in violent misconduct in year two. These included age ($p \leq .01$), Latino ($p \leq .001$), the individual's number of prior prison terms ($p \leq .05$), sentence length ($p \leq .05$), security level ($p \leq .001$), any misconduct in year one ($p \leq .001$), and whether an individual completed a college course during the first year of incarceration ($p \leq .001$). These higher-order estimates differed somewhat from the zero-order effects reported in table 4.11, with college course completion becoming significant in the multivariable model. Similar to the zero-order effects, the measures of number of prior prison terms and sentence length were inversely related to the odds of engaging in violent misconduct.

Intercepts as Outcome

The intercepts as outcome model with main effects only is displayed in table 4.15. This model included all level-1 and level-2 predictors. At level-2, the results indicated that behavior management was positively related to the odds of engaging in violent misconduct ($p \leq .05$). The significant level-1 relationships differed somewhat from those in the random coefficients model, where age, the individual's number of prior prison terms, security level, and any misconduct in year one remained significant but Latino, sentence length, and college course completion did not.

Table 4.14. Multivariable Level-1 Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N=677)

Misconduct	Violent	Drug	Property	Any
	b (se$_b$)	***b (se$_b$)***	***b (se$_b$)***	***b (se$_b$)***
Level-1: Individuals				
Intercept	-2.11	-2.49	-2.50	-.40
Male	.33 (.35)	1.44*** (.22)	.53* (.27)	.15 (.10)
Age	-.05** (.02)	**-.04* (.02)**	-.11*** (.02)	-.06*** (.01)
African American	**-.17 (.24)**	**-.60 (.32)**	**.04 (.28)**	**.04 (.23)**
Latino	**-1.70*** (.40)**	**-.13 (.61)**	**.04 (1.06)**	**.67 (.69)**
Married	**-.32 (.45)**	**.45 (.41)**	**.54 (.58)**	**.18 (.32)**
# prior prison terms	-.46* (.20)	**.16* (.08)**	.15 (.18)	-.02 (.10)
Sentence length (ln)	**-.67* (.34)**	*-.94 (.66)*	**-.08 (.61)**	**-.11 (.32)**
Security level	**.80*** (.21)**	.19 (.21)	**.16 (.31)**	**.58*** (.12)**
Any misconduct (year 1)	.86*** (.25)	**.95*** (.24)**	**1.01** (.35)**	1.03*** (.17)
Completed RS	**-.24 (.31)**	**.00 (.38)**	**.06 (.31)**	**-.07 (.25)**
Completed UM	**-.31 (.44)**	**.03 (.33)**	**-.36 (.41)**	**-.04 (.43)**
Completed MH	**-.37 (.34)**	**-1.00 (.54)**	**-.61 (.49)**	**.01 (1.16)**
Completed literacy	**.26 (.26)**	**-.08 (.54)**	.46 (.34)	**-.08 (.30)**
Completed voc.	**.11 (.36)**	**-1.05* (.43)**	**.17 (.53)**	**-.17 (.30)**
Completed college	**1.01*** (.31)**	**.14 (.35)**	**-4.24* (1.82)**	**.10 (.30)**

RS = recovery services, UM = unit management, GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Drug Misconduct

Null Model and Means as Outcome

The unconditional model revealed significant differences across facility-specific general education programs in the proportion of IPs who engaged in drug misconduct in the second year of their incarceration. The results for the null model are displayed in table 4.11. The estimate for the between-group variance was .23 ($\chi^2 = 34.11$, $p \leq .05$).

Table 4.12 reports the unstandardized zero order relationships between drug misconduct and the level-2 predictors. Program support was significantly and inversely correlated with the odds of engaging in drug misconduct ($p \leq .10$). This was the only level-2 predictor that had a significant relationship with the odds of engaging in drug misconduct.

A means as outcome model was also estimated with all level-2 measures included simultaneously (results displayed in table 4.13). None of the variables were significantly associated with drug misconduct. Most of the factors were in the predicted directions, however, with the exception of program ongoing training and behavior management.

One Way ANCOVA

The one-way ANCOVA models are displayed in table 4.11. The level-1 variables that explained a substantive amount of variance at level 2 when grand mean-centered included male, sentence length, and security level. All other level-1 variables were group mean-centered in all subsequent models. When examining each estimate separately, four variables were significantly related to drug misconduct. Male ($p \leq .001$), security level ($p \leq .01$), and any misconduct incidents in year one were positively related to drug misconduct ($p \leq .001$), whereas an IP's completion of a vocation program in year one was inversely related ($p \leq .05$). All of these relationships were in the predicted directions.

Table 4.15. Intercepts as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N1=677, N2=28)

Misconduct	Violent	Drug	Property	Any
	b (se$_b$)	*b (se$_b$)*	*b (se$_b$)*	*b (se$_b$)*
Level-1: Individuals				
Male	-.08 (.66)	6.70** (2.24)	-1.05 (1.10)	.67 (.72)
Age	-.05* (.03)	**-.04 (.03)**	-.10** (.03)	-.06*** (.02)
African American	**-.17 (.25)**	**-.71* (.29)**	**-.02 (.27)**	**.03 (.19)**
Latino	**-1.98 (1.93)**	**-.41 (1.04)**	**.08 (1.14)**	**.67 (.19)**
Married	**-.35 (.58)**	**.46 (.52)**	**.48 (.52)**	**.16 (.72)**
# prior prison terms	-.48* (.24)	**.13 (.16)**	.18 (.19)	-.01 (.11)
Sentence length (ln)	**-.62 (.53)**	-.76 (1.01)	**-.03 (.58)**	**-.10 (.40)**
Security level	**.85** (.27)**	-.06 (.27)	**.16 (.29)**	**.58** (.19)**
Any misconduct (year 1)	.88*** (.24)	**.99** (.33)**	**1.06*** (.27)**	1.05*** (.18)
Completed RS	**-.25 (.45)**	**.01 (.49)**	**.12 (.45)**	**-.06 (.31)**
Completed UM	**-.36 (.39)**	**.07 (.42)**	**-.38 (.42)**	**-.05 (.27)**
Completed MH	**-.45 (2.05)**	**-2.38 (4.74)**	**-.64 (2.24)**	**.01 (1.12)**
Completed literacy	**.28 (.34)**	**-.12 (.46)**	.39 (.35)	**-.08 (.29)**
Completed voc.	**.05 (.51)**	**-1.29 (.80)**	**.11 (.51)**	**-.18 (.36)**
Completed college	**1.02 (.77)**	**.15 (.86)**	**-8.15 (8.33)**	**.10 (.66)**

Table 4.15. Intercepts as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N1=677, N2=28)

Misconduct	Violent	Drug	Property	Any
	***b* (se_b)**	***b* (se_b)**	***b* (se_b)**	***b* (se_b)**
Level-2: Facility Specific Programs				
Intercept	-2.15	-2.49	.78	-.00
Program Support	.06 (.05)	-.24† (.13)	-.11 (.08)	-.02 (.04)
Institutional Ongoing Training	-.06 (.15)	.20 (.30)	.31 (.29)	.05 (.12)
Program Ongoing Training	.00 (.24)	1.25* (.52)	.09 (.32)	.13 (.17)
Instructor Effort & Ability	-.34 (.24)	-.01 (.37)	.14 (.29)	-.04 (.18)
Class Participation	.04 (.14)	.20 (.28)	.16 (.34)	-.04 (.11)
Class Time	-.26 (.24)	.50 (.35)	-.39 (.33)	-.02 (.18)
Behavior Management	.36* (.14)	-.38 (.32)	.29 (.19)	.19 (.11)
Staff racial heterogeneity	-.11 (1.08)	-4.06 (2.87)	-2.68 (1.88)	.18 (.83)
Crowding	-.19 (.44)	1.36* (.53)	-1.69* (.63)	-.28 (.32)

RS = recovery services, UM = unit management, GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Random Coefficients

The zero-order random effects are also displayed in table 4.11. When examining each estimate separately, only the slope for sentence length varied significantly across facility-specific programs ($p \leq .05$). Sentence length was therefore designated as random in the multivariable model with all other level-1 variables fixed.

Table 4.14 displays the level-1 multivariable model of the odds of engaging in drug misconduct where the nonsignificant varying slopes were fixed and the significantly varying slope was treated as random. Five independent variables were significantly associated with the odds of engaging in drug misconduct, including male ($p \leq .001$), age ($p \leq .05$), number of prior prison terms ($p \leq .05$), any misconduct in year one ($p \leq .001$), and vocation program completion ($p \leq .05$). The higher-order estimates in this model differed from the zero-order effects reported in table 4.11, with age and number of prior prison terms becoming significant and an individual's security level becoming nonsignificant in the multivariable model. Additionally, the slope for sentence length no longer varied significantly across facility-specific programs. Sentence length was therefore designated as fixed in the multivariable model.

Intercepts as Outcome

Table 4.15 displays the full multilevel model with main effects only. This model included all level-1 and level-2 predictors for proper model specification. Significant predictors included program support ($p \leq .10$), program ongoing training ($p \leq .05$), and crowding ($p < .05$). The positive relationship between program ongoing training and drug misconduct was not in the predicted direction whereas the other two relationships were consistent with the hypothesized effects.

Slopes as Outcome

Table 4.16 displays the results of the slopes as outcome model and the environmental effects on the level-1 estimates for sentence length. Program support and class participation both had significant positive effects on the slope of sentence length. Since sentence length had an inverse effect on the odds of engaging in drug misconduct, higher scores on program support and class participation for general education programs corresponded with weaker inverse effects of sentence length ($p \leq .05$). On the other hand, institutional ongoing training and class time had significant inverse effects on the slope of sentence length. Increases in both institutional training and class time corresponded with stronger effects of the inversive relationship between an individual's sentence length and the odds of engaging in drug misconduct.

Property Misconduct

Null Model and Means as Outcome

The null model of property misconduct revealed significant differences across facility-specific general education programs in the proportion of IPs who engaged in property misconduct. The results for the null model are displayed in table 4.11. The estimate for the between-group variance was .29 ($\chi^2 = 49.20$, $p \leq .001$).

Table 4.12 reports the unstandardized zero order relationships between property misconduct and the level-2 predictors, testing each effect separately. Program support was significantly and inversely correlated with the odds of engaging in property misconduct ($p \leq .10$). While this was an intuitive result, the other two significant relationships were not in the expected directions. Behavior management was significantly and positively correlated with the odds of engaging in property misconduct, and crowding was significantly and inversely correlated with the odds of engaging in property misconduct (p for behavior management $\leq .01$ and p for crowding $\leq .05$).

Table 4.16. Slopes as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed General Education Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (se$_b$)	*b (se$_b$)*	*b (se$_b$)*	*b (se$_b$)*
Sentence Length as Outcome				
Intercept	---	-14.67	---	---
Program Support	---	.56* (.24)	---	---
Institutional Ongoing Training	---	-1.81* (.81)	---	---
Program Ongoing Training	---	-.19 (1.02)	---	---
Instructor Effort & Ability	---	1.28 (1.35)	---	---
Class Participation	---	1.84* (.78)	---	---
Class Time	---	-1.71† (1.01)	---	---
Behavior Management	---	.87 (.76)	---	---
Staff racial heterogeneity	---	8.56 (5.27)	---	---
Crowding	---	.03 (1.44)	---	---

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

The means as outcome model with all level-2 measures included simultaneously is displayed in table 4.13. Again, program support was significantly and inversely related to the odds of engaging in property misconduct ($p < .05$), as was crowding ($p \leq .01$). Institutional ongoing training was also significant and positively correlated with property misconduct ($p \leq .10$). Slightly different from the zero-order relationships, behavior management was not significant in the multivariable model but approached significance and remained positively associated with property misconduct ($p = .105$).

One Way ANCOVA

Each level-1 predictor was modeled separately in a one-way ANCOVA model. Each variable was grand mean-centered and treated as fixed. The results of these zero-order effects are displayed in table 4.11. Based on these results, the variables that were grand mean-centered in the remaining models included male, age, the number of prior prison terms, and literacy program completion. All other level-1 variables were group mean-centered.

When examining these estimates separately, five of the level-1 variables were significantly related to engaging in property misconduct. Male was positively related to the odds of engaging in property misconduct ($p \leq .05$), age was inversely related ($p \leq .001$), the number of prior prison terms was inversely related ($p \leq .05$), security level was positively related ($p \leq .05$), and any misconduct during the first year of incarceration was positively related ($p \leq .001$). The relationships were in the predicted directions with the exception of the number of prior prison terms.

Random Coefficients

In the models examining each level-1 estimate separately as a random effect, the results were similar to the zero-order fixed effects results (see table 4.11). Additionally, there were no

results suggesting that any slopes varied significantly across facility-specific programs. All level-1 variables were therefore treated as fixed in subsequent models.

Table 4.14 displays the multivariable level-1 model in which four of five level-1 variables retained significance. Similar to the zero-order estimates, male ($p \leq .05$), age ($p \leq .001$), any misconduct in year one ($p \leq .01$), and college course completion ($p \leq .05$) were significant predictors of the odds of engaging in drug misconduct. All estimates were in the predicted directions.

Intercepts as Outcome

Table 4.15 displays the full multilevel model of main effects. At level-2, crowding was significantly and inversely associated with property misconduct ($p \leq .05$). This relationship was not in the expected direction. Additionally, the significant level-1 predictors differed somewhat in this multilevel model compared to the multivariable level-1 model. Specifically, male and college course completion were no longer significantly associated with property misconduct. Age and any misconduct in year one remained significant and in the predicted directions.

Any Misconduct

Null Model and Means as Outcome

The null model revealed significant differences across facility-specific general education programs in the proportion of inmates guilty of any misconduct during their second year of incarceration (displayed in table 4.11). The estimate for the between-group variance was .09. The results of this model demonstrated that there was significant variance in rates of any misconduct across facility-specific programs ($\chi^2 = 37.66$, $p \leq .05$).

Table 4.12 reports the unstandardized zero order relationships between any misconduct and all level-2 predictors. Only one level-2 variable maintained a significant zero-order effect. The

factor measuring behavior management was significantly and positively correlated with the odds of engaging in any misconduct in year two ($p \leq .10$).

The model with all level-2 measures included simultaneously is displayed in table 4.13. Two of the nine variables were significantly associated with any misconduct, including instructor effort and ability and crowding ($p \leq .10$). The relationship between instructor effort and ability was inversely related to the odds of engaging in any misconduct and the factor measuring crowding was inversely related. The relationship between crowding and any misconduct was not in the expected direction.

One Way ANCOVA

Each level-1 predictor was modeled separately in a one-way ANCOVA model. Each variable was grand mean-centered and treated as fixed. The results of these zero-order effects are displayed in table 4.11. Based on these results, the variables that were grand mean-centered in the remaining models included male, age, the number of prior prison terms, and any misconduct in year one. Each of the four variables explained a substantive amount of variance at level-2. All other level-1 variables were group mean-centered in subsequent models. When examining these estimates separately, five of the level-1 variables were significantly related to the odds of engaging in any misconduct. Male was positively related to the odds of engaging in any misconduct ($p \leq .05$), age was inversely related ($p \leq .001$), number of prior prison terms was inversely related ($p \leq .01$), security level was positively related ($p \leq .001$), and any misconduct during the first year of the inmate's incarceration was positively related ($p \leq .001$). All of these relationships were in predicted directions with the exception of the number of prior prison terms. Similar to the other proxy risk measures, the expectation would be that risk of misconduct would increase as the number of prior prison terms increased.

Random Coefficients

Table 4.11 displays the results for the zero-order random effects. When examining each estimate separately, none of the slopes for the level-1 predictors varied significantly across facility-specific general education programs. All level-1 measures were therefore designated as fixed in the multivariable model.

Table 4.14 displays the level-1 multivariable model of the odds of engaging in any misconduct. Three variables were significantly associated with the odds of engaging in any misconduct in year two, including age, security level, and any misconduct in year one (all significant at $p \leq .001$). These higher-order estimates differed somewhat from the zero-order effects reported in table 4.11, with male and the number of prior prison terms becoming nonsignificant in the multivariable model.

Intercepts as Outcome

Table 4.15 displays the full multilevel model with main effects. The model included all level-1 variables and the level-2 predictors for proper model specification. None of the level-2 predictors were significantly associated with the odds of engaging in any misconduct for inmates who completed general education classes. The significant level-1 variables were consistent with the results from the level-1 multivariable model.

Vocation & Apprenticeship Programs

This section describes the results from the analysis examining the individual- and facility-specific program characteristics on misconduct for the sample of IPs who completed vocation or apprenticeship programs. Each set of results include the steps for multilevel modeling across violent, drug, property, and any misconduct.

Violent Misconduct

Null Model and Means as Outcome

The unconditional model with no predictors did not reveal significant differences across facility-specific vocation and apprenticeship programs in the proportion of inmates found guilty of a violent misconduct (displayed in table 4.17). The reliability estimate for the model was .239 and the estimate for the between-group variance was .35. There was not significant variance in violent misconduct rates at the level of facility-specific programs ($\chi^2 = 26.43$, $p = .15$). Since this result was approaching significance, however, the level-2 models were estimated, following previous studies that underscore the potential relationships that may emerge in latter steps of multilevel modeling even when the level-1 intercepts do not vary significantly (Sampson, Raudenbush, & Earls, 1997). Despite the fact that there was not significant variance in violent misconduct rates at level-2, a couple of the zero-order relationships between facility-specific program characteristics and violent misconduct were significant (see table 4.18).

Table 4.18 displays the unstandardized zero order relationships between violent misconduct and the level-2 predictors considered for the full models. The program support factor was significantly (and inversely) correlated with violent misconduct ($p \leq .01$). The behavior management factor was also significantly correlated with violent misconduct ($p \leq .05$). Both of these relationships were in expected directions.

The results for the means as outcome model with all level-2 measures included simultaneously are displayed in table 4.19. In this multivariable model there were no significant level-2 predictors associated with violent misconduct among the sample of IPs who completed vocation or apprenticeship programs.

Table 4.17. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=179)

Misconduct	Violent			Drug			Property			Any		
	***b* (*se*$_b$)**	x^2	VC	***b* (*se*$_b$)**	x^2	VC	***b* (*se*$_b$)**	x^2	VC	***b* (*se*$_b$)**	x^2	VC
Null Model	-1.72	26.43	.35	-2.38	23.70	.56	-2.53	27.91	.22	-.65	28.28	.24
Zero-order fixed effects												
Male	.66 (.41)			---			---			1.05*** (.31)		
Age	-.04 (.03)			-.10*** (.02)			.06*** (.02)			-.06*** (.01)		
African American	.83* (.37)			-.39 (.70)			.00 (.55)			.78* (.36)		
Latino	---			---			---			-.90 (1.14)		
Married	-.43 (.71)			.18 (.63)			.38 (.63)			-.34 (.30)		
# prior prison terms	.03 (.10)			-.15 (.16)			-.35 (.42)			-.09 (.10)		
Sentence length (ln)	.88 (.83)			.62 (1.26)			2.00 (1.25)			.38 (.88)		
Security level	1.04*** (.22)			.66* (.31)			.26 (.43)			.93*** (.18)		
Any misconduct (year 1)	1.26* (.53)			1.79* (.78)			2.62*** (.68)			2.14*** (.44)		
Completed RS	-.08 (.65)			---			-.83 (1.11)			-.45 (.54)		
Completed UM	-.61* (.30)			-.86 (.82)			-1.51 (1.02)			-1.13** (.37)		
Completed MH	---			---			---			---		
Completed literacy	-.16 (.78)			-.18 (.72)			---			.67 (.56)		
Completed GE	-1.58 (.81)			-.15 (.59)			-.67 (1.18)			-.40 (.55)		
Completed college	1.30** (.45)			---			---			.20 (.46)		

Table 4.17. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=179)

Misconduct	Violent			Drug			Property			Any		
	***b* (se$_b$)**	x^2	VC	***b* (se$_b$)**	x^2	VC	***b* (se$_b$)**	x^2	VC	***b* (se$_b$)**	x^2	VC
Zero-order random effects												
Male	.56 (.36)	.00	.38	---	---	---	---			**1.08*** (.28)**	.04	.12
Age	-.04 (.03)	19.14	.00	-.09* (.03)	8.17	.00	**-.07 (.04)**	2.47	.00	**-.06*** (.01)**	11.29	.00
African American	.83* (.38)	11.73	.20	-.52 (.68)	12.95	.86	**-.13 (.66)**	9.17	.04	**.77* (.36)**	22.10	.38
Latino	**-3.05 (2.37)**	.36	.57	-4.71 (2.37)	.07	12.95	**-1.65 (2.58)**	.10	.39	-1.39 (1.25)	3.46	3.23
Married	-.35 (.73)	5.46	.26	.36 (.56)	2.55	.49	**.58 (.85)**	5.37	.05	**-.19 (.33)**	4.46	.16
# prior prison terms	**-.04 (.12)**	14.54	.03	-.17 (.15)	5.90	.00	**-.28 (.31)**	8.52	.18	-.20 (.12)	15.47	.06
Sentence length (ln)	**.66 (.84)**	15.97	1.09	1.05 (1.35)	16.72	1.88	**3.05 (1.48)**	7.41	.14	.99 (1.01)	28.87*	4.60
Security level	1.16*** (.27)	11.71	.16	.65 (.33)	7.28	.01	**.72 (.61)**	8.39	.03	**.93*** (.18)**	12.29	.01
Any misconduct (year 1)	1.36* (.55)	18.99	1.55	1.92* (.73)	12.46	1.31	**2.50** (.77)**	4.64	.12	**2.14*** (.48)**	22.58	1.65
Completed RS	**.24 (.65)**	10.84	.89	-1.39* (.57)	.56	.19	-.86 (1.19)	1.08	1.39	-.65 (.66)	16.73	1.46
Completed UM	**-.70* (.32)**	5.62	.03	-.86 (.87)	10.59	1.06	**-1.02 (.89)**	6.22	.02	-1.06* (.39)	14.01	.46
Completed MH	---	---	---	13.12*** (2.67)	.00	32.79	**-.76 (3.85)**	.04	.17	-4.82* (2.26)	.02	4.69
Completed literacy	**-.19 (1.01)**	6.62	1.28	-1.18 (.80)	1.79	.78	**-3.67 (2.90)**	.08	.13	**.67 (55)**	5.45	.04
Completed GE	**-1.71*** (.43)**	1.36	.18	-.73 (.54)	2.52	.50	**-1.29 (1.55)**	7.38	8.43	-.48 (.60)	13.67	1.07
Completed college	**1.46** (.46)**	1.00	.09	-2.77 (1.97)	.05	12.99	**-1.23 (2.79)**	.11	.33	.71 (.35)	1.11	.53

VC = variance component, RS = recovery services, UM = unit management, MH = mental health, GE = general education; Null model reliability estimates = .239, .531, .524, .645, respectively; Bolded coefficient = group mean-centered; Zero-order fixed effects for Latino and completed MH program would not converge.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

One Way ANCOVA

The next step of the analysis of violent misconduct involved estimating the zero-order effects of the level-1 predictors using one-way ANCOVA. Each variable was grand mean-centered and treated as fixed. The results of these zero-order effects are displayed in table 4.17. Findings led to grand mean-centering male, age, African American, marital status, security level, and any misconduct in year one for all subsequent models, with the remaining level-1 predictors group mean-centered.

When examining each estimate separately, five of the level-1 variables were significantly related to violent misconduct (see table 4.17). African American was positively related to the odds of engaging in violent misconduct ($p \leq .05$), an individual's security level was positively related ($p \leq .001$), and if s/he engaged in any misconduct in year one was positively related ($p \leq .05$). Additionally, the control variable capturing if an individual completed a unit management program during their first year of incarceration was inversely correlated with the odds of engaging in violent misconduct and college course completion was positively correlated ($p \leq .01$).

Random Coefficients

The first step in examining the level-1 effects as random was to estimate the effect of each level-1 variable separately. Table 4.17 displays the results for these zero-order random effects. When examining each estimate separately, none of the slopes varied significantly across facility-specific vocation and apprenticeship programs. All level-1 variables were therefore designated as fixed in the multivariable model. Additionally, the results of the zero order random effects were similar to the results of the fixed effects models with one exception. When the

Table 4.18. Level-2 Zero-order Effects on the Proportion of Inmates Guilty of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=28)

Misconduct	Violent		Drug		Property		Any	
	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained	***b* (se_b)**	Proportion L2 variance explained
Predictors								
Program Support	-.48** (.16)	.99	---	---	-.26 (.26)	.00	-.38* (.14)	.83
Institutional Ongoing Training	-.24 (.23)	.55	---	---	.58 (.43)	.00	-.17 (.20)	.36
Program Ongoing Training	.26 (.82)	.00	---	---	1.41 (.88)	.99	.13 (.63)	.00
Instructor Effort & Ability	.31 (.66)	.13	---	---	.10 (.82)	.00	.41 (.52)	.09
Class Participation	.38 (.31)	.15	---	---	.89† (.50)	.99	.34 (.21)	.32
Class Time	-.74 (.56)	.08	---	---	-.29 (.72)	.10	-.22 (.47)	.04
Behavior Management	-.56* (.25)	.85	---	---	.11 (.36)	.00	-.20 (.21)	.38
Staff racial heterogeneity	-2.37 (2.45)	.00	---	---	-5.40† (3.02)	.99	-.61 (1.83)	.00
Crowding	-.20 (.62)	.08	---	---	-.74 (.67)	.99	-.63 (.44)	.48

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.19. Multivariable Means as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (se_b)	*b* (se_b)	*b* (se_b)	*b* (se_b)
Level-2: Facility-specific programs				
Intercept	5.83	---	3.52	7.98
Program Support	-.38 (.26)	---	-.24 (.36)	-.41† (.21)
Institutional Ongoing Training	-.03 (.31)	---	.46 (.59)	-.15 (.25)
Program Ongoing Training	.16 (.84)	---	.56 (1.07)	.17 (.62)
Instructor Effort & Ability	-.54 (.88)	---	-.97 (1.11)	-.84 (.63)
Class Participation	.41 (.37)	---	.59 (.61)	.41 (.27)
Class Time	.24 (.80)	---	.31 (.99)	.37 (.56)
Behavior Management	-.65 (.53)	---	-.06 (.62)	-.04 (.36)
Staff racial heterogeneity	-3.81 (2.73)	---	-4.16 (3.17)	-.47 (1.68)
Crowding	.21 (.82)	---	-1.43 (1.07)	-.73 (.50)

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

variable measuring whether an IP completed general education was group mean-centered and treated as random it was inversely and significantly related to the odds of engaging in violent misconduct. The direction and general magnitude of the effect did not change, however, but the smaller standard error of the random effect rendered it statistically significant. Table 4.20 displays the level-1 multivariable model of the odds of engaging in violent misconduct where the nonsignificant varying slopes were fixed. Only three variables were significantly associated with the odds of engaging in violent misconduct, including security level ($p \leq .001$), general education program completed ($p \leq .01$), and college class completed ($p \leq .001$). These higher-order estimates differed from the zero-order effects reported in table 4.17, with African American and unit management program completion becoming nonsignificant in the multivariable model.

Intercepts as Outcome

Table 4.21 displays the full multilevel model with main effects only. This model included all level-1 predictors along with all level-2 predictors for proper model specification. The results indicated that program support was significantly associated with violent misconduct, as was staff racial heterogeneity (p for program support $\leq .10$ and p for staff racial heterogeneity $\leq .05$). Both of these relationships were inversely correlated with the odds of engaging in violent misconduct and were consistent with the predicted directions.

Drug Misconduct

Null Model

The null model did not reveal significant differences across facility-specific vocation and apprenticeship programs in the proportion of inmates engaging in drug misconduct (table 4.17). The estimate for the between-group variance was .56 and the reliability estimate for the null model was .235 ($\chi^2 = 23.70$, $p = .26$). Therefore, level-2 effects were not estimated.

Table 4.20. Multivariable Level-1 Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=179)

Misconduct	Violent	Drug	Property	Any
	b (se$_b$)	***b (se$_b$)***	***b (se$_b$)***	***b (se$_b$)***
Level-1: Individuals				
Intercept	-2.22	-3.71	-3.45	-1.02
Male	-.59 (.34)	---	---	.44 (.37)
Age	-.02 (.02)	**-.11 (.06)**	**-.01 (.02)**	-.02 (.01)
African American	.79 (.42)	**-.71 (.75)**	**.34 (.45)**	.69 (.41)
Latino	**-1.07 (2.06)**	**-7.79** (2.68)**	**-.63 (1.91)**	**-.37 (1.11)**
Married	-.07 (.75)	**1.12 (.66)**	**1.02 (.98)**	.37 (.48)
# prior prison terms	**-.05 (.13)**	**.27 (.27)**	**-.19 (.41)**	**-.12 (.13)**
Sentence length (ln)	**.59 (1.20)**	**1.11 (1.34)**	**3.13* (1.43)**	***.94 (1.00)***
Security level	1.01*** (.28)	**-.69 (.55)**	**-.03 (.84)**	.47 (.19)
Any misconduct (year 1)	.70 (.60)	**1.54 (1.07)**	**2.26* (.88)**	1.91*** (.49)
Completed RS	**.42 (.66)**	**-2.26* (.95)**	-.32 (1.19)	**-.21 (.72)**
Completed UM	**-.53 (.40)**	-.57 (.87)	**-.38 (.74)**	**-.99** (.36)**
Completed MH	**1.29 (.75)**	**-19.33*** (4.28)**	**-1.03 (1.84)**	**-3.39* (1.35)**
Completed literacy	**-.29 (1.16)**	**-.23 (1.07)**	**-3.02 (2.56)**	1.21* (.59)
Completed GE	**-1.77** (.63)**	**.48 (.49)**	**-.25 (1.58)**	**-.21 (.66)**
Completed college	**1.48*** (.43)**	**-2.56*** (.68)**	**-2.16* (1.07)**	**.32 (.59)**

RS = recovery services, UM = unit management, MH = mental health, GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

One Way ANCOVA and Random Coefficients

Each level-1 predictor was modeled separately in a one-way ANCOVA. The results of these zero-order effects are displayed in table 4.17. When examining each estimate separately, three level-1 variables were significantly related to engaging in drug misconduct. Age was inversely related to the odds of engaging in drug misconduct ($p \leq .001$), an IP's security level was positively related ($p \leq .05$), and any misconduct incidents during the first year of the IP's confinement was positively related ($p \leq .05$), all in the predicted directions.

Table 4.17 displays the results of the level-1 zero-order effects when treated as random. None of these estimates varied significantly across facility specific vocation and apprenticeship programs. Therefore, all level-1 variables were treated as fixed in the multivariable model. Table 4.20 displays the level-1 multivariable model of the odds of engaging in drug misconduct. Four variables were significantly associated with the odds of engaging in drug misconduct, including Latino ($p \leq .01$), recovery services program completion ($p \leq .05$), mental health program completion ($p \leq .001$), and college course completion ($p \leq .001$). These higher-order estimates differed from the zero-order effects reported in table 4.17 in that multiple variables that were significant at the zero-order were no longer significant, and some new variables became significant. The exceptions included recovery services and mental health program completion which were also significant in the zero-order random effects relationships.

Table 4.21. Intercepts as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N_1=179, N_2=28)

Misconduct	Violent	Drug	Property	Any
	b (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)	*b* (*se*$_b$)
Level-1: Individuals				
Male	-3.38* (1.52)	---	---	-.82 (.99)
Age	-.02 (.03)	---	**-.05 (.09)**	-.03 (.03)
African American	1.29* (.62)	---	**.32 (.91)**	1.07* (.48)
Latino	**-4.22 (4.31)**	---	**-2.27 (4.73)**	**-.37 (1.58)**
Married	.65 (1.00)	---	**1.45 (1.39)**	.82 (.80)
# prior prison terms	**.01 (.22)**	---	**-.23 (.44)**	**-.06 (.19)**
Sentence length (ln)	**.35 (1.35)**	---	**5.05* (2.42)**	**.92 (1.06)**
Security level	1.63** (.57)	---	**-.55 (.98)**	.73 (.41)
Any misconduct (year 1)	.81 (.60)	---	**3.17* (2.42)**	2.18*** (.49)
Completed RS	**.41 (.82)**	---	-1.10 (1.94)	**-.16 (.73)**
Completed UM	**-.39 (.67)**	---	**-.39 (1.21)**	**-.89 (.55)**
Completed MH	**1.83 (5.35)**	---	**-1.57 (5.15)**	**-7.73 (8.87)**
Completed literacy	**-.05 (.95)**	---	**-2.39 (3.70)**	1.27 (.83)
Completed GE	**-2.06 (1.26)**	---	**-.18 (1.51)**	**-.25 (.74)**
Completed college	**2.49 (1.39)**	---	**-10.84 (11.17)**	**.61 (1.07)**

Table 4.21. Intercepts as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N_1=179, N_2=28)

Misconduct	Violent	Drug	Property	Any
	***b* (se_b)**	***b* (se_b)**	***b* (se_b)**	***b* (se_b)**
Level-2: Facility Specific Programs				
Intercept	23.16	---	15.82	16.16
Program Support	-.84† (.42)	---	-.86 (.60)	-.61† (.31)
Institutional Ongoing Training	-.01 (.41)	---	.71 (.75)	-.09 (.36)
Program Ongoing Training	1.60 (1.12)	---	.10 (1.66)	1.42 (.86)
Instructor Effort & Ability	-2.33 (1.46)	---	-2.07 (1.89)	-1.91† (.99)
Class Participation	-.21 (.55)	---	1.09 (.99)	-.17 (.36)
Class Time	-.06 (1.03)	---	.24 (1.35)	.05 (.75)
Behavior Management	.13 (.59)	---	.00 (.88)	.62 (.48)
Staff racial heterogeneity	-8.38* (3.38)	---	-5.06 (4.34)	-1.92 (2.84)
Crowding	-2.02 (1.16)	---	-3.35 (1.94)	-1.55† (.79)

RS = recovery services, UM = unit management, MH = mental health GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Property Misconduct

Null Model and Means as Outcome

The model of property misconduct with no predictors included did not reveal significant differences across facility-specific vocation and apprenticeship programs in the proportion of IPs who engaged in property misconduct (displayed in table 4.17). The estimate for the between-group variance was .22, which was not significant across facility-specific programs ($\chi^2 = 27.91$, $p = .11$). Due to the estimate for between-group variance approaching significance, the level-2 models were estimated and reported. This is similar to the previous decision to move forward with examining level-2 relationships when the variance in misconduct rates at the level of facility-specific programs only approached significance.

Table 4.18 displays the zero-order relationships between property misconduct and the level-2 predictors. Class participation was positively related to the odds of engaging in property misconduct whereas staff racial heterogeneity was inversely related ($p \leq .10$). The relationship for class participation was counterintuitive while the relationship for staff racial heterogeneity was in the predicted direction.

The means-as-outcome model with all level-2 predictors included is displayed in table 4.19. There were no significant level-2 predictors associated with property misconduct in this multivariable model.

One Way ANCOVA and Random Coefficients

The results of the zero-order fixed effects for all level-1 variables are displayed in table 4.17. Based on these results, only recovery services program completed was grand mean-centered in the subsequent models. All other level-1 variables were group mean-centered. When examining the zero-order fixed effects, two variables were significantly related to engaging in property

misconduct. Age was inversely related to the odds of engaging in property misconduct and any misconduct during the first year of incarceration was positively related ($p \leq .001$). Both relationships were in the expected directions.

Table 4.17 also displays the results of the level-1 zero-order effects when treated as random. The significant variables were somewhat different in the random effects relationship when compared to the fixed effects. For example, age was not significant in the random effects model. In addition, sentence length was approaching significance ($p = .053$). There were no results indicating that the slopes for any variables varied significantly across facility-specific vocation and apprenticeship programs. As a result, all level-1 variables were treated as fixed.

Table 4.20 displays the level-1 multivariable model of the odds of engaging in property misconduct. Three variables were significantly associated with the odds of engaging in property misconduct, including sentence length, any misconduct in year one, and college course completed (all significant at $p \leq .05$). These higher-order estimates differed from the zero-order effects reported in table 4.17. An individual's sentence length and college course completion became significant in the multivariable model, and all three significant relationships were in predicted directions.

Intercepts as Outcome

Table 4.21 displays the full multilevel model with main effects. None of the level-2 predictors were significantly associated with the odds of engaging in property misconduct for the sample of vocation or apprenticeship program completers.

Any Misconduct

Null Model and Means as Outcome

The null model for any misconduct did not reveal significant differences across facility-specific vocation and apprenticeship programs in the proportion of IPs engaging in any misconduct during the second year of incarceration (see table 4.17). The estimate for the between-group variance was .24, which was not significant although it approaches significance ($p = .103$). For this reason, the level-2 models were estimated and reported for this sample.

Table 4.18 displays the zero-order relationships between any misconduct and the level-2 predictors. The program support factor was significantly and inversely correlated with any misconduct, consistent with the hypothesized direction ($p \leq .05$).

The means-as-outcome model with all level-2 measures included simultaneously is displayed in table 4.19. Program support was the only variable significantly associated with the odds of any misconduct (and in the predicted inverse direction).

One Way ANCOVA

The results of the zero-order fixed effects for all level-1 variables are displayed in table 4.17. Based on these results, seven variables were grand mean-centered in the subsequent models including male, age, African American, marital status, security level, any misconduct in year one, and literacy completion. All other level-1 variables were group mean-centered.

When examining each fixed effect separately, six variables were significantly related to engaging in any misconduct. Male, security level, and any misconduct during the first year of incarceration were positively associated with the odds of engaging in any misconduct ($p \leq .001$), African American was also positively associated albeit at a higher alpha level ($p \leq .05$), age was inversely related ($p \leq .001$), and unit management program completion was also inversely related ($p \leq .01$).

Random Coefficients

Table 4.17 displays the results for the zero-order random effects. When examining each estimate separately, the slope for sentence length varied significantly across facility-specific vocation and apprenticeship programs ($p \leq .05$). Sentence length was therefore designated as random in the multivariable model with all other level-1 variables fixed.

Table 4.20 displays the level-1 multivariable model of the odds of engaging in any misconduct where the nonsignificant varying slopes were fixed and the significantly varying slope was treated as random. Four variables were significantly associated with the odds of engaging in any misconduct in year two, including any misconduct in year one ($p \leq .001$), unit management program completion ($p \leq .01$), mental health program completion ($p \leq .05$), and literacy program completion ($p \leq .05$). The relationship between literacy program completion and the likelihood of engaging in any misconduct was positive, which is a counterintuitive finding. Additionally, the slope for sentence length no longer varied significantly across facility-specific programs. Due to this result the sentence length measure was fixed in the remaining models.

Intercepts as Outcome

Table 4.21 displays the full multilevel model with main effects. The results indicated that program support was significantly and inversely associated with any misconduct, instructor effort and ability was also significant, as was crowding ($p \leq .10$). The relationship between crowding and the odds of engaging in any misconduct was not in the predicted direction.

Slopes as Outcome

Table 4.22 displays the results of the slopes as outcome model and the environmental effects on the level-1 estimates for sentence length. Program support, institutional ongoing training, and

instructor effort and ability all had significant inverse effects on the slope of sentence length (p for program support and instructor effort $\leq .05$; p for institutional ongoing training $\leq .10$). Higher scores on each of the three factors coincided with weaker positive effects of an individual's sentence length on the likelihood of engaging in any misconduct. However, program ongoing training and behavior management both had significant positive effects on the slope of sentence length ($p \leq .05$). As program ongoing training and behavior management improved, the positive effect of an individual's sentence length on the likelihood that they engage in any misconduct became stronger.

College Programs

This section presents the results from the analysis of individual- and facility-specific program characteristics on misconduct for the sample of IPs who completed college programs. The types of misconduct examined in this section include violent, drug, property, and any misconduct.

Violent Misconduct

Null Model

The unconditional model of violent misconduct did not reveal significant differences across facility-specific college classes in the proportion of college completers who engaged in violent misconduct. The results for the null model are displayed in table 4.23. The estimate for the between-group variance was .00005 ($\chi^2 = .57$, $p > .50$) and the reliability estimate for this model was .000. Due to the small and nonsignificant variance estimate, the level-2 predictors were not estimated for this sample.

Table 4.22. Slopes as Outcome Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=28)

Misconduct	Violent	Drug	Property	Any
	b (se_b)	*b* (se_b)	*b* (se_b)	*b* (se_b)
Sentence Length as Outcome				
Intercept	---	---	---	113.22
Program Support	---	---	---	-5.75* (2.46)
Institutional Ongoing Training	---	---	---	-5.80† (2.74)
Program Ongoing Training	---	---	---	13.43* (5.56)
Instructor Effort & Ability	---	---	---	-16.11* (6.17)
Class Participation	---	---	---	-.97 (2.49)
Class Time	---	---	---	5.66 (3.49)
Behavior Management	---	---	---	9.61* (4.21)
Staff racial heterogeneity	---	---	---	25.24 (19.42)
Crowding	---	---	---	.17 (3.09)

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

One Way ANCOVA and Random Coefficients

Table 4.23 also displays the results of the level-1 zero-order effects from one-way ANCOVA. When examining each estimate separately, the results indicated that no level-1 variable was significantly related to violent misconduct.

The first step in examining the level-1 effects as random was to estimate the effect of each level-1 variable separately. Table 4.23 displays the results for these zero-order random effects. When examining each estimate separately, none of the slopes varied significantly across facility-specific college programs. Additionally, there were no variables that were significantly related to violent misconduct in the zero-order random effects models. A full multivariable random coefficients model was not estimated because the model did not converge.

Drug Misconduct

Null Model

The null model of drug misconduct did not reveal significant differences across facility-specific college classes in the proportion of IPs who engaged in drug misconduct during their second year of incarceration. The results for the null model are displayed in table 4.23. The estimate for the between-group variance was .00009 ($\chi^2 = 1.09$, $p > .50$) and the reliability estimate for this model was .000. Due to the nonsignificant differences across facility-specific college classes, the level-2 models were not estimated.

One Way ANCOVA and Random Coefficients

Table 4.23 displays the level-1 zero-order effects from a one-way ANCOVA. Similar to the results for violent misconduct, none of the level-1 variables were significantly related to the odds of engaging in drug misconduct. This is likely due to the small sample of IPs who completed college classes and were eligible for the analysis examining misconduct outcomes.

Table 4.23. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed College Programs (N=27)

Misconduct	Violent			Drug			Property			Any		
	***b* (se_b)**	**x^2**	VC	***b* (se_b)**	**x^2**	VC	***b* (se_b)**	**x^2**	VC	***b* (se_b)**	**x^2**	VC
Null Model	-1.48	.57	.00	-2.08	1.09	.00	-3.26	.30	.00	-1.25	.62	.00
Zero-order fixed effects												
Age	.01 (.07)			.07 (.08)			-.13 (.22)			.03 (.06)		
African American	-1.75 (1.20)			.69 (1.29)			---			-.98 (.97)		
Married	---			2.44 (1.60)			---			1.39 (1.50)		
# prior prison terms	-1.60 (1.03)			.13 (.62)			---			-.34 (.53)		
Sentence length (ln)	2.69 (3.10)			-.32 (3.56)			3.34 (6.57)			.90 (2.73)		
Security level	1.28 (.88)			---			1.50 (1.63)			1.53 (.88)		
Any misconduct (year 1)	.82 (1.05)			.41 (1.31)			---			.47 (1.01)		
Completed RS	.46 (1.28)			---			---			.18 (1.26)		
Completed UM	-.41 (1.22)			---			---			-.69 (1.20)		
Completed GE	1.66 (1.52)			---			---			1.39 (1.50)		
Completed vocation	.92 (1.34)			---			---			.64 (1.32)		
Zero-order random effects												
Age	**.02 (.07)**	1.21	.00	**.07 (.09)**	.93	.00	**-.11 (.20)**	.00	.00	.05 (.07)	.78	.00
African American	**-1.76 (1.25)**	.16	.00	**1.05 (1.69)**	2.35	1.11	**3.58 (4.67)**	.04	.01	-.87 (1.03)	.27	.00

Table 4.23. Zero-order Estimates of Level-1 Effects on Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed College Programs (N=27)

Misconduct	Violent			Drug			Property			Any		
	***b* (se_b)**	x^2	VC	***b* (se_b)**	x^2	VC	***b* (se_b)**	x^2	VC	***b* (se_b)**	x^2	VC
Married	**-4.78 (.01)**	.01	.01	**1.89 (3.08)**	3.57	9.81	**-1.13 (5.98)**	.02	.01	1.39 (1.69)	2.34	.53
# prior prison terms	**-1.67 (1.10)**	.30	.00	**.05 (.81)**	2.63	.44	**-2.69 (3.84)**	.07	.00	-.34 (.53)	1.08	.00
Sentence length (ln)	**3.69 (3.39)**	2.23	.01	**4.58 (6.61)**	4.57*	47.29	**2.87 (6.73)**	.00	.01	1.35 (2.92)	2.73	.00
Security level	**1.64 (1.04)**	1.65	.00	---	---	---	**3.36 (3.32)**	.12	.00	2.09 (1.04)	1.20	.00
Any misconduct (year 1)	**1.69 (1.54)**	.00	.00	.41 (1.31)	.32	.00	---	---	---	1.35 (1.53)	.00	.00
Completed RS	**.34 (1.33)**	.91	.00	---	---	---	**-2.91 (8.83)**	.01	.01	.18 (1.26)	.28	.00
Completed UM	**-.57 (1.27)**	.42	.02	**-6.31 (11.47)**	.00	.03	---	---	---	-.90 (1.26)	.28	.00
Completed GE	**1.69 (1.54)**	.00	.00	**-2.04 (5.17)**	.03	.01	---	---	---	1.39 (1.50)	.00	.00
Completed vocation	**.93 (1.38)**	.00	.00	**-2.05 (4.08)**	.04	.00	---	---	---	.64 (1.32)	.00	.00

VC = variance component, RS = recovery services, UM = unit management, GE = general education; Null model reliability estimates = .000; Bolded coefficient = group mean-centered; Zero-order fixed effects for marital status and literacy program completion would not converge; Male and Latino excluded due to limited variation in the sample.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.23 also displays the results for the zero-order level-1 random effects. The slope for sentence length varied significantly across facility-specific college classes ($p \leq .05$), and so sentence length was treated as random in the multivariable model with all other level-1 variables fixed.

Table 4.24 displays the level-1 multivariable model of the odds of engaging in drug misconduct where the nonsignificant varying slopes were fixed and the significantly varying slope was treated as random. The results indicated that no level-1 variables were significantly associated with the odds of engaging in drug misconduct. This is similar to the zero-order estimates.

Property Misconduct

Null Model

The null model of property misconduct did not reveal significant differences across facility-specific college classes in the proportion of IPs who engaged in property misconduct. The results for the null model are displayed in table 4.23. The estimate for the between-group variance was .0002 ($\chi^2 = .30$, $p > .50$) and the reliability estimate for this model was .000. Due to the nonsignificant differences across facility-specific college classes, the level-2 models were not estimated.

One Way ANCOVA and Random Coefficients

Table 4.23 displays the results for the level-1 zero-order effects using one-way ANCOVA. None of these fixed effects were statistically significant. Table 4.23 also displays the results for the zero-order random effects. None of these estimates varied significantly across facility-specific college classes, and a multivariable random coefficients model would not converge and so is not displayed.

Table 4.24. Multivariable Level-1 Model of Misconduct During the Second Year of Incarceration for the Sample of Incarcerated Persons Who Completed College Programs (N=27)

Misconduct	Violent	Drug	Property	Any
	***b* (se_b)**	***b* (se_b)**	***b* (se_b)**	***b* (se_b)**
Level-1: Individuals				
Intercept	---	-2.71	---	-5.25
Male	---	---	---	---
Age	---	**.14 (.15)**	---	**.51 (.46)**
African American	---	**1.60 (2.08)**	---	**-1.76 (2.18)**
Latino	---	---	---	---
Married	---	---	---	**28.13 (26.20)**
# prior prison terms	---	**-.57 (.95)**	---	-9.78 (9.78)
Sentence length (ln)	---	***1.76 (4.24)***	---	**1.17 (6.24)**
Security level	---	---	---	**3.09 (1.78)**
Any misconduct (year 1)	---	.86 (1.63)	---	**1.22 (3.54)**
Completed RS	---	---	---	8.72 (8.88)
Completed UM	---	---	---	**-1.34 (2.05)**
Completed GE	---	**-1.18 (6.74)**	---	---
Completed vocation	---	-4.25 (5.51)	---	-6.66 (7.21)

RS = recovery services, UM = unit management, MH = mental health, GE = general education; Bolded coefficient = group mean-centered; Italicized coefficient = random effect

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Any Misconduct

Null Model

The null model of any misconduct did not reveal significant differences across facility-specific college classes in the proportion of IPs who engaged in any misconduct during the second year of confinement. The results for the null model are displayed in table 4.23. The estimate for the between-group variance was .00005 ($\chi^2 = .62$, $p > .50$) and the reliability estimate for this model was .000. Due to the nonsignificant differences across facility-specific college classes, the level-2 models were not estimated.

One Way ANCOVA and Random Coefficients

Table 4.23 displays the results for the level-1 zero-order effects using one-way ANCOVA. None of these variables were significantly related to any misconduct. Table 4.24 displays the results for the level-1 zero-order random effects. When examining each estimate separately, none of the slopes varied significantly across facility-specific programs. Therefore, all of the level-1 variables were fixed in the multivariable model. Table 4.68 displays the level-1 multivariable model of the odds of returning to prison where the nonsignificant varying slopes were fixed. Similar to the zero-order estimates, there were no significant level-1 effects on the odds of engaging in any misconduct during the second year of incarceration.

Summary of Misconduct Results

Table 4.25 provides a summary of significant level-1 and level-2 predictors across the models of misconduct presented in this chapter. This summary suggests that individual-level predictors tend to have the most consistent impacts on misconduct. Specifically, the inverse relationship between age and various types of misconduct was a consistent result among completers of literacy and general education programs. The risk measures related to an

individual's security level and if s/he engaged in any misconduct during the first year of incarceration were also significant predictors of multiple types of misconduct across all the samples. Several of the controls for completion of other programs during the first year of confinement were inversely related to some misconduct outcomes.

The results for each of the education programs and facility-specific characteristics were less consistent and not always intuitive. For multiple program characteristics, there was a significant, positive relationship between the program characteristic and the odds of engaging in various types of misconduct. For example, behavior management practices increased the likelihood of engaging in violent misconduct after completion of a general education course. On the other hand, program support was significantly and inversely related with two different types of misconduct outcomes for the literacy and general education completers.

Table 4.25. Summary of Results: Misconduct Analyses

	Literacy				General Education				Vocation/ Apprenticeship			
Individual-Level Predictors	**Violent**	**Drug**	**Property**	**Any**	**Violent**	**Drug**	**Property**	**Any**	**Violent**	**Drug**	**Property**	**Any**
Male						**169.08**	*2.16*	*1.40*				*2.86*
Age	*.94*	**.90**	*.92*	**.96**	**.95**		**.90**	**.94**		*.90*	*.94*	*.95*
African American	*2.03*			*1.66*		**.54**			*2.29*			**2.91**
Latino												
Married												
# prior prison terms		**1.34**			**.62**		*.80*	*.78*				
Sentence length (ln)			**.15**		*.35*						**155.40**	
Security level	**7.24**	*2.77*	**3.12**	**3.46**	**2.33**	*1.54*	*1.67*	**1.79**	**5.11**	*1.93*		*2.54*
Any misconduct (year 1)	*2.64*		*2.65*	*2.47*	**2.40**	**2.85**	**2.89**	**2.87**	*3.53*	*5.90*	**23.76**	**8.85**
Completed RS					*.54*							
Completed UM									*.54*			*.32*
Completed MH												

Table 4.25. Summary of Results: Misconduct Analyses

	Literacy				General Education				Vocation/ Apprenticeship			
Completed literacy												
Completed GE									**.13**			
Completed voc.						*.33*						
Completed college									**12.09**		**.00**	
Facility-Specific Program Predictors	**Violent**	**Drug**	**Property**	**Any**	**Violent**	**Drug**	**Property**	**Any**	**Violent**	**Drug**	**Property**	**Any**
Program Support			**.87**			**.79**	*.90*		**.43**			**.55**
Institutional Ongoing Training		*.53*		*.78*								
Program Ongoing Training		*.59*				**3.48**						
Instructor Effort & Ability	**4.24**				*.65*							**.15**
Class Participation											*2.45*	
Class Time		*.49*										
Behavior Management		*.55*			**1.43**		*1.50*	*1.21*	*.57*			
Staff racial heterogeneity									**.00**		*.05*	
Crowding						**3.89**	**.19**					**.21**

Odds ratios (OR) reported; OR italicized = significant zero-order relationship, OR bolded = significant higher-order effect; College results excluded

Analysis of Return to Prison

Table 4.26 displays the descriptives for the four samples of IPs included in the analyses of return to prison. It appears that across all education programs, the majority of individuals were male and about half of each sample was African American. Most of the IPs who completed literacy, vocation/apprenticeship, and college courses were around 32 years of age. The sample of inmates who completed general education classes was slightly younger on average. This is likely due to the state policy requiring inmates to attend six months of general education classes if they are under a certain age and have no high school diploma or equivalency degree. IPs who completed vocation or apprenticeship programs had an average of 1.7 prior prison terms compared to inmates who completed general education programs and served an average of less than 1 prior prison term. IPs included in the analysis of college classes had the longest average sentences compared to the other samples.

Literacy Programs

The next set of results focused on the impacts of individual- and facility-specific program characteristics on the odds of returning to prison for the sample of IPs who completed literacy programs at any point during their sentences.

Null Model

The null model of the odds of returning to prison within three years after release did not reveal significant differences across facility-specific literacy programs in the proportion of IPs returning to prison (displayed in table 4.27). The estimate for the between-group variance was .12 and the reliability estimate for the null model was .131. There was not significant variation in

return to prison rates at the level of facility-specific programs ($\chi^2 = 13.42$, $p > .50$). Due to the nonsignificant variance estimate, the level-2 predictors were not estimated for this sample.

One Way ANCOVA and Random Coefficients

The zero-order fixed effects for each level-1 predictor are displayed in table 4.27. Two level-1 variables were significant in the zero-order fixed effects models. First, the number of prior prison terms was significantly associated with the odds of returning to prison ($p \leq .01$). Also, the individual's sentence length was inversely associated with the odds of returning to prison ($p \leq .05$).

When each estimate was treated as a random effect, only the number of prior prison terms was significantly related to the likelihood of returning to prison (table 4.27). Additionally, the slope of prior prison terms varied significantly across facility-specific programs ($p \leq .05$). This variable was therefore treated as random while the other variables were fixed in subsequent models.

Table 4.26. Sample-Specific Means and Standard Deviations for the Analyses of Return to Prison								
	Literacy (n=138)		General Education (n=1,869)		Vocation (n=2,849)		College (n=99)	
Outcome	$\bar{x}$	**SD**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	$\bar{x}$	**SD**
Reincarcerated within 3 years after release	.20	.40	.22	.41	.23	.42	.14	.35
Individual-Level Predictors								
Male	.75	.43	.70	.46	.80	.40	.90	.30
Age	32.95	10.80	29.88	9.97	33.35	9.39	32.04	9.58
African American	.51	.50	.41	.49	.48	.50	.52	.50
Latino	.01	.12	.01	.12	.01	.10	.00	.00
Married	.19	.39	.12	.32	.15	.36	.17	.38
# prior prison terms	1.35	2.19	.82	1.36	1.70	2.05	1.48	1.79
Sentence length (ln)	2.38	.69	2.52	.68	2.31	.66	3.31	.53
Security level	1.51	.52	1.41	.53	1.53	.57	1.34	.50
Serious misconduct	.23	.42	.27	.44	.22	.41	.30	.46

Table 4.27. Zero-order Estimates of Level-1 Effects on Return to Prison for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=138)

	B	***se$_b$***	***x^2***	**Variance Component**
Null Model				
Intercept	-1.43	---	13.42	.12
Zero-order level-1 fixed effects				
Male	.76	.61		
Age	-.02	.02		
African American	.38	.44		
Married	.16	.57		
# prior prison terms	.26**	.10		
Sentence length (ln)	-.73*	.34		
Security level	.55	.43		
Serious misconduct	-.59	.59		
Zero-order level-1 random effects				
Age	-.02	.02	8.78	.00
African American	.38	.44	5.30	.00
Latino	**4.14**	2.68	.09	.24
Married	**-.05**	.83	9.87	1.57
# prior prison terms	.36**	.12	17.40*	.03
Sentence length (ln)	**-.81**	.48	10.51	.48
Security level	.57	.44	8.56	.09
Serious misconduct	-.59	.59	5.07	.01

Null model reliability estimate = .131; Bolded coefficient = group mean-centered.
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.28 displays the multivariable level-1 model in which three of the level-1 variables were significant. Similar to the zero-order estimates, an individual's age and number of prior prison terms were significant predictors of the odds of returning to prison ($p \leq .05$). Both estimates were in the predicted directions. Additionally, sentence length became significant in the multivariable model and was inversely associated with returning to prison ($p \leq .05$).

Table 4.28. Multivariable Level-1 Model of Prison Returns for the Sample of Incarcerated Persons Who Completed Literacy Programs (N=138)

Predictors	*B*	se_b
Level-1: Individuals		
Intercept	-1.74	---
Male	-.01	1.08
Age	-.07*	.04
African American	.09	.55
Latino	**7.24**	10.26
Married	**.49**	.79
# prior prison terms	*.49**	.18
Sentence length (ln)	**-1.23***	.56
Security level	.45	.59
Serious misconduct	.15	.70

Bolded coefficient = group mean-centered; Italicized coefficient = random effect
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

General Education Programs

The next set of results are focused on the influence of individual- and facility-specific program characteristics on the odds of returning to prison for the sample of IPs who completed general education programs.

Null Model and Means as Outcome

For the sample of IP's who completed general education programs, the null model revealed significant differences across facility-specific general education programs in the proportion of inmates returning to prison during the three-year follow up period ($\chi^2 = 45.10$, $p \leq .01$). The between-group variance was .069. These results are displayed in table 4.29.

Table 4.30 reports the zero-order relationships between return to prison and all level-2 predictors. The results in table 4.30 are focused on testing each level-2 effect separately to examine changes from the null model. Only two of the level-2 predictors were significantly correlated with the likelihood of returning to prison. Support for the general education program was inversely correlated with return to prison, and behavior management in the classroom was

positively correlated with the odds of returning to prison (both significant at $p \leq .01$). While the relationship between program support and return to prison was in the predicted direction, the relationship between behavior management and return to prison was not in the predicted direction.

The model with all level-2 measures included simultaneously is displayed in table 4.31. Similar to the zero-order effects, program support was significantly associated with return to prison and behavior management was associated with the odds of returning to prison (both relationships significant at $p \leq .05$). The effect of behavior management was not in the expected direction, however, maintaining a positive effect on the likelihood of returning to prison.

One Way ANCOVA and Random Coefficients

Turning to level-1 effects, each level-1 variable was placed into the model as grand mean-centered and treated as fixed (table 4.73). Final centering decisions for the multivariable model were based on the amount of variance explained when each level-1 variable was grand mean-centered. The variables male, age, and an individual's security level were grand mean-centered in subsequent models whereas the other level-1 predictors were group mean-centered.

Table 4.29 also displays the results for the zero-order level-1 effects when each variable was treated as random. Five level-1 variables were significantly related to return to prison regardless of whether these effects were treated as fixed or random. Age was inversely related to

Table 4.29. Zero-order Estimates of Level-1 Effects on Return to Prison for the Sample of Incarcerated Persons Who Completed General Education Programs (N=1,869)

	B	se_b	x^2	Variance Component
Null Model				
Intercept	-1.35	---	45.10**	.07
Zero-order level-1 fixed effects				
Male	.27	.16		
Age	-.05***	.01		
African American	-.11	.12		
Latino	-1.21	.77		
Married	-.48*	.23		
# prior prison terms	.42***	.05		
Sentence length (ln)	-.46***	.11		
Security level	.67***	.08		
Serious misconduct	.12	.14		
Zero-order level-1 random effects				
Male	.22	.14	1.39	.09
Age	-.05***	.01	30.74	.00
African American	**-.19**	.11	15.84	.06
Latino	**-1.06**	.74	8.84	2.06
Married	**-.50***	.22	15.60	.10
# prior prison terms	**.44*****	.05	29.10	.02
Sentence length (ln)	**-.55*****	.10	27.88	.01
Security level	.67***	.08	10.74	.01
Serious misconduct	**.09**	.13	18.42	.00

Null model reliability estimate = .362; Bolded coefficient = group mean-centered.
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.30. Level-2 Zero-order Effects on Prison Returns for the Sample of Incarcerated Persons Who Completed General Education Programs (N=28)

Predictors	*B*	se_b	Proportion L2 variance explained
Program Support	-.06**	.02	.65
Institutional Ongoing Training	-.08	.07	.15
Program Ongoing Training	-.08	.08	.13
Instructor Effort & Ability	.01	.11	.00
Class Participation	-.01	.06	.00
Class Time	.01	.11	.00
Behavior Management	.21**	.06	.99
Staff racial heterogeneity	-.87	.57	.27
Crowding (population/capacity)	-.06	.11	.00

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.31. Multivariable Means as Outcome Model of Prison Returns for the Sample of Incarcerated Persons Who Completed General Education Programs (N=28)		
Predictors	***b***	***se*$_b$**
Level-2: Facility-specific programs		
Intercept	- .07	---
Program Support	-.08*	.03
Institutional Ongoing Training	.04	.08
Program Ongoing Training	.12	.11
Instructor Effort & Ability	-.02	.11
Class Participation	.00	.08
Class Time	.16	.13
Behavior Management	.15*	.06
Staff racial heterogeneity	-.38	.54
Crowding (population/capacity)	-.37	.22

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

the odds of returning to prison ($p \leq .001$) as was an individual's marital status ($p \leq .05$), and both the individual's number of prior prison terms and security level were positively related ($p \leq .001$). Sentence length was also significant but inversely related to the odds of returning to prison ($p \leq .001$), counter to the predicted direction. In terms of random slopes, none of the level-1 estimates varied significantly across facility-specific general education programs.

Table 4.32 displays the level-1 multivariable model which revealed six significant predictors of the odds of returning to prison. These variables included age ($p \leq .001$), African American ($p \leq .01$), Latino ($p \leq .01$), the number of prior prison terms ($p \leq .001$), sentence length ($p \leq .001$), and security level ($p \leq .001$). Some of the higher-order estimates differed from the zero-order effects in table 4.73, where African American and Latino became significant and marital status became nonsignificant in the multivariable model.

Intercepts as Outcome

Table 4.33 displays the full multilevel model with main effects. The model included all level-1 variables and the level-2 predictors for proper model specification. None of the level-2 predictors were significantly associated with the odds of returning to prison for IPs who

completed general education classes. The significant level-1 variables were consistent with the results from the random coefficients model with the exception of Latino. Latino was no longer significantly associated with the likelihood of returning to prison in the intercepts as outcome model.

Table 4.32. Multivariable Level-1 Model of Prison Returns for the Sample of Incarcerated Persons Who Completed General Education Programs (N=1,869)

Predictors	***B***	***se$_b$***
Level-1: Individuals		
Intercept	-1.68	---
Male	.07	.15
Age	-.10***	.01
African American	**-.38****	.13
Latino	**-1.34****	.49
Married	**-.01**	.21
# prior prison terms	**.73*****	.08
Sentence length (ln)	**-.77*****	.10
Security level	.38***	.11
Serious misconduct	**.18**	.20

Bolded coefficient = group mean-centered; Italicized coefficient = random effect
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.33. Level-1 Intercepts as Outcome Model of Prison Returns for the Sample of Incarcerated Persons Who Completed General Education Programs (N=1,869)

Predictors	*b*	se_b
Level 1: Incarcerated individuals		
Male	.56	.37
Age	-.11***	.01
African American	**-.39****	.15
Latino	**-1.27**	.80
Married	**-.02**	.25
# prior prison terms	**.74*****	.06
Sentence length (ln)	**-.78*****	.12
Security level	.32*	.14
Serious misconduct	.18	.17
Level 2: Facility-specific programs		
Intercept	-1.86	---
Program Support	-.03	.04
Institutional Ongoing Training	-.17	.11
Program Ongoing Training	.21	.15
Instructor Effort & Ability	.09	.13
Class Participation	.05	.11
Class Time	.27	.16
Behavior Management	-.02	.08
Staff racial heterogeneity	.65	.67
Crowding (population/capacity)	.03	.28

Bolded coefficient = group mean-centered; Italicized coefficient = random effect
† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Vocation and Apprenticeship Programs

The next set of results are focused on the impact of individual- and facility-specific program characteristics on the likelihood of returning to prison for the sample of IPs who completed vocation or apprenticeship programs.

Null Model and Means as Outcome

The unconditional model of prison returns revealed significant differences across facility-specific programs in the proportion of IPs who returned to prison during the follow up window. The results for the null model are displayed in table 4.34. The estimate for the between-group variance was .179 ($\chi^2 = 80.06$, $p \leq .001$).

Table 4.35 reports the zero-order relationships between return to prison and all level-2 predictors considered for the full models, testing each effect separately to examine changes from the null model. Only staff racial heterogeneity was significantly (and inversely) correlated with return to prison ($p \leq .01$). None of the program factors were significantly correlated with return to prison and several relationships were not in the predicted directions. The two factors related to training practices were positively correlated with return to prison, and instructor effort and class participation were positively correlated with return to prison.

A model was also estimated with all level-2 measures included simultaneously (see table 4.36). Two of the ten variables were significantly associated with return to prison, including program support ($p \leq .05$) and staff racial heterogeneity ($p \leq .10$). The significant relationships were both in the predicted directions.

One Way ANCOVA

Next, each level-1 predictor was modeled separately in a one-way ANCOVA model. Each variable was grand mean-centered and treated as fixed. The results of these zero-order effects are displayed in table 4.34. Final centering decisions were based on the amount of variance explained when each level-1 variable was grand mean-centered. The grand mean-centered variables included male, marital status, the individual's number of prior prison terms, and the individual's security level, with all other variables group mean-centered.

Five of the nine level-1 variables were significantly related to return to prison (see table 4.34). Male, number of prior prison terms, and an individual's security level were positively related to the odds of returning to prison, and age was inversely related. These four relationships were in the predicted directions, in contrast to the significant inverse relationship between sentence length and return to prison. All five relationships were significant at $p \leq .001$.

Table 4.34. Zero-order Estimates of Level-1 Effects on Return to Prison for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=2,849)

	B	se_b	x^2	Variance Component
Null Model				
Intercept	-1.21	---	80.06***	.18
Zero-order level-1 fixed effects				
Male	.78***	.06		
Age	-.02***	.00		
African American	.07	.07		
Latino	-.36	.41		
Married	-.17	.15		
# prior prison terms	.38***	.05		
Sentence length (ln)	-.43***	.05		
Security level	.69***	.10		
Serious misconduct	.16	.12		
Zero-order level-1 random effects				
Male	.78***	.06	.95	.00
Age	**-.02****	.00	16.35	.00
African American	**.02**	.07	15.65	.00
Latino	**-.26**	.44	10.11	.32
Married	-.18	.16	25.58	.08
# prior prison terms	.46***	.05	71.31***	.03
Sentence length (ln)	**-.47****	.06	28.73	.01
Security level	.69***	.11	23.02	.08
Serious misconduct	**.10**	.13	31.95	.06

Null model reliability estimate = .592; Bolded coefficient = group mean-centered.
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.35. Level-2 Zero-order Effects on Prison Returns for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=2,849)

Predictors	*b*	se_b	Proportion L2 variance explained
Program Support	-.12	.07	.25
Institutional Ongoing Training	.05	.13	.00
Program Ongoing Training	.06	.37	.00
Instructor Effort & Ability	.20	.22	.08
Class Participation	.12	.07	.13
Class Time	-.19	.20	.05
Behavior Management	-.15	.11	.08
Staff racial heterogeneity	-1.26**	.42	.29
Crowding (population/capacity)	-.02	.24	.01

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.36. Multivariable Means as Outcome Model of Prison Returns for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=2,849)

Predictors	*b*	se_b
Level-2: Facility-specific programs		
Intercept	-1.14	---
Program Support	-.09*	.04
Institutional Ongoing Training	.06	.12
Program Ongoing Training	.16	.22
Instructor Effort & Ability	.27	.24
Class Participation	.15	.09
Class Time	.10	.24
Behavior Management	-.20	.16
Staff racial heterogeneity	-1.05†	.58
Crowding (population/capacity)	-.25	.26

† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Random Coefficients

The first step in examining the level-1 effects as random was to estimate the effect of each level-1 variable separately. Table 4.34 displays the results for these zero-order random effects. When examining each estimate separately, only the slope for number of prior prison terms varied significantly across facility-specific vocation and apprenticeship programs ($p \leq .001$). The number of prior prison terms was therefore designated as random in the multivariable model with all other level-1 variables fixed.

Table 4.37 displays the level-1 multivariable model of the odds of returning to prison where the nonsignificant varying slopes were fixed and the significantly varying slope was treated as random. Five of the nine variables were significantly associated with the odds of returning to prison. These included male ($p \leq .01$), age ($p \leq .001$), African American ($p \leq .01$), number of prior prison terms ($p \leq .001$), and sentence length ($p \leq .001$). These higher-order estimates differed somewhat from the zero-order effects reported in table 4.34, with African American becoming significant and an individual's security level becoming nonsignificant in the

multivariable model. Additionally, the slope for the number of prior prison terms still varied significantly across facility-specific programs ($p \leq .01$).

Table 4.37. Multivariable Level-1 Model of Prison Returns for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=2,849)

Predictors	***b***	***se*$_b$**
Level-1: Individuals		
Intercept	-1.39	---
Male	.39**	.12
Age	**-.07*****	.01
African American	**-.34****	.11
Latino	**.14**	.38
Married	-.10	.16
# prior prison terms	*.54****	.05
Sentence length (ln)	**-.63*****	.08
Security level	.23	.13
Serious misconduct	**.28**	.16

Bolded coefficient = group mean-centered; Italicized coefficient = random effect
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Intercepts as Outcome

Table 4.38 displays the full multilevel model with main effects. This model included all level-1 predictors along with all level-2 predictors for proper model specification. In this model, the level-2 measures were not centered because there are no higher levels of aggregation. The results indicated that institutional ongoing training was significantly associated with return to prison ($p \leq .01$), instructor effort and ability was also significant ($p \leq .01$), as were class time ($p \leq .05$) and behavior management ($p \leq .05$). The estimate for behavior management was in the expected (inverse) direction, but the empirical relationships for institutional ongoing training, instructor effort and ability, and class time were opposite to those predicted.

Slopes as Outcome

Table 4.39 displays the results of the slopes as outcome model and the environmental effects on the level-1 estimates for number of prior prison terms. Staff racial heterogeneity had a significant positive effect on the slope of prior prison terms ($p \leq .05$). An increase in the racial

heterogeneity of prison staff coincided with a stronger effect of an individual's number of prior prison terms on the likelihood of returning to prison.

Table 4.38. Level-1 Intercepts as Outcome Model of Prison Returns for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=2,849)

Predictors	***b***	***se*$_b$**
Level-1: Individuals		
Male	.36	.26
Age	**-.07*****	.01
African American	**-.34****	.11
Latino	**.13**	.52
Married	-.07	.15
# prior prison terms	*.56****	.05
Sentence length (ln)	**-.63*****	.09
Security level	.22*	.10
Serious misconduct	**.27***	.13
Level-2: Facility-specific programs		
Intercept	-5.13	---
Program Support	.02	.04
Institutional Ongoing Training	.40**	.11
Program Ongoing Training	-.09	.20
Instructor Effort & Ability	.67**	.22
Class Participation	.05	.09
Class Time	.52*	.24
Behavior Management	-.40*	.15
Staff racial heterogeneity	.25	.63
Crowding (population/capacity)	.20	.26

Bolded coefficient = group mean-centered; Italicized coefficient = random effect.
† $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4.39. Level-1 Slopes as Outcome Model of Prison Returns for the Sample of Incarcerated Persons Who Completed Vocation/Apprenticeship Programs (N=2,849)		
Predictors	***b***	***se*$_b$**
Coefficient for number prior prison terms as outcome		
Intercept	.28	---
Program Support	-.02	.02
Institutional Ongoing Training	.07	.07
Program Ongoing Training	-.22	.13
Instructor Effort & Ability	.19	.12
Class Participation	-.01	.05
Class Time	.06	.14
Behavior Management	-.12	.10
Staff racial heterogeneity	.80*	.34
Crowding (population/capacity)	-.04	.15
Slope estimated separately † $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$		

College Programs

The next set of results focuses on individual- and facility-specific program effects on the likelihood of returning to prison for the sample of IPs who completed college courses.

Null Model

The null model (table 4.40) did not reveal significant differences across facility-specific college programs in the proportion of IPs returning to prison during the follow up period. The estimate for the between-group variance was .307 and the reliability estimate for this model was .227 ($\chi^2 = 13.09$, $p = .16$).

One Way ANCOVA and Random Coefficients

The zero-order fixed effect of each level-1 predictor is displayed in table 4.40. None of the level-1 variables were significant in these fixed effects models where each variable was grand mean-centered. For the zero-order random effects, also displayed in table 4.40, results were consistent where none of the level-1 variables were significantly associated with the odds of returning to prison. Additionally, none of the estimates varied significantly across facility-

specific college programs. Table 4.41 displays the level-1 multivariable model. Again, there were no significant relationships in this level-1 multivariable model.

Table 4.40. Zero-order Estimates of Level-1 Effects on Return to Prison for the Sample of Incarcerated Persons Who Completed College Courses (N=99)

	b	se_b	x^2	Variance Component
Null Model				
Intercept	-1.83	---	13.09	.31
Zero-order level-1 fixed effects				
Age	-.04	.04		
African American	-.70	.61		
Married	-1.15	1.09		
# prior prison terms	.13	.14		
Sentence length (ln)	.04	.56		
Security level	.40	.56		
Serious misconduct	.72	.61		
Zero-order level-1 random effects				
Age	**-.04**	.04	3.04	.00
African American[a]	-.70	.61	1.40	.01
Married	**-3.08**	2.26	7.18	13.45
# prior prison terms	.15	.15	7.88	.01
Sentence length (ln)	**.05**	.69	6.79	.23
Security level	**.57**	.71	9.29	1.01
Serious misconduct	**.75**	.79	8.54	1.21

Null model reliability estimate = .227; Bolded coefficient = group mean-centered
$^{*}p \leq .05$; $^{**}p \leq .01$; $^{***}p \leq .001$

Table 4.41. Multivariable Level-1 Model of Prison Returns for the Sample of Incarcerated Persons Who Completed College Courses (N=99)

Predictors	*b*	se_b
Level-1: Individuals		
Intercept	-1.95	---
Age	**-.06**	.05
African American	-.88	.68
Married	**-1.11**	1.12
# prior prison terms	.28	.19
Sentence length (ln)	**.13**	.75
Security level	**.37**	.62
Serious misconduct	**.37**	.76

Bolded coefficient = group mean-centered; Italicized coefficient = random effect
$^{*}p \leq .05$; $^{**}p \leq .01$; $^{***}p \leq .001$

Summary of Return to Prison Results

Table 4.42 provides an overview of the results for the return to prison analyses. Similar to the analysis of misconduct, several of the individual-level predictors were more consistent in predicting returns to prison compared to the aggregate predictors. Age, the number of prior prison terms, and an individual's security level were all significantly related to the odds of returning to prison across programs. The relationships between these variables and the outcomes were in the predicted directions. A less intuitive result was related to sentence length, however, where it was significantly and inversely related to the odds of returning to prison for three of the four programs. This would imply that among the IPs who have completed these various education programs, longer sentences are associated with decreased odds of returning to prison.

Related to the level-2 predictors, there was not much consistency with these results. All were unrelated to prison returns in the literacy and general education samples, and most were either unrelated to the odds of returning to prison or the relationships were counter to those expected in the model for vocation and apprenticeship programs. For example, instructor effort/ability and class time were positively associated with prison returns for the sample of IPs who completed vocation or apprenticeship programs. The expectation is that the program factors would improve outcomes for the IPs who completed these programs and this was not a consistent result across these analyses.

Table 4.42. Summary of Results: Return to Prison Analyses

	Literacy	General Education	Vocation/ Apprenticeship
Individual-Level Predictors			
Male			*2.19*
Age		**.90**	**.93**
African American		**.68**	**.71**
Latino			
Married		*.62*	
# prior prison terms	*1.30*	**2.10**	**1.75**
Sentence length (ln)	*.48*	**.46**	**.53**
Security level		**1.38**	**1.24**
Serious misconduct			**1.32**
Facility-specific Program Predictors			
Program Support		*.94*	
Institutional Ongoing Training			**1.49**
Program Ongoing Training			
Instructor Effort & Ability			**1.96**
Class Participation			
Class Time			**1.67**
Behavior Management		*1.23*	**.67**
Staff racial heterogeneity			*.28*
Crowding			

Odds ratios (OR) reported; OR italicized = significant zero-order relationship, OR bolded = significant higher-order effect; College results excluded

Conclusions

This chapter presented the results for the factor analysis of prison education program characteristics and the models examining how those factors (in conjunction with individual and other facility characteristics) influenced an IP's subsequent deviance. The factor structure of education and vocation program characteristics was examined first, producing a final set of seven latent factors including support for the education program, institutional ongoing training, program ongoing training, instructor efforts and ability, class participation, class time, and behavior management.

The next research question investigated the impact of each program factor on an IP's odds of subsequent misconduct. The program support factor was correlated with lower odds of engaging in property misconduct for literacy program completers, and lower odds of engaging in drug misconduct for general education program completers. The majority of the results for misconduct outcomes were counterintuitive. Program ongoing training was positively correlated with the odds of drug misconduct for general education program completers; behavior management was positively correlated with the odds of violent misconduct for general education program completers, and instructor effort and ability was positively correlated with the odds of violent misconduct for literacy completers. Findings also revealed no significant facility-specific program effects on misconduct for the vocation and apprenticeship program completers.

The final research question focused on these same program effects on an IP's odds of returning to prison. The only significant effects of program characteristics emerged for vocation/apprenticeship program completers, and three of the four significant effects were opposite to hypothesized directions. Institutional ongoing training, instructor effort and ability,

and class time were positively associated with returning to prison, while behavior management was inversely associated with returning to prison among vocation and apprenticeship completers.

Overall, results suggest that several of the education and vocation program characteristics examined here influence an IP's subsequent deviance, but these effects are primarily counterintuitive. These results warrant further discussion related to the features of effective prison education programming. The next chapter will discuss possible implications and relevance to policy as well as study limitations that should be considered in related research.

CHAPTER FIVE
DISCUSSION

There is a growing body of research supporting the effectiveness of providing educational opportunities for inmate populations. Specifically, there are several meta-analyses and recent studies demonstrating the effectiveness of prison education in terms of reducing recidivism (Aos & Drake, 2013; Bozick et al., 2018; Davis et al., 2013; MacKenzie, 2006; Wilson et al., 2000). There is less support demonstrating the effectiveness of prison education at reducing misconduct but some studies have produced favorable evidence to this affect (Duwe et al., 2015; Pompoco et al., 2017). One of the knowledge gaps in this field involves the specific program characteristics that might drive the effectiveness of prison education for criminal outcomes. Currently, there are no studies that examine the specific classroom practices or program characteristics that are common among effective education programs. The literature from the field of education, and specifically adult education, provides insight into the important practices and components of effective adult education programs. These components have not been applied to offender populations or within institutional settings to see if the principles apply to correctional education for adults.

This dissertation aimed to identify specific characteristics of effective education programs while acknowledging the influence of individual characteristics and the prison environment. This chapter discusses key findings from the analyses of latent program variables, misconduct, and return to prison. Also discussed are the implications of these findings for the framework presented in chapter 2, policy implications and recommendations, future directions for research, and the limitations of the analyses.

Identifying Latent Program Variables

The first step in understanding how education program characteristics influence behavior was identifying and confirming the latent constructs based on the data collected in the original study evaluating Ohio's prison programs. The first research question asked *what is the factor structure of education and vocation program characteristics?* To answer this question factor analysis was performed through a series of exploratory and confirmatory factor analyses. The results demonstrated several factors related to institution-wide program support, training practices, and specific classroom management techniques. These included the following: program support, institutional ongoing training, program ongoing training, instructor effort and ability, class participation, class time, and behavior management.

Missing from the final set of factors were some of the components from the Principles of Effective Intervention (PEI). For some components of PEI, this result was due to a lack of variation in the data. For example, measures tapping into the risk principle were eliminated early in the EFA process because so few programs and teachers had information regarding an individual's risk level. During data collection for the larger study, ODRC was in the process of transitioning their main risk assessment tool from the RAP to the ORAS. This transition period could potentially explain why the information was not shared widely. In addition, some of the components of the responsivity principle were also eliminated due to a lack of variation. For example, the measures related to matching staff to classes/students based on their skills and experience was not common in the education programs included in this study. Some of the components of the PEI literature could not be tested due to this lack of variation across the sample of programs included in this study. Other measures that stemmed from this body of literature were included in the factor analysis but they did not load significantly on any factors. For example, there were several measures related to responsivity practices used by staff to

remove individual barriers for IPs in the classroom (e.g., provide extra materials, meet with other instructors). These measures did not fit the factor structure and thus were excluded from the analysis examining how facility-specific program features influence misconduct and return to prison.

The latent program variables identified above reflect important facets of programming including the support and training for staff and overall efforts to engage participants. First, three of the factors were related to support for the program and training of staff. The overall support for prison education programs may indicate that staff and administrators within facilities understand the potential benefits of education. At the leadership level, this could translate to increased funding or more opportunities to offer and expand these programs. At the line staff level, general support from staff may look somewhat different (e.g., referring education programs to IPs, eliminating barriers to program completion, reinforcement for program completion). Additionally, the ongoing training for education staff can provide important learning and practice opportunities to ensure staff are successful in their positions (Borko, 2004; Cohen & Ball, 1999). This includes training related to institution-specific tactics (e.g., de-escalation, restraint, clinical topics) and training on the program or curriculum they are teaching. Incorporating both program support and ongoing staff training increases the potential for success within the education program (Marzano, Waters, & McNulty; 2005; Seashore Louis, Dretzke, & Wahlstrom, 2010). These variables tap into the larger institutional context and management practices.

The other factors are related to specific practices within the classroom involving efforts to keep IPs engaged, the instructor's ability to explain concepts, the amount of time provided for students, and the management of behavior within the classroom. These variables are key

components for learning and creating an environment that increases the likelihood that IPs obtain new skills and retain information. They tap into the environment created by the instructor and the expectations of the program. The factors are comprehensive in terms of capturing multiple dimensions of education programs including participation requirements, how misbehavior is handled, and the instructor's level of expertise. These practices and techniques are consistent with the literature on effective adult education programs (Birkenholz, 1999; Darkenwald & Merriam, 1982; Galbraith, 1991).

Overall, the latent program variables identified in this study provide a unique contribution to the literature because they span institutional aspects of the program as well as program and instructor specific practices. They provide a comprehensive structure for beginning to understand the specific dimensions of education and vocation programs that influence behavioral outcomes linked to deviance.

Themes from the Analysis of Institutional Misconduct

After identifying the factor structure of the education and vocation programs, the factors along with individual- and facility-level predictors were included in multilevel analyses of multiple types of misconduct. The second research question asked, *which program characteristics are significantly correlated with reductions in the odds of engaging in various forms of misconduct?* Across three types of education programs, the factor of program support was inversely related to the odds of engaging in multiple types of misconduct. Specifically, the results demonstrated that support for literacy programs was significantly associated with lowered odds of engaging in property misconduct, program support for general education was inversely related to drug misconduct, and program support for vocation or apprenticeship programs was inversely associated with violent and any misconduct. This theme demonstrates the relevance of

program support across three of the four types of education programs. Program support may reinforce to IPs that the prison staff view education as an important goal and a practical avenue to help them manage their behavior while incarcerated.

The results related to the ongoing training factors were somewhat mixed. For the sample of IPs who completed literacy programs, both institutional and program ongoing training factors were inversely (but not significantly) related to most types of misconduct. The opposite was true for the sample of IPs who completed general education programs. The direction for most of the relationships between institutional and ongoing training and misconduct for this sample were in unexpected directions. For institutional ongoing training, it could be that IPs who completed literacy classes benefit from the education staff being trained in techniques like de-escalation and clinical topics to manage issues in an effective way. Additionally, when education staff attend program ongoing training they may learn new techniques to teach literacy and help IPs in the program gain some skills and confidence in their ability to change. The counterintuitive results for training and behavior among the sample of IPs who completed general education courses could be due to the fact that those courses have a high proportion of mandated students. In Ohio if IPs are admitted without a high school diploma or GED they are mandated to attend general education programming for six months. The result of this is that the sample of IPs that completed general education programs include a mixture of IPs who signed up for the program willingly and some who were mandated to attend, most of whom likely fell in the second group.

For the sample of IPs who completed vocation and apprenticeship programs, the relationships between institutional ongoing training and the outcomes of violent and any misconduct were in the expected directions, although not significant. The relationships between program ongoing training and three of the misconduct outcomes were not in predicted direction

for the same program sample, however. One possible explanation could be when vocation and apprenticeship staff attend ongoing training related to curriculum or assessments related to their field, they may feel the need to scale back on their own unique ways of teaching students the trade. They may attend the training and are reminded or instructed to follow a certain curriculum and this may not benefit their students in terms of learning the skill or staying focused in ways that would help them learn skills and manage their behavior in the institution. In short, instructors may be dissuaded in these sessions from using individualized approaches that actually "work" for them.

The directions of the relationships between instructor effort and ability and the misconduct outcomes were mostly intuitive. For the sample of IPs who completed vocation or apprenticeship programs, instructor effort and ability was inversely associated with all three types of misconduct and this variable significantly lowered the likelihood of IPs engaging in any misconduct after program completion. For the sample of IPs who completed general education programs, the relationship between instructor effort and ability and most of the misconduct outcomes were also in the predicted direction but not significant. For this sample in particular, when the instructor is able to answer questions and provide clear examples this may help the IPs in the class to learn concepts and increase the chances that they pass their GED. The positive feelings associated with passing the test and the self-efficacy gained from this achievement may encourage IPs to stay out of trouble.

Finally, the positive relationship between instructor effort and ability and violent misconduct for the sample of IPs who completed literacy programs was counterintuitive. It could be that when literacy instructors are skilled at explaining concepts or giving examples, this causes some animosity or IPs view their teaching style as condescending even when if the instructor is trying

to help. This could potentially feed IPs' disrespect toward these specific programs and facilitators.

The relationships between class participation, class time, and the misconduct outcomes were mixed across all program types. Results for behavior management were also mixed but mostly counterintuitive. In all of the models examining misconduct for the sample of IPs who completed vocation or apprenticeship programs, this relationship was positive. Additionally, the relationship between behavior management and violent misconduct was significant for the sample of IPs who completed general education programs. Perhaps when staff are using behavior management techniques they are creating power struggles and the attempts to calm misbehavior or manage noncompliance result in more incidents and/or frustration that leads to violent misconduct. Additionally, these results could be a consequence of how education staff in Ohio are not formally trained in core correctional practices (CCP) as a way to manage behavior in the classroom. While they may receive training as an instructor on other methods for managing behavior, there may be additional techniques and skills that are more effective in prison settings.

Finally, there were a few notable interaction effects when random level-1 estimates for any misconduct in year one were treated as the outcome. For the sample of IPs who completed literacy programs, higher scores on program support and behavior management coincided with stronger effects of past misconduct on any subsequent misconduct. On the other hand, higher scores on instructor effort and ability corresponded with weaker effects of prior misconduct on subsequent misconduct. These instructors may be more effective in boosting the confidence of IPs in their ability to gain skills, potentially tempering the impact of past rule violations on future deviance within the facility.

The sample of IPs who completed college courses included only 27 individuals and there were very few significant results. Findings demonstrated that there were no individual-level predictors that reached the level of significance and the level-2 models were not estimated due to the nonsignificant variance in misconduct rates across facility-specific college classes.

Overall, the program characteristics that appeared to matter in terms of lowering the likelihood of different types of misconduct for most program types included program support and instructor effort and ability. The education program features that had generally mixed or null relationships with misconduct were institutional ongoing training, class participation, and class time across most program types. Program ongoing training and behavior management were often positively associated with increased odds of engaging in several types of misconduct.

Themes from the Analysis of Return to Prison

The final research question asked, *which program characteristics are significantly correlated with reductions in the odds of returning to prison?* In looking at the themes across the multilevel models for literacy and vocation/apprenticeship programs, the results are mixed and mostly counterintuitive. Although program support and institutional ongoing training were inversely related to returning to prison for the general education completers (as predicted), these factors were positively associated with returning to prison for the vocation and apprenticeship program completers. Perhaps specific efforts to support vocation or apprenticeship programs somehow hinder an IP's ability to learn the trade and do not assist them in finding employment after release. For some of the vocation and apprenticeship programs offered in Ohio's institutions, the skill or trade that they are learning does not easily translate to opportunities in the community. For example, many institutions ran functioning farms and agriculture programs at the time of the study. These programs may have had support from the institution and

administration but it may be difficult for IPs to find employment related to these skills. Many IPs return to urban areas in Ohio (e.g., Cincinnati, Cleveland, Columbus) and the skills they gained in the agriculture industry in the institution do not apply to employment opportunities in the urban areas where they reside.

The relationships between instructor effort and ability, class participation, class time, and return to prison were counterintuitive for both general education and vocation/apprenticeship completers. These factors were positively associated with prison returns for both program samples. It could be that ongoing training of vocational staff in restraint and de-escalation techniques places them on guard or encourages them to shift their teaching style in a way that hinders IPs from remaining successful in the long-run. This could lead to distrust of IPs in the program and perhaps instructors are less likely to give IPs freedom to test out vocational tasks/skills. Such a focus in training could lead instructors to physically distance themselves from IPs and not demonstrate or allow them to observe demonstrations of skills, thus hindering an IP's motivation to learn the specific trade.

Another hypothetical explanation for these results could be that instructor effort and ability may result in the instructor relying too heavily on textbook explanations or explaining and describing techniques without physically demonstrating these skills for the IPs in the class. This may not be helpful for the IPs because they need to see demonstrations and practice the trade in a hands-on fashion. This is consistent with research on best practices in terms of social learning theory and teaching new skills through observation and practice (Bandura & Walter, 1977). When instructors in the vocation/apprenticeship programs are simply explaining concepts or providing verbal examples, this may not be useful to IPs upon reentry.

Another counterintuitive finding for this program sample is the positive relationship between class time and return to prison. It is possible that increased class time in a vocational or apprenticeship program may result in more unstructured, unsupervised time where IPs are not learning or applying skills to gain proficiency in the trade they are learning. The IPs could be missing opportunities to practice skills to improve their chances of employment. Additionally, unsupervised time may lead to antisocial behavior. If a group of IPs are gathered in a classroom and there is little to no supervision from instructors or other staff, this could lead to discussions of illegal pastimes or engaging in antisocial behavior.

The direction of the relationships between program ongoing training and return to prison was mixed for the samples of IPs who completed general education and vocation/apprenticeship programs. For vocation and apprenticeship completers, this relationship was inverse while the relationship was positive for the general education completers. The program-specific ongoing training could help vocation/apprenticeship instructors learn new ways of teaching skills and this may result in improved outcomes in terms of employment for completers. On the other hand, program ongoing training for general education instructors does not assist IPs in gaining any type of vocational skills. Program ongoing training for general education instructors may be related more to helping participants pass their GED, and these skills may not directly apply to success after release.

An intuitive result for individuals who completed vocation or apprenticeship programs was the inverse relationship between behavior management and return to prison. Perhaps more behavior management techniques implemented in the classroom helps individuals to self-monitor their own behavior after release. It could also be that vocation and apprenticeship classes with

more structure and with formal behavior management systems in place are more equipped to teach IPs the skills they need to be successful at a job related to the vocation.

Another notable result from the sample of general education completers is that many of the level-2 predictors were significant in the zero-order and the multivariable models with level-2 predictors only, but when included with the level-1 predictors they were no longer significant. Controlling for these level-1 effects rendered non-significant level-2 effects, suggesting that the composition of program participants was most important for determining the odds of returning to prison.

For the sample of IPs who completed college courses, there were again few significant results. Due to the small sample of IPs and the few college programs where data were collected, it was difficult to make any conclusions about the impact of multilevel predictors on the odds of returning to prison.

In sum, the program characteristic that appeared to be more consistently linked to lower odds of returning to prison involved behavior management. Program characteristics that had mixed relationships with return to prison involved program support, institutional ongoing training, and program ongoing training. At the other end of the spectrum, instructor effort and ability, class participation, and class time were often positively associated with increased odds of returning to prison.

Implications for Rehabilitation, Prison Education Programs, & Institutional Management

The first research question focused on identifying the major dimensions of prison education and vocation programs using a data collection tool grounded in the theories of the PEI and the adult education literature. The second and third research questions aimed to understand how those program characteristics, controlling for individual- and facility-specific characteristics,

influenced the odds of rule violations during incarceration as well as the odds of returning to prison after release for persons who completed these programs. The results from this study provide insight into how the PEI and the theoretical foundation of adult education impact IPs who complete education and vocation programs. Additionally, the findings have implications for research related to prison management practices, misconduct, and the notion that both individual- and institution-level characteristics influence behavior in prison.

Implications for the Principles of Effective Intervention

The principles of effective intervention provide guidance related to the components of effective treatment programs for individuals involved in the justice system. For this study, the PEI provided context for the utility of examining prison education and vocation programs. This section briefly reviews the components of risk, need, responsivity, and fidelity and offers a discussion of their applicability to these programs.

The risk principle is focused on assessment of risk for recidivism and identifying the most appropriate group of individuals for intensive treatment services (Andrews & Bonta, 2017). Specifically, more treatment programs and "dosage" hours are recommended for higher risk individuals (Gendreau, 1996). When intensive treatment services are provided to low risk individuals this tends to increase recidivism rates (Andrews & Bonta, 2017; Bonta et al., 2000). Although some of the measures capturing components of the risk principle were either not included (due to a lack of variation across facility-specific programs) or they did not load on particular factors, this principle may provide an explanation for some of the counterintuitive results of this study. For example, the risk levels of IPs involved in education and vocation programs were largely unknown. This could lead to increased misconduct or recidivism outcomes for lower risk IPs if they are exposed to higher risk IPs in these programs.

Additionally, some of the programs examined here could be considered "intensive" programs. For example, some of the literacy programs are literacy "units" within an institution where IPs are housed with others who are participating in the program. Some of the vocation and apprenticeship programs included in the study provide over 1,000 hours of instruction for those who participate. These "intensive" programs may be targeting an inappropriate group of IPs. This may be similar to the research demonstrating that treatment programs can provide too much dosage for lower risk individuals (Makarios et al., 2014).

The need principle guides the most effective targets for treatment and services for individuals involved in the justice system. These areas include static and dynamic areas in an individual's life. Although this study focused on the criminogenic need area of education and employment, research on this principle may provide some insight into the results. Taking a closer look at the IPs involved in the return to prison analyses, the samples were limited to IPs who *only* completed the education program of interest. Some of the failure in terms of returning to prison may be due in part to the fact that only one criminogenic need was targeted while they were incarcerated. Additionally, targeting fewer criminogenic needs may negatively impact behavior while incarcerated. Previous studies have demonstrated that targeting multiple criminogenic needs through prison programs can impact misconduct (French & Gendreau, 2006). This is somewhat consistent with the technical report on the Evaluation of Ohio's Prison Programs where completion of multiple programs generally led to lowered misconduct rates (Latessa et al., 2015).

The responsivity principle consists of two components including general and specific responsivity. General responsivity provides guidance on the type of treatment and the overall environment that is most effective for the majority of individuals (Andrews & Bonta, 2017). The

recommendations related to general responsivity typically highlight the importance of using cognitive behavioral treatment and social learning approaches for treatment programming. In addition, research on the responsivity principle has emphasized the importance of consistency and the regular use of core correctional practices by staff (Chadwick et al., 2015). In the current study, the behavior management variable is most closely aligned with the core correctional practices. The core correctional practices include several verbal skills that can be used to manage behavior by reinforcing prosocial behavior or disapproving of antisocial behavior (Andrews & Kiessling, 1980). The results of the current study suggest that behavior management was inversely associated with the odds of returning to prison for general education and vocation/apprenticeship completers. However, the results for misconduct did not support the importance of behavior management in the classroom. Behavior management was positively associated with misconduct across the samples of IPs who completed literacy, general education, and vocation/apprenticeship.

Specific responsivity is focused on efforts to assess and remove individual barriers to increase the effectiveness of treatment (Andrews & Bonta, 2017). One of the latent program variables was focused on an area that would be traditionally considered a specific responsivity component in the correctional rehabilitation literature. This variable was instructor effort and ability which captures the importance of managing barriers from a responsivity perspective. The measures included in this factor are related to the instructor's ability to answer questions and provide useful examples or illustrations to explain concepts. However, instructor effort and ability was positively associated with violent misconduct for the literacy completers and positively associated with return to prison for the sample of IPs who completed general education and vocation or apprenticeship programs. The results suggest that this component of

specific responsivity did not apply to multiple education programs and even resulted in increased failures for the IPs who completed these programs.

The fidelity principle emphasizes the importance of consistent adherence to risk, need and responsivity, and conducting practices and programs with integrity. Recommendations to maintain fidelity include hiring practices, staff training policies, and efforts for quality assurance/monitoring (Lipsey & Landenberger, 2005; Makarios et al., 2016). In this study, two factors are related to the fidelity principle. These factors involved ongoing training for education staff on institutional practices (e.g., restraint, de-escalation) and ongoing training for program-specific practices (e.g., curriculum, assessments). This component of PEI emphasizes the importance of ensuring that there is consistency and that staff are implementing practices in the way they were designed. Ongoing training is a quality assurance practice that aims to build coherence and provide increased opportunities to remind or update staff on the skills learned in the previous trainings. The results from this study are mostly inconsistent with prior evidence supporting the importance of staff training in terms of the impact on outcomes like recidivism (Makarios et al., 2016). For example, ongoing program training was positively associated with all four types of misconduct examined for the sample of IPs who completed general education programs. Institutional ongoing training for staff was significantly associated with greater odds of returning to prison for the vocation/apprenticeship completers. The results of the current study do not provide support for the training component of the fidelity principle. This could be due to the fact that the training variables in this study are focused only on education staff whereas previous studies of training were focused on treatment staff. This may be an important distinction.

Implications for Adult Education Principles in a Prison Setting

The results of this dissertation provide some implications for how the adult education principles apply to prison-based education and vocation programs. Most of the latent program variables fall within two of the principles of effective education programs discussed in chapter two with a majority falling under the "environment principle."

The environment principle described earlier was focused on the specific and general environment of the education program. Two of the components of this principle include the climate of the classroom/institution and the extent to which participation is elicited from adults in the class. The program support factor taps into the first component related to the climate of the class and the overall support for the program. Extant research on this principle describes the "psychological" climate of the class and how this influences outcomes (Galbraith, 1991). Both measures from the program support factor may tap into the concept of the overall environment of the classroom. For example, if there is clear support from administration for the program this would likely impact the climate of the class. Similarly, if instructors believe that the IPs are capable of changing their behavior, this would likely impact the environmental features of the class. Studies examining this component of the environment principle have focused mainly on measuring changes in academic outcomes (e.g., Eccles & Roeser, 2009) so it is difficult to directly compare the results from this dissertation since the outcomes are focused on criminal behavior. However, the results of this study refute the idea that certain components of the environment principle described in the adult education literature are related to reductions in recidivism.

Another component of the environment principle is related to active participation in the classroom. Again, this dissertation identified a unique factor related to class participation. Many education scholars have discussed the influence of engaging adult learners through direct

practice and active participation (Ames, 1992; Birkenholz, 1999; Darkenwald & Merriam, 1982). The results of the factor analysis support this idea and demonstrate that this component is an important factor in prison-based education programs as well. Additionally, related to the environment principle, and specifically participation, the factor capturing class time could be somewhat related to this principle. This factor may be relevant to the environment principle when considering the amount of time in class for IPs to learn new skills, practice, and work with instructors to understand concepts. Again, the class participation and class time factors may be part of the factor structure for prison education programs but they were often not significantly related to subsequent deviance in this study, and most of the significant effects involved higher odds of misconduct and prison returns.

Finally, the factor related to behavior management taps into two different principles of adult education. First, behavior management may be a component of the environment in the classroom. The two measures included in this factor are evidence that rules/norms are followed and the rules of the classroom are physically posted somewhere. These items may reflect environmental characteristics or the "climate" of the education/vocation program. In classes where students are following the rules and listening to instructors when redirected could be an indicator of a specific environment where expectations of students are clear and there is a level of accountability. Additionally, if the rules/expectations are actually posted in the class this again reinforces the message that the instructor has expectations and is willing to enforce rules if necessary. These efforts may increase the feeling of a structured, safe environment. Second, the behavior management factor also captures some of the features of the collaboration principle. Specifically, the measures around if IPs receive a copy of the rules and if they formally agree to those rules. These practices may encourage collaboration between IPs and instructors. If IPs

must sign a contract at the beginning of the class agreeing to follow the expectations and rules, this provides an opportunity for them to have a choice and review those expectations. The results of the study do not support the importance of behavior management in terms of lowering the odds of engaging in misconduct. However, the behavior management factor was significantly and inversely related to the odds of returning to prison for the sample of IPs who completed vocation or apprenticeship programs.

Implications for Theories of Institutional Misconduct

Some of the major predictors of misconduct, in extant research and demonstrated in this dissertation, include the individual characteristics of IPs. The individual-level characteristics examined in this study are similar to previous research examining misconduct outcomes. First, marital status was not significantly associated with misconduct, counter to the ideas presented in social control theory where marriage may reflect a commitment to conformity (to social norms/constructs). This result was not consistent with previous research where marital status was a significant predictor of misconduct (Cao et al., 1997; Wright, 1991). Age, however, was a consistent predictor of both misconduct and return to prison outcomes. This result is similar to previous studies examining misconduct as an outcome (Wooldredge et al., 2001; Camp et al., 2003; Griffin & Hepburn, 2006; Steiner & Wooldredge, 2008). The inverse relationship between age and misconduct applied to the education and vocation program completers across all samples in this study.

At the institution-level there were several notable results that have implications for prison management strategies. Several of the prison management models, discussed in chapter two, encourage the use of remunerative controls to maintain order in prison. Providing opportunities for IPs to be involved in jobs, programs, and structured activities serves as a way to manage the

population. The results from this dissertation implying that multiple program completions may impact misconduct of various types is supportive of this idea that remunerative controls may help increase safety. Huebner (2003) found evidence to suggest that remunerative controls (higher proportions of IPs working) resulted in less assaultive behavior. Similarly, among the sample of IPs who completed vocation programs, when IPs completed other programs along with the vocation or apprenticeship training this tended to lower the likelihood of violent, drug, and any misconduct in year two. It may be that these programs help to keep IPs busy and structure their time while incarcerated, making it beneficial to offer more programs.

The findings for crowding are also worth noting. Based on previous research, an increase in crowding may also increase the rate of misconduct. This may be due to the difficult nature of supervising a large number of IPs because of the limited capacity of available programming available when you have a large number of IPs who need treatment services (Steiner & Wooldredge, 2009). In this dissertation, there were mixed results for the effects of crowding on misconduct and return to prison. For the sample of IPs who completed general education programs, crowding was inversely related to property misconduct but was positively associated with drug misconduct. It could be that as crowding increases the ability to supervise IPs and detect when drugs come into the institution may become more difficult. There is less supervision when the number of IPs increases beyond the capacity of the institution. In crowded institutions drug transactions may be easily concealed where stealing from other IPs is more difficult due to more people in close proximity. It could also be that as crowding increases staff are more likely to write up more serious infractions and manage less serious infractions informally. Therefore, property misconduct may be less of a concern in an overcrowded prison or staff may decide that

it is not worth citing an inmate for that behavior. There are many instances when staff manage conflict and misbehavior in an informal capacity without writing a formal ticket.

Policy Implications and Recommendations

Some of the findings described in this dissertation might be considered for improving prison education and vocation programs for the purposes of reducing misconduct and lowering the odds of IPs returning to prison after release. The implications and specific recommendations include increased support for education programs, creating education pathways within institutions, improving behavior management within programs, and recognizing the individual-level factors that influence behavior. Each of the implications and specific recommendations are discussed below.

Program Support

The factor measuring program support was significantly and inversely correlated with property misconduct for literacy completers and drug misconduct for general education completers. These findings suggest that it may be worthwhile to increase support for literacy and general education programs within Ohio prisons. One of the two measures in the factor of program support is support for the program by the administration, and so efforts might specifically target administrative and leadership staff. This could include training for management and leadership related to the importance and effectiveness of education programming. The prison administration could attend workshops or presentations related to the benefits of education for IPs including the available research demonstrating the impact on misconduct (Duwe et al., 2015; Pompoco et al., 2017), recidivism (Bozick et al., 2018; Davis et al., 2013), and studies demonstrating the cost effectiveness of education programs (Aos et al., 2006).

The second measure in the program support factor is specifically related to the education staff and their support for rehabilitation. This may be an important consideration for the education department when hiring new staff. If this is not a current practice, leadership in the education department could add questions during initial interviews related to the potential instructor's beliefs or views related to offender rehabilitation. Decisions about hiring staff could incorporate these beliefs or views.

Education Pathways

There were several findings that demonstrated the added value of IPs completing other programs in addition to the education program of interest. This is consistent with literature demonstrating the increased effectiveness of completing multiple prison programs (Latessa et al., 2015) and the literature demonstrating the effectiveness of targeting multiple criminogenic needs (French & Gendreau, 2006). It could also be argued that increased programming and structured activities serve as a way to increase remunerative controls in the institution (Huebner, 2003).

Some of the results from this dissertation support the notion that increased programming opportunities are useful in terms of lowering the odds of misconduct. Institutions can create more structured avenues for IPs to identify and complete programs. For example, when IPs complete their general education program and/or obtain their GED, instructors and case managers can recommend or present the vocational opportunities available. The same structured pathway could apply to college programs. Upon completion of a college class, staff can begin working with completers to identify a vocational program. Another possible way to increase buy-in and interest in furthering educational opportunities would be to create an incentive system where upon completion of a GED, for example, IPs are prioritized or placed higher on the waitlist for vocational or apprenticeship programs. Additionally, the findings demonstrated some benefits in

terms of lowered odds of engaging in multiple types of misconduct when IPs completed treatment programs in addition to completing vocation programs. Case managers could provide specific recommendations related to participating in a vocation or apprenticeship program after completing a unit management, recovery services, or mental health program. This might not be an intuitive recommendation from the perspective of a case manager, so staff may need to be trained and coached on how to choose and recommend next steps for IPs who have successfully completed these programs. IPs may already be accustomed to regularly attending a structured program, so they could be encouraged to sign up for a vocation program shortly following the completion of the treatment.

Behavior Management

The behavior management factor was significantly related to successful outcomes in the return to prison analysis for the sample of IPs who completed vocation or apprenticeship programs. Although many instructors are likely trained in general behavior management techniques, this could be an area where training and coaching could increase consistency and further improve outcomes post release. Either initial or booster training for instructors on formal and informal behavior management strategies could improve these practices. One recommendation that may assist in this endeavor would be training education staff on the Core Correctional Practices (CCP) (Andrews & Kiessling, 1980). These trainings are provided to staff working in corrections to ensure that there is consistency across staff in how they manage prosocial and antisocial behavior along with learning some cognitive behavior interventions. This training provides guidance on how to redirect misbehavior and encourage prosocial behavior. These skills would be useful in classroom settings and, again, provide training on consistent responses to offender behavior.

Individual-Level Factors

Individual-level factors played a more consistent role in explaining variation in both misconduct and recidivism. This result provides some insight into what contributes to behavior upon completion of education and vocation programs. For IPs who completed vocation or apprenticeship programs, a pattern emerged where the individual's security level and if s/he engaged in any misconduct during the first year of incarceration were fairly consistent in terms of their significant and positive association with different types of misconduct. For the sample of IPs who completed literacy programs, several of the individual-level predictors were the *only* significant predictors of returning to prison within three years of release. This was similar to the results for the sample of IPs who completed general education programs. Across both of these samples significant level-2 predictors were not detected in the multilevel models. For the samples of IPs who completed literacy and general education programs, the significant individual-level predictors included age, the number of prior prison terms, and sentence length. The direction of the relationship between sentence length and the odds of returning to prison, however, was counterintuitive. This is a unique finding and not replicated in other studies using these data (Latessa et al., 2015; Lugo et al., 2019; Pompoco et al., 2017). Perhaps this is a result that is specific to the samples of IPs who completed education and vocation programs. Additionally, for the sample of IPs who completed vocation or apprenticeship programs, there were consistent level-1 predictors that were significantly related to the likelihood of returning to prison. The number of prior prison terms, security level, and serious misconduct were all positive and significantly related to returning to prison for this group.

Overall, age was consistently significantly and inversely related to multiple misconduct outcomes and return to prison across several program samples. The second most consistent

individual-level predictor was security level and it was positively associated with many misconduct outcomes and return to prison. Knowing that these individual characteristics are important for behavior change can guide recommendations and referrals for IPs.

Study Limitations

Although this study contributes to knowledge on prison education and vocation programs and the underlying mechanisms driving success upon completion of these programs, there were several limitations of the study that should be noted. First, there were several analytic samples that were small due to the exclusionary criteria. In part this was due to the decision to limit the sample to "stable" IPs, or IPs who experienced one to two movements between institutions. Although this was necessary for the multilevel nature of the analyses, this approach decreased the sample substantially. Additionally, for the analysis of misconduct, the sample was further limited to IPs who served at least two years. This was necessary to establish temporal order of program completion in the first year of incarceration and then tracking any misconduct incidents post-program completion in the second year. This decision impacted the number of IPs who were ultimately included in the samples.

Related to sample limitations, for the analyses involving misconduct as an outcome the samples included IPs who completed other programs during the timeframe of interest. In order to maintain enough cases for the statistical analyses, these IPs were included while controlling for each of the additional reentry approved programs that they completed during this timeframe. These IPs accounted for a small proportion of each sample but this is a limitation nonetheless.

An additional limitation is related to the outcome measures of misconduct. The misconduct measures included in the analyses were limited to only infractions that IPs were found guilty of through RIB hearings. This officially reported misconduct has been criticized in the past because

it may underestimate the actual misbehavior in prison (Steiner & Wooldredge, 2008). One way to approach this would be to include any infraction the IP was written up for instead of only including the guilty infractions. Another method would be to collect self-reported misconduct data. Self-reported data has its own set of limitations but a combination of self-reported and official misconduct would be preferred (Steiner & Wooldredge, 2014). Self-reported misconduct was not part of the data collection efforts from the larger evaluation study but might be a consideration for future research examining misconduct as an outcome.

The final limitation noted here is the collection of data on education and vocation program characteristics for the multilevel analyses. During the data collection process in the larger evaluation study, the researchers used the data collection forms for individual programs (e.g., literacy, welding, carpentry) at each facility. Depending on the number of programs able to be evaluated during each site visit, this often resulted in multiple scoresheets for the same "type" of program (e.g., general education, vocation/apprenticeship). In order to create one facility-specific program to evaluate in the multilevel models, these scoresheets were pooled across the same programs (e.g., scoresheets completed on three college classes). For example, if Lebanon Correctional Institution (LeCI) had multiple vocation and apprenticeship programs, these scoresheets would be combined by averaging the scores across those programs to provide a general picture of the "average" vocation or apprenticeship program at LeCI. Although this is not a perfect measure of each distinct program's specific characteristics, this is the first evaluation examining how education and vocation program characteristics generally influence outcomes. Future studies could examine each distinct program individually for greater precision.

Directions for Future Research

The results for this dissertation raise several possible implications for future research. First, the small sample of IPs who completed college courses limited the analyses of those programs. Due to recent changes in Pell Grant opportunities in the United States there may be new opportunities for IPs to participate in college classes. In the 1990s when Pell grant funding for IPs was prohibited many states cut back on their college programs (Messemer, 2003). It is likely that college courses will expand in the future allowing more opportunities for eligible IPs to participate and earn college credit while incarcerated. With a larger sample, there would be a sufficient number of IPs nested within the facility-specific programs to provide reliable estimates of individual-level effects on misconduct and return to prison and to allow the effects to vary across facility-specific programs.

Additionally, the data collection efforts in the larger evaluation study could be replicated to increase data on education and vocation programs. Several measures were immediately eliminated from the factor analysis due to lack of variation. Future studies could collect data from prison education and vocation programs across states in order to increase variance in these distributions. For example, in Ohio's prison-based education and vocation programs there was no variation in programs that were aware of the inmate's risk level. Since all programs included in this study were within the same education department, this was not a practice that varied across facilities or programs. If data collection efforts were expanded across multiple states there may be more variation in some of the measures.

Third, the EFA and CFA was conducted with items pooled across all of the education programs as opposed to being conducted for each program separately. Future studies could separate these program types (e.g., literacy, general education, vocation/apprenticeship, and

college classes) and conduct similar analyses to identify similarities and differences in the latent program variables.

Finally, an interesting result emerged from this study demonstrating that the control variable of an inmate completing other programs along with a vocation or apprenticeship program was significantly and inversely correlated with lowered odds of engaging in multiple types of misconduct. Future studies could examine how much added benefit results from the completion of multiple programs and if there are certain program combinations that are more effective than others.

Conclusion

Extant studies of participation in prison education and vocation programs have uncovered some benefits for reducing recidivism (Aos & Drake, 2013; Bozick et al., 2018; Davis et al., 2013; MacKenzie, 2006; Wilson et al., 2000), and there is emerging evidence that participation in these programs corresponds with lower rates of misconduct (Duwe et al., 2015; Pompoco et al., 2017). Also, these programs tend to be cost-effective (Aos et al., 2006) and there is research suggesting that they assist with post-release outcomes such as employment (Bozick et al., 2018; Wilson et al., 2000). A major gap in this literature, however, is the role of specific elements of education programs for reducing subsequent misconduct and recidivism.

This dissertation is a first step in beginning to understand the program characteristics of effective correctional education programs. In addition, this study was grounded in theories of effective correctional treatment programming, literature from adult education and learning, as well as theories on the environmental influences on inmate behavior. The analytical approach revealed the relevance of individual, program, and facility-specific influences on misconduct and return to prison outcomes.

The findings described here demonstrate the importance of inmate characteristics for shaping specific outcomes for different education programs. Results were nuanced in that these predictors did not significantly impact all outcomes across all programs, and when they did it was not always in expected directions. Additionally, the findings revealed an intriguing factor structure for the program-specific data collected for the larger evaluation study.

Results were mixed in terms of how the facility-specific program features impacted misconduct and return to prison. Intuitive findings underscored the importance of program support and its influence on multiple types of misconduct among literacy and general education program completers. Also, behavior management strategies were inversely associated with the odds of returning to prison for IPs who completed vocation or apprenticeship programs.

Some of the findings also revealed counterintuitive relationships between the facility-specific program characteristics and outcomes. For example, ongoing training and instructor efforts/ability were related to increased odds of misconduct and return to prison across several samples. Overall, the results reiterate the need to continue to collect data and evaluate how inmate, program, and institutional characteristics influence behavior both inside and outside of the institution.

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APPENDIX A.

EVIDENCED-BASED CORRECTIONAL PROGRAM CHECKLIST- Vocation/Education Program (CPC-VEP) *VALIDATION SCORE* SHEET

Name of program: _____(ABLE, GED, college, carpenter)
Name of institution:_____
Date of Assessment:_____
Name of Assessor(s): _____

Program type/Interview: __Academic __Education __Vocation __ Apprenticeship __Principal Interview

1.0 Program Leadership and Support

1.1 Is there a Program Coordinator (PC) in charge of the programs that has overall responsibility and oversight?

Check one: _____ YES _____ NO

1.2 Does the PC select or approve all instructors - Check one:

_____ No involvement
_____ Minimal involvement—occasionally interviews/reviews resumes or not the decision maker
_____ Moderate involvement—conducts interviews/reviews resumes and shares decision making
_____ Significant involvement—conducts interviews/reviews resumes and is the decision maker

1.3 Does the PC supervise all instructors – Check one:

_____ No supervision or "open door policy"; provides supervision only when staff have questions
_____ Minimal—rarely attends staff meetings/conducts individual/group supervision sessions with staff
_____ Moderate—regularly attends staff meetings/conduct individual/group sessions, less than 2/ month
_____ Significant—attends nearly all staff meetings/conducts individual sessions, at least twice per month

Supervision setting – Check all that apply:

_____ Group setting
_____ Individual setting
_____ Staff meeting

Number of times per month: _____

Number of hours of formal supervision per month on average: _____

1.4 PC education and experience – Answer all items:

Highest level of education: _____
Area of study: _____
Years of experience working with offenders full-time: _____

1.5 Supported by administration – Rate all items:

Rating program support institution wide (# on a scale of 1-10): _____
Rating program support by the facility administration (# on a scale of 1-10): _____
Rating program support by stakeholders (# on a scale of 1-10): _____
Rating support for rehabilitation by security staff (# on a scale of 1-10): _____
Rating support for rehabilitation by education staff (# on a scale of 1-10): _____
Rating support for rehabilitation by unit management staff (# on a scale of 1-10): _____
Rating support for rehabilitation by recovery services staff (# on a scale of 1-10): _____

Rating support for rehabilitation institution wide (# on a scale of 1-10): _____
Rating support for rehabilitation the facility administration (# on a scale of 1-10): _____
Rating support for rehabilitation by security staff (# on a scale of 1-10): _____
Rating support for rehabilitation by education staff (# on a scale of 1-10): _____
Rating support for rehabilitation by unit management staff (# on a scale of 1-10): _____
Rating support for rehabilitation by recovery services staff (# on a scale of 1-10): _____

Rapport

Do you think the staff here have a good rapport with offenders? How would you rate your staff's rapport with offenders on a scale of 1-10?

Institution Wide:	1	2	3	4	5	6	7	8	9	10
Administration:	1	2	3	4	5	6	7	8	9	10
Security Staff:	1	2	3	4	5	6	7	8	9	10
Education Staff:	1	2	3	4	5	6	7	8	9	10
Unit Program Staff:	1	2	3	4	5	6	7	8	9	10
Recovery Services:	1	2	3	4	5	6	7	8	9	10

1.6 Ability of the current funding to sustain the program as designed – Check one:

_____ Funding completely inadequate—have had to cut several programs/services or have had to let staff go or not replace staff who have retired/resigned due to funding limitations
_____ Funding issues—unable to operate the program as designed due to some funding issues
_____ While increased funding is desired, able to operate the program as designed
_____ Program has enough funding to introduce new services/programming

Rate the adequacy of funding for the institution.

1	2	3	4	5	6	7	8	9	10
Not at all adequate								Very adequate	

1.7 Stability of program funding over the past two years – Check one:

_____ Highly unstable- program has experienced major funding cuts over the past two years resulting in decreases/elimination of several programs/services or one or two major programs/services
_____Unstable- program has experienced some funding cuts over the past two years resulting in decreases or elimination of one or more minor programs/services
_____ Stable- program funding has been stable and has not changed over the past two years or minor decreases have not resulted in service/programming decrease
_____ Highly stable- program funding has increased in the past two years

1.8 CENTRAL OFFICE

1.9 Library access adequate – Check all that apply:

_____ NA (non-education program)
_____ There is a schedule when participants can access the library

_____ Books are readily available in the library
_____ Materials are readily available in the library
_____ There is a budget for library materials
_____ There is a replacement schedule for these materials

1.10 Services for offenders with special needs are available – Check all that apply:

_____ NA
_____ Individuals with special needs are accepted into the program
_____ Physical space adapted for special needs
_____ Staff are certified to work with special needs
_____ Aides are available to assist individuals with special needs
_____ Equipment/materials are adapted for individuals with special needs

1.11 Computers/textbooks/material up-to-date – Answer all items:

No materials: _____
Year of copyright or development for textbooks: _____
Year of copyright or development for on materials: _____
Year of purchase of computers/equipment (majority of computers): _____
Year/type of operating system on computers: _____

2.0 Staff

2.1 For all instructors in these programs, what is their education/certification – Answer all items:

% with GED: _____
% with high school diploma: _____
% with some college: _____
% with associate degree: _____
% with bachelor's degree: _____
% with certification in the area they are instructing: _____
% with license in the area they are instructing: _____

2.2 For all instructors in these programs, what is their experience with offenders – Answer all items:

% with 1 year working with offenders: _____
% with 2 years working with offenders: _____
% with 3 years working with offenders: _____
% with 4 years working with offenders: _____
% with 5 years working with offenders: _____
% with 6+ years working with offenders: _____

2.3 What are the 5 most common skills & values that instructors are hired for – Check 5 that apply:

_____assertive/directive
_____good communication skills
_____good paperwork skills
_____good prosocial model for offenders
_____solution focused
_____believe treatment works for offenders
_____believes offenders should be punished
_____strict
_____good computer skills
_____good group facilitation skills
_____firm but fair

_____flexibility
_____teamwork
_____appearance
_____verbal communication skills
_____teaching experience
_____won't get walked on by offenders
_____ability to problem solve
_____little experience in corrections (so as not to burn out)
_____experience in a prison
_____experience in any correctional environment
_____licensure/certification
_____Other, please list_____

2.4 Regular instructor/staff meetings – Answer all items:

How many times per month do *you meet* with staff in your area: _____
How long do these program meetings last: _____
What happens in these meetings – Check all that apply:
An agenda is used: _____
Staff have input into the agenda: ____
New intakes are reviewed: _____
Cases reviews are conducted: _____
Problems are discussed: _____
Progress reports are completed: _____
Terminations are deliberated: _____
Trainings are delivered: _____

How many times per month do *you meet with* staff from outside your area: _____
How long do these facility meetings last: _____
What happens in these meetings – Check all that apply:
An agenda is used: _____
Staff have input into agenda/meeting: _____
Trainings are delivered: _____
Staff are required to attend meetings: _____
Problems are discussed: _____

2.5 Staff are able to modify the classes – Check one:
_____ No input into the program structure
_____ Limited input into the program structure
_____ Moderate input into the program structure
_____ Significant input into the program structure

2.6 Staff evaluations – Answer all items:
Are performance evaluations completed? _____
Is the evaluation the one from the state? _____
Number of times per year staff receive evaluations: _____
Staff receive a copy of their evaluation? _____YES _____ NO

2.7 Initial and on-going training for all instructors – Answer all items:

All staff attend the academy? _____

Staff receive additional training at this specific institution? _____

How were you trained to work in this department? _____

How many hours of INITIAL formal training total do staff receive? _____

Did you receive training in any of the following?
_____ First aid/CPR/Restraint (and other mandated non-service related topics)
_____ Training on facility policy and procedures
_____ Clinical topics (e.g. substance abuse, mental health, anger issues etc.)
_____ Assessments used by program
_____ Curriculum/materials used by program
_____ Program specific training
_____ Theory and practice of correctional interventions
_____ Training on "what works" in corrections
_____ Restraint/De-escalation
_____ Other security related topics
_____ Relationship skills
_____ Other

How long until new staff are working independently? (Number of days) _____

How many hours of ongoing formal training are staff REQUIRED to attend per year? _____

How many hours do staff actually attend each year? _____

_____ Training topics for formal ongoing trainings – Check all that apply:
_____ First aid/CPR/Restraint (and other mandated non-service related topics)
_____ Training on facility policy and procedures
_____ Clinical topics (e.g. substance abuse, mental health, anger issues etc.)
_____ Assessments used by program
_____ Curriculum/materials used by program
_____ Program specific training
_____ Theory and practice of correctional interventions
_____ Training on "what works" in corrections
_____ Restraint/De-escalation
_____ Other security related topics
_____ Relationship skills
_____ Other

2.8 Ethical guidelines in place that covers staff/offender boundaries, behavior, interactions, etc.? Check one:

X YES _____ NO

3.0 Offender Assessment

3.1 Program eligibility criteria followed and appropriate clients – Check all that apply:

_____ Eligibility criteria exist for the program
_____ Eligibility criteria are routinely followed
_____ There is a match between the service offered and the presenting offender problem
_____ Instructor has the ability to manage responsivity issues in class

What are the eligibility criteria? (list out assessments and scores)

What is the percentage of offenders that are accepted into the program that are inappropriate for the services offered? _____

3.2 Risk level known and separated – Check all that apply:

_____ The program is aware of the risk level of the offenders upon referral
_____ The program takes into account offender risk level for entry into the program
_____ Low risk offenders are not typically placed in programs with high risk offenders

What is the percentage of low risk offenders that are accepted into the program? _____

3.3 What instruments are used to assess for program need?
Purpose of tool: What is the instrument measuring? (e.g. depression, motivation, personality, etc.)
Standardized: Is the same criteria used to score each assessment?
Summary score: Do items in the instrument add up to a summary score?
Valid: Does the instrument have predictive validity? (is it a validated tool?)
Normed: Has the instrument been normed on the target population to make sure it is still predictive?

3.4 What instruments are used to assess for responsivity?
Purpose of tool: What is the instrument measuring? (e.g. depression, motivation, personality, etc.)
Standardized: Is the same criteria used to score each assessment?
Summary score: Do items in the instrument add up to a summary score?
Valid: Does the instrument have predictive validity? (is it a validated tool?)
Normed: Has the instrument been normed on the target population to make sure it is still predictive?

3.5 Group targets relevant higher need – Answer all items:

% of offenders with low need for service: _____
% of offenders with moderate need for service: _____
% of offenders with high need for service: _____

4.0 Educational Practices

4.1 Program serves sufficient number – Answer all items:

Number of clients admitted per quarter: _____
Total number of offenders who are admitted into the class each year: ____

4.2 ESL services provided – Check all that apply:

_____class is equipped to accept ESL students
_____class has separate classes for ESL students
_____instructors are ESL certified
_____instructors speak another language
_____class translates materials into other languages
_____class gives ESL students additional time to complete work

4.3 Instructors consistently skilled and knowledgeable – Check all that apply:
(PARTICIPANT INTERVIEWS)
Instructors are knowledgeable: _____
Instructors are comfortable: _____

Instructors can answer questions: _____
Instructors explain concepts clearly: _____
Instructors provide clear examples and illustrations: _____

4.4 Instructors consistently encourage participation – Check all that apply:

Not Applicable: _____ (i.e., workshop only)
Instructors have a participation requirement: _____
Participants are actively involved in the class: _____
Instructors call on participants: _____
Instructors give everyone a chance to practice: _____
Instructors ensure participants are paying attention/staying focused: _____

4.5 Homework assigned & reviewed – Check all that apply:

Not Applicable: _____ (i.e., maintenance program)
Instructors regularly assign homework: _____
Instructors regularly review homework: _____
Instructors regularly provide feedback to participants: _____

4.6 Class norms consistently established & followed – Check all that apply:

Not Applicable: _____ (i.e., workshop only)
There is evidence that class norms/rules have been established: _____
There is evidence that class norms/rules are followed: _____
Norms/rules are posted in the classrooms: _____
Participants receive a copy of the norms/rules: ____
Participants formally agree to abide by norms/rules (i.e., sign a contract): _____

4.7 Classes consistently held entire time – Check all that apply:

Not Applicable: _____ (i.e., workshop only)
Classes start on time: _____
Classes end on time: _____
Class time is used to provide instruction and give students time to practice: _____

4.8 If co-instructors are used, they actively participate in the class: Check one: ___ YES___ NO ____ NA

Are the co-instructors staff or inmates?

4.9 What is the average class size?

Start size: _____ End size: _____

What are the reasons people don't finish?

4.10 Instructors consistently address responsivity – Check all that apply:

Instructors aware of responsivity assessments: _____
Instructors address the different learning styles/barriers participants: ____

If so – how:

4.11 Use of instructional materials – Check all that apply:

NA: _____
Instructors routinely integrate materials into the classes: _____
Instructors use books: ____
Instructors use workbooks: _____
Instructors use handouts: _____
Instructors use audio/visual equipment: _____
Instructors use films/movies: _____

4.12 Learning objectives clearly stated – Check all that apply:

NA: _____
Learning objectives are outlines/stated for each class: ____
Objectives are attainable: _____
Objectives are measurable: _____
Evidence that lesson plans are designed to achieve goals: _____

4.13 Lesson plans – Check all that apply:

NA: _____
Lesson plans are developed for each class: _____
Plans have goals and objectives: _____
Plans outline the content of the lesson: _____
Plans outline the recommended teaching methods: _____
Plans include exercises and activities: _____
Plans include the accompanying homework: _____

4.14 Tutors/aides are available to assist participants who need extra help - Check one: __ YES __ NO __NA

4.15 Attendance recording – Check all that apply:

Attendance is recorded for each class: YES
The number of absences is limited by policy: YES

4.16 Are any of the following considered when matching offenders to treatment groups – Check all that apply:

_____ NA (all voluntary)
_____ Needs of the offender
_____ Level of offender motivation
_____ Offender personality
_____ Offender learning style
_____ Cognitive limitations of offender
_____ Gender
_____ Age
_____ Other, please specify
_____ None

4.17 Are staff matched to groups or services they provide based on any of the following attributes – Check all that apply:
_____ Staff professional experience
_____ Staff personality
_____ Staff desire/motivation to provide a particular treatment/service
_____ Staff skill level in a particular area
_____ Staff schedule/shift
_____ None -Assignment based upon need for service and staff attributes not considered when assigning staff to work duties

4.18 Classes are monitored by staff from beginning to end: DEFAULT SCORE YES

Effective Reinforcement

4.19 Rate the use of rewards/incentives by the program – Check one:

_____ Rewards are not used by the program
_____ Rewards are used sparingly—offenders should not be rewarded for expected behavior
_____ Moderate use of rewards—while the program believes rewards are important, they are limited in how liberally they use them
_____ Liberal use of rewards—staff are encouraged to use rewards frequently to shape offender behavior

What types of incentives and rewards are used by the program – Check all that apply:

_____ None
_____ Verbal/praise/recognition for prosocial behavior
_____ Increased privileges (e.g. bed time, free time, phone calls etc.)
_____ Certificates/awards
_____ Ceremonies
_____ Food/candy
_____ Points/level increase
_____ Gift certificates
_____ Early release
_____ Credit time/time for good behavior
_____ Increase in community passes/time on passes
_____ Other, please list

Do rewards appropriately match behaviors – Check one: ____ YES ____ NO

Is there written documentation outlining rewards – Check one: ____ YES ____ NO

4.20 Rate the application of rewards – Answer all items:

What is the approximate ratio of rewards to punishers (# of rewards to # of punishers)

_____ Rewards to _____ Punishers

Which factors do the program employ in the administration of rewards – Check all that apply:

_____ Staff are consistent with rewarding offenders
_____ Rewards seen as valuable in shaping behavior
_____ Rewards based on demonstration of a behavior
_____ Offender is told why s/he is being rewarded (tying reward to behavior)
_____ Rewards are individualized (no group rewards)
_____ Rewards are desired by the offender
_____ Rewards are varied
_____ Other, please list: _____

Effective Disapproval

4.21 Rate the use of punishers/consequences by the program – Check one:

_____ Punishers/consequences are not used by the program
_____ Liberal use of punishers—staff are encouraged to use punishers frequently to deter offender behavior
_____ Moderate use of punishers—punishers are used regularly to deter offender behavior
_____ Punishers are used sparingly—punishers are used only when necessary to extinguish inappropriate behavior

What types of punishers or consequences are used by the program – Check all that apply:

_____ None
_____ Verbal warnings/reprimands
_____ Conduct reports
_____ Dismissal from program
_____ Loss of privileges (e.g. bed time, free time, phone calls etc.)
_____ Shaming techniques (e.g. wearing signs, dressing up, singing, etc.)
_____ Typical Therapeutic Community techniques (client encounters)
_____ Physical interventions (push-ups, kneeling)
_____ Isolation/chair restriction
_____ Extra chores/duties
_____ Lengthen program stay
_____ Points/level decrease
_____ Take away community passes/time on passes
_____ Other, please list: _____

Do punishers appropriately match infractions – Check one: ____ YES ____ NO

4.22 Which factors do the programs employ in the administration of punishers – Check all that apply:

_____ Staff are consistent with punishing/consequencing offenders.
_____ Punishers seen as valuable in extinguishing unwanted behavior
_____ Punishers based on demonstration of a antisocial behavior
_____ Offender told why s/he is being punished (tying consequence to behavior)
_____ Punishers are individualized (no group consequences)
_____ Punishers are undesirable by the offender
_____ Punishers are varied
_____ Punishers appropriately match the infraction (not too harsh or lenient)
_____ Escape from punisher is impossible (offenders don't get out of punisher)
_____ Punishers are not spread out
_____ Alternative prosocial behavior it taught to offenders
_____ Punishers are immediate
_____ Other, please list: _____

4.23 Alternative behavior is offered after punisher is administered: DEFAULT SCORE YES

Structured Skill Building

4.24 Instructors consistently models skills & explains benefits – Check one: ____ YES ____ NO

4.25 Skill training w/corrective feedback is provided throughout the classes – Check one: ____ YES ____ NO

4.26 Graduated practice w/corrective feedback is provided – Check one: ____ YES ____ NO

Relationship Skills

4.27 Rapport established – Check all that apply:

_____ Instructors feel they have good rapport
_____ Participants feel the instructors have a good relationship with participants
_____ Respect is evidenced (Observation and participant interviews)
_____ Instructors have a good demeanor while instructing (Observation and participant interviews)
_____ Instructors have clear boundaries and maintain a professional relationship (Observation and participant interviews)

4.28 Avoids arguments & rolls w/resistance – Check all that apply:

_____ Instructors do not engage in arguments with participants

_____ Instructors use appropriate techniques to roll with resistance (Observation and participant interviews)

5.0 Quality Assurance

5.1 Observation of classes w/feedback – Answer all items:

How many times per year is each class/group observed by the program coordinator or supervisors: _____
How many times per year is each instructor given feedback on their performance in class: _____

5.2 Is participant satisfaction captured – Check one: ____ YES ____ NO

5.3 Are pre/post tests used to measure offender progress? If so, list:

5.4 Completion rate – Answer all items:

NA (new program): _____
Meets the established rates of the state department of education: _____
What is the average successful completion rate: _____

5.5 Completion criteria – Check all that apply:

Criteria clearly outline program completion: _____
Progress in acquiring knowledge and skills are the main consideration: _____
Performance measures that track skill acquisition are used: _____
Hours are tracked (if yes, write down number: _____
Program uses an assessment instrument: _____
Program uses a checklist of indicators: _____
Program uses exams: _____
Program uses a final project: _____
Program uses only attendance to determine completion: _____
Program uses a subjective determination to determine completion: _____

5.6 Progress clearly measured in the programs – Check all that apply:

The program has objective measures to track progress over time: _____
The program uses writing assignments: _____
The program uses demonstration of skills: _____
The program uses presentations: _____
Participants receive formal feedback concerning their progress: _____

5.7 Is the program well run? Check all that apply:
Strong leadership/management _____
Organized _____
Organizational harmony _____
% employed with this program for at least two years?
_____

5.8 Is the institution well run?
Strong leadership/management _____
Organized _____
Organizational harmony _____

APPENDIX B.

Table 1. EFA Results for Program Characteristics

Item	Factor Loading								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Instructors have participation requirement	.26	.15	.09	-.14	**.59**	-.18	.07	.38	.03
Participants are actively involved in the class	.04	.10	.05	.20	**.76**	-.08	.30	.39	.13
Instructors call on participants	-.19	.09	.16	**.42**	**.59**	.04	.07	.10	-.01
Instructors give everyone a chance to practice	-.03	.10	**-.57**	.34	**.70**	.10	.08	.16	.13
Instructors ensure participants are paying attention/staying focused	-.05	.09	-.06	.31	**.79**	.13	.18	.16	-.05
There is evidence that class norms/rules are followed	.03	-.07	-.04	.38	**.50**	.21	.29	**.68**	.06
Training topics for formal ongoing training: First aid/CPR	-.02	**.64**	-.02	-.03	-.05	-.07	-.04	.17	**.41**
Training topics for formal ongoing training: Facility	.03	**.73**	.09	-.30	.02	-.10	-.28	.18	-.05

Table 1. EFA Results for Program Characteristics

Item	Factor Loading								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
policy and procedures									
Training topics for formal ongoing training: Clinical topics	-.13	**.76**	.15	-.17	.36	.11	**-.48**	.05	-.01
Training topics for formal ongoing training: Restraint/de-escalation	-.06	**.59**	-.22	-.13	.10	-.07	**-.46**	**.44**	.25
Training topics for formal ongoing training: Other security related topics	.04	**.71**	-.30	.06	-.12	-.01	-.16	.20	.12
Training topics for formal ongoing training: Relationship skills	**-.46**	**.62**	-.01	-.04	.26	.17	-.26	.01	.03
There is a match between the service offered and the presenting offender problem	-.02	.29	.16	-.04	.25	**.58**	-.38	-.09	**-.45**
Instructors can answer questions	-.03	-.10	-.02	**.91**	.06	-.06	.35	.29	-.03
Instructors explain concepts clearly	.05	-.12	.10	**.99**	.14	.08	**.45**	.29	.21

Table 1. EFA Results for Program Characteristics

Item	Factor Loading								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Instructors provide clear examples and illustrations	-.11	-.11	-.05	**.91**	.19	.17	.33	.16	.04
Percentage of instructors with a Bachelor's degree	-.30	.03	.18	.10	-.03	**.49**	-.09	-.01	-.11
Total number of offenders who are admitted into the class each year	-.04	-.09	.09	.15	-.06	**.50**	.01	.04	.11
The average start size of the class	-.19	.03	.22	.28	.09	**.61**	-.03	.24	-.10
Instructors use workbooks	.20	-.01	**-.47**	-.20	-.08	**.58**	-.15	-.01	.09
Instructors use handouts	-.02	.07	.01	-.03	.20	**.45**	-.16	-.01	**.67**
Instructors use books	.13	-.08	-.08	.26	.16	**.46**	.07	.07	-.12
Class translates materials into other languages	.23	-.04	-.15	-.05	.06	**.50**	.04	-.01	.26
Pre/posttest used to measure offender progress: CASAS	-.22	.01	-.35	.09	.06	**.51**	-.11	.07	.33
Types of incentives and rewards used by the program: School supplies	.10	.26	-.10	-.01	.03	.07	-.37	-.03	**.68**

Table 1. EFA Results for Program Characteristics

Item	Factor Loading								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Training topics for formal ongoing training: Assessments	.00	**.42**	**.52**	.06	.11	.25	**-.44**	-.05	-.12
Training topics for formal ongoing training: Curriculum/material used by program	.05	.20	**.77**	-.20	.14	.08	-.30	-.08	.13
Training topics for formal ongoing training: Program specific training	.15	.01	**.71**	-.07	.10	.05	-.09	-.33	.11
Rating of the use of rewards/incentives by the program	.28	-.09	**.42**	.08	-.05	.15	.06	.01	.28
Class is equipped to accept ESL students	**.51**	-.14	.35	-.22	.01	.34	.38	.06	.03
Classes start on time	.21	.14	.01	.30	.24	-.12	**.85**	.28	-.01
Classes end on time	-.02	.14	-.06	.35	.11	-.14	**.82**	.30	.03
Norms/rules are posted in the classroom	.02	.13	-.07	.11	.16	.26	.13	**.50**	.01
Participants receive a copy of the norms/rules	.10	.15	-.03	.18	-.01	.09	.06	**.73**	-.12

Table 1. EFA Results for Program Characteristics

Item	Factor Loading								
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Participants formally agree to abide by the norms and rules (e.g., sign a contract)	-.03	.29	-.04	.16	.14	.00	.18	**.83**	.22
Rating of program support by the facility administration	**.72**	.08	.08	-.02	.15	-.00	.02	.03	-.05
Rating of support for rehabilitation by education staff	**.48**	.17	.08	-.03	.07	.14	-.05	-.02	-.02
Eigenvalues	5.59	4.40	3.39	2.98	2.67	2.29	2.05	1.71	1.64
*Factor loadings over .40 appear in bold									