

# Utah Cost of Crime

## Education and Vocation Programs for Adult Offenders: Technical Report

July 2013



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*Utah Criminal Justice Center*

COLLEGE OF SOCIAL WORK  
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES  
UTAH COMMISSION ON CRIMINAL AND JUVENILE JUSTICE  
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**Education and Vocation Programs for Adult Offenders:  
Technical Report**

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**July 2013**

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# Introduction

## Background

Research consistently indicates that educational attainment and employment stability are inversely associated with criminal offending (Bushway, 2003; Harer, 1995; Harlow, 2003; Sampson & Laub, 1993; Seiter & Kadela, 2003; Uggen & Thompson, 2003; Visher, Debus, & Yahner, 2008). In the United States (U.S.), the prison population is characterized by lower levels of literacy and educational achievement when compared to the general population (Andrews & Bonta, 2003; Mackenzie, 2006; Tewksbury & Vito, 1994). As many as 37% of state prison inmates do not have a high school diploma or equivalent, compared to 19% of the general population (Harlow, 2003). This discrepancy is even wider when looking at higher education, with half of the general population having some postsecondary experience compared to 14% of state prisoners. These figures suggest that offenders and ex-offenders are at a substantial disadvantage in a job market that increasingly requires postsecondary education or training (Spellings, 2007).

Employment is theorized to reduce criminal behavior because of its impact on social engagement, pro-social identity, and self-sufficiency (Solomon, Johnson, Travis, & McBride, 2004). Many criminal offenders enter prison with limited job skills and no stable employment history (Harlow, 2003). Offenders with educational and employment deficits at the time of incarceration often emerge from prison with employment prospects that have been further diminished due to deterioration of skills, experience, and network contacts (Wolff, Shi, & Schumann, 2012). Given positive associations between education, employment, and desistance from crime, researchers and practitioners suggest that incarceration should be organized such that it functions as a mechanism for enhancing offenders' human capital (Petersilia, 2003; Travis, 2005; Wilkinson, 2001). Corrections-based vocation and education programs are intended to reduce offender recidivism by enhancing educational attainment and employability.

The majority of federal (98%) and state (84%) prisons offer some form of education program (Brazzell, Crayton, Mukamal, Solomon, & Lindahl, 2009; Stephan, 2008). Participation in those programs is limited, however, by a range of factors that include: attendance restrictions based on facility's lack of resources; offenders' lack of awareness or interest in programs; and criminal justice system requirements that are prioritized above education and post-release employment (Crayton & Neusteter, 2008). As such, less than 30% of state and federal prisoners participate in work and education programs during incarceration (Brazzell et al., 2009). Gaes (2008) argues that the widespread presence of corrections-based education means that such interventions have the potential to impact a broad range of offenders. For example, one-third of states currently require GED attainment in prison, which likely accounts for the fact that almost three-fourths of inmates with a GED obtained it while serving time in a correctional facility (Crayton & Neusteter, 2008).

**Education.** Educational programs commonly offered in correctional settings include: adult basic, secondary, postsecondary, special, and vocational education. Education-oriented interventions vary in the degree to which they focus on formal achievement—such as attainment of diplomas and degrees—or skills, such as critical thinking, decision-making, and

communication (Gaes, 2008). In large part, education programs are intended to enhance offenders' post-release job prospects (Brazzell et al., 2009). In 2005, all state correctional facilities in Utah operated some form of education program, most commonly adult basic or secondary education (Stephan, 2008).

***Adult basic education (ABE).*** ABE is comprised of basic skills training in arithmetic, reading, writing, and/or English as a Second Language (ESL).

***Adult secondary education.*** Adult secondary education includes instruction for a high school diploma, the General Equivalency Diploma (GED), or another certificate of high school equivalency. It may also include special education for individuals with learning disabilities.

***Post-secondary education (PSE).*** PSE consists of college credit, certification, or vocational training for eligible inmates (those who have a high school diploma or equivalent) (Palmer, 2012). Credits attained through coursework may be applied to a college degree or certificate. PSE takes place in both secure facilities and off-site, often at community colleges.

***Vocational education.*** Vocational education combines education and vocational skills classes, although the specific components can vary greatly. Offenders generally receive training in basic employment skills as well as trade-specific skills. Classroom education, certification, and apprenticeships may be included, in addition to soft skills such as customer service (Feeney, 2008; MacKenzie, 2006).

***Prior research.*** Research consistently indicates that corrections-based adult basic education and post-secondary education is associated with reduced recidivism (Aos et al., 2006; Chappell, 2004; Drake et al., 2009; Gaes, 2008; MacKenzie, 2006; Wilson et al., 2000). Program effect sizes, however, vary widely across studies and intervention type (Gaes, 2008). In a systematic review, Wilson and colleagues (2000) identified a 26% reduction in recidivism for postsecondary education (based on 13 studies) and an 18% reduction in recidivism for adult basic education (based on 14 studies). Chappell (2004) conducted a meta-analysis of 15 studies of post-secondary education and found a 40% reduction in recidivism rates for offenders who participated compared to those who did not (41% vs. 22%). In contrast, the Washington State Institute for Public Policy (Aos et al., 2006; Drake et al., 2012) found that participation in basic or post-secondary education (17 studies, results cannot be separated by type) was associated with a 7% reduction in recidivism. Even with the relatively smaller impact of programming, the WSIPP studies calculated a \$17,636 cost savings for corrections-based general education programs (Drake et al., 2009).

Systematic reviews and meta-analyses of vocational education are subject to critique because of the heterogeneity of program components that comprise vocational education and the poor methodological quality of much of the research (Bouffard, MacKenzie, & Hickman, 2000). Nonetheless, MacKenzie (2006) argues that vocational training programs that include an educational component are significantly associated with reduced recidivism. In an analysis of 17 studies, Wilson (2000) found that vocational education was associated with a 22% reduction in

recidivism and a 34% increase in employment outcomes. The WSIPP analysis (4 studies) estimates that prison-based vocational education is associated with a 10% reduction in recidivism (Drake et al., 2009, 2012).

**Employment.** Employment-focused corrections programs include general institution maintenance, correctional or prison industries, job-readiness classes, job training, job placement, job monitoring by a case manager, work release, and reentry or transitional job programs. In addition to providing job skills, employment programs can serve as an indicator to potential employers that ex-offenders have the motivation and skills to maintain employment. Prison work assignments are prevalent in correctional facilities, but the extent to which prison work translates into external employment and, subsequently, reduced recidivism is varied (Bushway, 2003; Solomon et al., 2004). In 2005, all Utah state correctional facilities offered some form of work program and 11% of inmates participated (Stephan, 2008).

**Correctional or prison industries (PI).** Correctional or prison industries use prison labor to produce goods and services that are purchased by the states. PI serves a dual purpose: it gives offenders work experience and offsets prison operating costs (Bouffard et al., 2000). More recently, PI includes partnerships with private companies to provide work opportunities that approximate private-sector work (Solomon et al., 2004). Nationally, 31% of state and federal correctional facilities operate prison industry programs.

**Job training placement.** Job training programs are often integrated into reentry and release planning processes and may include mentorship, resume preparation, interview skills, and resources to search for jobs (Bushway, 2003; Visher, 2006).

**Work release.** In work release programs, offenders are allowed to leave the facility to continue working at a current place of employment (or to participate in a transitional work program), with the intention of maintaining employment after release (Bouffard et al., 2000). During a work release program, offenders may return to jail or prison at night or live in a halfway house, community correction center, or their own home. Nationally, 28% of state and federal correctional facilities operate work release programs; in Utah, less than 5% of prisoners participate in work release (Stephan, 2008).

**Transitional jobs.** In transitional jobs programs, offenders are given subsidized employment, and other support services, at the point of release in order to provide a source of legal income during the vulnerable release period. The job opportunities are organized by program staff who works with prisoners to find long-term employment (Bloom, 2006; Solomon et al., 2004; Welfare to Work Partnership, 2000a, b).

**Prior research.** While there is a clear correlation between employment and recidivism, findings on the impact of employment-related interventions for offenders are mixed. Bouffard, MacKenzie, and Hickman (2000) reviewed empirical studies and found a positive impact on recidivism for correctional industries, vocational training, and a positive, but weaker, impact for work release programs. In a meta-analysis, Wilson (2000) found a significant positive impact for vocational training and a non-significant positive impact for prison industries and multi-component education/work programs. The Washington State Institute for Public Policy (WSIPP) conducted a meta-analysis that demonstrated a 6.4% reduction in recidivism for prison-based

correctional industries (25 studies) and a 4.6% reduction in recidivism for community-based employment- and job-training (16 studies) (Drake et al., 2009). WSIPP also found a 1.3% reduction in recidivism for the Washington state work release program. In a meta-analysis of eight community-based employment programs, Visher, Winterfield, and Coggeshall (2005, 2006) found no significant impact of the intervention on rearrest rates. Visher and colleagues surmise that the lack of significant findings may reflect, in part, a poor match between programming and offenders, as most of the included studies did not conduct assessments prior to placing offenders in services. Multiple researchers note the difficulty in making definitive conclusions about the impact of employment programs on recidivism because of the lack of rigorous primary studies and the heterogeneity in program components, offenders, and outcome measures (Bouffard et al., 2000; Visher et al., 2006; Wilson et al., 2000).

## Methods

**Inclusion criteria.** A systematic review was conducted, in accordance with the protocol outlined by PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009), to identify studies for inclusion in this meta-analysis. The research team identified eligibility criteria for population, intervention, setting, outcome, and methodology (see Methods Report for complete explanation of the search strategy). The search was restricted to studies written in English and conducted between 1987 and 2013. Studies had to meet the following criteria to be eligible:

- a) The treatment and comparison groups must consist of offenders or ex-offenders. Programs serving both court and non-court involved populations were excluded unless the impact on the court-involved population could be isolated from the rest of the results.
- b) Studies evaluating interventions conducted in either institution- or community-based settings were eligible.
- c) Eligible studies must include a measure of recidivism—which could be arrest, conviction, incarceration, or failure—as an outcome. Recidivism data from official sources was preferred, but studies using only self-report recidivism measures were also eligible. Non-criminal outcome measures—such as measures of educational attainment or employment status—were excluded from this analysis. The study must report quantitative results that could be used to calculate an effect size. Given the interest in recidivism, dichotomous data were preferred (e.g., odds-ratios). If the study only included continuous measures, effect sizes were calculated and converted into odds-ratios (Lipsey & Wilson, 2001) using log odds (see Methods Report).
- d) Both experimental and quasi-experimental studies were eligible for inclusion. Quasi-experimental studies had to use matching or statistical methods to demonstrate equivalence between the intervention and comparison group. Treatment dropouts were not considered an appropriate comparison group. Comparison groups consisting of offenders who refused treatment were included only if the authors conducted analyses that demonstrated that the groups were similar.

**Retrieving and screening studies.** The initial literature search identified 2,710 abstracts from which researchers pulled 62 studies for further evaluation. Full articles were screened by two researchers, which resulted in 26 studies that met inclusion criteria. Five of those studies included multiple independent comparison groups, which resulted in 34 effect sizes that were



included in the analysis (see Appendix A). For the remainder of this document, the term “study” refers to independent comparisons, even if both come from the same manuscript.

**Extracting data.** The authors developed a detailed code sheet and manual, which included variables related to study quality, program characteristics, participant characteristics, and treatment variables (see Methods Report for a full description of coding variables). Two researchers coded all of the included studies and entered the data into an Excel spreadsheet; discrepancies in coding were resolved through discussion. To assess study quality, the researchers used a modified version of The Maryland Scale of Scientific Rigor (Aos et al., 2001; Gottfredson, MacKenzie, Reuter, & Bushway, 1997). Studies that received a rating lower than three (unmatched comparison group or no comparison group), out of five possible points, were excluded. Where studies reported multiple measures of recidivism, researchers selected the broadest measure (e.g., arrest over conviction and conviction over re-incarceration). Studies were classified as education-oriented if: the study authors described it as an education intervention; and if the intervention included basic education, secondary education, postsecondary education, vocational education, or a combination of these elements. Studies were coded as employment-oriented if: the authors described it as employment- or job-oriented intervention; and if the intervention included job search assistance, job placement, subsidized employment, apprenticeships, prison industries, work release, or institutional work. Vocational programs were coded as education if they took place primarily in a classroom and employment if they took place primarily in the setting of an apprenticeship or job.

**High school diploma compared to GED.** In this study, the authors attempted to analyze the impact on recidivism of attaining a high school diploma compared to a GED. Unfortunately, in all of the eligible studies the two were treated as equivalents. According to Brazzell and colleagues (2009), prisons are more likely to offer GED programming than high school diplomas; however, research suggests that completing high school is associated with higher wages when compared to receipt of a GED (Elvery, 2005). The GED was not originally intended to serve as an educational goal, but rather a means to allow military servicemen without a diploma to attend college under the GI Bill (Boesel, 1998). It has since been adapted for the general public, and most higher education institutions accept the GED in lieu of a high school diploma. In a non-prison context, multiple studies have been conducted to determine the value of a GED when compared to a high school diploma, often finding that GED recipients are closer to high school dropouts than high school graduates in terms of ability and economic status (Cameron & Heckman, 1993). Cameron and Heckman (1993) contend that programs treating a GED as a stand-alone goal are making a crucial error because the “economic return [that] exists from GED reciprocity arises from its value in opening postsecondary schooling and training opportunities.” When both GED recipients and high school graduates attend post-secondary education, their market outcomes are closer together. However, only 11% of GED recipients in this study had completed at least one year of college by the age of 27, and only 8% had completed at least two years of college (Cameron & Heckman, 1993).

It is difficult to compare GED recipients and high school diploma recipients in the context of prison education programs, because most studies treat them as functional equivalents. In addition, many studies measuring the effectiveness of prison education programs do not focus on high school equivalency, but rather post-secondary education such as college credit and

vocational certification (Erisman & Contardo, 2005). Texas evaluated its high school equivalency programs when it did a study of 30,000 former inmates' employment for one year after release (Martinez & Eisenberg, 2000). The study compared multiple benchmarks such as earning a GED, earning a vocational certificate, and improving test scores. The study measured the effectiveness of all program components and when compared, data showed that those who earned both a GED and a vocational certificate in prison had the most successful employment outcomes. While not the primary focus of the study, the researchers also found that, on average, those with a high school diploma worked more months in a year and earned approximately \$1000 more than those with a GED (Martinez & Eisenberg, 2000).

**Analysis.** Data were coded into an Excel spreadsheet, which allowed researchers to calculate descriptive statistics for the full sample. The researchers then recoded variables, to condense data into comparable units wherein each study contributed only one effect size to each outcome measure, and entered those into *Comprehensive Meta-Analysis* (CMA, version 2). Using CMA, the researchers assessed heterogeneity using the  $Q$  and I-squared statistics (see Results section). The  $Q$  statistic is a test of the null hypothesis: a significant value ( $p < .05$ ) indicates that the variation between studies was greater than one would expect if the difference could be explained entirely by random error (Borenstein, Hedges, Higgins, & Rothstein, 2009). Because the  $Q$  statistic is not a precise measure of the magnitude of dispersion between studies, the researchers conducted additional analyses to quantify the proportion of variance that could be attributed to differences in study characteristics (e.g., setting, population, intervention). The I-squared statistic (values range from 0% to 100%) provides an estimate of how much of the variation between studies can be explained by random error: values near 0 indicate that all of the difference can be explained by random error. Values at 25%, 50% and 75% are, respectively, considered low, moderate, and large heterogeneity (Piquero & Weisburd, 2010; Sedgwick, 2012). Given the range of study characteristics present in this sample, a random effects model, which assumes variability between studies (Piquero & Weisburd, 2010), was used to generate a summary effect size for each outcome measure. All data was coded and transformed into odds-ratios, with values above 1 indicating a negative treatment effect and values below 1 indicating a positive treatment effect (i.e., reduced recidivism rates for offenders who participated in treatment).

## Results

**Sample characteristics.** All of the included studies were conducted in the United States and the majority of studies were unpublished technical reports (see Table 1 on the following page). Ten of the studies were random control trials; the remaining 24 used convenience samples and controlled for group differences (through matching, statistical controls, or both). The follow-up period for the included studies ranged from one to ten years. Total sample sizes ranged from 153 to 15,326 and the entire sample describes 59,649 offenders in treatment groups and 51,811 offenders in comparison groups.

**Table 1: Characteristics of studies included in meta-analysis (k=34)**

Characteristics	Frequency	%
<b>Publication type</b>		
Peer-reviewed journal	9	26
Dissertation	5	15
Government Report	6	18
Non-Government Agency Report	12	35
Other	2	6
<b>Setting</b>		
Institution	20	59
Community	14	41
<b>Dropouts enumerated</b>	13	38

Twenty-four studies evaluated employment-oriented programs and ten evaluated education-oriented programs (see Table 2). Most of the education programs were characterized as combined interventions (comprised of participants who received either ABE, secondary, PSE, or vocational education). The majority of the employment-oriented programs were transitional jobs programs or multi-component programs (comprised of participants who received some combination of job training and job search assistance).

**Table 2: Characteristics of study comparisons (k=34)**

Study Comparisons	Frequency	%
<i>Total Sample</i>	34	
<b>Education-oriented programs</b>		
Combined Education	5	50
Postsecondary Education (PSE)	4	40
Vocational Education	1	10
<b>Employment-oriented programs</b>		
Multi-component Work	6	25
Prison Industries	4	17
Private Prison Industries	3	13
Vocational Training	1	4
Transitional Jobs	6	25
Work Release	4	17

**Meta-analysis.** Thirty-four (34) comparisons were included in the meta-analysis. Results are reported below, separated by program type. The between-groups  $Q$  test showed significant heterogeneity between education and employment programs ( $Q=6.08$ ,  $df=2$ ,  $p=.01$ ).

**Education-oriented programs.** Recidivism was examined in ten studies evaluating an education intervention. In all of those, results favored the intervention (eight were significant at  $p<0.05$ ). The odds-ratios for education programs ranged from 0.37 to 0.97. The random effects mean odds-ratio was 0.74 (95% CI of 0.65 to 0.84,  $p<0.001$ ), indicating a significant difference in recidivism between the intervention and comparison groups. The  $Q$  test showed that the distribution of the effect sizes was significantly heterogeneous ( $Q=21.97$ ,  $df=9$ ,  $p<0.05$ ). This finding was expected given the range of offenders and program types included in the meta-

analysis and confirmed by the I-squared statistic ( $I^2=59.03$ ), which indicated that a moderate amount of the variance can be attributed to study-level differences. All of the education-oriented programs were conducted in an institutional setting.

*Education program by program type.* The following analyses report the impact of various types of programs on recidivism.

**Combined education programs.** Five of the education-oriented programs evaluated a combined intervention, wherein participants received either basic, secondary, postsecondary, or vocational education (this includes Cho & Tyler, 2010, which evaluated an adult basic education program; since this was the only ABE it was included in this analysis to increase the sample size). In all of those, results favored the intervention (three were significant at  $p<0.05$ ). The random effects mean odds-ratio was 0.80 (95% CI of 0.69 to 0.92,  $p<0.01$ ), indicating a significant difference in recidivism between the intervention and comparison groups.

**Postsecondary education programs.** Four of the education-oriented programs evaluated a postsecondary education program. In all of those, results favored the intervention (all were significant at  $p<0.05$ ). The random effects mean odds-ratio was 0.47 (95% CI of 0.34 to 0.64,  $p<0.001$ ), indicating a significant difference in recidivism between the intervention and comparison groups.

**Vocational education programs.** Only one study evaluated a vocational education program. The odds-ratio for the vocational education program was 0.80 (95% CI, 0.68, 0.95), indicating a significant difference in recidivism between the intervention and comparison groups.

The between-groups  $Q$  for all education-oriented programs was significant ( $Q=10.04$ ,  $df=2$ ,  $p<0.05$ ), indicating a significant heterogeneity by program type.

*Employment-oriented programs.* General recidivism was examined in 24 studies evaluating an employment-oriented intervention. In 18 of those, results favored the intervention (eight were significant at  $p<0.05$ ). The odds-ratios for employment programs ranged from 0.50 to 1.29. The random effects mean odds-ratio was 0.88 (95% CI of 0.84 to 0.92,  $p<0.001$ ), indicating a significant difference in recidivism between the intervention and comparison groups. The  $Q$  test showed that the distribution of the effect sizes was significantly heterogeneous ( $Q=62.50$ ,  $df=23$ ,  $p<0.05$ ). This finding was expected given the range of offenders and program orientations included in the meta-analysis and confirmed by the I-squared statistic ( $I^2=63.20$ ), which indicated that a moderate amount of the variance can be attributed to study-level differences.

*Employment-oriented programs by program type.* The following analyses report the impact of the different types of employment programs on recidivism.

**Prison industry programs.** Four of the employment-oriented programs evaluated a traditional prison industry program. The random effects mean odds-ratio was 0.82 (95% CI of 0.71 to 0.94,  $p<0.01$ ), indicating a significant difference in recidivism between the intervention and comparison groups. Three additional employment-oriented programs compared a privatized prison industry program (private companies hire prison labor) to a traditional prison industry program. The random-effects mean odds-ratio was 0.89 (95%

CI 0.84, 0.95,  $p < 0.001$ ), indicating a significant difference in recidivism between the intervention and comparison groups. The between-groups  $Q$  for this comparison was not significant ( $Q = 0.127$ ,  $df = 1$ ,  $p = 0.72$ ).

**Transitional jobs programs.** Six of the employment-oriented programs evaluated a transitional jobs program. In five of those, the transitional jobs program was compared to other programming; in one, the transitional jobs program was compared to no intervention. The random effects mean odds-ratio was 0.99 (95% CI of 0.90 to 1.09,  $p = 0.81$ ), indicating no significant difference in recidivism between the intervention and comparison groups.

**Multi-component work programs.** Seven of the employment-oriented programs evaluated a multi-component work/vocational program. In four of those, the multi-component work/vocational program was compared to other programming; in the other three, the multi-component program was compared to no intervention. The random effects mean odds-ratio was 0.76 (95% CI of 0.64 to 0.90,  $p < 0.01$ ), indicating a significant difference in recidivism between the intervention and comparison groups.

**Work release programs.** Four of the employment-oriented programs evaluated a work release program, all compared to no intervention. The random effects mean odds-ratio was 0.92 (95% CI of 0.88 to 0.97,  $p < 0.01$ ), indicating a significant difference in recidivism between the intervention and comparison groups.

*Employment-oriented programs by setting.* Fourteen studies examined recidivism following a community-based intervention and nine showed results that favored the intervention (two were significant at  $p < 0.05$ ). The random effects mean odds-ratio was 0.93 (95% CI, 0.90, 0.97,  $p < 0.001$ ), indicating a significant reduction in recidivism. Ten studies examined recidivism following an institution-based intervention and nine showed results that favored the intervention (six were significant at  $p < 0.05$ ). The random effects mean odds-ratio was 0.83 (95% CI, 0.78, 0.89,  $p < 0.001$ ), indicating a significant reduction in recidivism. The  $Q$  test assessing between-group heterogeneity was significant ( $Q = 8.55$ ,  $df = 1$ ,  $p = 0.003$ ), indicating that there was a significant difference between the effects of institutional- and community-based interventions on recidivism.

*Community-based, employment-oriented programs by custody status.* Ten of the community-based interventions were evaluated among samples comprised of parolees/probationers. Of these, the random effects mean odds-ratio was 0.93 (95% CI, 0.87, 0.99,  $p < 0.01$ ), indicating a significant reduction in recidivism. Four of the community-based interventions were evaluated among samples comprised of ex-offenders, who were not on supervision at the time of the intervention. Of these, the random effects mean odds-ratio was 0.96 (95% CI 0.86, 1.06,  $p = 0.41$ ), indicating no significant difference between the intervention and comparison group. The  $Q$  test assessing between-group heterogeneity was not significant ( $Q = 0.19$ ,  $df = 1$ ,  $p = 0.67$ ), which suggests that there is no significant difference between the effects of the intervention on supervised compared to unsupervised offenders.

**Limitations.** The strength of a meta-analysis rests on the comprehensiveness of the search strategy. While the research team sought to identify all eligible studies, the possibility exists, and is in fact likely, that those efforts failed to identify all the extant research on education and

vocation programs for offenders and ex-offenders. In some cases, the researchers were unable to obtain studies that were identified as eligible evaluations. Further, the strength of a meta-analysis is dependent on the quantity and quality of the available primary research. Finally, the studies included here reflect significant heterogeneity in terms of offenders, settings, program components, implementation fidelity, and outcome measures. In many cases, the study authors did not provide sufficient information to allow for moderator analyses of the relationship between those characteristics and intervention effect.

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### **Included Studies**

Note: The studies marked with an asterisk (\*) were included in the analyses. The other studies listed are eligible but statistically dependent.

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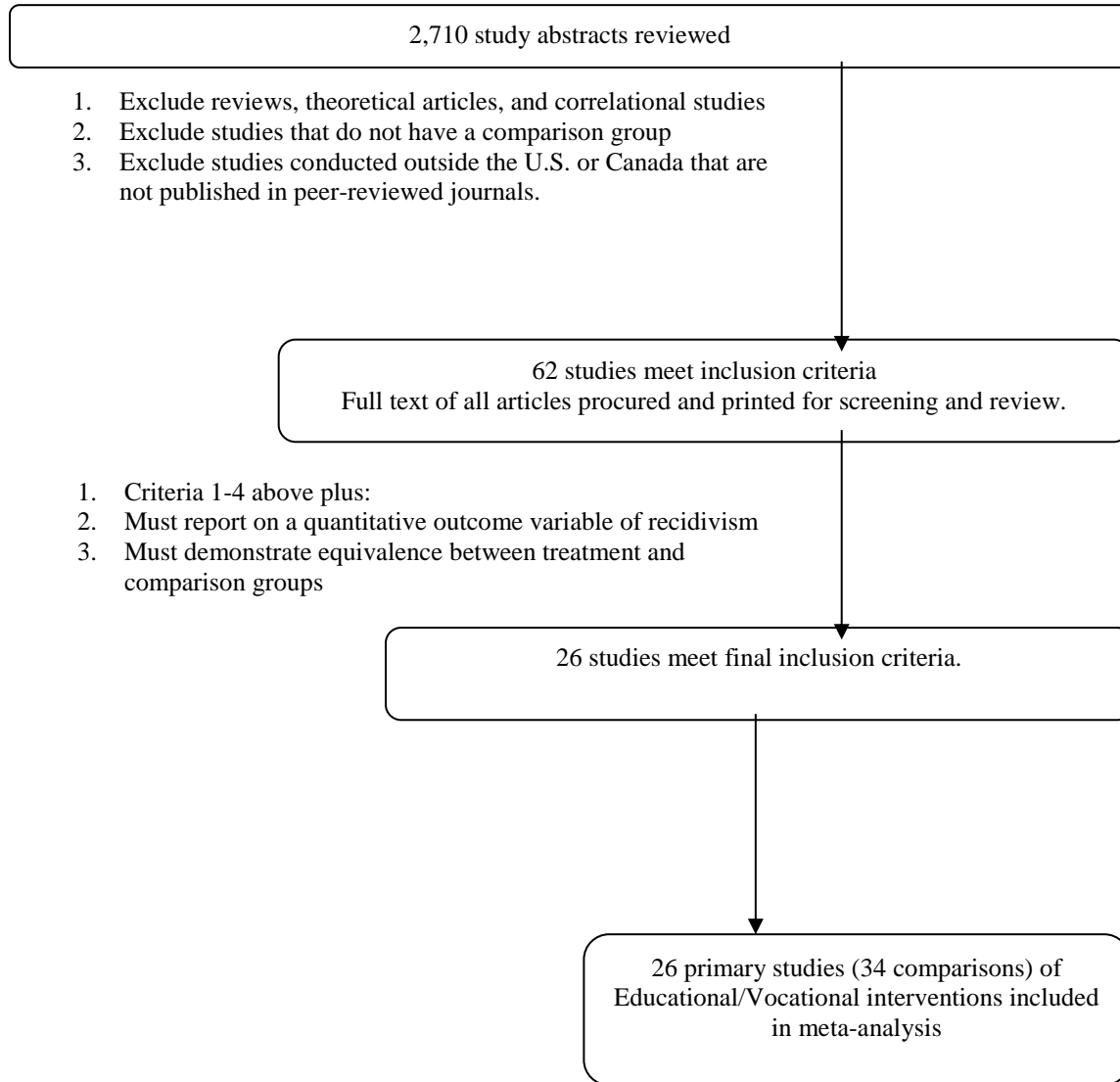
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## APPENDIX A: Search Results

Search: Title and Abstract  
Search Limiters: Date Range  
(1987-2013), English



## Appendix B: Table of Included Studies

Author	Publication Date	N in each group		Study Design	Comparison		Recidivism	
		<i>Tx</i>	<i>Control</i>		<i>Intervention</i>	<i>Comparison</i>	<i>OR</i>	<i>95% CI</i>
Berk	2008	2186	7035	Convenience	Work Release	None	.94	.91, .97
Bloom	1997	132	68	Convenience	Work	Other	1.15	.64, 2.08
Bohmert	2012	224	224	Convenience	Work Release	None	.94	.64, 1.39
Cave	1993	127	109	Convenience	Work	Other	.75	.42, 1.30
Cho	2010	4731	299	Convenience	ABE	None	.97	.83, 1.14
Drake	2007	11413	3913	Convenience	Work Release	None	.88	.82, .95
Harer	1995	183	436	Convenience	Education	None	.74	.52, 1.06
Hopper	2008a	8198	1117	RCT	Prison Industry	Other	.94	.91, .96
Hopper	2008b	6537	858	RCT	Prison Industry	Other	.90	.87, .93
Kim	2013	340	340	Convenience	PSE	None	.50	.32, .80
Lattimore	1990	138	109	RCT	Voc Train	Other	.66	.40, 1.10
Lichtenberger	2011	1428	1428	Convenience	Voc Ed	None	.80	.68, .95
Maguire	1988	399	497	Convenience	Prison Industry	None	1.04	.78, 1.34
Menon	1995	3250	3250	Convenience	Work	None	.89	.71, 1.09
Redcross	2012	568	409	RCT	Transitional Job	Other	.83	.64, 1.07
Richmond	2009	1685	1685	Convenience	Prison Industry	None	.90	.74, 1.08
Saylor & Gaes	1999	2837	2132	Convenience	Work	None	.63	.51, .77
Schochet	2001	211	203	RCT	Combined	Other	.83	.56, 1.22
Sedgley	2010a	2041	2474	Convenience	Education	Other	.83	.73, .94
Sedgley	2010b	4018	497	Convenience	Prison Industry	Other	.72	.61, .85
Smith	2005	1123	413	Convenience	Education	None	.68	.48, .97
Smith	2006a	2280	2232	Convenience	Prison Industry	None	.76	.67, .85
Smith	2006b	2280	1841	Convenience	Private PI	Other	.76	.67, .86
Steurer	2003	1373	1797	Convenience	Education	None	.70	.61, .80
Turner	1997	112	106	Convenience	Work Release	None	.93	.34, 2.57
Uggen	2000	2052	2210	RCT	Work	None	.97	.86, 1.09
Visher	2010	80	73	Convenience	Work	None	.50	.22, 1.13
Winterfield	2009a	328	10112	Convenience	PSE	None	.46	.22, .99
Winterfield	2009b	133	1274	Convenience	PSE	None	.46	.24, .88
Winterfield	2009c	353	3520	Convenience	PSE	None	.37	.15, .91
Yahner	2012a	189	185	RCT	Transitional Job	Other	1.07	.71, .60
Yahner	2012b	213	212	RCT	Transitional Job	Other	1.29	.87, 1.92
Yahner	2012c	251	251	RCT	Transitional Job	Other	1.11	.77, 1.60

