

## Positive Action

### Public Health & Prevention: School-based

Benefit-cost estimates updated December 2018. Literature review updated September 2018.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our [Technical Documentation](#).

Program Description: Positive Action aims to improve social and emotional learning and school climate. It consists of a detailed curriculum of approximately 140 short lessons throughout the school year in kindergarten through 6th grade and 82 lessons in 7th and 8th grade, along with materials to promote school-wide reinforcement of positive actions learned in the classroom. The program includes training and professional development for teachers, resource coordination, and incentives for positive behavior. The studies in this analysis included both elementary and middle school students and evaluated schools after implementing the Positive Action program for four school years, on average.

### Benefit-Cost Summary Statistics Per Participant

#### Benefits to:

Taxpayers	\$8,577	Benefit to cost ratio	\$32.36
Participants	\$10,728	Benefits minus costs	\$32,156
Others	\$12,505	Chance the program will produce	
Indirect	\$1,371	benefits greater than the costs	95 %
<b>Total benefits</b>	<b>\$33,181</b>		
<b>Net program cost</b>	<b>(\$1,025)</b>		
<b>Benefits minus cost</b>	<b>\$32,156</b>		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2017). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

## Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to: <sup>1</sup>	Benefits to:				
	Participants	Taxpayers	Others <sup>2</sup>	Indirect <sup>3</sup>	Total
Crime	\$0	\$3,365	\$7,393	\$1,691	\$12,449
Labor market earnings associated with test scores	\$10,615	\$4,821	\$4,707	\$0	\$20,143
K-12 grade repetition	\$0	\$7	\$0	\$4	\$11
Property loss associated with alcohol abuse or dependence	\$4	\$0	\$8	\$0	\$12
Health care associated with anxiety disorder	\$109	\$384	\$397	\$193	\$1,082
Mortality associated with depression	\$0	\$0	\$0	\$0	\$0
Adjustment for deadweight cost of program	\$0	\$0	\$0	(\$516)	(\$516)
<b>Totals</b>	<b>\$10,728</b>	<b>\$8,577</b>	<b>\$12,505</b>	<b>\$1,371</b>	<b>\$33,181</b>

<sup>1</sup>In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

<sup>2</sup>"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

<sup>3</sup>"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

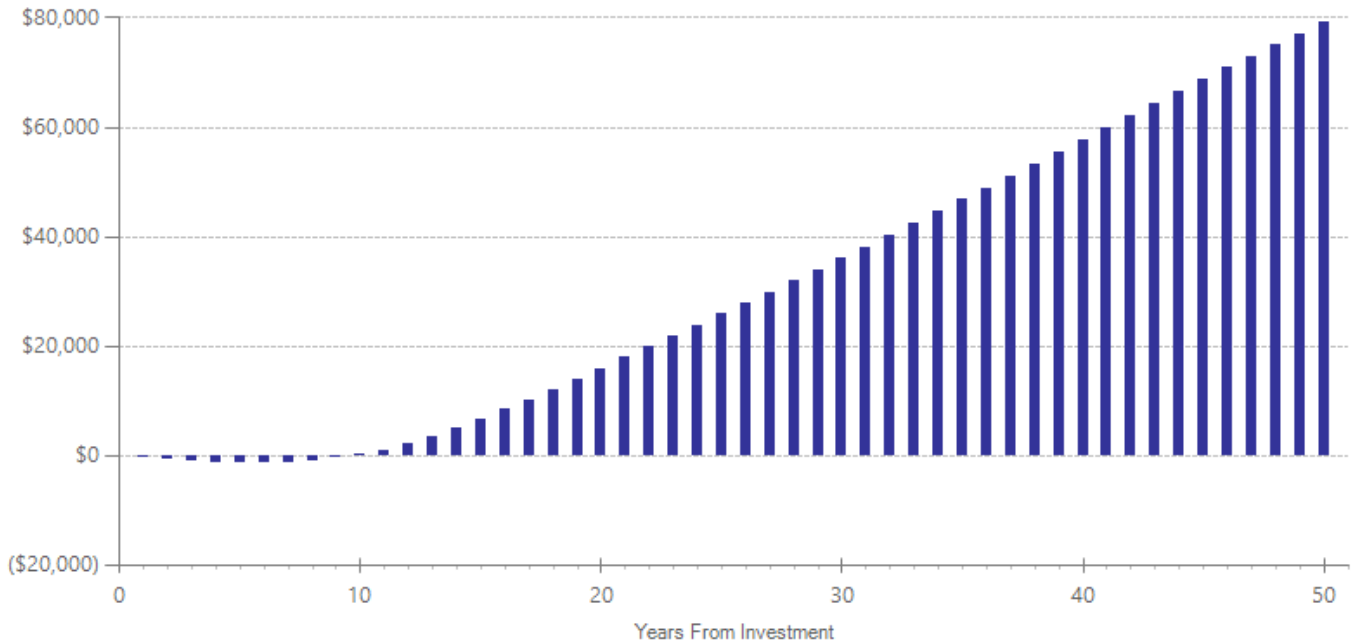
## Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	\$270	2017	Present value of net program costs (in 2017 dollars)	(\$1,025)
Comparison costs	\$0	2017	Cost range (+ or -)	40 %

The per-participant cost includes the price of the Positive Action program kit for each year (average cost of \$400 for 16 students); teacher training at an average of \$550 per teacher; and a Positive Action climate kit costing \$500 for six teachers (<http://www.positiveaction.net/>). We calculate the value of staff time using average Washington State compensation costs (including benefits) for teachers as reported by the Office of the Superintendent of Public Instruction (<http://www.k12.wa.us/safs/PUB/PER/1617/tbl07.pdf>). We assume an average class size of 16 students, as reported in the included studies.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

## Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

## Meta-Analysis of Program Effects

Outcomes measured	Treatment age	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
				First time ES is estimated			Second time ES is estimated				
				ES	SE	Age	ES	SE	Age	ES	p-value
Alcohol use before end of middle school	7	2	1169	-0.416	0.083	10	-0.416	0.083	14	-0.416	0.001
Anxiety disorder	7	1	193	-0.259	0.106	10	-0.103	0.088	11	-0.259	0.014
Body mass index (BMI) <sup>^</sup>	7	1	193	-0.220	0.105	10	n/a	n/a	n/a	-0.220	0.037
Cannabis use before end of middle school	7	1	193	-0.348	0.162	10	-0.348	0.162	14	-0.348	0.032
Crime	7	3	1177	-0.614	0.098	10	-0.614	0.098	20	-0.487	0.001
Illicit drug use before end of middle school	7	1	976	-0.771	0.203	10	-0.771	0.203	14	-0.771	0.001
Initiation of sexual activity <sup>^</sup>	7	1	976	-1.039	0.214	10	n/a	n/a	n/a	-1.039	0.001
K-12 grade repetition <sup>^^</sup>	7	1	10	-0.384	0.165	11	n/a	n/a	n/a	-0.384	0.020
Major depressive disorder	7	1	193	-0.140	0.105	10	0.000	0.310	12	-0.140	0.185
Office discipline referrals <sup>^</sup>	7	3	43	-0.159	0.127	10	n/a	n/a	n/a	-0.677	0.099
School attendance <sup>^</sup>	7	5	61	0.104	0.077	10	n/a	n/a	n/a	0.157	0.043
Smoking before end of middle school	7	2	1169	-0.343	0.110	10	-0.343	0.110	14	-0.343	0.002
Suspensions/expulsions <sup>^</sup>	7	4	49	-0.199	0.102	11	n/a	n/a	n/a	-0.295	0.005
Test scores	7	5	61	0.187	0.098	10	0.123	0.107	17	0.266	0.001

<sup>^</sup>WSIPP’s benefit-cost model does not monetize this outcome.

<sup>^^</sup>WSIPP does not include this outcome when conducting benefit-cost analysis for this program.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

## Citations Used in the Meta-Analysis

- Bavarian, N., Lewis, K.M., Acock, A., DuBois, D.L., Zi, Y., Vuchinich, S., . . . Flay, B.R. (under review). *Direct and mediated effects of a social-emotional learning and health promotion program on adolescent health outcomes: A matched-pair, cluster-randomized controlled trial*.
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