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POST-SECONDARY CORRECTIONAL EDUCATION AND RECIDIVISM:
A META-ANALYSIS OF RESEARCH CONDUCTED 1990-1999

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Abstract

The current figure of United States citizens serving time behind bars stands at about 2 million. Recidivism rates range from approximately 41% to more than 60% depending on method of measurement. The 1994 Crime Bill ended Pell Grant eligibility for prison inmates, significantly cutting the depth and breadth of higher education programs in prisons and jails. In order to curtail further cuts, and to increase the number and scope of such programs, their efficacy must be verified. The relationship of post-secondary correctional education (PSCE) and recidivism has been widely studied with various, idiosyncratic results. A meta-analysis of ten years of existing studies was conducted to synthesize a portion of the past research. This study demonstrates, using relevant studies reported from 1990 – 1999, that there is a positive correlation (+.31) between PSCE and recidivism reduction. These results are statistically significant. Four subsets, or moderator analyses, were also positively related to recidivism reduction and statistically significant. These included (1) PSCE program completers versus completers and participants; (2) reincarceration only as the recidivism construct; (3) length of recidivism measure; and (4) studies using control groups to negate possible selection bias. It is hoped that this information will increase interest, justification, and funding of future PSCE programs.

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Chapter I The Problem

Introduction

Is higher education in prison a worthwhile endeavor for both inmates and society? The general consensus is “No!” It is a fact, however, that many research studies have shown benefits to inmates and society in terms of lower recidivism rates. This means that an inmate, who participates in higher education while in prison, is less likely to commit crimes, get arrested, or serve time in prison, after release or parole. Unfortunately, most of these studies are unique to the institution under scrutiny and use a variety of ways to measure higher education and recidivism, and are therefore not strong arguments in favor of post-secondary correctional education. A meta-analysis of an appropriate number of existing studies, in other words, a mathematical combination of all the methodologies, measurements, and results, will provide a more comprehensive and systematic justification for the inclusion of such programs in rehabilitative efforts.

But why is it necessary to ask this question? The numbers and percentages of United States citizens serving time behind bars is staggering, more than any other nation in the world (except possibly Russia), and five to eight times more citizens per capita than Western European countries. The current figure stands at about 2 million (Abramsky, 2002).

Recidivism rates are also staggering, ranging from approximately 41% to more than 60% depending on method of measurement (Frolander-Ulf & Yates, 2001). For example, the Bureau of Justice Statistics (2002) reports that of the 272,111 persons released from prisons in 15 States in 1994, an estimated 67.5% were rearrested for a felony or serious misdemeanor within 3 years, 46.9% were reconvicted, and 25.4% were re-sentenced to prison for a new crime. The 272,111 offenders discharged in 1994

accounted for nearly 4,877,000 arrest charges over their recorded careers. More than 7 of every 10 current (1996) inmates had prior sentences to probation or incarceration. About half a million imprisoned men and women will be released in the next decade (Frolander-Ulf & Yates, 2001). Few people would challenge the assertion that recidivism rates are a costly reality for society, in terms of both tax dollars and safety issues.

In the 200-year history of prisons in the United States, some type of education has always existed in these institutions, and higher education was incorporated in about 1912 (Silva, 1994). At its height in 1990, there were 350 higher education programs for inmates in the United States (Frolander-Ulf & Yates, 2001). In 1994, an Omnibus Crime Bill (Violent Crime Control and Law Enforcement Act of 1994: H.R. 3355) was easily passed by both the Senate and House of Representatives and signed by President Bill Clinton. Added to this bill was earlier proposed legislation halting the availability of Pell Grants for Post-Secondary Correctional Education (PSCE). The social and political climate at the time was in favor of getting tough on crime and slanted toward punishment rather than rehabilitation. When federal funding ceased, most states followed suit and substantially cut the funding and breadth of many PSCE programs (Steurer, Smith & Tracy, 2001; Tewksbury & Taylor, 1996). By 1997, there were 8 higher education programs for inmates remaining (Frolander-Ulf & Yates, 2001).

Prison labor has also been in existence since the beginnings of prisons in the United States. Changes in the direction of prison labor and industry from limitations to expansion have been occurring since 1979 and continue to the present day. Prison industries typically cost the taxpayers money and create unfair competition within the private sector due to the low wages paid and the non-necessity of medical benefits, sick

leave and retirement. There is also a dearth of actual job training given the low-end specter and skill levels needed for these jobs. Many prisons involved in the prison-industrial complex place the needs of the industry above rehabilitation efforts. By 1994, the gross sales of prison industry goods and services were \$1.2 billion (Verdeyen, 1995).

The prevailing climate and the growth of the prison-industrial complex, combined with idiosyncratic research on PSCE's effects on rates of recidivism, led to its significant reduction. The meaning of incarceration and the characteristics ascribed to prisoners are not historical constants. These changes directly relate to the varying approaches to education (Silva, 1994). Today, General Education Diploma (GED) courses, books, and testing are still available at most institutions and are often the only remaining educational opportunities. Life skills-types of "classes" geared specifically towards inmates are the focus of new additions to prisoner education. (Please note that there is more than just a semantic difference between educating prisoners and prisoner education. PSCE programs aim to bring the knowledge and opportunities inherent in higher education to inmates. Prisoner education is specifically designed for prisoners and deals with issues such as anger management and life skills. These programs, while potentially beneficial in some aspects, are very different than higher education, and not addressed in this research).

Education has played a role in the social mission of the prison throughout its history, and its role has been shaped in the systemic conflict between security, punishment and treatment (Silva, 1994). The current trend toward punishment and profit, rather than rehabilitation is serving no one, not prisoners, not victims, not society. It has not proven to be a deterrent, it costs vast sums of taxpayer dollars (Abramsky, 2002), and

it releases prisoners who are less marketable for employment than before their incarceration (Wacquant, 2000). In 1999, Federal, State, and local governments spent over \$146 billion for civil and criminal justice, an 8% increase over 1998. For every United States resident, the three levels of government together spent \$521. The average annual operating expenditure per inmate in 1996 was \$20,100 with a range from the lowest, Alabama at \$8,000 to the highest, Minnesota at \$37,800 (Bureau of Justice Statistics, 2002).

One of the primary goals of PSCE is to reduce recidivism by providing increased options for employment and a greater understanding of society for inmates while they serve their time. In order for PSCE programs to continue and grow, these effects must be measurable to an extent that satisfies those in the position to make decisions in this area, namely politicians, correctional administrators and educators, as well as the general, voting public.

There is little doubt that providing access to higher education to inmates within our nation's penal institutions is a highly controversial subject. Real challenges are presented to those aiming to promote education as a solution to the growing numbers of repeat offenders behind bars:

- Public and political views on the punishment versus rehabilitation debate
- The scarcity of, and competition for, funding options
- The perceived unworthiness of recipients
- The growth of the prison-industrial complex

These difficulties, combined with idiosyncratic and unconvincing research measuring PSCE's effect on recidivism, impede the corrections educators' attempts to sustain and

increase educational opportunities for prisoners. However, rehabilitation has distinct advantages as a public idea because it reflects core American values and has ideological legitimacy. It has been shown to be related to a reduction in recidivism while its competitor, the punishment paradigm, largely has not. It also provides an avenue for talking seriously about the root causes of crime (Cullen & Wright, 1997).

Statement of the Problem

Many individual studies have been conducted with various and situation-specific results leaving PSCE's measurable efficacy subject to critique (Clarke & Harrison, 1992; Gerber & Fritsch, 1995; Gregg, 1995; Holloway & Moke, 1986; Jancic, 1998; Jenkins, Pendery & Steurer, 1995; Ryan & Mauldin, 1994; Tracy, 1995; Windham School System, 1994). Recent and future changes in federal and state funding of PSCE make it imperative that the effects be documented in a more comprehensive and conclusive manner.

This study was conducted to gather evidence as to whether or not higher education in prison is related to recidivism rates. Meta-analysis was used to synthesize research results from much of the available data on Post-Secondary Correctional Education's (PSCE) relationship to recidivism. The individual studies used were published or reported between the years 1990 and 1999 and selected using the criteria explained in Chapter III. By conducting a meta-analysis of a substantial portion of recent research, specific issues such as design flaws, unique variables and small sample sizes, were reduced or negated. In this way, the best of the available data were compiled (Cooper, 1989; Rosenthal, 1991).

Purpose

The initial purpose of this research is to provide a data-based response to the question originally posed, and often repeated, in reference to rehabilitation efforts in prisons: "What works?"(Martinson, 1974). Almost without fail, the conclusions of these studies have included a statement regarding the need for a more widespread, comprehensive look at PSCE's effects. The results of a large-scale meta-analysis should offer a clear indication of Post-Secondary Correctional Education's benefits. This data may then be used for at least four purposes as outlined by I. Newman, Ridenour, C. Newman & Demarco (2001): (1) to measure change; (2) to add to the knowledge base; (3) to have a social, institutional and organizational impact; and (4) to inform constituencies.

In an effort to measure change, the specific meta-analysis procedure used goes beyond the indication of significance/non-significance of an individual study and coalesces the relationships of many studies. This research adds to the knowledge base by clarifying and organizing the research that has been done, and delineating the areas where subsequent research will be most informative (Olkin, 1990).

Meta-analysis is particularly valuable for policy-oriented research, that which holds social, institutional and organizational impact as its premise. Combining results from a number of experiments has a long history in the hard sciences, and due to the problems providing definitive conclusions from single social or behavioral studies, a synthesis of multiple studies is often necessary. Meta-analysis applies quantitative methods in combining results from different analytic studies. Although not a statistical method per se, it is oriented toward research synthesis that uses many techniques of

measurement and data analysis (Wachter & Straf, 1990). In simpler terms, it can provide the comprehensive numerical data so desired in policy formulation. It is assumed that this research will inform politicians, corrections administrators and educators as to the relevance of PSCE and, hopefully, have a beneficial influence on those leaders tasked with allocating funds and providing widespread opportunities for Post-Secondary Correctional Education.

The final purpose of this research is to inform its constituencies. These consist of the policy-makers above, but also the general public and the prisoners themselves. Although still a hard-sell, comprehensive data showing PSCE's relationship to recidivism may encourage some citizens to rethink their stance on rehabilitative efforts. The cost factor alone should convince even the conservative, tough-on-crime voters (price of education versus price of incarceration) that PSCE is worthy of investment. Community support, combined with success rates and stories, should provide valuable motivation for offenders looking for a new beginning.

The Theoretical Framework

Theory. The theoretical framework that has led to this topic, guided the literature review, and cemented the eventual decision to perform this specific analysis, stems from Johan Galtung's theory of structural violence (1969). As a peace researcher, Galtung defined peace as the absence of violence. The unique characteristic of his assertion involves his definition of violence, which he feels is present whenever humans are influenced so that their physical or mental realities are below their potential. Violence is the cause of the difference between the actual and the potential. In other words, if the potential is higher than the actual, and this state is avoidable, that which causes the lower

potential is a form of violence. Galtung uses literacy as an example: if the literacy rate is lower than it could or should be, that which has caused this can be called structural violence. It is a premise of this researcher, as well as other researchers and sociologists, that many criminal offenders are often early victims of structural violence.

Structural violence is different from personal violence in that it often is not readily apparent. In fact, the object of structural violence may not perceive it because it is silent, essentially stable and static, and often seen as the natural or normal state of affairs. Social injustice is often responsible for structural violence. For example, “in a society where life expectancy is twice as high in the upper as in the lower classes, violence is exercised even if there are no concrete actors one can point to as directly attacking others.” (p.173) In the case of inmates and PSCE, structural violence can be considered to be a core factor in the incarceration of many, if not most, non-violent offenders (Wilson, 1997; see also Pollack, 1980; Tabb, 1970; Winnick, 1989).

It is an irrefutable fact that African Americans are over-represented in all aspects of the criminal justice system. Prisons and jails are no exception. While African Americans represent approximately 12% of the general United States population, they represent 46.5 % of the male inmate population and 43% of the female inmate population (Harrison & Beck, 2002). Structural violence is involved in the lives of many African Americans in insidious ways. Beginning early in life, the lack of opportunity, discrimination, lack of hope, inequities in K-12 public education, insufficient health care and nutrition, and low expectations of society, are some of the ways that structural violence may have been manifested in the lives of those who come from the oppressed

groups in our society, including but not limited to African Americans and folks with low socio-economic status. As stated by Angela Davis (1998):

Criminality and deviance are racialized. Surveillance is thus focused on communities of color, immigrants, the unemployed, the undereducated, the homeless, and in general on those who have a diminishing claim to social resources. (p. 5)

Praxis. Many current and historical practices in criminal justice, such as mandatory sentencing, profiling, differential arrest, conviction and sentencing policies, and the so called “war on drugs,” have led to astronomical numbers of incarcerated citizens, particularly African Americans. Many of these same citizens have been victims of structural violence in their neighborhoods, schools, and opportunities afforded them. The interconnectedness and typical outcomes of these and other social injustices have led to a criminalization of the poor (Wacquant, 2000). The recent cuts in funding for, and emphasis on, Post-Secondary Correctional Education and other forms of rehabilitation, are denying citizens, in large part, African American citizens, the access to a chance to strive for their piece of the American dream. One can speculate about the role that the racial make-up of our prisons played in the 1994 cessation of PSCE opportunities to inmates.

The primary goal when illuminating a particular occurrence of structural violence is closely tied to ending or ameliorating social injustice. By synthesizing a decade’s worth of research on PSCE and recidivism, and giving activists, administrators, and elected officials access to sound, verifiable data about PSCE, it is hoped that the restoration and expansion of these programs will be a future reality.

Assumptions Underlying the Study

The following paragraph explains the underlying assumptions relevant to the parameters of this study. The researcher assumes that, given the number of years of research included in this study (ten), the results of meta-analysis will provide comprehensive and systematic data to substantially inform the knowledge base. It is also assumed that the degrees of freedom used in calculating individual study results will negate the differences in number of subjects in each study. It is further assumed that any education beyond high school or its equivalency is considered PSCE and will be included.

General Research Hypothesis

There is a relationship between Post-Secondary Correctional Education and recidivism, as demonstrated by a meta-analysis.

Delimitations. Research has been conducted on the effects of PSCE on recidivism for decades. The decision to concentrate on the years between 1990 and 1999 was based upon several assumptions. First, the research will be relatively current and thus more meaningful. Second, ten years of this research should generate a relatively large sample size. Third, given the astronomical changes in PSCE due to the 1994 Crime Bill, it may be possible to use this data in a further study comparing and contrasting these effects prior to and subsequent to the changes.

Many studies, particularly those with significant results, came directly from refereed journals. Most applicable journals in the fields of education, criminal justice, public policy, law, public administration and sociology were included. Other studies, particularly those not showing significant results, may not have been published. Searches

through dissertation abstracts, reports from federal grants, as well as solicitations to members of the Correctional Education Association PSCE Special Interest Group (SIG), uncovered additional studies for use.

Definitions and Operational Terms.

Recidivism- A tendency to relapse into criminal behavior. These are measured by looking at rates of re-arrest, re-conviction and re-incarceration. Recidivism is operationally defined by each study used.

Post-Secondary Correctional Education (PSCE) - Any type of education beyond high school, or its equivalency, that has inmates of prisons or jails for students. This includes vocational, academic, undergraduate, graduate, certificate and/or degree programs.

Meta-Analysis – A statistical procedure calculating correlational data size for a number of related studies in order to aggregate and understand the existing literature. Specific details and parameters are addressed in Chapter III.

Summary

The effects of Post-Secondary Correctional Education on recidivism have been widely studied with situation specific and varying results. The cuts in funding and breadth of higher education programs in prisons and jails can be viewed as structural violence as they limit the potential opportunities of a growing population of United States citizens. In order to curtail further cuts, and to increase the number and scope of such programs, their efficacy must be verified. A meta-analysis of ten years of existing studies addresses this question, and offers clarification of discrepant results in specific studies. It

is hoped that this information will increase interest, justification and funding of future PSCA programs. We all stand to benefit.

Chapter II Review of the Literature

General Background Information

The following is a review of the history and empirical research on post-secondary correctional education and recidivism. The chapter is divided into four sections. The first section is a historical background of prison education in the United States, which includes a brief, concurrent history of prison labor growth, and a current look at the state of both. The second section focuses on prior research on prison education and recidivism. The third section examines theoretical perspectives pertaining incarceration, punishment and rehabilitation. The fourth and final section attempts to justify the proposed research and the use of meta-analysis.

History of prison education. Education has been connected with prisons since the beginnings of prison in the United States. The first prison in the U.S. was run by Quakers in Philadelphia in 1791, who felt that solitude and the Bible would rehabilitate better than public humiliation or corporal punishment. The rehabilitative ideal affirms that the primary purpose of prison is to effect changes in the characters, attitudes, and behavior of convicted offenders, so as to strengthen the social defense against unwanted behavior, but also to contribute to the welfare and satisfactions of offenders (Allen, 1981). Education, predominantly religious in content, was seen as an integral part of this ideal and was incorporated in 1798 (Silva, 1994). Quaker rehabilitation-based prisons became known as the Pennsylvania System. Later, in the 1820s, a competing system lacking an educational component, known as the Auburn System was developed in New York State.

In the Pennsylvania system, prisoners were totally isolated except for nightly visits from a chaplain. This chaplain would provide reading lessons to facilitate the

reading of the Bible. In the Auburn System, men labored together all day in total silence. The founders believed that prisoners needed to be treated severely, producing terror and suffering, and they doubted that the prisoners were reform-able. By the 1840s, the Pennsylvania system was losing popularity and the Auburn System was adopted by most states.

Toward the end of the 1800s, a different view of criminality emerged, spearheaded by Zebulon Brockway, the first warden of the Elmira Reformatory in New York (Wells, 2000). He felt that some of the blame for a criminal's behavior was the fault of society, stemming from environmental influences and poverty. Therefore, he believed that education could provide a regeneration of the individual as well as a successful reintegration into society. This began the Reformatory era and the first ventures into post-secondary corrections education.

The first higher education courses in prisons were correspondence courses from Columbia University. In the 1920s, other, primarily land grant colleges, began offering courses in prison, including studies in agriculture, real estate, salesmanship, and remedial level academic courses. College level studies began at Sing Sing prison by Columbia University in 1923. There is evidence of the first personal contact between college faculty and prisoners at Rockview Prison in Pennsylvania in 1924 (Silva, 1994).

The state of California had the most extensive prison education programs in the country. In 1928, San Quentin Prison reported that there were 438 prisoners enrolled in University of California Extension Division courses. Mid-western states' inmates took extension courses from primarily land grant colleges and state education agencies. Southern states offered little to no education with the exception of a few, isolated literacy

programs. Somewhat understandably, during the Depression and World War II, little attention was paid to prison education. After WW II, due to the G.I. Bill, adult higher education grew quickly. State colleges and universities increasingly developed continuing education divisions and community colleges. Prison higher education benefited from this growth.

The first degree program in prison was initiated in 1953 by the Southern Illinois University at Carbondale at the Menard State Prison (Silva, 1994). Inmates were funded by state aid and university grants. Lack of funding was a persistent problem with prison higher education and its growth slowed in the 1950s. By 1965, only 12 postsecondary college programs were operating on a regular basis.

Perhaps the single most important event in the development of PSCE occurred in 1965 with the passage of Title IV of the Higher Education Act, which included Pell Grants that were available to prisoners, to pay for higher education. The 1960s & 1970s experienced growth in PSCE unlike any other time in history. Funds were available from public sources, private sources, federal, state and local government, and foundations, although very few received funding from their parent organizations (colleges and universities, etc.). Rehabilitation was a top priority for prisons, which were renamed “correctional institutions.” In 1968, there were college programs in 13 states, and by 1970, there were college programs in 33 states. PSCE grew from 182 programs in 1973, to 350 programs in 1982. In 1981, at least 28,000 prisoners were participating in higher education (Sourcebook of Criminal Justice Statistics, 1982).

In 1992, Pell Grants for PSCE were reauthorized with assurances that the Pell Grant was to be used to supplement rather than supplant State funding (Silva, 1994).

Without access to these funds, Jones and d'Errico (1994) felt that most prison education programs would be unlikely to survive.

Concurrent history of prison labor. Prison labor, in one form or another, has also existed since the advent of prisons. In the 1770s, the Connecticut colonial legislature specified the employment of inmates for profit. By the 1800s, the use of labor to subsidize the costs of incarceration was fairly common. In the mid 1800s, chain gangs and inmate lease systems emerged and by 1874, 33 states were selling inmate labor (Sigler & Stough, 1991).

The Auburn system of correctional industry that emerged in the 1800s has significant influence on the use of inmate labor today. Offenders were released to private manufacturers as laborers and prisons provided the space and supervision for this labor. The private sector and labor unions argued that this constituted unfair competition. In an effort to limit this competition, the Hawes-Cooper Act of 1929 determined that prison-made goods were subject to individual state laws (Verdeyen, 1995). In 1934, Federal Prison Industries, Inc. (FPI) was created by legislation to employ the greatest number of inmates with the condition that competition with private industry and free labor be reduced to a minimum (Flanagan & Maguire, 1993). The following year, the Sumners-Ashurst Act of 1935 prohibited the transportation in interstate commerce or from any foreign country into the United States any goods, wares or merchandise manufactured by prison labor (Verdeyen, 1995). Both the Hawes-Cooper Act and the Sumners-Ashurst Acts closed the private-sector markets to goods made by inmates (Verdeyen, 1995). In 1942, most prison labor limitations were lifted temporarily to allow convict labor to

contribute to the war effort. Legislation was returned to its pre-war state in 1947 (Hawkins, 1983).

A change in the direction of prison labor and industry from limitations to expansion occurred in 1979. The Justice System Improvement Act, aka the Percy Amendment, aka Prison Industry Enhancement (PIE), the Justice Assistance Act of 1984 and the Crime Control Act of 1990, expanded the PIE to include 50 jurisdictions. A key provision of the PIE was exemption from federal constraints placed on prison-made goods by permitting sales of such goods in interstate commerce and to the federal government. Also wages were to be comparable to the federal minimum (minus substantial deductions) (Verdeyen, 1995).

The goals of PIE were and are: (1) to generate products and services that produce income so that offenders can make a contribution to society, pay their own cost of incarceration and pay restitution to victims of crime, and (2) to provide purposeful work for offenders, thereby reducing prison tensions and providing some opportunity for offenders to change. At the origin of PIE, benefits to the prisoner seem to be the focus (Chappell, 1998).

In the 1980s the Law Enforcement Assistance Administration's Free Venture Model initiative (part of PIE) relaxed restrictive state-use legislation. Its major goal was to establish prison industrial programs that operated like their private-sector counterparts. It was intended to provide an opportunity for the private sector to become involved in prison production, although state-run industries were also eligible. In 1987, twenty states had enacted new or revised laws to allow for private sector employment of prisoners.

Twenty-four states authorized the sale of prisoner-made goods on the open market, while 18 states prohibited such sales (Flanagan & Maguire, 1993).

Prison industry does not initially and sometimes never saves the taxpayers money. The public may be unaware that state funds (from their tax dollars) provide the initial seed money for prison industries; this includes many private sector owned prison industries. In an article written to convince the state of Massachusetts to contribute yet more money to prison industry, Aghjayan (1994) stated that "Departments of Correction should not have to make economic choices between basic inmate services and work programs that offer the best hope for rehabilitation" (p. 103). Prison labor has not been shown conclusively to decrease recidivism.

Though many factors within prisons are affected by prison labor, the major goal is often arguable. Whether inmate rehabilitation or economics should be first priority has been debated and is unresolved (Flanagan & Maguire, 1993). When there was a choice between having an illiterate prisoner in California work in a prison industry or attend school, the work assignment invariably won (Little Hoover Commission, 1994). Whereas many felt that work was an instrument of the restoration of offenders to law abiding life, others felt that work must be relegated to secondary importance and there must be no interference with the main reason for incarceration-namely social re-education (Hawkins, 1983). There is a very real potential of prison industry contradicting the goals of rehabilitation because prison officials are often asked to minimize interruptions by suspending treatment and educational and vocational activities to accommodate the industry's desire for an eight-hour work day (Lichtenstein & Kroll, 1990).

Prison industries typically train and employ prisoners for lower-spectrum jobs. After release, these inmates will compete for employment at this low end of the spectrum. Economic conditions at that time will dictate displacement of free workers and availability of employment for released inmates (Flanagan & Maguire, 1993). The growth of industry in prison and the private ownership and management of corrections has been dubbed the corrections-commercial complex (see Chappell, 1998; Lilly & Knepper, 1993), or the prison-industrial complex (see Davis, 1998; Lotke, 1996) due to its similarities to the military-industrial complex.

1994. As of 1994, 43 states provided associate's degrees and 31 states offered bachelor's degrees. Nine states offered master's degrees and three offered doctorates (Silva, 1994). By 1994, more than 60,000 prisoners appeared to be involved in college-level course work (Jones & d'Errico, 1994).

In 1994, the gross sales of prison industry goods and services were \$1.2 billion. If this were ranked among Fortune 500 companies, correctional industries would be placed in the top two-thirds (Verdeyen, 1995).

The Violent Crime Control and Law Enforcement Act of 1994, became public law 103-322 on September 20, 1994. Section 20411 of this Act amends the Higher Education Act of 1965 to prohibit awards of Pell Grants to any individual incarcerated in a Federal or State penal institution. This move was previously proposed in a separate bill sponsored by Representative Bart Gordon, Democrat, Tennessee, but was not enacted, and was later added to this very popular, bipartisan Crime Bill.

2001/2002. Once federal aid for prison education was eliminated, state aid was also cut. In 1990, there were 350 higher education programs for inmates. In 1997, there

were 8. If prisons are offering any education at all, it is increasingly likely to be computer-based “distance learning” or housed in programs directly controlled by state departments of corrections. (Frolander-Ulf & Yates, 2001). Current data on education in prisons are not readily available. The Bureau of Justice Statistic’s massive website, once a good source of information on the subject, no longer contains information about education in prisons (2002).

Prison industry, however, is booming. Net sales from Unicor (Federal Prison Industries) for the year 2000 were \$541.3 million and for 2001 were \$581.5 million. Gross sales for all state run corrections industries were not readily available but, as an example, Ohio Penal Industries total sales in 2002 were \$30 million.

Correctional Education Recidivism Research

It can be assumed that including higher education in prison had, as one of its goals, the reduction of return incarceration for its students. However, it was not until 1924, that the first data-based information about reduced recidivism was noted. At the Ohio Penitentiary, 200 prisoners were enrolled in correspondence courses and a subsequent survey reported that inmates were successful after their release (Silva, 1994). This was the first link between PSCE and recidivism.

In 1967, a prison higher education system, Project Newgate, was started. The initial concept was to establish a campus experience within prison walls. Inmates were relieved of other duties, and sometimes provided special living quarters and library facilities. Inmates were able to complete their degree program even after release. The goals were to lessen recidivism, and to help inmates achieve stability, and the realization of their life goals. It was deemed successful by those involved, and worthy of replication.

(Silva, 1994). Higher education in prison was growing, and although analysis of the results were not experimentally studied in a way that proved causation (of reduced recidivism), general opinion, anecdotal evidence, and statistics indicated its efficacy.

In 1974, a blow to these claims of efficacy was issued. After analyzing 231 studies (1945–1967) of prison rehabilitation programs, including higher education, Martinson asserted that “with few and isolated exceptions, the rehabilitative efforts that have been reported so far have had no appreciable effect on recidivism” (p. 25). He also stated that it was hard to tell whether what “works” for one kind of offender also works for others. Martinson’s “What Works?- Questions and answers about prison reform” article appeared in the Spring 1974 issue of *The Public Interest*, and received widespread attention and significance. To this day, it is cited as a seminal work in the area of rehabilitation and recidivism.

Soon after Martinson’s results were made public, Ted Palmer (1975) thoroughly scrutinized the report, highlighting methodological shortcomings and inconsistencies. He concluded his in-depth analyses stating that while it is true that no one treatment worked on offenders as a whole, a more appropriate question would be “which methods work best for which types of offenders, and under what conditions or in what types of settings” (p. 150). For this question, Palmer cited many and various programs that had indeed worked in reducing recidivism. Unfortunately, Palmer’s publication did not receive the attention that Martinson’s had, and correctional treatment programs increasingly came under fire.

Despite criticism, prison education continued and many researchers attempted to prove its efficacy by studying programs and with small-scale syntheses of prior research.

Many of these had vague or mixed findings, however most found somewhat positive connections (i.e. negative correlations, etc.) between PSCE and recidivism (see Jenkins, et al. 1995).

In 1975, Lipton, et al. summarized several prison education programs, and concluded that such programs are successful in their task of training and educating both adult and youthful offenders. However, the impact of such training on institutional adjustment, post-release employment record, and recidivism is mixed. Linden & Perry's (1982) review of the literature reported that prison education programs "will be most likely to succeed if they are intensive, if they can establish an alternative community within the prison, and if they offer post-release services to inmates" (p. 43)

In a study of correctional education program completers released in 1990-1991, Jenkins, Steurer and Pendry (1995) found that "the higher the level of educational attainment while incarcerated, the more likely the releasee was to have obtained employment upon release...The success of the college graduates is especially notable" (p. 21). Taylor's 1992 literature review of several decades, found much evidence of PSCE's effectiveness in substantially lowering recidivism rates for inmates. He states that higher education is particularly effective in this reduction as well as having beneficial effects on post-release employment, and institutional discipline, and that these programs were cost effective and provided a substantial return-on-investment for society. A recent study shows that inmates with at least two years of college have a 10% re-arrest rate, compared to a national re-arrest rate of approximately 60%. (Center on Crime, Communities, and Culture, 1997). Frolander-Ulf & Yates (2001) stated that "nearly all studies show that the more schooling an imprisoned person receives, the less likely he or she is to get in trouble

upon release” (p. 2). Although this assertion makes logical sense, it is difficult to draw definite conclusions based upon specific studies or small-scale syntheses. The unfortunate reality is that each study done is seen as idiosyncratic, typically not consisting of control groups, and is therefore deemed somewhat anecdotal.

A few large-scale meta-analyses on education and recidivism have been completed. In 1992, Palmer published a book integrating and discussing the findings from 32 meta-analyses and literature reviews from 1975-1989. He focused mainly on juvenile delinquents in institutional and community-based settings with at least adequate research designs and analyses. He concluded that there was “little doubt that many programs worked, and not just with one or two types of offenders and programs” (p. 76).

In a 1995 review of research on adult academic and vocational correctional education (1980-1991), Gerber & Frisich found that participation in PSCE was likely to produce benefits for inmates and society due to a clear and consistent correlation between collegiate studies and recidivism. Wells (2000) explored relationships between several educational variables, not just post-secondary, and the post-release behaviors. His findings support a positive relationship (negative correlation) between education, social bonding, and recidivism.

A very recent and comprehensive study published in September of 2001, was conducted for the U. S. Department of Education, Office of Correctional Education by the Correctional Education Association (Steurer, Smith & Tracy). This was a three-state, longitudinal study (Ohio, Maryland and Minnesota) with data on about 3,200 inmates released in late 1997 and early 1998. Although participation in education programs while incarcerated was the major variable, over 500 variables were collected on each

participant and the design framework included internal control groups. Re-arrest, reconviction and re-incarceration were measured for three years. The rates of these recidivism constructs were significantly lower for education participants. The types of education programs attended typically included Adult Basic Education, high school, GED preparation, Life Skills, vocational training, and post-secondary education. The recidivism data were not dis-aggregated for distinct types of education, therefore, no specific data on the impact of post-secondary correctional education on recidivism was reported. Although the Three-State Recidivism Study is extremely valuable in terms of depth, breadth and findings, post-secondary correctional education is more difficult to justify and procure funding, so comprehensive data showing its particular importance is also needed.

Theoretical Perspective on crime and rehabilitation

The argument for educating prisoners goes beyond the notion of criminals' perceived worthiness or, more likely unworthiness, of such an effort. Examining the constructs of crime and punishment further complicates the issue.

The entire notion of crime is subject to criticism. Freud believed that the reason governments forbid wrong-doing is not in their desire to abolish it, but because it desires to monopolize it (in Roazen, 1968). Allen (1981) writes that Foucault felt that "bourgeois society deliberately creates crime both in order to justify a law-enforcement mechanism quickly adaptable to the suppression of political dissent and also to divert the more aggressive members of the dispossessed classes into the commission of ordinary crimes and away from revolutionary action against the dominant social interests" (pp. 39-40).

Incarceration as crime control can also be problematic. Clear (1994) asserts that the punishment paradigm is non-falsifiable. Even when increased imprisonment does not reduce lawlessness, the relative stability of the crime rate is taken not as evidence of the limits of punishment, but of the need for still more incarceration. Foucault (1977) states that prison, itself, cannot fail to produce delinquents. It does so by the very type of existence that it imposes on its inmates: whether they are isolated in cells or whether they are given useless work, for which they will find no employment, it created an unnatural, useless and dangerous existence.

As previously stated, Galtung's theory of structural violence provides a lens in which to view criminality. The fact that the predominance of prisoners come from low socio-economic families and communities, typically have had less education, both in terms of years completed and the quality of instruction and resources available, is no coincidence. The unrealized dreams and thwarted opportunities dealt to inner-city children and others living in poverty have a very real connection to the eventual involvement in the criminal justice system (Chappell, 1998). Cullen and Wright (1997) state that:

“In too many inner cities, the population of youths and adults at risk for crime will grow. The structural forces undergirding an entrenched, chronically poor underclass within these communities will continue to operate without meaningful opposition: racism, fleeing employment, inequitable school funding.” (p. 548)

Rehabilitation demands the constant search for the sources of criminality, which inevitably leads to discussions of how certain social contexts place youths at risk. In response to these inequities, Frolander-Ulf and Yates (1991) ask “why wasn't decent

education provided to these men and women before they entered prison? It is certainly cheaper and more socially desirable to educate people than imprison them” (p. 7). Ruess (1999) feels that the purpose of education in prison is partly to compensate for the inadequate education and social skills many prisoners have.

Education in prison means different things to different people. The reformer may see it as a means of improving prison conditions. The prison staff may see it as a way to keep prisoners occupied. Educators may see it as remedy for past injustice and researchers may see it as a way to reduce recidivism. Prisoners themselves may see it as a way to pass the time. Taxpayers may see it as a privilege for undeserving students. (Reuss, 1999). Despite the differing attitudes, opinions and purposes that surround this issue, the safety and financial realities inherent in criminal recidivism demand that we seek ways to ameliorate it. Society in general, and inmates in particular, deserve extensive research, investigation, and experimentation in humane and cost-efficient ways to understand, address, treat, and ultimately prevent recurrent criminal behavior.

Justification for This Research and Approach

The astronomical rise of the numbers of people behind bars in the United States demands a new look at the entire concept of incarceration. Prison populations have tripled since 1980 (Donzinger, 1996) while crime rates have remained stable. Incarceration, alone, does not automatically decrease an inmate’s chances of returning to a life of crime. In fact, virtually all statistics show that the majority of those behind bars have been there before. “Even if the role (of the rehabilitative ideal) is severely limited and the effort to make prisoners better and less dangerous is largely abandoned, penal policy can hardly ignore the problem of prisoners being made worse and more dangerous

by the prison experience.” (Allen, 1981, p. 79). And the unfortunate reality is that today’s new penology basically abandons rehabilitation (Cullen & Wright, 1997).

The tough-on-crime stance of the Reagan, Bush, Clinton and Bush years makes it highly unlikely that a rebirth of the rehabilitation movement will be easily rekindled though legislation and/or government-backed programs. As predicted decades ago by Allen (1981), “it seems that in their search for programs to demonstrate concern for community anxieties, some legislators will be less drawn to proposals concerned with implementing minimum standards of ethical behavior toward prisoners than those promising prodigies of crime control” (p. 85).

Ethics aside, it is hard to justify incarceration only (without rehabilitation) from a strictly financial standpoint. As reported by ABC News in 1999, several States have been cutting education spending almost in sync with their increased spending on the criminal justice system. In some states, more money is now spent on prisons than on schools. Prison building is often one of the fastest growing industries in many states, including New York, California and Arizona. One only has to look at state budgets to see the tremendous actual costs of increasing incarceration to society. And all of this money is going toward a system that does not work. It is necessary that we lower our expectations of what justice agencies can do, and raise our expectations of what social programs *must* do (Petersilia, 1992). Rehabilitative programs, for those that have already crossed the legal line, combine justice and social programs, in an effort to break the incarceration cycle.

Education courses, particularly those at higher levels, in prison, have been closed or under the threat of closure and so the real tragedy lies in the fact that something which

has enormous potential to ‘work’ for some people in prison is destined for the recycle bin before its capacity has been fully realized (Reuss, 1999). Prison education is frequently still seen as a luxury and not a right (Fitzgerald & Sim, 1982), often by those who work within the penal system, as well as by the general public. Such a view comes from the current desire for the maintenance of a law-and-order society (Hall, 1986), but also, because of the continuing failure to emphasize that prisoners are *people* (Duguid, 1995) regardless of what they may have done. Prisoners are seen as having the least eligibility for (Allen, 1981), and worthiness of, these programs.

One of the reasons for this may be the us-and them mentality of the general public. Persons serving time institutions are seen as very far removed, morally, ethically, spiritually, and intellectually from the rest of ‘us.’ A certain anecdotal statistic, that 90% of us have done something in our lives, that had we been caught, would have landed us behind bars (high priced lawyers and biased criminal justice system notwithstanding), usually brings lowered eyes and a reflection on our own human fallibilities. Members of the middle and upper classes however, are subjected to much less scrutiny and surveillance, more lenient police officers, better representation, more forgiving judges and juries, and alternative and shorter sentencing (see Donzinger, 1996; Kennedy, 1997; Mauer, 1999; Tonry, 1995). These fortunate folks also begin, and travel, through life with more opportunities, education, connections, chances and options than members of the lowest classes.

It is known that prisoners come predominantly from the underclass. A mean, self-fulfilling prophecy then emerges: inner-city youths are seen as a dangerous class, beyond reform, which will spur further dis-investment in these youths’ lives, which in turn will

breed even more dangerous behavior. By segregating those we deem as criminal, prison fortifies and conceals this structural racism (Davis, 1998). “The correctional system will be seen as an instrument to manage and monitor, not rehabilitate, this alien, unruly population – to minimize the extent to which the underclass disrupt or threaten the lives of ‘decent’ folks” (Cullen & Wright, 1997, p. 550).

It is a fact that nationwide, over 70% of all people entering state correctional facilities have not completed high school (Center on crime, communities and culture, 1997), lending credibility to the argument that education and criminal behavior are negatively correlated. When we neglect and mis-educate the powerless and poor, the disenfranchised and the disadvantaged, we endanger the social future that depends on our caring (Gaylin, 1978). An important piece that is missing is the care and public support for rehabilitation. So often, support for rehabilitative programs is seen as a soft approach to crime and providing a payoff to criminals. What needs to be argued forcefully is that programs, such as education, are not simply concerned helping offenders, but also with crime control and preventing victimization. The reality is that if criminals are not “cured” in the correctional system, they eventually will return to the streets unchanged and dangerous (Cullen & Wright, 1997). If the general public could get to a collective, critical, and informed understanding, leaving vengeful emotions and knee-jerk reactions aside, it would become evident that a push for rehabilitation is in their own best interest.

Summary

Fear of crime, rather than crime itself, shapes criminal justice policies (Donzinger, 1996). The perpetual criminal justice pendulum – the swing in the 1990s where the prevalent attitude is to incapacitate and incarcerate more citizens for less

serious crimes, increase prison construction, mandatory sentencing, and the move to exclude inmates from entitlement education programs, are not unlike other swings in public persuasion since the 1790s (Silva, 1994). Education in prison is no panacea, but the weaving mechanisms of all that post-secondary education entails can trigger processes of personal development and increased opportunities. Therein lies the potentiality for change (Reuss, 1999, 125).

As Frolander-Ulf and Yates state (2001) “we have noticed that the more classes the students (inmates) take, the more they can envision themselves as productive members of society” (p. 125). Reuss (1999) noted that “during the course of my research the men would observe that the one place they felt able to be ‘themselves,’ to be ‘human’ and to be ‘real people’ was the prison classroom” (p. 119).

Cullen & Wright (1997) state that:

In corrections, unmasking the poverty of one future, imminent and bleak, and imagining an alternative path, progressive and affirming, may make a difference. If done enough times and in diverse forums, it may challenge the hegemony of the punitive paradigm and create the space needed to construct a corrections that is, at once, more humane and protective of the social order. (p. 542)

And, in a timeless statement by Allen (1981), he notes that:

Roles for rehabilitative effort must be conceded as long as we are concerned with efforts at decarceration, avoiding the avoidable deterioration of human beings in penal confinement, and in maintaining defensible standards for the governance of those held in state custody. This being true, there is a continuing need for the

gathering of new knowledge concerning the efficacy of official efforts to accomplish such ends. (p. 86)

Despite two decades of attacks on correctional treatment by liberals and conservatives, the rehabilitative ideal has shown amazing tenacity. (Cullen & Wright, 1997). The review of literature, research and current trends away from rehabilitation, strongly support the need for a current meta-analysis on post-secondary correctional education and recidivism.

Chapter III Methods

Research Design

Meta-analysis is a set of statistical procedures that are used to quantitatively aggregate the results from many studies for the purpose of integrating the findings (Glass, 1976). It is a powerful and common approach to summarizing empirical research. The main reason to use this technique is to generate an overall correlation as to the existence of a relationship. Combining correlations from many studies in a meta-analysis synthesizes the results so that overall conclusions can be drawn (Cooper, 1989). Meta-analytic procedures also give the ability to investigate relationships not investigated in the original primary studies and find trends too subtle to identify with narrative reviews. Meta-analysis is a more standardized and objective means of integrating results from multiple primary studies (Arthur, Bennett, & Huffcutt, 2001).

Meta-analysis is based on the concept of sampling error theory. Sampling error is the difference between a sample and the population from which the sample is drawn. The sampling error indicates that the relationship of the study subjects is a combination of the true size of the relationship in the population plus an error component. The logic behind meta-analysis is that each individual study represents one sample from a given population and each study sample is likely to differ from the population by a sampling error. Because sampling errors tend to form a normal distribution, it follows that all of the sampling errors in one direction (of the studies in the meta-analysis) will be balanced by the sampling errors in the other direction. The direction of each sampling error of each study correlation refers to its relative strength or weakness in relation to the actual population (Arthur, Bennett, & Huffcutt, 2001).

Meta-analysis is advantageous for research areas that are well-established and have a large number of primary studies; it can provide information on general trends and the consistency of relationships and effect sizes across situations. Many readers of this study will also be interested in the data showing the statistical significance outcome. According to Hunter and Schmidt (1990), because meta-analytic results theoretically represent population parameters, it is conceptually illogical to apply significance tests to meta-analytic results. Significance tests are tests of inferences from a sample to a population, however, meta-analytic results estimate population relationships (Arthur, Bennett, & Huffcutt, 2001). Meta-analysis avoids the common pitfall of low power in primary research, which may be responsible for contradictory results. Hedges and Olkin (1985) feel that an inferential test of significance on meta-analytic results would reintroduce this same problem. Although meta-analytic data is a better estimate of the population relationship, it is not an exact population measure. Because it is an estimate of the population, this researcher believes that a significance test is warranted and essential. Meta-analysis, therefore, is complimented by significance testing, which will be performed.

Meta-analysis, however, is not without other issues. A prominent one is the influence of statistical artifacts such as range restriction and measurement error. These artifacts reduce the size of the relationship in primary studies, thereby making the mean relationship across the studies an underestimate of the true strength of these in the population. A common approach is to weigh the mean correlation relationship after aggregation using the average of whatever artifact is available across the studies (Hunter and Schmidt, 1990).

Another question one could ask is whether the strength of the relationship is consistent across all situations. If an extraneous variable changes the strength of the relationship, (referred to as a moderator variable), it causes the theory of sampling error to break down. In this case the mean relationship becomes an estimate of the average strength of the relationship in the population rather than as estimate of the unitary value (Arthur, Bennett, & Huffcutt, 2001). The standard solution is to separate the studies by various levels of a known moderator variable and conduct a separate meta-analysis for each of the levels (Hunter and Schmidt, 1990).

Specific approach. The three most common and popular approaches to meta-analysis are the Hunter and Schmidt, Glass, and Hedges and Olkin procedures. As the Hunter and Schmidt approach uses the common metric r_s for correlational studies, it is most appropriate for the correlational segment of this study. This approach, referred to as validity generalization, also corrects summary statistics for the influence of statistical artifacts. These corrections provide a more accurate estimate of the true size of a relationship and the variance of this relationship (Arthur, Bennett, & Huffcutt, 2001). The SAS (SAS Institute, 1990) programming code *PROC MEANS* procedure will be used to perform the data computations. *Conducting meta-analysis using SAS* (Arthur, Bennett, & Huffcutt, 2001), is the primary resource and guide used in this process. The following three paragraphs are a summarization of this guidance.

The Hunter and Schmidt procedure allows for the correction of some artifacts. However, because the predictor and criterion variables in this meta-analysis do not come from a test or instrument that may introduce sampling error, measurement error and range variation and restriction, it is not necessary to correct for these artifacts.

In the implementation of this meta-analysis of correlations, studies are collected and their results or r s are extracted. The average correlation with its variance across studies is then calculated. The next step is to test for the influence of moderator variables. The correlations are organized by levels of the moderator variable and the meta-analysis is repeated.

Specific Research Hypothesis. In an effort to help further the cause of providing inmates with post-secondary education, this study is a meta-analysis of research quantifying the relationship between such education and recidivism rates. The studies will include all relevant and retrievable research completed between 1990 and 1999. It is postulated here that involvement in post-secondary correctional education while incarcerated has a positive relationship with reduced recidivism. This study tested previously stated hypothetical relationships and, it should be noted, that there is a danger of misinterpretation through inferred causation (Newman & Newman, 1994). Correlation and relationship strength, rather than causation, are the intended outcomes for this analysis.

Inclusion criteria

The primary goal was to gather all possible studies using published articles, dissertations, and any unpublished research discovered through literature reviews and requests of information from the Correctional Education Association. The time frame includes articles published and reports finalized between 1990-1999. This means that much of the actual data may come from the 1980s. The decision was made to select studies based on the dates of the documents rather than the dates of the data.

The first criterion was that the study includes Post-Secondary Correctional Education (PSCE). For the purposes of this research, this is defined as any type of education beyond high school, or its equivalency, that has inmates of prisons or jails for students. This includes vocational, academic, undergraduate, graduate, certificate and/or degree programs. In several studies, it was difficult to ascertain whether the vocational training offered was secondary or post-secondary. Those in question were not included.

The second criterion was that recidivism rates of education participants were measured. Recidivism can be defined as a tendency to relapse into criminal behavior. These are measured by looking at rates of re-arrest, re-conviction and re-incarceration, with re-arrest rates being highest (re-arrest does not equal guilt). Recidivism is operationally defined by each study used, typically by re-incarceration. Unfortunately, there is no universally accepted operational definition. Time spans after release vary from study to study with the shortest being one year. There is also no centralized data source of those who recidivate. Given this, most correctional facilities report vague recidivism rates of the general prison population between 60 and 70 percent (Werner, 1990).

Both correlational and quasi-experimental studies were collected as sufficient equations are available to transform data into a single statistic (correlation).

Sampling Procedures

Searching for relevant studies. An intensive literature search was conducted to identify empirical studies that had investigated correctional education and recidivism. Many computer general and subject-specific databases from education, sociology, the social sciences and law were accessed (Academic Search Premier, ArticleFirst,

Dissertation Abstracts, Education Abstracts, ERIC, LexisNexis, PAIS International, Sociological Abstracts, Social Sciences Citation Index, and WorldCat). The following keywords or phrases were among those used: correctional education, recidivism, academic, treatment, prison education, rehabilitation, and post-secondary education.

Several criminal justice publications were searched individually (Corrections Today, Crime and Delinquency, Criminology, Journal of Correctional Education, Journal of Offender Rehabilitation, Journal of Research in Crime and Delinquency, and Justice Quarterly). The general list-serve of the Correctional Education Association was queried for unpublished studies. A manual search of relevant literature reviews identified reports, program evaluations, and papers was conducted.

Approximately 450 citations were deemed as possibilities from this initial search. A review of the abstracts or complete documents for appropriate content (i.e., empirical studies that contained post-secondary education (as opposed to only secondary or vocational education), along with a decision to retain only English language articles, narrowed the list down to 59 articles. Attempts were made to retrieve all 59 studies with 43 successes. Repeated attempts were made to gain access to those not retrieved using phone calls and emails. Several requests went unanswered. The sources of the studies retrieved were as follows: journal articles (27), reports & program evaluations (10), book chapter (1), dissertations and theses (2), and conference papers (2).

Selecting the final set of studies. Each article acquired was reviewed for consideration of inclusion in the meta-analysis. Several decision rules were used to determine the studies that would be included in the meta-analysis. A primary decision involves the choice of separating, or aggregating, multiple data points (correlations). One

unfortunate finding was that several of the studies used the same cohorts. In these cases, the initial cohort analysis was used. Duplicate cohort studies were not included, thereby preserving the independence of data points.

Studies needed to include an overall recidivism rate, usually determined by state statistics, institutional statistics, or SIRs (Statistical Information on Recidivism). SIRs are numerical values calculated using indicators of risk levels such as marital status, type of offense, number of offenses, and age at first arrest, etc. These do not predict individual behavior but can be used for group prediction and analysis. (Duguid, Hawkey & Knights, 1998). Studies that did not include some form of overall recidivism rates for comparison were not included.

A few studies used control groups as well as overall statistics for their analysis. Those studies containing both were included, and a separate, smaller meta-analysis was conducted specifically with the studies with control groups.

Studies needed to include specific data for those inmates participating in post-secondary correctional education. Several studies included these inmates but combined their data with inmates receiving Adult Basic Education (ABE), General Equivalency Degree (GED) work, or secondary education. If data were unable to be separated, the study was eliminated.

Finally, to be included in the meta-analysis, a study needed to have sufficient information that allowed for the computation of a Chi-square or variance estimate. This data would, in turn, be converted into correlations for purposes of conducting the meta-analysis. According to Wachter and Straf, "it is commonplace for those attempting meta-analyses to find too little information given in published papers or reports to allow

computation of effect sizes or proper coding of features of design”(1990, p. xvii).

Several studies reported insufficient information.

Data Collection

The following study characteristics were extracted from the studies: N, PSCE (type of courses, i.e. academic or vocational, and amount, i.e. minimum number of classes taken or degree completed), recidivism construct (re-incarceration, re-arrest etc.), and recidivism length (the length of follow-up for checking each releasee for recidivism). Variances (r^2), correlation coefficients (r), and effect sizes (f^2) (McNeil, Newman & Kelly, 1996), were calculated for each study. Due to limited resources and the unavailability of labor, multiple raters did not code the studies. Therefore inter-rater reliability was not measured.

Statistical Treatment

Calculation of summary statistics. The mean and the variance of the study coefficients are the first meta-analysis statistics calculated. These are sample-weighted so that studies with larger sample sizes are given more weight than those based on smaller samples. This sample-weighted mean r is then a reasonable estimate of the true strength of the effect in the population. This, however, is only the initial phase of a meta-analysis. Several other tests must be run to substantiate and explain the findings

Testing for and detecting outliers. An outlier is a datum that seems to be inconsistent with other data due to errors in transcription, computation, or an unusual research subject or characteristic. The effect of outliers is often a notable increase in observed variance and a distortion of the mean (Arthur, et al, 2001). Although most discussions on outliers refer to a single data point, in the case of a meta-analysis, the

concern is the study outlier. Detecting outliers in meta-analytic data sets is very important. The basic purpose of meta-analysis is to negate or lessen the effects of statistical artifacts. An outlier among the data may cause an incorrect assumption of a moderator causing residual variance. This outlier could alter the conclusions of a meta-analysis.

There are several methods for detecting outliers, but the only technique developed specifically for meta-analytic data is the “Sample-Adjusted Meta-Analytic Deviancy” (SAMD) procedure by Huffcutt and Arthur (1995). It compares the value of each study correlation to the mean sample-weighted correlation computed without that one study’s data, then adjusts the difference for the sample size of that study. The end result is one SAMD statistic for each study included in the meta-analysis, and a distribution of SAMD statistics that approximate a t distribution. Extreme SAMD values are investigated as potential outliers (Arthur, et al, 2001). The *SAS PROC MEAN* contains code to calculate the sample-weighted mean and variance. These statistics will then be tested for outliers. Should one or more outliers be identified, these individual studies will be scrutinized for computational and/or transcription errors. The deviance may also be caused by an unknown moderator variable, high, unreported levels of artifacts, or extreme sampling error. Eliminating possible outliers can lead to an underestimation of the true variability, whereas inclusion could lead to an overestimation. Unfortunately, it is often impossible to discern the true cause of an outlier and a decision regarding inclusion in the meta-analysis can be a subjective one.

Correcting for artifacts. The most common artifacts in meta-analysis are sampling error, measurement error, and range restriction. This particular study will not

need the investigation and correction of artifacts. Discussion of specific artifacts and their irrelevancy are included below.

Sampling error is considered the largest source of variation across studies and is determined primarily by sample size (Arthur, et. al., 2001). Smaller sample sizes have higher levels of sampling error than larger samples. The sample sizes are sufficient in each included study, therefore this correction is not warranted.

Measurement error is the second largest source of variation. In both the independent variable (post-secondary correction education) and the dependent variable (recidivism), the construct was a dichotomy rather than a construct measured by a scale or instrument. Range variation and restriction of the independent and dependent variables also fall into this category. Any differences in the criteria for the measuring the construct fall under the auspices of moderators rather than artifacts and will be discussed later.

Since both the independent and dependent variables are dichotomies, it is assumed that they are being measured without error. The same hold true for the construct validities of the independent and dependent variables.

Chi-square test for variation across studies. Although a matter of debate, particularly by Hunter and Schmidt (1990), a chi-square test was run to test if the observed variance in the studies is greater than expected by chance. This is a test for homogeneity and can be used to test for moderators. If the chi-square is significant, there may be true variation across the studies, or it may be the result of the operation of moderator variables. Therefore, if the chi-square is significant, it does support a positive

relationship between post-secondary correctional education and the reduction of recidivism in this study.

Confidence Intervals. Confidence intervals estimate the extent that sampling error remains in the summary statistics. It is a range of values that the mean size is likely to be if other studies were taken from the population (Arthur, et. al, 2001). Depending on the outcome of the chi-square (significant implies that a participant in PSCE is less likely to recidivate than a non-participant) one of two computations for the standard error of the mean correlation around correlation estimates will be used. Once again, it should be noted that this meta-analysis is not testing for causation, it is a correlation which tests for relationships.

Selecting and testing for potential moderators. A moderator is a variable that affects the relationship between the independent and dependent variables. It can account for, or helps explain, more variance than would otherwise be the case. Since the possibility of moderators exist, individual subsets of the studies in the overall meta-analysis will be tested for their influence. A moderator variable is typically identified by a corrected variance that has a lower average in the subsets than for the data as a whole, and a corrected mean r that varies from subset to subset. Three theoretical moderators have been identified by the researcher and are discussed below.

1. Subset 1- Amount of PSCE – All the studies included in the overall meta-analysis are comparing inmates who have some post-secondary correctional education, to those who do not, as it is related to recidivism. However, the inclusion criterion for each study varies. Some studies included inmates with a minimum of as little as 2 completed courses, whereas other studies used degree or certificate

- completion as the criterion. It is hypothesized, at this point, that program completion would have a more positive effect on negating recidivism than a lesser amount of PSCE.
2. Subset 2 - Recidivism Construct – Most studies used re-incarceration as the criteria to be classified as a recidivist. Others included re-arrest or parole status as well. Those studies including re-arrest or parole violation, it is hypothesized, may find a higher rate of recidivism. Re-incarceration implies not only re-arrest, but also re-conviction and a return to a correctional institution. Re-arrest does not establish guilt, and therefore, is not as stringent a construct when defining a return to criminal behavior.
 3. Subset 3 - Recidivism Length – Studies varied as to how long releasees were tracked for recidivism. This ranged from as little as one year to a maximum of 12 years. It is hypothesized that the longer one looks for recidivist behavior, the more you will find. Therefore, a subset of those studies that used 3 years or less for follow-up may yield lower recidivism rates. Three years was chosen as the measure due to its frequency of use in many of the overall studies. Had more studies used a one-year measure, that would have been a preferred option.
- Subset 4 is not so much a test for moderators as it is a separate meta-analysis. Three studies were quasi-experimental and included control groups. In their reports, comparison data from general statistics as well as the control group, were included. For each of these studies, two sets of data were produced: one using the general recidivism rate for that state or institution and another using the control group recidivism rate. The first set was included in the primary meta-analysis and a second,

smaller meta-analysis was run on the second set of data (Subset 4). It is hypothesized that the control group meta-analysis will control for limitations such as selection bias, and will possibly show less of a relationship between PSCE and recidivism reduction.

Limitations

There are several known limitations of this study that are beyond the control of the researcher. First, the relatively few (15) studies appropriate and available for this 10-year meta-analysis were a disappointment to the researcher. Initial searches and reviews had indicated that a larger sample would fit the criteria. As noted earlier, several factors contributed to this limitation. Many studies that included post-secondary correctional education in their investigation of recidivism did not separate the data between secondary and post-secondary. Several studies failed to note the population and statistics they were using for comparison purposes. Other studies reported relationships but did not supply the necessary data for inclusion.

Recidivism is only measured when it occurs within the same state as the inmate was originally incarcerated and is therefore a conservative estimate of actual behavior. At this point, a national database is either not available, or is not used, by states in tracking their releasees. However, it should be noted that this was the case for virtually all the studies included in the meta-analysis, and is therefore less problematic than if this was not the case.

Selection bias and lack of matched control groups are issues in any study of corrections education. Also, relatively few studies looked at the inmates' achievement in the PSCE programs (grades, attendance, motivation, et.) in reference to recidivism.

Differences in PSCE participation and recidivism construct and length also exist but may be tested as possible moderators.

Meta-analysis as a technique is also subject to several limitations. As with any research, the results are only as good as the input. The assumption is made, when selecting the final set of studies for inclusion, that rigor and accuracy of reporting are present. The fact that much research of any kind that fails to show significance is often relegated to the file drawer of the primary researcher is also a limitation to meta-analysis.

Although several possible moderators will be examined, there is the very real possibility of unknown or unidentified moderators. Perhaps if this research becomes widely distributed, other ideas will be suggested. It is also possible that the researchers of the original 15 studies may have input or suggestions as well.

The process of selecting studies for inclusion is a subjective one. The subjectivity does not end here however. Extracting and coding data from each study can be subjective and multiple raters are encouraged. This was not an option for this particular study.

It should also be noted that the subsets of data that were tested as moderators were based upon differences *between* the 15 studies. Most studies controlled internally for various demographics including, but not limited to, age, race, gender, substance-abuse, violent vs. non-violent crime, sentence length, type of first offense, age at first offense, time between program completion and release, further higher education after release, criminal subculture, opiate addiction, county of residence, juvenile convictions, pre-arrest employment, post-release employment, type of employment, hourly wage after release, and marital status. These variables are *within* studies and it was therefore not possible to

run specific meta-analyses on this data. Had specific studies been done on specific groups, such as African Americans, it would have been feasible to conduct separate, smaller analyses of such studies.

The choice of specific data analysis is another subjective decision. This researcher chose the Arthur, Bennett & Huffcutt (2001) guided text of the Hunter and Schmidt (1990) approach using the *SAS PROC MEANS* based on recommendations from several respected statisticians. The decision to choose a meta-analysis of correlations, rather than effect sizes, was also a matter of judgment.

As always when using correlational data, there is the danger of implying causation. It is hoped that emphasis on the relational quality of the constructs of this meta-analysis was both obvious and ubiquitous, so that an unintentional implication of causation was not inferred by the reader.

Summary

This study is a meta-analysis of research on post-secondary correctional education. It is a meta-analysis of correlations and the Hunter and Schmidt (1990) approach was used. Summary statistics were calculated by the *SAS PROC MEANS* program. Data was tested for outliers and moderator variables.

Chapter IV Results

Demographic Descriptive Statistics

Due to the selection process used in the final set of studies, only 15 studies were deemed appropriate for a meta-analysis of post-secondary correctional education and recidivism for the 1990-1999 time frame. These are detailed in the Appendix A.

Data extracted from each study included: N, PSCE (type of courses, i.e. academic or vocational, and amount, i.e. minimum number of classes taken or degree completed), recidivism construct (re-incarceration, re-arrest etc.), and recidivism length (the length of follow-up for checking each releasee for recidivism)(see Table 1). Numerical data was also extracted and converted, if necessary into correlation, variance and effect size statistics (see Table 1). In subset 4, a smaller meta-analysis, the same calculations were conducted on the three studies with control groups, using the control group recidivism rate rather than the institutional rate. Sample sizes were also adjusted according to the size of the treatment and control groups (see Table 2). A total of 15 studies were included with a total sample size of 7320 subjects.

Table 1
Study Characteristics and Calculations

#	N	Type of PSCE	Recidivism		r ²	r	f ²
			Construct	Length			
1	654	> 2 College courses	Reincarceration	3 Years	.060	.25	.06
2	60	CE Associate or Bachelors Degree	Reincarceration	3 Years	.260	.71	.35
3	95	CE Associate Degree	Reincarceration	10 Years	.180	.42	.22

Table 1 (continued).

#	N	Type of PSCE	Recidivism		r ²	r	f ²
			Construct	Length			
4	46	Completed College or Vocational Program	Parole status (Unsat or sat)	1 Year	.077	.28	.08
5	760	PS Academic, Vocational Training, or both	Parole Violation Reincarceration	1 Year	.116	.34	.13
6	92	60 or more PSCE credits	Rearrest	2 Years	.026	.16	.03
7	356	Inmate college program success	Reincarceration	≥1 Year	.045	.46	.05
8	3500	PSCE Academic & Vocational	Reincarceration	1 Year	.070	.27	.08
9	129	Participation in PSCE	Reincarceration	1-3 Yrs.	.160	.40	.19
10	360	Some Televised PSCE	Reincarceration	5 Years	.136	.37	.16
11	700	At least 2 PCSE courses	Reincarceration	Various	.180	.42	.22
12	84	Some PSCE	Rearrest or Parole Revoked	3 Years	.054	.23	.06
13	93	PSCE degree or Vocational certificate	Reincarceration	1-12 Yrs.	.267	.52	.36
14	312	PSCE Associate Degree or Vocational Certificate	Reincarceration	1-5 Years	.110	.33	.12
15	79	Telecom College courses	Reincarceration	3 Years	.010	-.10	.01

Note: N= Number of inmates participating in the study, r² = variance, r = correlation, f² = effect size.

Table 2

Study Characteristics and Calculations of Control Group Subset 4

#	N	Type of PSCE	Recidivism		r ²	r	f ²
			Construct	Length			
9a	258	PSCE Participation	Reincarceration	1-3 Yrs.	.040	.40	.04
11a	700	≥ 2 Courses PSCE	Reincarceration	Various	.027	.17	.03
12a	1174	Some PSCE	Rearrest/Parole	3 Years	.060	.24	.06
			Revoked				

Note: N= Number of inmates participating in the study, r² = variance, r = correlation, f² = effect size.

Results of Testing the Research Hypothesis

The sample-weighted mean correlation for the meta-analysis of post-secondary correctional education and recidivism was +.31 (see Table 3). This correlation refers to the hypothesis that participation in PSCE is related to lowering the recidivism of inmates after their release from prison. A chi-square test was found to be significant at $p \leq .01$. In addition, 95% confidence intervals for the sample-weighted mean r were placed around the correlation and were found to range from 0.29 to 0.33. Frequency data were also calculated and shown in Table 4. Frequencies were calculated by adding the numbers of recidivists, both with PSCE and without, in each study included. Percentages were then calculated with the overall N of each meta-analysis or subset. For the overall meta-analysis, inmates who participated in PSCE recidivated 22% and those not participating in PSCE had a recidivism rate of 41%.

Table 3

Meta-Analysis Results for PSCE and Recidivism

Meta-Analysis	Studies Included	K	Total Sample Size	Sample-weighted Mean <i>r</i>	Var.	SD	Chi-Square	Sig. at level	95% Conf. Inter.
Over-	All 15	15	7320	0.31	.007	.08	62.72	p<.01	.29 - .33
all	Studies								
Sub-	Completed	6	962	0.43	.010	.10	14.58	p<.02	.38 - .48
set 1	PSCE								
Sub-	Reincar-	11	6338	0.31	.007	.08	54.30	p<.01	.29 - .33
set 2	ceration								
Sub-	≤ 3 Years	10	5760	0.29	.005	.07	34.29	p<.01	.27 - .31
set 3	Recidivism								
Sub-	Control	3	2132	0.24	.005	.07	11.98	p<.01	.20 - .28
set 4	Grp. Studies								

Note: There is overlap between the subsets so total *K*'s and Sample sizes will not equal the overall numbers. Sample-weighted Mean *r* indicates the positive correlation between PSCE and non-recidivism. *K*= number of studies included in meta-analysis set; Var. = variance; SD = standard deviation; Sig. = significant; Conf. Inter = confidence interval. Subset 1 -Completed PSCE Program =(rather than only participated); Subset 2 – Recidivism is tallied by reincarceration only; Subset 3 – recidivism is only measure for 3 year or less, as opposed to up to 12 years; Subset 4 is the Control groups study including the 3 studies that were quasi-experimental.

Moderator Analysis

Three other subsets of data were meta-analyzed on the SAS *PROC MEANS*. The first subset (1) included only those studies (6) that used completion of a PSCE program as the criterion for inclusion in the study. It was hypothesized that lower recidivism rates might be more strongly correlated with inmates who had completed programs rather than

just participating. Several studies included relatively little participation (for example, at least 2 courses) as a criterion. The sample-weighted mean r was indeed stronger at 0.43 and was statistically significant at the .02 probability level such that people who completed PSCE programs were more likely to reduce their recidivism than non-participants or participants that did not necessarily complete a program (see Table 3). Numbers and percentages of releasees that recidivated are noted in Table 4. With a total sample size of 6338, 19% of those who completed a PSCE program recidivated compared to 38% of those who had not completed a PSCE program.

Subset 2 included only those studies that used re-incarceration as the recidivism construct. It was hypothesized that the more stringent construct (larger percentages of ex-convicts are re-arrested or violate parole than are actually re-incarcerated) would be a more appropriate measure. Re-arrest does not imply guilt, therefore may not be an accurate measure of recidivism. Surprisingly, the sample-weighted mean r for this group of 11 studies was identical to the overall study at 0.31 in the same direction. It was also significant at the .01 probability level (see Table 3). There were differences in actual percentages of recidivism, however, both PSCE participants and non-participants had higher recidivism rates than the overall study. 25% of PSCE participants were reincarcerated, whereas 45% of those with no PSCE were reincarcerated as shown in Table 4.

Subset 3 included only those studies that measured recidivism length for 3 years or less. It was hypothesized that the longer the measure, the more likely the chance of finding recidivism. Ten studies were included and the sample-weighted mean r was

actually lower at 0.29 (see Table 3) but still showed a positive relationship between PSCE and lowered recidivism. This statistic was significant at the .01 probability level. The percentage of PSCE participants who recidivated in 3 years or less after release was 22% and the percentage for non-PSCE participants in the same time frame was 38% (see Table 4).

Table 4

PSCE and Recidivism Frequency Table

	Study	K	N	Recidivism			
				With PSCE		Without PSCE	
				#	%	#	%
Overall	All 15 Studies	15	7320	1637	22%	2983	41%
Subset 1	Completed PSCE Program (rather than only participated)	6	962	181	19%	369	38%
Subset 2	Recidivism = Reincarceration Only	11	6338	1560	25%	2863	45%
Subset 3	≤ Three Years Recidivism (rather than 1-12 years)	10	5760	1281	22%	2196	38%
Subset 4	Studies with Control Groups (quasi-experimental)	3	2132	444	21%	736	35%

Note: Frequencies (# and %) will not add to 100% or N size. Those subjects with and without PSCE who did not recidivate are not shown. PSCE = post-secondary correctional education.

Subset 4 included the three studies that were quasi-experimental and had control groups. As mentioned earlier, different descriptive statistics were calculated using the control group data for each study rather than institutional or state figures (see Table 2). The sample-weighted mean r was 0.24 and was statistically significant at the .01

probability level as shown in Table 3. Control group comparisons, in these studies, helps to control for selection bias, a primary concern and confounding effect of most PSCE and recidivism studies. It is felt that inmates that choose PSCE would be more likely to become law-abiding upon release, with or without PSCE. This small meta-analysis shows that, even with the use of control groups, PSCE has a positive relationship with the reduction of recidivism. Frequency data for this subset are shown in Table 4. PSCE participants recidivated at a rate of 22%, whereas the control groups who did not have PSCE recidivated at a rate of 35%.

Testing for Outliers

The Sample-Adjusted Meta-Analytic Deviancy Statistic (SAMD) was run on the data using SAS PROC MEANS. Results are shown in Table 5. Two studies fall outside two standard deviations of the mean SAMD statistic, study 8 and study 15. In examining study 8, it is possible that its relatively large sample size (3500) is a contributing factor in its SAMD statistic's deviation from the mean SAMD. In the process of sample-weighting, a N that is considerably larger than the other studies will have its correlation carry more weight. Study (8) has a lower (.27) than average or mean correlation coefficient (.35). When comparing a non-sample-weighted mean of .35 to the meta-analytic mean of .31, it seems likely that this study, with its large sample size, and lower-than-mean-r of .27 may be responsible for lowering the results of the meta-analysis. However, the overall results are still significant when including this possible outlier. If removed, the sample-weighted mean r would be greater, and therefore, the case could be made that the inclusion of study 8 is resulting in an underestimation of the correlation of PSCE and recidivism. Given the relatively small number of studies available for this

meta-analysis and the importance of such a large sample size in study 8, this researcher has made the judgment to include it in the meta-analysis. Had this study resulted in an overestimation of the correlation, a different decision may have been warranted.

Study 15 was the only study that met the inclusion criteria for the meta-analysis that showed a negative correlation between PSCE and recidivism reduction. Given that it falls more than two standard deviations from the mean SAMD statistic, one could make the case that it is an outlier. However, as mentioned in Chapter III, studies with unexpected or undesirable outcomes often are not published and therefore not included in meta-analyses. This particular study was, indeed, an unpublished paper that had been presented at a conference. This researcher felt that it was necessary to include it in all relevant analysis as a nod to any possibly remaining or undiscovered disappointing PSCE/recidivism research.

Table 5

Outlier Data

<u>Study #</u>	<u>N</u>	<u>R</u>	<u>SAMD</u>	<u>Rank ID</u>
8	3500	0.27	3.81	1
15	79	-0.10	2.74	2
11	700	0.42	2.45	3
7	356	0.46	2.26	4
2	60	0.71	2.24	5
13	93	0.52	1.51	6
1	654	0.25	1.36	7
6	92	0.16	1.10	8

Table 5 (continued)

Study #	N	R	SAMD	Rank ID
10	360	0.37	0.90	9
3	95	0.42	0.80	10
9	129	0.40	0.77	11
5	760	0.34	0.67	12
12	84	0.23	0.56	13
14	312	0.33	0.26	14
4	46	0.28	0.15	15

Note: Mean SAMD = 1.44, SAMD Standard Deviation = 1.05

Table 6

Meta-Analysis Results for PSCE and Recidivism Summary

Meta-Analysis	Studies Included	Sample- Weighted Mean <i>r</i>	Significant?	Level
Overall	All 15 Studies	0.31	Yes	p<.01
Subset 1	Complete PSCE Program	0.43	Yes	p<.02
Subset 2	Reincarceration Only	0.31	Yes	p<.01
Subset 3	≤ Three Years Recidivism	0.29	Yes	p<.01
Subset 4	Studies with Control Group	0.24	Yes	p<.01

Note: Sample-weighted Mean *r* indicates the positive correlation between PSCE and non-recidivism.

Summary

As displayed in Table 6, the meta-analysis of post-secondary correctional education and recidivism research conducted between 1990 and 1999 has a correlation of 0.31, which is statistically significant. This means that PSCE is correlated with lower rates of recidivism as defined by the study. There were consistent findings in each of the four subsets, or moderator analyses, and they were also found to be statistically significant.

Chapter V Discussion

Summary of the Study

This chapter is divided into three major sections: the first, a summary of the study, the second, conclusions, and the third, implications and suggestions for further research. The summary of the study section contains the statement of the problem, the statement of the procedures, the research hypotheses, and the study results. The conclusions section contains discussion of the overall meta-analysis and the 4 subset or smaller meta-analyses. The final section suggests both implications of this study as well as further research.

Statement of the problem. This research investigated the relationship between post-secondary correctional education and recidivism. PSCE includes any education in prison or jail beyond high school or its equivalent. Recidivism rates measure the likelihood of a released inmate returning to known criminal activity.

Statement of the procedures. A meta-analysis was conducted on all available research on PSCE and recidivism reported between 1990 and 1999. Out of 450 possibilities, 15 studies were found to have the necessary criteria for inclusion. The extracted data were processed with the SAS *PROC MEANS* program on the University of Akron's mainframe computer. The hypothesis was influenced by the theoretical framework of Johan Galtung's (1969) theory of structural violence, and was tested using meta-analysis to aggregate idiosyncratic data to produce a better estimate of the relationship between the independent and dependent variables. Moderator variables and outliers were also investigated using *PROC MEANS*.

Specific research hypothesis. The specific research hypothesis was that post-secondary correctional education was positively related to recidivism reduction.

Study results. The overall meta-analysis resulted in a correlation coefficient of .31 and was statistically significant. Therefore, the research hypothesis was supported. In addition, four subsets of data were tested and also showed positive, significant relationships to recidivism reduction.

Conclusions

The rate at which released inmates commit new crimes rose significantly from 1983 to 1994, a time when the number of people behind bars doubled. One possible reason for the increase in recidivism is state governments cut-backs on rehabilitation programs like drug treatment, vocational education and life skills education (Butterfield, 2002). Given the high numbers of people serving time in jails and prisons and the likelihood that they will commit new crimes after release, it is imperative that ways to reduce recidivism are explored. It is cheaper in the “not-so-long-run” to pay (adequately) for effective anti-recidivism measures, than to finance law enforcement, justice administration, and penal services and apparatus (Taylor, 1992).

A great deal of research has shown that correctional education may be one avenue for rehabilitation. While programs that deliver Adult Basic Education, high school courses, GED preparation and life skills education are integral parts of corrections institutions, post-secondary education has dwindled in the years after the 1994 Crime Bill. This cut Pell Grant eligibility for inmates. The blow was significant. Recently, President George W. Bush decided not to include funds for post secondary education and life skills programs in the fiscal year 2003 education budget (Steurer, 2002). This is in

contrast with the following example from Illinois: after cutting all correctional academic and vocational postsecondary programs in 2001, Governor Ryan restored the vocational programs one month later. Information regarding recidivism reduction was instrumental in making the case for correction education programs. This provides a good example of how correctional educators, armed with solid research and outcome data about recidivism and employment improvement can convince the public, media and politicians that correctional education deserves solid funding, even in times of tough budget decisions (Bedell, 2002).

Debates about the continuation and growth of PSCE programs contain many reasonable objections, among them is the fact that most PSCE and recidivism research is idiosyncratic and not methodologically sound. Most give mixed reviews on the impact of prison college programs on recidivism. Given a collection of studies of such disparate quality, the question of efficacy of prison higher education remains. (Lockwood,1999). The goal of this research is to provide a synthesis of the data already in existence in an effort to assist in the justification of post-secondary correctional education. A meta-analysis was conducted on all available and appropriate research conducted on PSCE and recidivism between 1990 and 1999. Policy relevant conclusions emerge when meta-analytic techniques are used to achieve consensus out of the inconsistencies found in individual research studies (Wells, 2000).

Overall Meta-analysis. The meta-analysis of research available on PSCE and recidivism research reported between 1990 and 1999 showed a positive correlation between participation in post-secondary correctional education and the reduction of recidivism. Although the correlation was moderate at .31, the results are statistically

significant and support the research hypothesis. In a recent, larger meta-analysis of all correctional education, Wells (2000) found a more than moderately strong effect size (.54) from a meta-analysis of 124 studies from 1987-2000. His research included pre-and post-secondary education. The current study can be viewed at a more specific look at a similar hypothesis with post-secondary education as the predictor (or independent) variable. Neither study found it methodologically necessary to correct for statistical artifacts.

A Sample-Adjusted Meta-Analytic Deviancy (SAMD) statistic was calculated for the studies in this overall meta-analysis. Two studies fell more than two standard deviations away from the mean SAMD, however, it was decided that both should be retained. The first, study 8, had a relatively larger sample size (3500) and a lower than average correlation. Because a meta-analysis correlation is sample-weighted, the results from this individual study carried more weight than studies with smaller sample sizes. However, due to its size and importance, and the fact that its correlation was smaller than the mean, it could possibly cause an underestimation of the relationship between PSCE and recidivism reduction rather than an inflated result.

The second study to fall more than two standard deviations from the mean SAMD, study 15, was the only study that met inclusion criteria with a negative correlation between PSCE and recidivism reduction. It was kept in the analyses to provide a more accurate account of research, both available and unavailable.

Such subjective judgments and trade-offs are typical in meta-analyses in some research areas. Unlike the hard sciences, which routinely throw out 5 - 20% of their upper and lower data sets, the social and behavioral sciences do not necessarily adhere to

this standard (Hedges, 1987). Arthur, et al (2001) caution that removal of extreme studies be done on a limited basis. They recommend, instead, that moderators be investigated. Outliers should only be eliminated if it can be strongly justified. If the outlier had caused a possibly overestimation of the results, a different decision about its retention may have been made.

Several issues or constructs were identified as containing possible moderator variables. Four subset meta-analyses were performed in an effort to investigate the possible effect of their existence. Below are the descriptions, rationale, and results of the hypothesized moderator subsets.

Subset 1. Of the 15 studies in the overall meta-analysis, 6 included only those inmates who completed a PSCE program. Nine studies included inmates who had participated in some sort of PSCE, including one study with a minimum of two courses required for inclusion. It was hypothesized that program completers would have a greater reduction in recidivism than those who had only participated. If PSCE was positively related to recidivism reduction, wouldn't more PSCE and/or a complete PSCE have a stronger relationship?

The 6 studies using program completion as the criterion were analyzed with the SAS *PROC MEANS* program. The result was a positive correlation of .43, and was statistically significant. Although 6 studies is a small set, the results do indicate that PSCE completion is a stronger predictor criterion than PSCE participation alone. It should be noted that the studies using participation as a criterion, may also include program completers (in other words, participation does not imply lack of completion, the two are not mutually exclusive) thereby strengthening their relationship as well. The

results of this small meta-analysis indicate that the amount of PSCE education received may be a moderator variable in the findings of the overall study.

It is also important to examine what makes an inmate a program completer. These inmates also may have succeeded because they were more motivated and/or competent than those who do not complete programs (Gerber & Fritsch, 1995). Subset 4 partially addresses this concern.

Subset 2. Eleven of the 15 studies used the construct – reincarceration – to assess recidivism. The remaining 4 studies included re-arrest and/or parole revocation or violation as criteria. It was felt by the researcher that reincarceration was a more accurate measure of recidivism than other constructs. For example, a releasee may be re-arrested and subsequently have charges dropped or be found not guilty in a trial. Using re-arrest as a recidivism construct prematurely, and perhaps falsely, implies a return to criminal activity. Therefore, re-arrest frequency data may include subjects that did not actually recidivate.

The myriad of deeds, that could cause a releasee to be labeled with a parole violation or to have parole revoked, is also not necessarily criminal. Parolees are subject to stricter rules than the average citizen and counting a parole violation as a return to criminal behavior may be problematic. Therefore a meta-analysis was run on the 11 studies using only reincarceration as the recidivism construct. The result was a positive correlation of .31, and was statistically significant. This is the same correlation as the overall meta-analysis so the hypothesis that using the recidivism construct of reincarceration would yield a greater reduction in recidivism rates was not confirmed. In

the overall meta-analysis, the recidivism construct does not appear to be impacted by a moderator variable.

Subset 3. Ten of the 15 studies measured recidivism for 3 years or less after release. The remaining 5 used longer, or inconsistent, follow-up measures when assessing recidivism. It was hypothesized that, the longer you look for recidivism, the more you will find. It was also speculated that, after 3 years, it would be difficult to make the case that education or the lack thereof, while incarcerated, would have as critical an impact. A meta-analysis was run on the 10 three-years-or-less studies, with a positive correlation of .29, and was statistically significant. It is interesting to note, however, that the correlation is slightly weaker than that of the overall study. This would indicate that recidivism length may be effectively measured within 3 years of release. This may be related to the fact that two-thirds of inmates who are rearrested are rearrested within 12 months of their release (Butterfield, 2002). While this study cannot make the assertion that it is unnecessary to go beyond three years when studying recidivism, the length of follow-up does not appear to be a moderator variable in the overall study.

Subset 4: Three studies included control groups as part of their research design. Selection bias is one of the primary arguments against positive finding in treatment programs, including education, with inmates. The recent OCE/CEA (2000) Three State study sought to correct alleged sampling bias in previous studies of inmate education. The researchers collected data on the backgrounds and attitudes of inmates, to ensure that access to education programs was the key difference among the groups being studied

(Schmidt, 2002). Recidivism rates were significantly lowered with the re-incarceration rate reduced by 29% (Steurer, Smith & Tracy, 2001).

The three studies in this smaller meta-analysis (subset 4) all included control groups in a quasi-experimental design. These control groups were chosen on criteria deemed relevant to selection of, and participation in PSCE programs. A meta-analysis was run on the three and resulted in a positive correlation of .24, which was statistically significant. The lower correlation is not surprising given that the PSCE participants were being compared to groups with similar demographics (age, education level, attitudes, prior convictions, etc. depending on the specific study) rather than the institution or state prison population as a whole. The finding that the correlation is positive and statistically significant helps to offset the blanket dismissal of PSCE and recidivism research using selection bias as the dominant variable. Selection bias may, however, be a moderator variable in the overall meta-analysis.

Implications

Massive incarceration, a United States trend in the late 20th and early 21st centuries, has not proven to be a deterrent to criminal behavior. As stated by Angela Davis (1998), “the great majority of people have been tricked into believing in the efficacy of imprisonment, even though the historical record clearly indicates that prisons do not work” (p. 4). Recidivism rates are as high or higher than ever, and states are having difficulty keeping up for the “demand” for more incarceration capacity. Incarceration alone does nothing to prepare an inmate for a law-abiding life upon release. Once someone has served time, they are less likely to ever get a decent job, graduate from high school or college, or be allowed to vote (Hanauer, 2002). Inmates are released

having received little or not job training, drug treatments or education. Many are unable to find jobs and are barred by law from living in public housing projects, so they quickly return to crime (Butterfield, 2002)

Rehabilitative efforts, such as post-secondary correctional education, offer tangible, cost-effective alternatives to the prison revolving door. Unfortunately, for many reasons, rehabilitative efforts in general, and PSCE specifically, have decreased in support and implementation. Often, the supposed lack of rigorous research proving its efficacy is cited as the cause. This research is but one of the many research efforts that clearly indicate the benefits to both inmates and society. It is a sad reality, however, that inmate rehabilitation is not high on many peoples' list of priorities. At a time when public colleges and financial-aid programs face cuts in their state appropriations, legislatures are unlikely to latch onto educating prisoners as a priority. Some state corrections officials hesitate to even discuss their prison education programs with reporters because they fear that merely calling attention to the programs will result in their cessation (Schmidt, 2002).

What most citizens do not realize, however, is that the rise in incarceration and recidivism has a direct effect on their lives. Between 1985 and 2000, the increase on state spending on prisons, \$20 billion, was nearly double that of the increase to state colleges, \$10.7 billion. The total increase in spending on higher education by states was 24% compared with 166% for prisons (Cottin, 2002). As an example, in the past two decades in California, over 20 prisons were opened and only one new higher education campus (Davis, 1998). Comparisons of state spending on higher education and prisons are examples of misguided priorities among policy-makers (Ohlemacher, 2002). Our

experiment with building lots more prisons as a deterrent to crime is not working (Butterfield, 2002), yet we keep pouring more and more money into it which leaves less and less money for other state services.

Rehabilitation including PSCE offers a way to decrease our incarceration numbers at a considerable savings. Considering what each state spent keeping someone in prison for just one year, the OCE/CEA (2001) study concluded that every dollar spent on prison education yields more than two dollars in savings from reincarceration costs alone (Schmidt, 2002). The prevention of crime also helps to eliminate cost to crime victims, court system costs, lost wages and taxes of the inmate while incarcerated, and costs to the inmate's family (Wells, 2000).

It is now a fact that incarceration has become big business. Westinghouse, AT&T, Sprint, MCI, Smith Barney, American Express, General Electric and Corrections Corporation of America operate 48 correctional facilities. It is interesting to note that the rise in the prison-industrial complex has happened concurrently with the fall of the rehabilitation ideal. Big companies are profiting billions of dollars by charging the state to house prisoners, all the while profiting from their labor. Report of private prisons and prison industry involvement in prisons, whether it is taxpayers footing the bill for much of their labor or the corners cut in prisons, including substandard diet, extreme overcrowding and abusive guards and practices (Cottin, 2002), do not seem to concern the general population. In fact, most citizens are unaware of the situation. The us/them dichotomy that most citizens have when referring to inmates, as well as the unrealistic opinion that prisoners have a cushy life, keeps most from investigating or caring what

goes on in our nation's prisons. The reality that it directly affects what is in each of our wallets is a connection that is rarely made.

This meta-analysis provides valuable and useful information in the quest to increase post-secondary correctional education. Success in PSCE can mean dollars saved and dollars that can be reinvested in continuing to do the right things. It also means human tragedy averted (Linton, 2002, 122). Although the effect size may seem small, when you consider that 2 million citizens are incarcerated, the numbers that could be affected by PSCE are quite large. Research such as this can go a long way toward making the case for PSCE but the future of correctional education depends on a variety of political and economic variables (Welsh, 2002). Until the general public, and policy makers can see that what is good for inmates is great for society, the struggle is an uphill battle.

A side implication of this research stems from the smaller subset 3. When looking at length of time after release that recidivism was measured, it was found that a length of three years or less was sufficient to gather appropriate data. Stretching the measurement time further actually reduced the percentage of recidivism found due to the reality that, if a person is going to recidivate, chances are it will be sooner, rather than later, after release. This makes a strong case for using short lengths of time, perhaps one to three years, when looking at the relationship to any rehabilitative efforts with inmates.

Suggested Further Research

In the mind of this researcher, there are multitudes of avenues to pursue when it comes to further research in this area. This section will be divided into two general areas, (1) research specifically related to the data in this paper, and (2) research aimed at the

general political, economic, and philosophical trends of crime, criminal behavior, and corrections.

Specific research suggestions. The findings of Subset 1 indicate that further study needs to be done when looking at PSCE participants and recidivism. It makes common sense that a program completer might have a better chance at success out of prison than a non-completer. Since each inmate has a different sentence, and arrives at a different time, many more logistical factors impact an inmate's participation than a traditional student. Therefore, research needs to be done to identify specific program components that seem to have the most benefit. This would enable inmates with short sentences to be exposed to the most significant aspects and therefore enable many more participants to become completers in one way or another.

A related debate surrounds what types of education are best for inmates. Current trends are away from traditional college courses held in prison, and moving toward an education component specifically designed for prisoners. Since traditional college includes problem-solving and critical thinking skills, a more global worldview, and an understanding of society, are programs that focus on literacy, mathematics, occupational factors, good behaviors, attitudes, and discipline, only (for example), enough to enable an inmate to make qualitative changes and achieve legitimate success in life?

Distance learning is a relatively new development that may allow an increase in PSCE while keeping costs low (Garmon, 2002). The personal, interactive capabilities as well as the wide range of media and technological advances make it a much more class-like than televised instruction or computer-based courses. As with the prior suggestions,

research would need to be done to ascertain which aspects of an education are best suited for this method of delivery.

Although a return to the pre-1994 funding of PSCE would improve and expand PSCE's role and impact enormously, it is doubtful that this will occur. Alternative funding is in place in some areas and some grants are available for those inmates under 26 years old. More alternatives need to be found. One source of growth may be to increase the role of community colleges. These institutions have made their reputations by serving thousands of people (annually) looking for a second chance in life (Garmon, 2002). Most mission statements of higher education institutions include some kind of commitment to the community. Educational partnerships with correctional institutions are worth consideration and investigation in line with that mission. (Welsh, 2002).

Prison industry is a growing enterprise and rehabilitative services, such as substance abuse therapy, counseling and education, are often pushed aside in favor of work. One of the primary justifications for this is the valuable work experience that the inmates receive. Research on prison industry experience and recidivism reduction needs to be widespread, methodologically sound and analyzed to determine if this supposed benefit exists.

The centrality of racism in criminal justice and corrections makes it imperative that race taken into consideration when implementing PSCE or other rehabilitative programs and research. An assumption that a one-size-fits-all approach to rehabilitation is what is needed in corrections will be limited in its benefits.

General research suggestions. This research was done to assist in making the case for increasing post-secondary correctional education. PSCE is one of many ways

we, as a society, can work toward rehabilitating those among us who find it difficult to stay within the laws and parameters society creates. Rehabilitation raises the question of whether it is society's obligation to transform the inmate into a law-abiding citizen (Logan & Gaes, 1992). Our beliefs about criminal behavior, corrections and punishment, and societal roles and responsibilities, can indicate what emphasis rehabilitation should have in our criminal justice system. If we do believe, as a society, that the role of corrections includes rehabilitation, we must devote more time, energy, and dollars to provide multiple avenues for the recovery of both the offender and society, PSCE among them.

This general suggestion relates back to the theoretical framework that guides this researcher, Galtung's (1969) theory of structural violence. Although post-secondary correctional education is of great importance to this researcher, in many ways it is just one of many "band-aid" approaches. "Racism has undermined our ability to create a popular discourse to contest the ideological trickery that posits imprisonment as key to public safety" (Davis, 1998, p. 4). Addressing the structural inequities that have led to the current mass incarceration may lead to a more systemic and preventative set of solutions for societal well-being. The earlier in life that a person's first criminal activity occurs, the more likely the offender is to continue committing crimes. (Wells, 2000). We know many of the factors involved here: the criminalization of poverty, inequalities in public education, and the "War" on drugs are but a few. Persons with public policy matters in their control, as well as grass-roots organizations, need to be inundated with research and support for initiating measurable change. As profoundly stated by Harr in 1999:

We live in a society full of contradictions – egalitarian yet not accepting, wanting to help others yet unwilling to forgive those who have made mistakes. Until we afford others the same principles of fairness and humane treatment that we demand for ourselves, we will continue to see increased incarceration and recidivism (p. 22).

Summary

Chapter V began with a summary of the study. A meta-analysis of all available studies reported between 1990 and 1999, was conducted to investigate the relationship between post-secondary correctional education and recidivism reduction. Four subsets of studies were also analyzed for relationships, significance, and to investigate the possibility of moderator variables.

The conclusions section reported the results. The overall meta-analysis did show a positive relationship between PSCE and recidivism reduction. These results were statistically significant. The four smaller subsets of studies included PSCE program completers versus completers and participants, reincarceration only as the recidivism construct, length of recidivism measure, and studies using control groups to negate possible selection bias. All subsets showed positive relationships with recidivism reduction and were statistically significant. Program completion versus participation may be a moderator variable worth further consideration.

The implication of this study was that PSCE is a form of rehabilitation that is worthy of increase. More research needs to be conducted to ascertain the most appropriate methods for the most cost-effective, and rehabilitative, approaches. It is also crucial for society to recommit to the rehabilitative ideal, and rethink the supposed “tough-on-crime” stance that has resulted in the proliferation of inmates and recidivists.

The costs, in terms of unrealized human potential and societal welfare, warrant thoughtful and proactive consideration of the highest priority.

Appendix A

Studies Included in the Meta-Analysis

Study #	Citation
1	Duguid, S. Hawkey, C. & Knights, W. (1998). Measuring the impact of post-secondary education in prison: A report from British Columbia. <i>Journal of Offender Rehabilitation</i> , 27(1/2), 87-106.
2	Stevens, D. J. & Ward, C. S. (1997). College education and recidivism: Educating criminals is meritorious. <i>Journal of correctional education</i> , 48(3), 106-111.
3	Batiuk, M. E., Moke, P. & Rountree, P. W. (1997). Crime and rehabilitation: Correctional education as an agent of change – A research note. <i>Justice Quarterly</i> , 14(1), 167-180.
4	Jenkins, H. D., Steurer, S.J. & Pendry, J. (1995). A post-release follow-up of correctional education program completers released in 1990-1991. <i>Journal of Correctional Education</i> , 46(1), 20-24.
5	Anderson, D. B., Schumacker, R. E., & Anderson, S. L. (1991). Releasee characteristics and parole success. <i>Journal of Offender Rehabilitation</i> , 17(1/2), 133-145.
6	Lockwood, D. (1991). Prison higher education and recidivism: A program evaluation. <i>Yearbook of Correctional Education 1991</i> , 187-201.

- 7 New York State, Department of Correctional Services (1992). *Overview of department follow-up research on return rates of participants in major programs (1983 study)*. Albany: Department of Correctional Services.
- 8 New York State, Department of Correctional Services (1991). *Analysis of return rates of The Inmate College Program participants*. Albany: Department of Correctional Services.
- 9 O'Neil, M. (1990). Correctional higher education: Reduced recidivism? *Journal of correctional education*, 41(1), 28-31.
- 10 Langenbach, M., North, M. Y., Aagaard, L. & Chown, W. (1990). Televised instruction in Oklahoma prisons: A study of recidivism and disciplinary actions. *Journal of correctional education*, 41(2), 87-94.
- 11 Duguid, S., Hawkey, C. & Pawson, R. (1996). Using recidivism to evaluate effectiveness in prison education programs. *Journal of correctional education*, 47(2), 74-85.
- 12 Harer, M. D. (1994). *Recidivism among federal prisoners released in 1987*. Federal Bureau of Prisons, Office of Research and Evaluation: Washington D.C. August 4, 1994.
- 13 Haynes, J. (1996). An analysis of recidivism rates for inmates completing vocational/academic programs at Twin Rivers Corrections Center/Edmonds Community College (1984-1995). *Journal of Northwest Center for the study of correctional education*, 1(1), 43-46.

- 14 Kelso, C. (1996). A study of the recidivism of Garrett Heyns Education Center Graduates released between 1985 and 1991. *Journal of Northwest Center for the study of correctional education*, 1(1), 24-42.
- 15 Nelson, S. D. (1995). *Learning their lesson: The impact on recidivism of providing college courses to inmates*. Unpublished Paper presented at 1995 Western and Pacific Association of Criminal Justice, Reno, NV.
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