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Evaluating the Effectiveness of Correctional Education

A Meta-Analysis of Programs That Provide
Education to Incarcerated Adults

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Summary

Introduction

It is challenging to prepare offenders with the needed vocational skills and education to be successful in reintegrating back into society. Offenders, on average, are less educated than the general population. For example, in 2004, approximately 36 percent of individuals in state prisons had attained less than a high school education compared with 19 percent of the general U.S. population age 16 and over. In addition to having lower levels of educational attainment, offenders often lack vocational skills and a steady history of employment, which is a significant challenge for individuals returning from prison to local communities. And the dynamics of prison entry and reentry make it hard for this population to accumulate meaningful, sustained employment experience. Finally, the stigma of having a felony conviction on one's record is a key barrier to postrelease employment.

On April 9, 2008, the Second Chance Act (Public Law 110-199) (SCA) was signed into law. This important piece of legislation was designed to improve outcomes for individuals who are incarcerated, most of whom will ultimately return to communities upon release. The SCA's grant programs are funded and administered by the Office of Justice Programs (OJP) within the U.S. Department of Justice (DOJ). In 2010, funding was set aside, for the first time under the SCA, to conduct a comprehensive study of correctional education. OJP's Bureau of Justice Assistance (BJA) awarded the RAND Corporation a cooperative agreement to comprehensively examine the current state of correctional education for incarcerated adults and juveniles and where it is headed, which correctional education programs are effective, and how effective programs can be implemented across different settings. One central task in that effort was to comprehensively review the scientific literature and conduct a meta-analysis to synthesize the findings from multiple studies about the effectiveness of correctional education programs in helping to reduce recidivism and improve employment outcomes for incarcerated adults within U.S. state prisons.

In this report, we present the findings from our meta-analysis, which will inform policy-makers, educators, and correctional education administrators interested in understanding the association between correctional education and reductions in recidivism and improvements in employment and other outcomes.

To prepare for the meta-analysis, we first conducted a comprehensive literature search for published and unpublished studies released between 1980 and 2011 that examined the relationship between correctional education participation and inmate outcomes. We focused exclusively on studies published in English of correctional education programs in the United States that included an academic and/or vocational curriculum with a structured instructional component. A scientific review panel abstracted data, and the quality of the research design

was rated using the Maryland Scientific Methods Scale and the U.S. Department of Education's What Works Clearinghouse rating scheme. Studies that met our eligibility criteria in terms of intervention type, research design, and outcomes and that rated a 2 or higher on the Maryland Scientific Methods Scale were included in the meta-analysis.

We used meta-analytic techniques to synthesize the effects of correctional education programs administered to adults across multiple studies. As with previous meta-analyses in this area, our focus was largely on recidivism, because it is the outcome most often used in the literature. However, we also examined whether participating in a correctional education program was associated with an increase in labor force participation and whether participating in a correctional education program with a computer-assisted instructional component was associated with gains in achievement test scores. In addition, we conducted a cost analysis comparing the direct costs of correctional education with those of re-incarceration to place our recidivism findings into a broader context.

Results

Relationship Between Correctional Education Programs and Recidivism

Our meta-analytic findings provide additional support for the premise that receiving correctional education while incarcerated reduces an individual's risk of recidivating after release. After examining the higher-quality research studies, we found that, on average, inmates who participated in correctional education programs had *43 percent lower odds of recidivating* than inmates who did not. These results were consistent even when we included the lower-quality studies in the analysis. This translates into a reduction in the risk of recidivating of 13 percentage points for those who participate in correctional education programs versus those who do not. This reduction is somewhat greater than what had been previously reported by Wilson, Gallagher, and MacKenzie (2000), which showed an average reduction in recidivism of about 11 percentage points. Using more recent studies and ones of higher quality, our findings complement the results published by Wilson, Gallagher, and MacKenzie (2000), Aos, Miller, and Drake (2006), and MacKenzie (2006) and provides further support to the assertion that correctional education participants have lower rates of recidivism than nonparticipants.

Given the high percentage of state prison inmates who have not completed high school, participation in high school/general education development (GED) programs was the most common approach to educating inmates in the studies we examined. Focusing only on studies that examined this kind of program relative to no correctional education, we found that inmates who participated in high school/GED programs had *30 percent lower odds* of recidivating than those who had not. In general, studies that included adult basic education (ABE), high school/GED, postsecondary education, and/or vocational training programs showed a reduction in recidivism. However, we could not disentangle the effects of these different types of educational programs, because inmates could have participated in multiple programs, and the amount of time that they spent in any given program was rarely reported.

Relationship Between Correctional Education Programs and Employment

When we look at the relationship between correctional education and postrelease employment, our meta-analyses found—using the full set of studies—that *the odds of obtaining employment postrelease among inmates who participated in correctional education (either academic or vocational*

programs) was 13 percent higher than the odds for those who had not participated. However, only one study fell into the higher-quality category. Thus, if policymakers want to base decisions on the higher-quality studies alone, then we are limited in our ability to detect a statistically significant difference between program participants and nonparticipants in postrelease employment. Still, our results suggest a positive association between correctional education and postrelease employment. Our findings align with those produced in the Wilson, Gallagher, and MacKenzie (2000) meta-analysis, which also found improved odds of employment among correctional education participants.

When examining the relationship between correctional education and postrelease employment, one might expect vocational training programs to be more adept than academic education programs at imparting labor market skills, awarding industry-recognized credentials, or connecting individuals with prospective employers. And, indeed, when we looked at the relationship between vocational training—versus academic correctional education programs—and postrelease employment, we found that *individuals who participated in vocational training programs had odds of obtaining postrelease employment that were 28 percent higher than individuals who had not participated.* In comparison, individuals who participated in academic programs (combining ABE, high school/GED, and postsecondary education programs) had only 8 percent higher odds of obtaining postrelease employment than those individuals who had not participated in academic programs. Although the results suggest that vocational training programs have a greater effect than academic programs on one's odds of obtaining postrelease employment, there was no statistically significant difference between the odds ratios for the two types of programs, because the number of vocational training studies was relatively small.

Relationship Between Computer-Assisted Instruction and Academic Performance

We also examined the relationship between computer-assisted instruction and academic performance. In this case, the outcomes of interest were standardized test scores in mathematics or reading. We reviewed four studies that compared the achievement test scores of inmates receiving computer-assisted instruction with the achievement test scores of inmates receiving face-to-face instruction. In two of the studies, students in both the treatment and comparison groups also received additional, traditional classroom instruction beyond the portion of their instructional time that was computer-assisted. *We estimated that the overall effect of computer-assisted instruction relative to traditional instruction is 0.04 grade levels in reading, or about 0.36 months of learning, and 0.33 grade levels in mathematics, which represents about 3 months of learning.* In other words, on average across the studies, students exposed to computer-assisted instruction relative to traditional instruction learned very slightly more in reading in the same amount of instructional time and substantially more in mathematics. However, there was no statistically significant difference in test scores between the different methods of instruction, and given that the confidence intervals included zero for both reading and mathematics, we could not rule out the possibility that the effects estimated were due to chance alone. Because computer-assisted instruction can be self-paced and supervised by a tutor or an instructor, it is potentially less costly to administer. It is worth noting that, since the publication of these four studies, the capability and utility of instructional technology has progressed substantially (U.S. Department of Education, 2010), which suggests that the effects of the newer technologies may potentially outstrip those found in the studies examined here.

Comparison of the Costs of Correctional Education Programs and Reincarceration Costs

State policymakers, corrections officials, and correctional education administrators are asking a key question: How cost-effective is correctional education? Our cost analysis suggests that correctional education programs are cost-effective. Focusing only on the *direct costs* of correctional education programs and of incarceration itself, and using a three-year reincarceration rate for a hypothetical pool of 100 inmates, we estimated that the three-year reincarceration costs for those who did not receive correctional education would be between \$2.94 million and \$3.25 million. In comparison, for those who did receive correctional education, the three-year reincarceration costs would be between \$2.07 million and \$2.28 million. This means that reincarceration costs are \$0.87 million to \$0.97 million *less* for those who receive correctional education. In comparison, our estimates indicate that the costs of providing education to inmates would range from \$140,000 to \$174,400 for the pool of 100 inmates. This translates into a per-inmate cost of correctional education ranging from \$1,400 to \$1,744, suggesting that providing correctional education is cost-effective compared with the cost of reincarceration. It is worth noting that this estimate takes into account only the direct costs to the system, but it does not consider such other costs as the financial and emotional costs to victims of crime or to the criminal justice system as a whole. Hence, it is a conservative estimate of the broader effect that correctional education can potentially yield.

To further help interpret the cost savings, we also calculated the *break-even point*—defined as the risk difference in the reincarceration rate required for the cost of correctional education to be equal to the cost of incarceration. For a correctional education program to be cost-effective, we estimated that a program would need to reduce the three-year reincarceration rate by between 1.9 and 2.6 percentage points to break even. In fact, as noted, our meta-analytic findings show that participation in correctional education programs is associated with a 13 percentage-point reduction in the risk of reincarceration three years after release from prison.

Conclusions and Recommendations

Our meta-analytic findings provide further support that receiving correctional education while incarcerated reduces an individual's risk of recidivating after release from prison. Our findings were stable even when we limited our analyses to those studies with more rigorous research designs. We found a notable effect across all levels of education, from adult basic education and GED programs to postsecondary and vocational education programs. Further, our cost analysis suggests that correctional education programs can be cost-effective. As noted by other researchers interested in estimating the effect of correctional education (e.g., MacKenzie, 2008; Gaes, 2008), we, too, found a number of methodological weaknesses in the current body of research that substantially limit one's ability to inform the direction of policy and the design of effective programs. Thus, a number of questions of interest to educators and policymakers remain that the current literature does not permit us to answer, such as understanding what is inside the "black box" in terms of what program elements, for example, are associated with effective programs.

In addition, much is changing in the field of correctional education. The 2008 recession affected correctional education (and other rehabilitative) programs in a number of states and led to some dramatic changes in the number of programs offered, the sizes of classes, the

modes of delivery, and the number of inmates who participate in these programs. A reduced funding environment will likely be true for many correctional education programs for the near future, and questions about the return on investment of these programs will likely continue to be a topic in state-level budget discussions.

Going forward, there is a need to undertake studies that “drill down” to get inside the black box and identify the characteristics of effective programs in terms of such variables as curriculum, dosage, and quality. To inform policy and funding decisions at the state and federal levels, policymakers need additional information and a better understanding of how these programs work (or do not work). In addition, we need to continue to build the evidence base in this area. We provide recommendations for doing so in four critical areas: (1) applying stronger research designs, (2) measuring program dosage, (3) identifying program characteristics, and (4) examining more proximal indicators of program efficacy.

One option is for state and federal policymakers and foundations to invest in well-designed evaluations of correctional education programs to inform such policy questions. Also, researchers and program evaluators need to strive to implement rigorous research designs to examine questions related to potential bias and program dosage and to measure both proximal and distal outcomes. Funding grants and guidelines can help further the field by requiring the use of more rigorous research designs. Such funding would also enable correctional educators to partner with researchers and evaluators to undertake rigorous and comprehensive evaluations of their programs. Last, a study registry of correctional education evaluations would help in further developing the evidence base in this field to inform policy and programmatic decisionmaking.

Findings from this study can be found on the project’s website: <http://www.rand.org/jie/projects/correctional-education.html>.