



# A meta-analysis of the effect of juvenile delinquency interventions on academic outcomes<sup>☆</sup>

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## ABSTRACT

This meta-analysis examined the effects of juvenile delinquency interventions on academic outcomes. After retrieving over 250 reports, 15 reports met inclusion criteria and provided 134 effect sizes (92 unadjusted and 42 adjusted) based on 20 separate samples in a variety of settings, including school, community, and juvenile justice settings. Heterogeneity of the samples, generally weak research designs, and the absence of control conditions in many recovered reports was a limitation in the existing research. Overall, there were limited positive effects of juvenile delinquency interventions on academic outcomes. The lack of theory-driven or empirically supported academic interventions was notable. Studies with the weakest designs produced the largest effects on academic achievement, and school attendance outcomes were enhanced only for older adolescents. The implications of findings for future research and policy are discussed.

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## 1. Introduction

The concept of the *school to prison pipeline* is one of the most pressing concerns related to juvenile delinquency and education. This term refers to the phenomenon in which students gradually become disengaged from school while simultaneously becoming more involved in crime and delinquency (Christle, Jolivette, & Nelson, 2005). The overall cost to society is a concern. That is, youths (5–17 years) account for 18.9% of the total United States population (Howden & Meyer, 2011), but are responsible for approximately 16% of all violent crime, and 26% of all property crimes (Puzzanchera, 2009). According to the Office of Juvenile Justice and Delinquency Prevention (OJJDP), nearly 2 million youths are arrested each year and the overall incidence and costs that result from acts of delinquency are considerable (Puzzanchera, 2009). Education seems to be a central component of the problem and solution (Council of State Governments and Public Policy Research Initiative, 2011). Low educational attainment is linked to higher rates of delinquency and recidivism (Cottle, Lee, & Heilbrun, 2001; Leone et al., 2003), while increased literacy and educational achievement is associated with lower rates of crime (Cottle et al., 2001; Keith & McCray, 2002).

The educational challenges of populations engaged in juvenile delinquency have been clearly noted in research literature since the

1950s (Wilson, Lipsey, & Soydan, 2003). One often-cited characteristic of juvenile offenders is the high proportion of them who are involved in special education. Special education participation of youths in juvenile justice systems is considerably higher than that of the general population; 35% of juvenile offenders participate in special education (Quinn, Rutherford, Leone, Osher, & Poirier, 2005; Zabel & Nigro 1999) versus 8% national rate of the general population of the United States (National Center for Education Statistics, 2010). However, this characteristic alone is not a useful descriptor. The problem is not that youths are enrolled in special education participation per se; it is low academic skill. The average age of adjudicated youth is 15 years, an age at which most youth are entering the 10th grade, but the average reading level of adjudicated youth is aligned with the 4th grade, where children are typically age 9–10 years (Leone, Krezmien, Mason, & Meisel, 2005; Vacca, 2008). In light of the close associations among reading level, educational attainment, and crime and recidivism rates, academic skill is a highly relevant consideration for juvenile justice rehabilitation efforts.

In spite of the importance of educational attainment, much of the current literature focuses exclusively on behavioral and crime/recidivism outcomes. It is not surprising that there are numerous reports on interventions to reduce crime and improve behavioral outcomes for youth, many of which have examined educational variables and outcomes in some capacity. Yet, despite the clear links between delinquency and education, the literature about juvenile delinquency interventions and educational outcomes is under-developed. Specifically, reports of educational interventions and studies of potential factors that may influence interventions are more or less effective for promoting positive educational outcomes for youth offenders are not clearly summarized in the current literature.

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A synthesis of the educational effects of juvenile delinquency interventions would provide a meaningful contribution to inform future interventions and research. To address the gaps in the literature, the primary purpose of this investigation is to synthesize existing research about the effects of juvenile delinquency interventions on academic outcomes. We start by briefly summarizing the research about delinquency interventions not specific to education, summarizing some general patterns that guided our quantitative analyses, and then we describe the available literature about educational effects of delinquency programs.

### 1.1. Prior meta-analyses on the effects of juvenile delinquency interventions

Several meta-analyses have summarized effects of juvenile delinquency interventions on behavioral outcomes, primarily recidivism and crime. Although educational outcomes have not generally been the focus of these prior meta-analyses (though some have examined academic outcomes to a limited extent or used education variables as moderators), it is useful to have an overview of the characteristics of successful juvenile delinquency interventions that focus on behavioral outcomes. This framework serves as a background to understand what factors might be important to consider in understanding the effects of juvenile delinquency interventions on academic outcomes. One of the most comprehensive datasets of juvenile delinquency reports has yielded multiple meta-analytic investigations (Lipsey, 1999, 2009; Wilson & Lipsey, 2001, 2007). In the most recent update using that database, Lipsey (2009) included 500 published and unpublished original studies conducted between 1950 and 1996. These earlier syntheses of delinquency interventions contribute several helpful points to understand to what extent, when, and how interventions reduce delinquency.

There are four consistent findings related to juvenile delinquency interventions and behavioral outcomes. First, even among delinquency interventions that offer moderate success, recidivism is only reduced by about 12% overall (Lipsey, 1999), with generally small effect sizes ( $d = .10$  to  $.15$ ) (Lipsey & Cullen, 2007). Second, the most effective delinquency interventions are those based on theory and a clear approach for change, often with a solid research base. Third, interventions conducted as standard field practice are somewhat helpful, but less so than more intensive implementations of interventions that are closely supervised by researchers. Fourth, positive, as opposed to punitive, behavioral interventions to address aggression or disruptive behaviors typical in juvenile offender populations appear to be helpful, even when delivered as routine programs apart from a rigorous research-driven approach in schools (Lipsey & Cullen, 2007; Wilson, Lipsey, & Derzon, 2003). These four overall findings are clear in terms of behavioral outcomes, and they provide useful guides for additional synthesis for the same population.

In terms of the effects of juvenile delinquency interventions on academic outcomes, it is prudent to consider whether intervention characteristics found to be associated with positive behavioral outcomes may also be associated with positive academic outcomes. That is, would academic outcomes mirror the effect sizes of the behavioral outcomes? Further, we use these prior meta-analyses as a guide in the current meta-analysis because examining similar questions will allow findings from this meta-analysis to be integrated and compared with those of prior syntheses of juvenile delinquency intervention effects.

### 1.2. Educational programs that address behavior

During the past two decades, there have been a number of studies of school-based interventions geared at improving positive behaviors while also reducing “acting out” and delinquency-type behaviors among the general student population. Many of these studies are showing positive effects on both academic and behavioral outcomes. The effects of

those programs have been summarized in two separate, comprehensive synthesis investigations (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Wilson, Gottfredson, & Najaka, 2001), indicating that behavior-focused programs can be successful at addressing both behavioral and academic concerns. One group of programs, the Social and Emotional Learning (SEL) programs, was the target of a recent meta-analysis that included academic and behavioral outcomes in school settings. SEL programs produced moderate positive effects on conduct problems and academic performance ( $d = .22$  and  $.27$ ), even when academic intervention was not the primary program component (Durlak et al., 2011). Another approach, Response to Intervention (RTI), a data-driven approach in education to address academic concerns (Edmonds et al., 2009; Vaughn, Denton, & Fletcher, 2010) has emerging support for behavioral concerns as well (Gresham, 2007). Positive Behavior Support programs (PBS; Sugai & Horner 1999) have also been designed to promote academic and behavioral success, often for the same youths that are served by juvenile justice centers.

Overall, research on these school-based universal prevention and targeted early intervention programs indicates that they are helpful in promoting positive academic outcomes, even when the focus is on reducing disruptive and aggressive behavior (Wilson et al., 2001). The body of education research generally shows that school based prevention and early intervention programs, even when the focus is behavioral and not academic, help improve behavior and academic achievement. In light of these findings, it would seem important to clarify the effects of interventions with populations engaged in delinquency on academic outcomes because there may be academic benefits even of juvenile delinquency programs that have no academic component.

### 1.3. Academic intervention research in juvenile corrections

While it would seem that even behavioral and conduct focused interventions can have an impact on academic outcomes, it also seems like common sense to suspect that those juvenile delinquency programs that include an academic component might be most successful at improving academic outcomes. There have been a handful of studies examining the effects of using academic interventions with a reading focus within juvenile correctional detention facilities (e.g. Campbell, Marsh, & Stickel, 1993; Drakeford, 2002; Leone et al., 2005; Malmgren & Leone, 2000). In fact, a research synthesis on the topic was conducted for studies carried out in correctional facility settings (Leone et al., 2005). The scholars could not draw firm conclusions about overall effects of such programs because there were only six studies available which met their inclusion criteria (Krezmien & Mulcahy, 2008; Leone et al., 2005). The authors noted the difficulty of carrying out reading research in detention and corrections settings as one of their main findings.

However, community services and public schools also address that academic needs of juvenile offenders and programs in these settings are relevant to include in a synthesis for this population. Youths involved in juvenile delinquency typically spend less than 30 days in detention facilities, and only about 14% of all youths who are involved in juvenile justice at any given time are in detention. So the great majority of these youth spend the most of their time in community, school, and other service agencies, where they receive intervention (OJJDP, 2008). To date, a number of studies that have examined the effects of academic and reading-specific intervention programs with juvenile offenders outside the detention setting have not been included in a synthesis of research. In addition, academic intervention research for youths in secondary education, the age range typical for youths engaged in juvenile delinquency, has increased within the most recent 15 years (Edmonds et al., 2009). In sum, given the expansion of educational intervention research, as well as the wide range of settings within which intervention for juvenile delinquency is known to occur, there seems to be a pressing need to synthesize and compare

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