

The Long-Term Effects of After-School Programming on Educational Adjustment and Juvenile Crime: A Study of the LA's BEST After-School Program

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Study Brief

Abstract

This is a longitudinal study on the effect of LA's BEST on educational attainment and juvenile crime. Sophisticated analyses were conducted as detailed below. In short, results indicated that students who participated at a higher rate in LA's BEST had significantly lower incidences of juvenile crime. Cost-benefit analyses indicated an average saving of \$2.50 to each \$1.00 invested in the program.

There has been widespread interest in the impact of after-school programs on youth development in the past few years, especially in the area of impact on juvenile crime. However, definitive evaluations have been impeded by a lack of accurate longitudinal student data and limited funding opportunities for comprehensive program evaluations. Funded by the U.S. Department of Justice, the National Center for Research on Evaluation, Standards, and Student Testing (CRESST) at UCLA studied the effects of the LA's BEST after-school program on juvenile crime. Using eight years of data from approximately 6,000 total students, CRESST researchers examined the program's effect on student achievement, juvenile crime, and cost effectiveness. The findings on academic achievement benefits are inconsistent.¹ Although overall differences in juvenile crime, such as felonies, and misdemeanors were not significant, more sophisticated analysis found LA's BEST had impact. That is, students who participated at a higher rate in LA's BEST, had significantly lower incidences of juvenile crime. Economic implications were also examined. The economic benefits of the program exceed its costs; that is, every dollar invested in the LA's BEST program resulted in a savings in juvenile crime costs of approximately \$2.50. The study is based on a number of assumptions that are detailed in the executive summary and full report.

Background

Each year hundreds of millions of dollars are spent on funding after-school programs in the United States. For the 2003 fiscal year, Congress appropriated approximately one billion

¹ See full report for details

dollars to be used for this purpose (U.S. Department of Education, 2002). While this investment reflects the importance that the public places on after-school programs, most evaluations have focused on student achievement and reactions to aspects of the programs themselves. Yet, the purpose of many of these programs is to affect longer term goals, including student aspirations and their ability to overcome difficulties in their local settings. It is surprising, then, that there have been few evaluations of the possible effects of after-school programs in lowering juvenile crime. After-school programs have many potential positive effects on juveniles, and given that the annual cost of juvenile crime is estimated at approximately \$56.7 billion (Caldwell, Viotacco & Rybroek, 2006), the impact of programs in this area warrants analysis. In addition, few studies have included a cost-benefit analysis of after-school programs and their impact on juvenile crime. This study helps fill the research gap in understanding the connection between the LA's BEST after-school program, long-term academic achievement, and juvenile crime.

The LA's BEST after-school program seeks to provide a safe haven for at-risk students in neighborhoods where gang violence, drugs and other types of anti-social behaviors are common. The stated mission of LA's BEST is: to provide a safe and supervised after school education, enrichment and recreation program for elementary school children ages 5 to 12 in the City of Los Angeles. The stated vision of LA's BEST is: All children need a safe place to be after school with caring, responsible adults and engaging activities that connect each child to his/her school, family and community.

Housed at selected Los Angeles Unified School District (LAUSD) elementary schools, the LA's BEST program is designed for students in kindergarten through fifth/sixth grade. Sites are chosen with priority given to schools with low academic performance, and their location in low-income and/or high-crime neighborhoods. LA's BEST is a free program open to all students in the selected sites on a first-come, first-served basis. The organization serves a student population of approximately 30,000 elementary school students. LA's BEST attendees are predominantly Hispanic (80%) and African American (12%). In addition, English language learners comprise at least half of the student population from most sites.

Goals and Research Questions

The first goal of the study was to examine the long-term relationship between participation in LA's BEST and academic achievement; consistent with our previous work, the current analysis found uneven effects. The second, more important goal, was to investigate the impact of LA's BEST on reducing juvenile crime and, if a systematic impact

was found, to analyze cost-benefits of the program. The three research questions for this study were as follows:

- Is there a difference in the long-term educational outcomes of LA's BEST participants in comparison with non-participants?
- Is there a difference in the students' rate of committing juvenile crimes among LA's BEST participants and non-participants?
- What is the cost effectiveness of LA's BEST in terms of students' long-term juvenile crime?

The Data and Methods Used in this Study

Using existing data retrospectively, students and schools were matched so as to be as similar as possible in the makeup of the student and school samples. LA's BEST data included information from 2,331 students from 24 schools. The second group was a matched sample of 2,331 students, with similar background characteristics and achievement in 1994, from the same schools who had not participated in the LA's BEST program. A third group for comparison consisted of 1,914 students, matched on background characteristics and achievement in 1994, who attended schools without the LA's BEST program. Data were collected for students starting the 1994-95 school year and outcome data were collected through 2003. Student background information allowed the team to examine control factors such as gender, race/ethnicity, language proficiency, and social economic status. Available cost information was used to derive cost-benefit ratios.

The research team used a combination of analyses in the study, first to describe student behaviors and then to take into account the volatility of enrollment. Because the data covered many years, the study team had the advantage of following the academic and social development of students over time using growth modeling (Raudenbush and Bryk, 2002) and survival analysis (Singer and Willett, 2003) techniques. In this way the research team was able to examine individuals to identify the various patterns of performance or growth paths. This process strengthened the validity of conclusions (Rogosa, Brandt & Zimowski, 1982).

Results

Evaluation Question 1: Was there a difference in the long-term educational outcomes of LA’s BEST participants in comparison with non-participants?

The study team examined both reading and mathematics achievement over a ten-year period from 1993 to 2003 for LA’s BEST students (treatment) and non-LA’s BEST students enrolled in the same school (Control 1), as well as students enrolled in different schools (Control 2)². The report examined achievement in great detail and depth, especially by investigating the effects of years of program participation and average daily attendance. The overall results provide mixed evidence of some positive program effects on achievement for some subjects and grades. As with most complex studies, the use of a set of performance indicators produces a more comprehensive picture of program quality (Please refer to page 76 of the full report for details). Since the focus of this press release is on juvenile crime, evaluation question 2 and 3 will be discussed in more depth.

Evaluation Question 2: Is there a difference in juvenile crimes between LA’s BEST participants and control groups?

Sophisticated analyses found LA’s BEST has positive impact on the reduction of juvenile crime. More specifically, two types of analyses were conducted: descriptive statistics and more sophisticated survival analysis. The descriptive statistics show that the proportions of juveniles arrested through 2006 are nearly identical for the three groups (See Table 31 from the full report, excerpted below.)

Table 31
Number and Percentage of Juveniles in the Original and DOJ Data

	Sample sent to DOJ Office	Sample with arrest info in DOJ	% in DOJ Data
LA's BEST	2331	184	7.9%
Control I	2331	179	7.7%
Control II	1237	96	7.8%
Total	5898	459	7.8%

² Control 1 includes students in the same schools who did not attend the LA’s BEST program. Control 2 includes students who attended schools with similar demographics but did not have the LA’s BEST afterschool program.

The study also found that for all three groups, the rate of crime began to increase dramatically during the middle school years (p. 83). Despite this, a subset of LA's BEST students who were in the program longer than other students committed fewer crimes (page 86), a notable positive effect.

The analyses revealed that it was important to distinguish between the number of years a student attended and how intensely the student was engaged in the program on an on-going basis. Hence duration refers to the number of years a student was enrolled in LA's BEST and engagement refers to the number of days per week the student actually attended. Descriptive results reveal only differences between students based on levels of engagement.

Survival Analysis Results. Using the survival analysis methods (which are described in the full report) the relationship between youth crime, student and school characteristics, and LA's BEST program effects were examined (pp. 78 and 102). Consistent with expectations, we found an increasing probability of committing a crime (crime hazard) from elementary through early high school, followed by a decrease into adulthood (p. 102). Our results showed a maximum crime hazard when students were in grades 9, 10, and 11.

The survival analysis results, using only a single yes-no indicator of program participation, did not show a significant LA's BEST program effect. However, once both the duration (number of years of LA's BEST enrollment) and engagement (average number of days per week of actual attendance) were taken into consideration the results became clearer.

Survival probability charts the likelihood that a student will maintain crime-free behavior. The results indicate that LA's BEST significantly improves juvenile crime survival probabilities in a positive direction. Students who are actively and intensely engaged benefit most from LA's BEST, while those who are moderately engaged also benefit. The graph indicates that by 2005, approximately 87.5% of the control group members and low-engagement LA's BEST participants had avoided juvenile crime records. In contrast, about 91.4% of medium-engagement and 93.1% of high-engagement LA's BEST students avoided juvenile crime records.

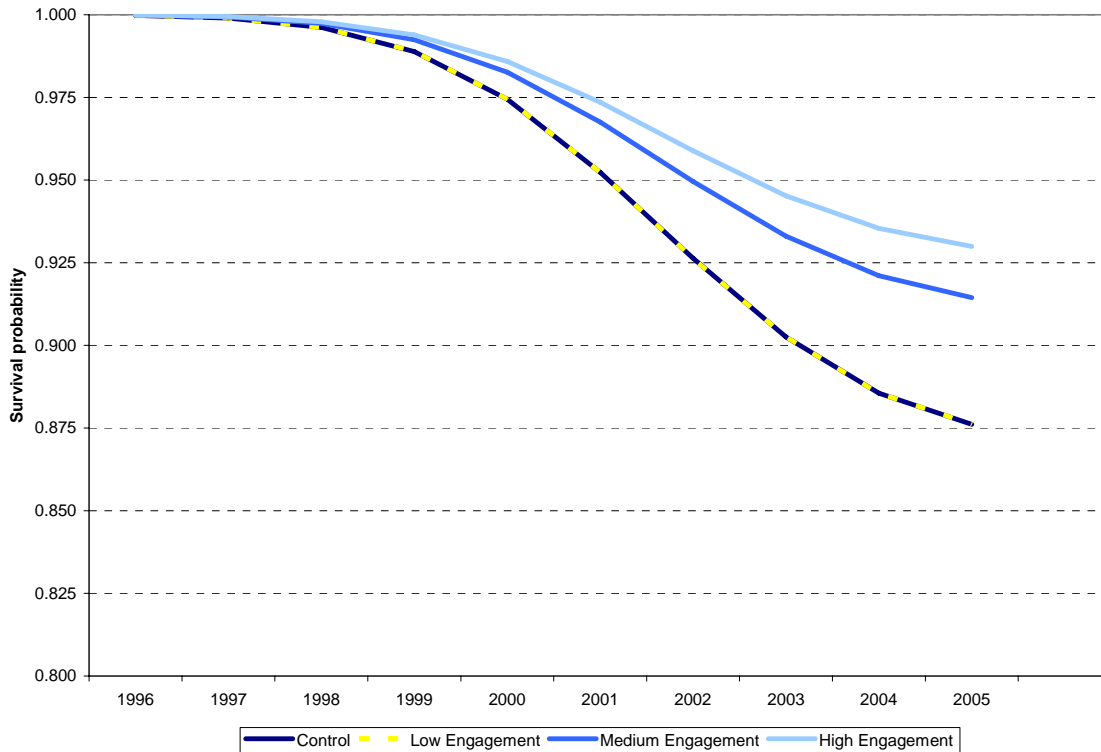


Figure 1. Survival probabilities for treatment and control groups. Students in Control I are students attending the same schools as LA’s BEST students. Control II students attended matched schools.

Summary of Juvenile Crime Results. In summary, although initial descriptive statistics suggest that actual crime rates between LA’s BEST students and the two control groups are not very different, the picture changes when student level of involvement changes and a higher percentage of involved LA’s BEST students resist the impulse to commit crime.

The important message in this study is that a simple program enrollment indicator was not precise enough to identify program effects. Program quality, exposure, and engagement all needed to be considered to expose program benefits. Our findings remained consistent when student characteristics, as well as school and neighborhood effects were included. Furthermore, the results were consistent over a variety of sophisticated modeling approaches.

In general, the study found that students who were intensely engaged benefited the most from LA’s BEST. In addition, those who were moderately engaged also benefited, while those who were only sporadically engaged did not benefit from the program. Put simply, benefits related to crime reduction increased as LA’s BEST engagement increased. It is important to note that simply enrolling students in LA’s BEST for more years does not benefit students if they do not consistently physically participate. Analyses also examined

impact differences among types of schools. Two key effects emerged. First, students who attended schools in higher socio-economic status (whether or not the student was classified as low socio-economic status) demonstrated reduced crime hazards. Second, students attending schools in very poor neighborhoods, living below the poverty threshold, derived benefits from even sporadic attendance in LA's BEST. This finding provides further evidence of LA's BEST effects and validation of their school selection criteria, as these neighborhoods are a focus of this intervention.

LA's BEST schools demonstrate similar trends as control schools in both total crimes and severe crimes; this implies that observed differences in crime are not due to LA's BEST selecting schools with less crime to receive the program. Comparisons between LA's BEST and control schools need to be conducted with caution because of the different grade levels among schools.

Evaluation Question 3: What is the cost effectiveness of LA's BEST in terms of students' long-term juvenile crime?

The purpose of a cost effectiveness analysis is to determine whether the present value of benefits is greater than the present value program's costs. Mathematically, the benefits outweigh the costs if the ratio of benefits to costs is greater than 1. The study team developed benefit estimates, in the form of avoided costs, associated with specific crimes and juvenile court costs provided by Cohen and his collaborators (2000, 1998) combined with the estimated likelihood of committing crimes based on the survival model and the observed distribution of misdemeanors and felonies committed by the students in the sample. The estimates of tangible costs to victims for specific types of crimes are based on the National Crime Victimization Survey (NCVS), published by the Bureau of Justice Statistics.

Table 42 from the full report outlines the annual estimated costs associated with the LA's BEST after-school program. Program cost estimates are based on actual incurred costs as well as opportunity costs associated with adult volunteers assisting LA's BEST programs. Typical facilities costs were excluded because LA's BEST programs were housed in existing school space that had no competing uses (no opportunity costs) and likely did not substantially increase school facility and maintenance costs. Extrapolation of the cost/benefit results to other settings pertain only to those programs with similar support.

Students were included in this study only if they participated in LA's BEST for a minimum of 36 days per school year, or about once per week. The per-student cost estimate under these conditions and assumptions is \$568 per student per year in 1998 dollars. The program financial costs are detailed in Appendix A of the full report.

Table 43

Annual Costs Associated with LA's BEST After-School Program

Costs	FY 1994 \$	in 1998 \$
Direct costs	1,774,680	1,951,909
Administrative	383,859	422,193
Total financial	2,158,539	2,374,102
Opportunity (volunteers ¹)	126,715	111,771
Total Economic cost	2,285,254	2,485,873
Number of participants ²	4,380	
Cost per participant	521.75	567.55

Note. 1) Volunteer hours were estimated at the hourly staff rate

2) Students were considered LA's BEST participants if they attend a minimum of 36 days per year.

Benefits. The study team used published estimates of benefits related to avoiding juvenile crime (Cohen, 1998) to measure the benefits associated with avoided costs. In this study estimated average cost is based on the distribution of crimes in the study sample. Cohen's (1988) estimates are based on juvenile crimes committed 1 to 4 times per year. The average in our sample is 2.15 over the sample period. The costs consist of victim costs, direct costs of adjudication, and probation. These costs are presented in Table 44. It should be noted, while many studies use costs associated with lifelong criminals, in this study it is reported as a separate category.

Table 44

Present Value Costs of Juvenile Crime

Cost	Low	High	Lifelong	Estimated ¹ Sample Ave.
Victim	62,000	250,000		42,470
Adjudication	21,000	84,000		14,385
Total	83,000	334,000		122,238
Adult			1,100,000	

Note. 1) Based on the sample distribution of misdemeanors and Felonies and misdemeanor costs estimated at 0.1 of Felony costs.

The full report describes the cost-benefit findings under three scenarios (pp. 119-125) with highly variable results depending on the assumptions and the scenarios. The ratios range from about \$-40.76 to \$68.81. The negative figure indicates that a \$1.00 investment produces a negative return on crime of about \$40 whereas the positive figures indicate a positive return of more than \$68.

In sorting through the myriad of cost-benefit values, one should be focused on those related to the most plausible scenarios. Including all exposure and engagement levels and using the no-treatment condition as the sole comparison, the cost-benefit ranges from \$0.57 to \$7.53 for the high engagement students; from \$-4.79 to \$8.33 for the medium engagement students, and low engagement students have negative benefit-cost ratios. When only medium and high engagement students are compared against the control, the cost-benefit ratio is significantly increased. In this case, expected total benefit-cost ratios³ range from \$0.09 to \$24.05. Ultimately, the most plausible combination of exposure (sample average) and engagement (medium and high) yields a benefit-cost ratio of approximately \$2.50 (pp. 117, 125 and 136) or two and a half times the payoff of the cost of the program.

Concluding Statement

The LA's BEST after-school program demonstrates statistically and substantively positive effects on youth crime abatement, especially for students who attend at least 10 days per month. Benefit-cost ratios vary substantially depending on assumptions, but the most plausible estimate indicates that each dollar spent on LA's BEST returns a benefit of \$2.50 to society in the form of costs avoided due to juvenile crime. As noted, student engagement is the key element to consider when examining benefits. Students who are enrolled in LA's BEST year after year will not benefit unless they actually engage in the program – that is by attending at least 10 days per month. Once student engagement is accurately reflected, results are robust and demonstrate consistent effects for all students.

This study highlights key issues about causal claims of program effects and isolates specific elements related to effects. It also suggests that a well implemented program consistently engages students, and thus promotes important benefits toward preventing juvenile crime.

³ Benefit-cost ratios are based on comparisons of the medium and high engagement students to control students.

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