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Updated Inventory of Evidence- and Research-Based Practices: *Washington's K–12 Learning Assistance Program*

Benefit-Cost & Meta-Analysis Results

July 2015

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The benefit-cost results in this document are current as of July 2015.
For the most up-to-date benefit-cost results, please visit our website.
http://www.wsipp.wa.gov/BenefitCost

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Becoming a Man **(BAM)**

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Becoming a Man (BAM) is a high school behavioral program that offers non-academic intervention to disadvantaged and at-risk males through exposure to prosocial adults and skill training based on cognitive behavioral therapy. The program focuses on teaching character and social-emotional skills including considering another person's perspective, evaluating consequences ahead of time, and reducing automatic decision-making. Participants attend weekly one-hour group sessions offered during the school day.

Benefit-Cost Summary

Program benefits	
Participants	$1,107
Taxpayers	$1,185
Other (1)	$2,418
Other (2)	($645)
Total	$4,064
Costs	($2,000)
Benefits minus cost	$2,064

Summary statistics	
Benefit to cost ratio	$2.03
Benefits minus costs	$2,064
Probability of a positive net present value	73 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$546	$1,976	$273	$2,794
Labor market earnings (hs grad)	$1,127	$481	$557	$0	$2,164
Health care (educational attainment)	($20)	$158	($115)	$79	$103
Adjustment for deadweight cost of program	$0	$0	$0	($997)	($997)
Totals	$1,107	$1,185	$2,418	($645)	$4,064

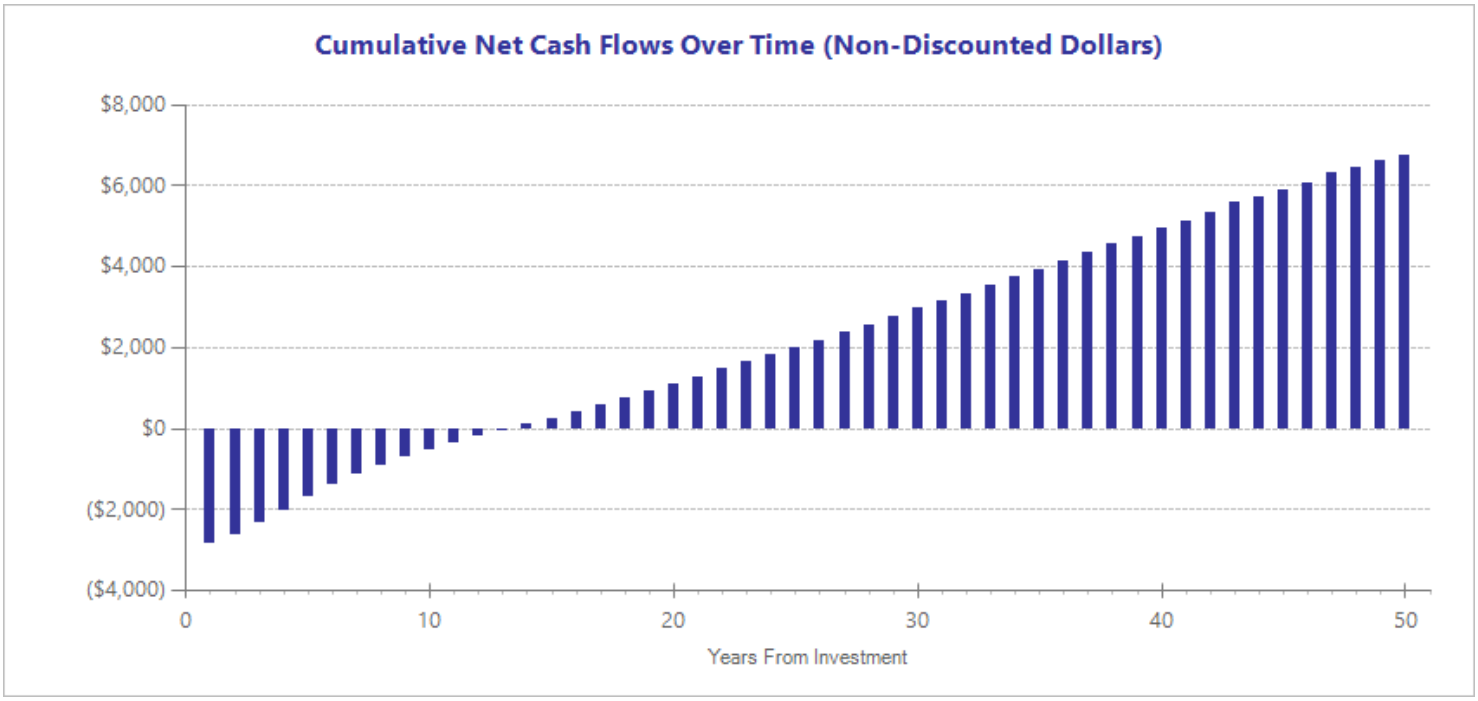
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,000	1	2014	Present value of net program costs (in 2014 dollars)	($2,000)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	10 %

The estimated cost for BAM is $2,000 per student as reported in Heller, S.B., Shah, A.K., Guryan, J., Ludwig, J., Mullainathan, S., & Pollack, H.A. (2015). Thinking, fast and slow?: Some field experiments to reduce crime and dropout in Chicago (NBER Working Paper 21178). Cambridge, MA: National Bureau of Economic Research.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	1032	-0.072	0.100	-0.072	0.044	16	-0.072	0.044	26
School attendance	Primary	1	1032	0.011	0.810	0.011	0.044	16	0.011	0.044	16
Grade point average	Primary	1	1032	0.001	0.976	0.001	0.044	16	0.001	0.044	16

Citations Used in the Meta-Analysis

Heller, S.B., Shah, A.K., Guryan, J., Ludwig, J., Mullainathan, S., & Pollack, H.A. (2015). *Thinking, fast and slow?: Some field experiments to reduce crime and dropout in Chicago* (NBER Working Paper 21178). Cambridge, MA: National Bureau of Economic Research.

Becoming a Man (BAM) with high-dosage tutoring

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Becoming a Man (BAM) is a high school behavioral program that offers non-academic intervention to disadvantaged and at-risk males through exposure to prosocial adults and skill training based on cognitive behavioral therapy. The program focuses on teaching character and social-emotional skills including considering another person's perspective, thinking ahead, evaluating consequences ahead of time, and reducing automatic decision-making. Participants attend weekly one-hour group sessions offered during the school day. The program included in this analysis combines BAM with individualized math tutoring conducted for one-hour each day in groups of two students.

Benefit-Cost Summary

Program benefits	
Participants	$16,268
Taxpayers	$7,886
Other (1)	$7,439
Other (2)	($1,774)
Total	$29,819
Costs	($4,461)
Benefits minus cost	$25,358

Summary statistics	
Benefit to cost ratio	$6.68
Benefits minus costs	$25,358
Probability of a positive net present value	71 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$16,382	$6,987	$8,092	$0	$31,461
Health care (educational attainment)	($114)	$899	($653)	$447	$579
Adjustment for deadweight cost of program	$0	$0	$0	($2,221)	($2,221)
Totals	$16,268	$7,886	$7,439	($1,774)	$29,819

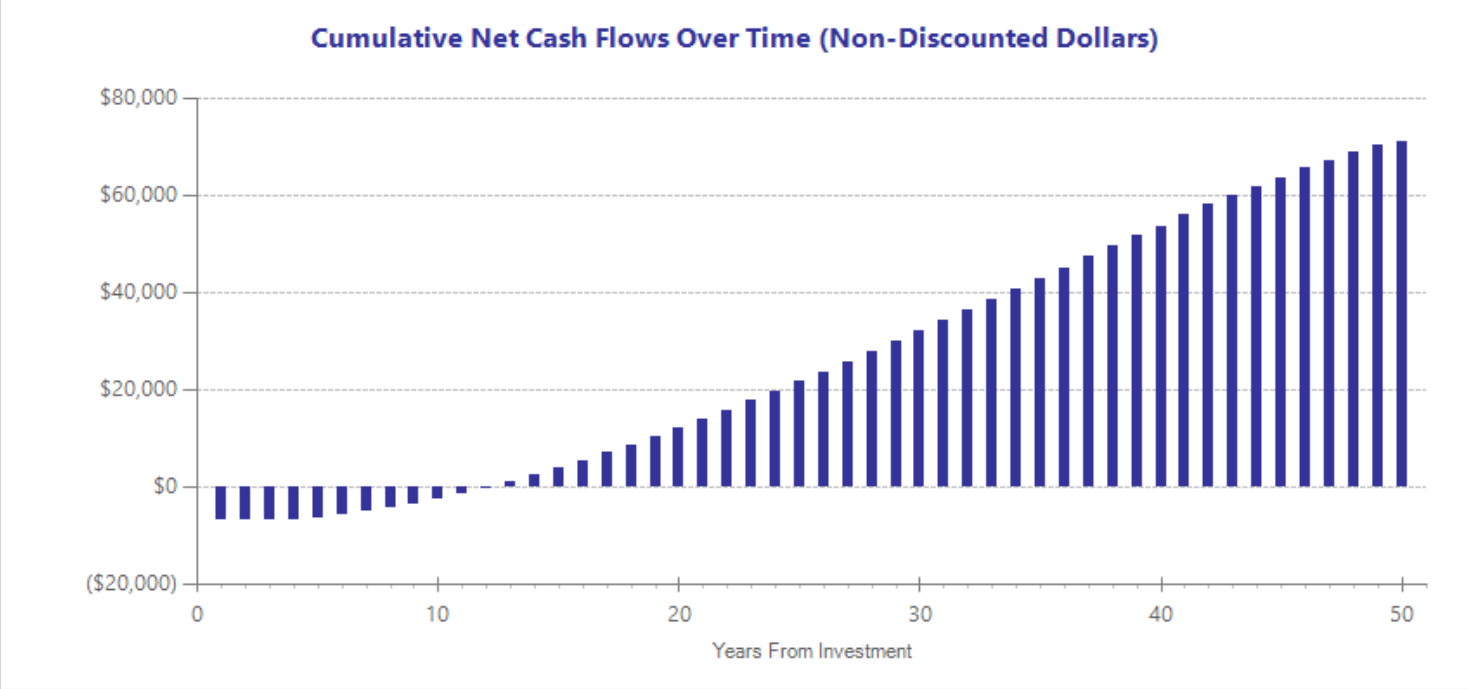
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$4,400	1	2013	Present value of net program costs (in 2014 dollars)	($4,461)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

The estimated cost for BAM with high-dosage tutoring is $4,400 per student as reported in Cook, P.J., Dodge, K., Farkas, G., Fryer, R.G., Guryan, J., Ludwig, J., ... Steinberg, L.. (2014). The (surprising) efficacy of academic and behavioral intervention with disadvantaged youth: Results from a randomized experiment in Chicago (NBER Working Paper 19862). Cambridge, MA: National Bureau of Economic Research.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Suspensions/expulsions	Primary	1	68	-0.210	0.338	-0.210	0.220	16	-0.210	0.220	16
School attendance	Primary	1	68	0.352	0.111	0.352	0.221	16	0.352	0.221	16
Office discipline referrals	Primary	1	72	0.073	0.726	0.073	0.208	16	0.073	0.208	16
Test scores	Primary	1	60	0.217	0.387	0.217	0.251	16	0.208	0.276	17
Grade point average	Primary	1	72	0.350	0.095	0.350	0.210	16	0.350	0.210	16

Citations Used in the Meta-Analysis

Cook, P.J., Dodge, K., Farkas, G., Fryer, R.G., Guryan, J., Ludwig, J., ... Steinberg, L.. (2014). *The (surprising) efficacy of academic and behavioral intervention with disadvantaged youth: Results from a randomized experiment in Chicago* (NBER Working Paper 19862). Cambridge, MA: National Bureau of Economic Research.

Behavioral Monitoring and Reinforcement Program (BMRP)

Benefit-cost estimates updated July 2015. Literature review updated April 2012.

Program Description: BMRP is a school-based intervention that aims to prevent juvenile delinquency, substance use, and school failure for high-risk adolescents. For two years, beginning in seventh grade, participants' school records are monitored for attendance, tardiness, and disciplinary action. Program staff contact parents by letter, phone, and occasional home visits to inform them of their children's progress. Teachers submit weekly reports assessing students' punctuality, preparedness, and behavior in the classroom, and students are rewarded for good evaluations. Each week, 3-5 students meet with a staff member to discuss their recent behaviors and their consequences, and role-play prosocial alternatives to problem behaviors.

Benefit-Cost Summary

Program benefits	
Participants	$1,381
Taxpayers	$1,572
Other (1)	$2,861
Other (2)	($164)
Total	$5,650
Costs	($1,317)
Benefits minus cost	$4,333

Summary statistics	
Benefit to cost ratio	$4.29
Benefits minus costs	$4,333
Probability of a positive net present value	62 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$765	$2,316	$388	$3,469
Labor market earnings (hs grad)	$1,407	$600	$695	$0	$2,702
Health care (educational attainment)	($26)	$207	($150)	$106	$136
Adjustment for deadweight cost of program	$0	$0	$0	($658)	($658)
Totals	$1,381	$1,572	$2,861	($164)	$5,650

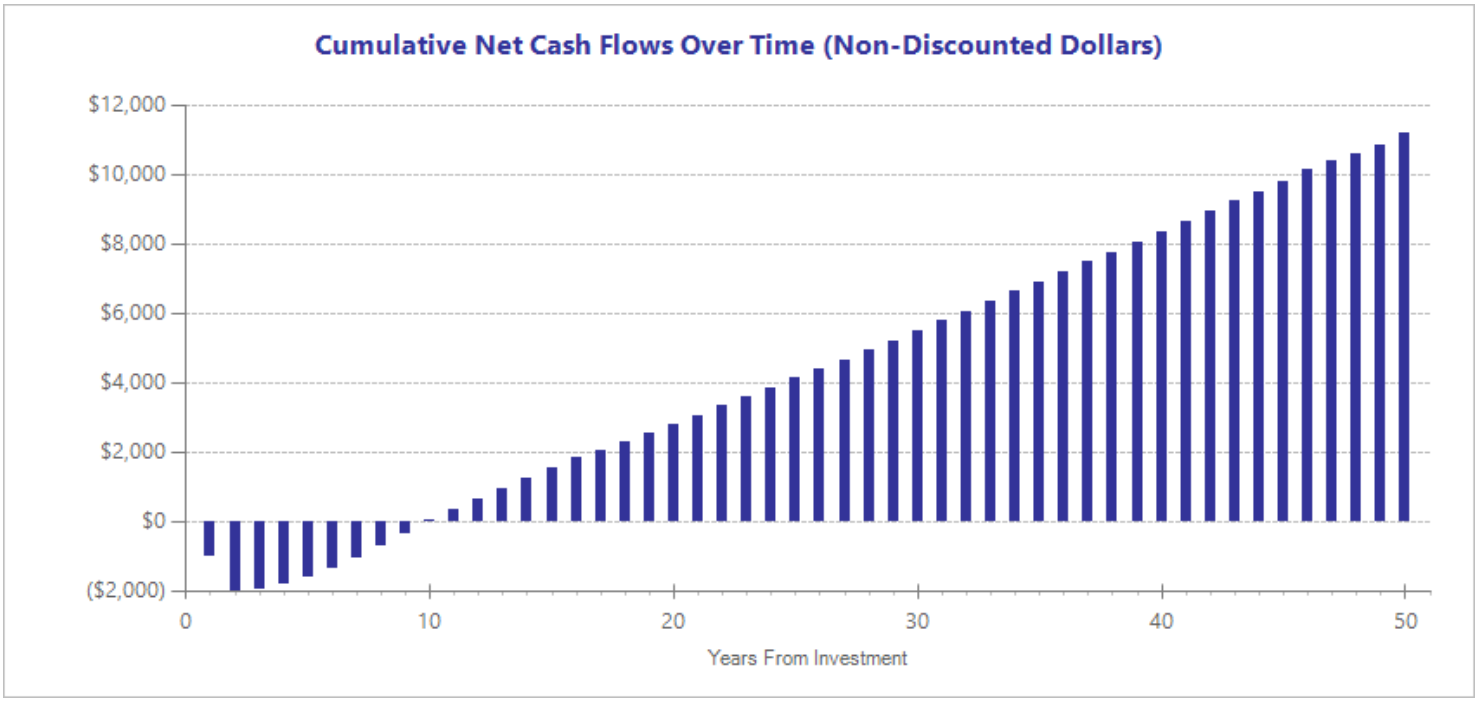
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$500	2	1999	Present value of net program costs (in 2014 dollars)	($1,317)
Comparison costs	$0	2	1999	Uncertainty (+ or - %)	10 %

Source: Miller, T.R., and Hendrie, D. (2005). "How should governments spend the drug prevention dollar: A buyer's guide." In: Stockwell, T., Gruenewald, P., Toumbourou, J., and Loxley, W., eds. Preventing harmful substance use: The evidence base for policy and practice. Chichester, England: John Wiley & Sons. pp. 415–431.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	30	-0.561	0.271	-0.213	0.510	16	-0.213	0.510	26
Employment	Primary	1	30	0.709	0.215	0.269	0.572	16	0.269	0.572	26
School attendance	Primary	3	34	0.903	0.001	0.343	0.255	16	0.343	0.255	16
Grade point average	Primary	3	34	0.786	0.002	0.299	0.252	16	0.299	0.252	16

Citations Used in the Meta-Analysis

Bry, B.H., & George, F.E. (1979). Evaluating and improving prevention programs: A strategy from drug abuse. *Evaluation and Program Planning*, *2*(2), 127-136.

Bry, B.H., & George, F.E. (1980). The preventive effects of early intervention on the attendance and grades of urban adolescents. *Professional Psychology*, *11*(2), 252-260.

Bry, B.H. (1982). Reducing the incidence of adolescent problems through preventive intervention: One- and five-year follow-up. *American Journal of Community Psychology*, *10*(3), 265-276.

Case management in schools

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Case management involves placing a full-time social worker or counselor in a school to help identify at-risk students' needs and connect students and families with relevant services in and outside of the K–12 system. Three such models have been evaluated and are included in this analysis (in no particular order): Communities in Schools, City Connects, and Comer School Development Program. In practice, each of these models includes other services (such as extended learning time and educator training), but the program evaluations focus on the impact of the case management component.

Benefit-Cost Summary

Program benefits	
Participants	$5,560
Taxpayers	$3,264
Other (1)	$2,226
Other (2)	$295
Total	$11,346
Costs	($251)
Benefits minus cost	$11,094

Summary statistics	
Benefit to cost ratio	$45.12
Benefits minus costs	$11,094
Probability of a positive net present value	86 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$11	$29	$5	$45
Labor market earnings (hs grad)	$5,666	$2,417	$2,806	$0	$10,888
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Health care (educational attainment)	($106)	$837	($607)	$416	$540
Adjustment for deadweight cost of program	$0	$0	($2)	($126)	($127)
Totals	$5,560	$3,264	$2,226	$295	$11,346

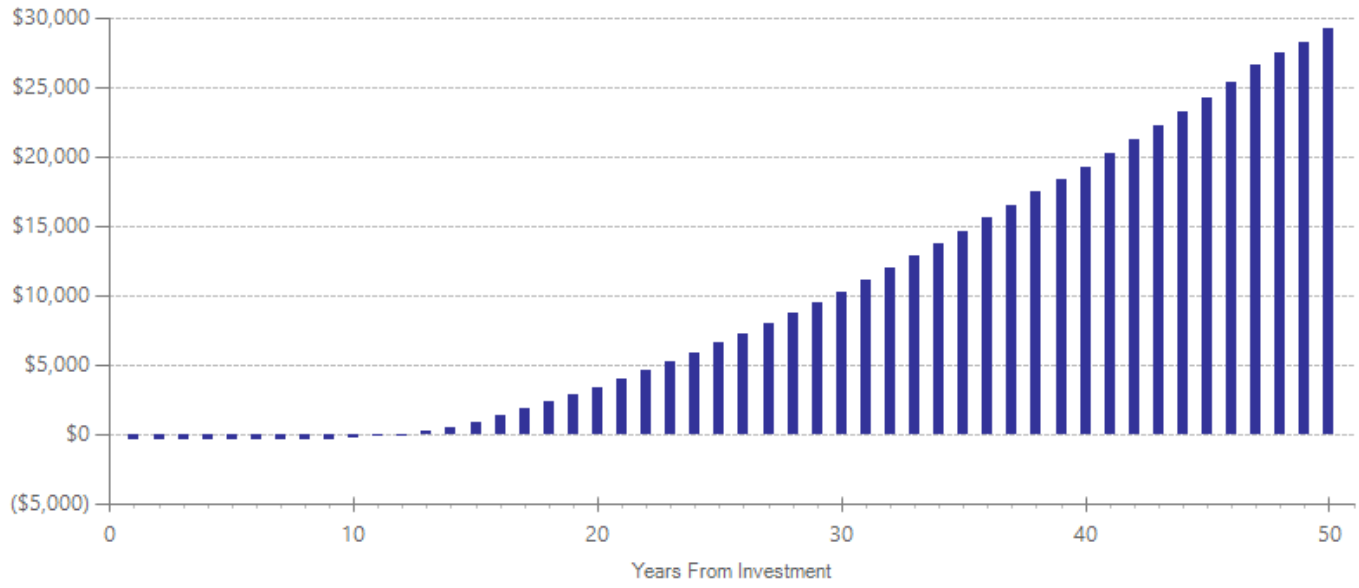
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$248	1	2013	Present value of net program costs (in 2014 dollars)	($251)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

To calculate a per-student annual cost, we use average compensation costs (including benefits) for a social worker as reported by the Office of the Superintendent of Public Instruction, divided by the number of students in a prototypical elementary school and add per-student annual materials, supplies, and operating costs. The estimate also includes a half-hour of principal and administrative support time per week.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
High school graduation	Primary	3	1335	0.169	0.018	0.085	0.071	18	0.085	0.071	18
Test scores	Primary	11	8553	0.061	0.018	0.026	0.026	12	0.027	0.044	17
Smoking before end of middle school	Primary	3	6199	0.015	0.862	0.001	0.085	12	0.001	0.085	17
Cannabis use before end of middle school	Primary	3	6199	0.013	0.880	0.001	0.085	12	0.001	0.085	18
Alcohol use before end of middle school	Primary	3	6199	0.032	0.705	0.002	0.085	12	0.002	0.085	18
Illicit drug use before end of middle school	Primary	4	6772	-0.034	0.654	-0.002	0.075	12	-0.002	0.075	18
Externalizing behavior symptoms	Primary	1	573	-0.325	0.044	-0.016	0.161	12	-0.008	0.083	15
Internalizing symptoms	Primary	4	6772	-0.030	0.075	-0.002	0.075	12	-0.001	0.059	14
Grade point average	Primary	7	7448	0.097	0.328	0.033	0.066	12	0.115	0.148	13
School attendance	Primary	9	7066	-0.002	0.966	-0.002	0.045	12	0.002	0.054	13
Office discipline referrals	Primary	3	252	0.194	0.192	0.194	0.149	12	0.141	0.162	13
Suspensions/expulsions	Primary	4	1321	-0.025	0.819	-0.025	0.110	12	-0.025	0.110	12

Citations Used in the Meta-Analysis

Cook, T.D., Phillips, M., Settersten, R.A., Shagle, S.C., Degirmencioglu, S.M., & Habib, F.N. (1999). Comer's School Development Program in Prince George's County, Maryland: A theory-based evaluation. *American Educational Research Journal*, *36*(3), 543-597.

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Walsh, M., Foley, C., Denny, B.R., Lindsay, L., Coyle, J., & Howard, M. (2012). *The impact of City Connects* (Progress report 2012). Boston: Boston College Center for Optimized Student Support

Walsh, M., Foley, C., Denny, B.R., Lindsay, L., Coyle, J., & Howard, M. (2011). *The impact of City Connects* (Annual report 2011). Boston: Boston College Center for Optimized Student Support

"Check-in" behavior interventions

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Check-in behavior interventions provide support for at-risk students in order to reduce dropouts, promote engagement at school, and reduce problem behaviors. Typically, students must check-in with a designated adult at the school each day. The designated adult collects and monitors data on at-risk indicators (e.g. tardiness, absenteeism, discipline referrals, and poor grades); provides feedback and mentoring; facilitates individualized interventions as appropriate; and ensures communication with parents. The programs included in this analysis are (in no particular order) Check-In, Check-Out (also known as the Behavior Education Program); Check and Connect; and Check, Connect, and Expect.

Benefit-Cost Summary

Program benefits	
Participants	($424)
Taxpayers	($163)
Other (1)	($189)
Other (2)	($650)
Total	($1,426)
Costs	($1,329)
Benefits minus cost	($2,755)

Summary statistics	
Benefit to cost ratio	($1.07)
Benefits minus costs	($2,755)
Probability of a positive net present value	45 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$2	$7	$1	$10
Labor market earnings (test scores)	($430)	($183)	($219)	$0	($832)
Health care (disruptive behavior disorder)	$6	$17	$22	$9	$53
Adjustment for deadweight cost of program	$0	$1	$2	($660)	($657)
Totals	($424)	($163)	($189)	($650)	($1,426)

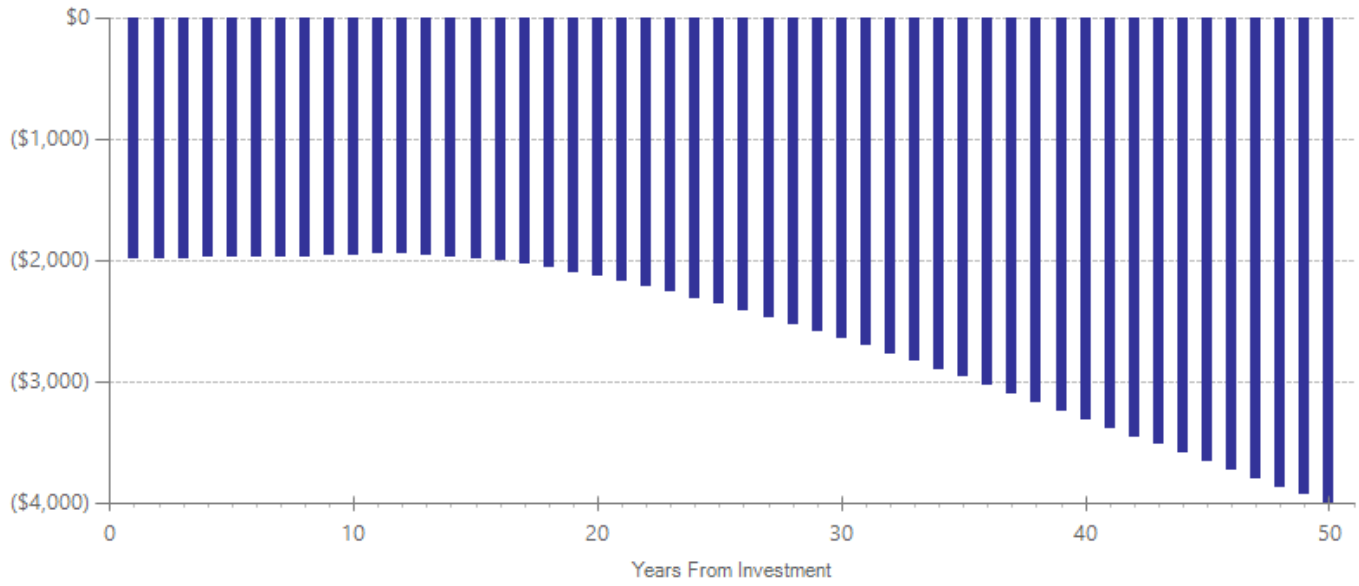
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,329	1	2014	Present value of net program costs (in 2014 dollars)	($1,329)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	30 %

Costs for check-in programs can vary depending on the type and intensity of the intervention. To calculate a per-student annual cost, we use the average between a minimal check-in program facilitated by a paraprofessional serving a caseload of up to 15 students and a more intensive program facilitated by a school counselor with a caseload of up to 35 students. We use average Washington State compensation costs (including benefits) for K-12 staff as reported by the Office of the Superintendent of Public Instruction and include training time in our estimate. Program implementation details are based in part on information provided by the following sources: National Center on Intensive Intervention. (n.d.) Behavior Education Program (BEP) or Check-in/Check-out (CICO). Retrieved from http://www.intensiveintervention.org/chart/behavioral-intervention-chart/13178; and Coalition for Evidence-Based Policy. (2015). Check and Connect. Retrieved from http://evidencebasedprograms.org/1366-2/check-and-connect.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Grade point average	Primary	1	89	0.070	0.633	0.070	0.146	15	0.070	0.146	15
Externalizing behavior symptoms	Primary	1	121	-0.218	0.298	-0.094	0.209	9	-0.045	0.110	12
Office discipline referrals	Primary	2	116	-0.276	0.054	-0.276	0.143	15	-0.276	0.143	15
Test scores	Primary	1	121	-0.037	0.858	-0.016	0.209	9	-0.010	0.230	17
Internalizing symptoms	Primary	1	121	-0.325	0.122	-0.140	0.210	9	-0.102	0.169	11
School attendance	Primary	1	89	0.010	0.945	0.010	0.146	15	0.010	0.146	15

Citations Used in the Meta-Analysis

Cheney, D.A., Stage, S.A., Hawken, L.S., Lynass, L., Mielenz, C., & Waugh, M. (2009). A 2-year outcome study of the Check, Connect, and Expect intervention for students at risk for severe behavior problems. *Journal of Emotional and Behavioral Disorders*, *17*(4), 226-243.

Maynard, B.R., Kjellstrand, E.K., & Thompson, A.M. (2014). Effects of Check and Connect on attendance, behavior, and academics: A randomized effectiveness trial. *Research on Social Work Practice*, 24(3), 296-309.

Simonsen, B., Myers, D., & Briere, D. (2010). Comparing a behavioral Check-In/Check-Out (CICO) intervention to standard practice in an urban middle school setting using an experimental group design. *Journal of Positive Behavior Interventions*, *13*(1), 31-48.

Consultant teachers: Coaching

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Coaching is a form of job-embedded professional development for teachers. Coaching programs (sometimes called literacy coaching, mathematics coaching, instructional coaching, or other terms) typically assign a full-time, trained teacher to an individual school to serve as a coach. Generally, coaches work directly with classroom teachers (usually one-on-one or in small groups) to help them improve their instructional strategies. Coaches observe teaching, provide individual feedback, engage in co-teaching sessions, model effective instructional practices, and provide professional development workshops.

Benefit-Cost Summary

Program benefits	
Participants	$2,661
Taxpayers	$1,250
Other (1)	$1,245
Other (2)	($73)
Total	$5,083
Costs	($256)
Benefits minus cost	$4,827

Summary statistics	
Benefit to cost ratio	$19.87
Benefits minus costs	$4,827
Probability of a positive net present value	81 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$2,675	$1,141	$1,324	$0	$5,140
Health care (educational attainment)	($14)	$109	($79)	$54	$71
Adjustment for deadweight cost of program	$0	$0	$0	($127)	($127)
Totals	$2,661	$1,250	$1,245	($73)	$5,083

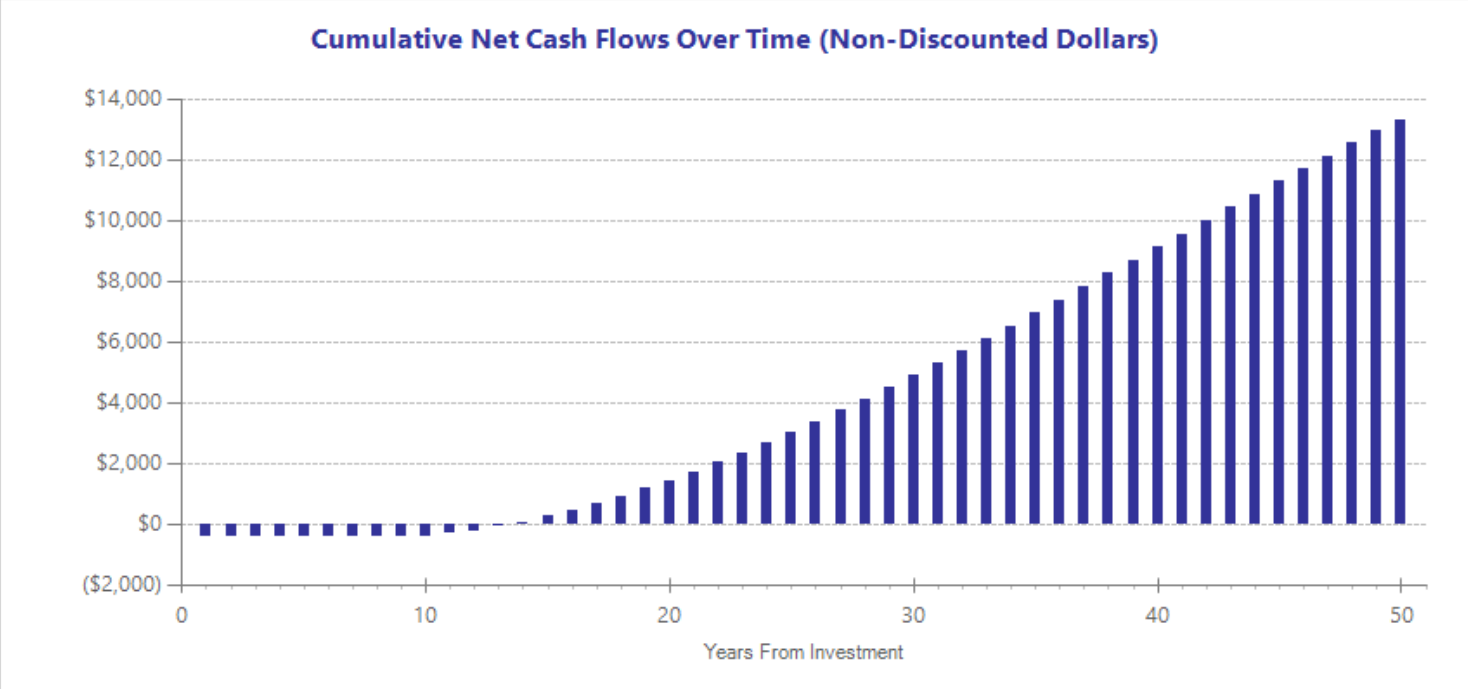
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$252	1	2013	Present value of net program costs (in 2014 dollars)	($256)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

The cost is a WSIPP estimate based on the framework described in Knight, D.S. (2012). Assessing the cost of instructional coaching. *Journal of Education Finance*, *38*(1), 52-80. The estimate is based on one-full time coach per school at the average compensation cost (including benefits) for K–8 teachers as reported by the Office of the Superintendent of Public Instruction. In addition, the estimate includes costs related to administrator time, materials, professional development, and classroom teacher time to work with coaches. To calculate a per-student annual cost, we use the average number of students per school in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	11	12805	0.060	0.105	0.060	0.037	10	0.040	0.041	17

Citations Used in the Meta-Analysis

Campbell, P.F., & Malkus, N.N. (2011). The impact of elementary mathematics coaches on student achievement. *The Elementary School Journal*, *111*(3), 430-454.

Garet, M.S., Cronen, S., Eaton, M., Kurki, A., Ludwig, M., Jones, W., . . . Silverberg, M. (2008). *The impact of two professional development interventions on early reading instruction and achievement.* Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences.

Lockwood, J.R., McCombs, J.S., & Marsh, J. (2010). Linking reading coaches and student achievement: Evidence from Florida middle schools. *Educational Evaluation and Policy Analysis*, *32*(3), 372-388.

Consultant teachers: Content-Focused Coaching

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Content-Focused Coaching is a professional development model that provides structured training to administrators, coaches, and teachers in order to improve instructional practices and student outcomes. The program provides training for school coaches and principals led by staff from the University of Pittsburgh's Institute for Learning. Coaches, in turn, provide professional development and one-on-one feedback to classroom teachers with a focus on specific reading comprehension strategies. The evaluation included in this analysis compared the effects of Content-Focused Coaching to coaching-as-usual.

Benefit-Cost Summary

Program benefits	
Participants	$4,006
Taxpayers	$1,883
Other (1)	$1,869
Other (2)	$54
Total	$7,811
Costs	($58)
Benefits minus cost	$7,753

Summary statistics	
Benefit to cost ratio	$135.08
Benefits minus costs	$7,753
Probability of a positive net present value	94 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$4,027	$1,718	$1,989	$0	$7,733
Health care (educational attainment)	($21)	$165	($120)	$83	$107
Adjustment for deadweight cost of program	$0	$0	$0	($29)	($29)
Totals	$4,006	$1,883	$1,869	$54	$7,811

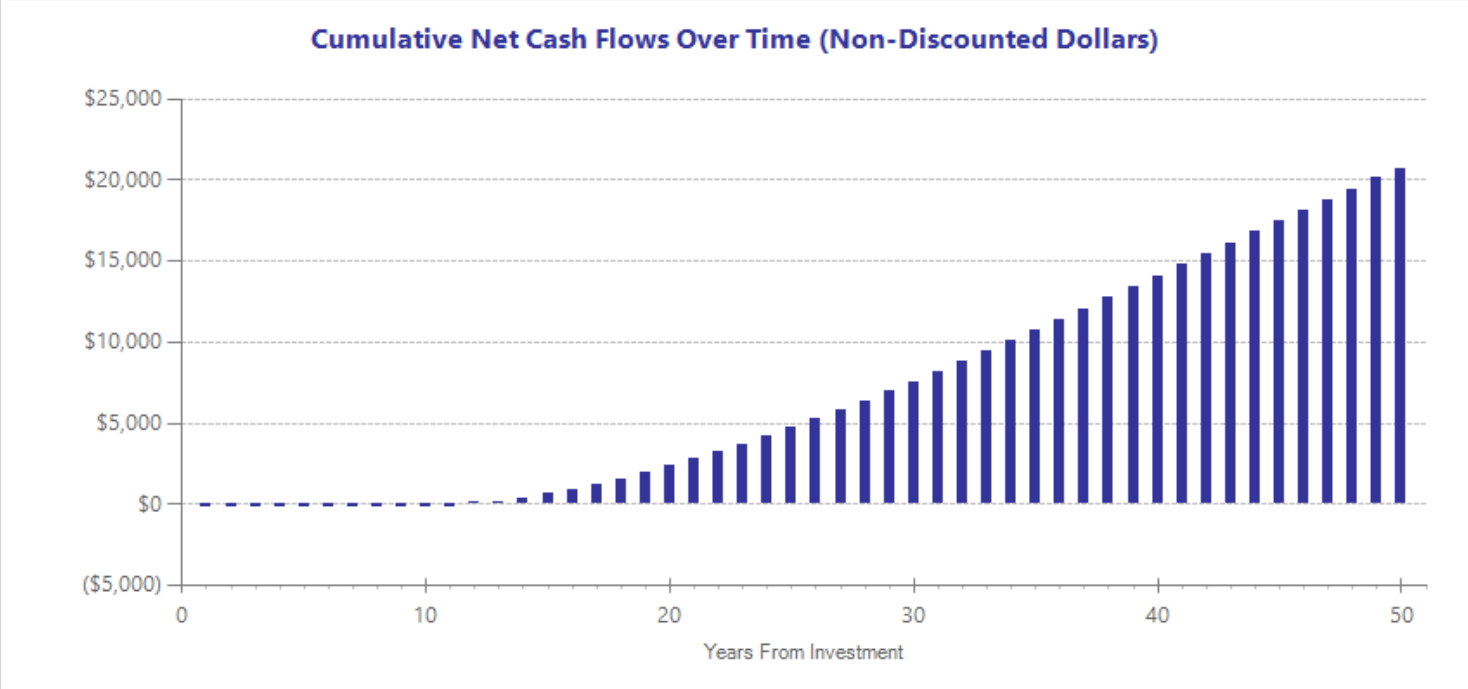
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$299	1	2013	Present value of net program costs (in 2014 dollars)	($58)
Comparison costs	$242	1	2013	Uncertainty (+ or - %)	10 %

Content-Focused Coaching provides additional training time for principals, coaches, and teachers beyond the usual amount of time in other coaching programs. We calculate the cost of Content-Focused Coaching by adding this additional time to the WSIPP estimate for coaching-as-usual based on the framework described in Knight, D.S. (2012). Assessing the cost of instructional coaching. *Journal of Education Finance*, *38*(1), 52-80. The estimate is based on one-full time coach per school at the average compensation cost (including benefits) for K–8 teachers as reported by the Office of the Superintendent of Public Instruction. In addition, the estimate includes costs related to administrator time, materials, professional development, and classroom teacher time to work with coaches. To calculate a per-student annual cost, we use the average number of students per school in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	1	1543	0.250	0.001	0.107	0.037	9	0.064	0.041	17

Citations Used in the Meta-Analysis

Matsumura, L.C., Garnier, H.E., & Spybrook, J. (2013). Literacy coaching to improve student reading achievement: A multi-level mediation model. *Learning and Instruction*, *25*(1), 35-48.

Consultant teachers: Literacy Collaborative

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Literacy Collaborative is a comprehensive teacher professional development model that uses coaching for teachers as a primary strategy to improve instructional practices and student outcomes. The program provides up to 35 days of training at university sites to literacy coaches before placement in schools, as well as on-going training and support. Coaches provide professional development and work one-on-one with classroom teachers with a focus on the specific instructional strategies in the Literacy Collaborative model. The evaluation included in this analysis measures the impact of the model on students in grades K–2 after three years of implementation.

Benefit-Cost Summary

Program benefits	
Participants	$9,869
Taxpayers	$4,660
Other (1)	$4,590
Other (2)	($157)
Total	$18,962
Costs	($740)
Benefits minus cost	$18,222

Summary statistics	
Benefit to cost ratio	$25.62
Benefits minus costs	$18,222
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$9,922	$4,232	$4,899	$0	$19,053
Health care (educational attainment)	($54)	$427	($309)	$214	$279
Adjustment for deadweight cost of program	$1	$0	$0	($371)	($370)
Totals	$9,869	$4,660	$4,590	($157)	$18,962

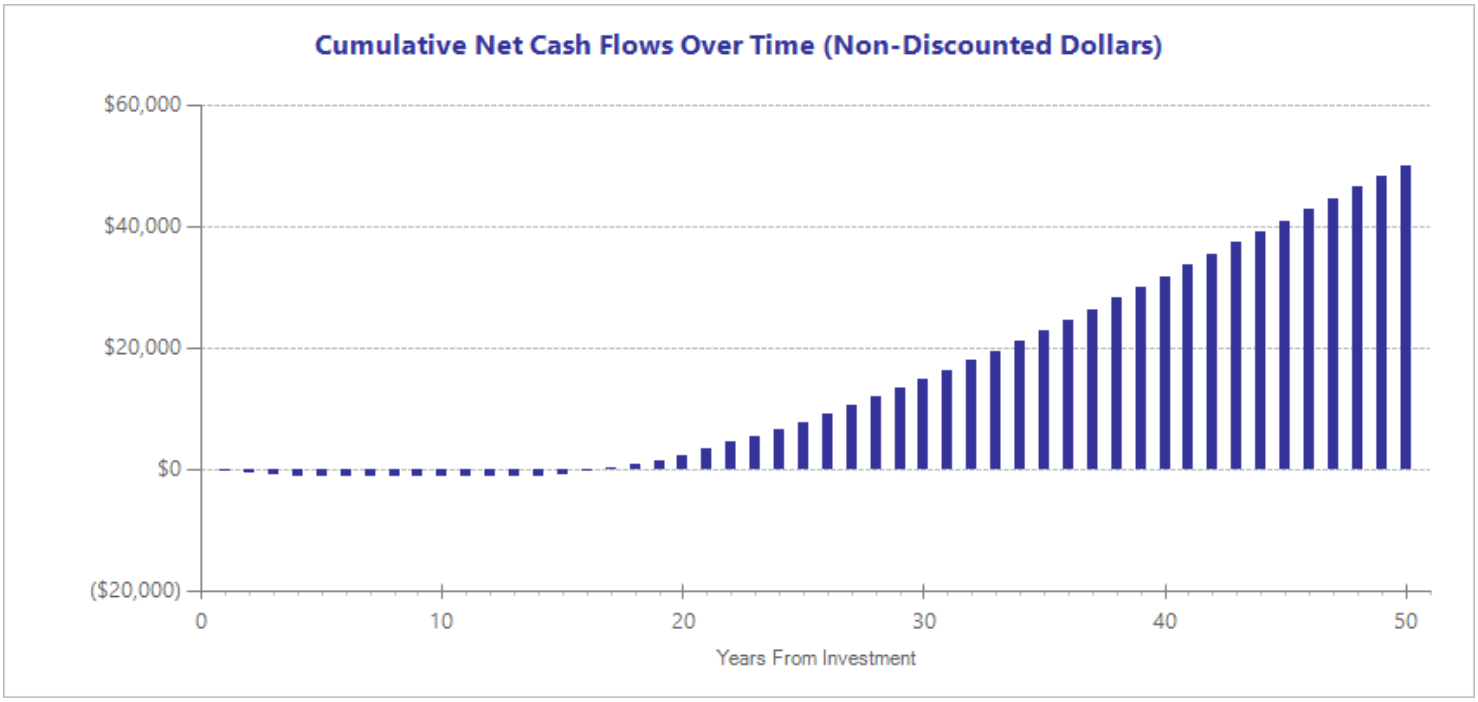
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$192	4	2013	Present value of net program costs (in 2014 dollars)	($740)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

Cost is a WSIPP estimate based on published literacy coach training costs, including training fees, travel, and materials, from Ohio State University (2014). *Costs for Literacy Collaborative literacy coach training 2014-2015*, Columbus Ohio, OH: author. The estimate also includes salary costs for coach and teacher time based on the average compensation cost (including benefits) for K–8 teachers as reported by the Office of the Superintendent of Public Instruction. To calculate a per-student annual cost, we use the number of students in grades K–2 in Washington's prototypical schools formula. Costs reflect the average annual cost per-student assuming three years of implementation and one year of training.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	1	3348	0.428	0.001	0.428	0.025	6	0.171	0.028	17

Citations Used in the Meta-Analysis

Biancarosa, G., Bryk, A.S., & Dexter, E.R. (2010). Assessing the value-added effects of Literacy Collaborative professional development on student learning. *The Elementary School Journal, 111*(1), 7-34.

Consultant teachers: Online coaching

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Online coaching programs provide professional development support and feedback to classroom teachers in a web-based environment. The program included in this analysis (My Teaching Partner – Secondary) provides teachers with feedback and guidance on methods to improve their interactions with students. In the online coaching program, teachers upload video recordings of class sessions twice per month. Trained teacher consultants review the recordings and provide feedback to teachers online and over the phone.

Benefit-Cost Summary

Program benefits	
Participants	$5,882
Taxpayers	$2,750
Other (1)	$2,753
Other (2)	$17
Total	$11,402
Costs	($194)
Benefits minus cost	$11,208

Summary statistics	
Benefit to cost ratio	$58.87
Benefits minus costs	$11,208
Probability of a positive net present value	86 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$5,910	$2,521	$2,919	$0	$11,350
Health care (educational attainment)	($29)	$229	($166)	$114	$148
Adjustment for deadweight cost of program	$0	$0	$0	($97)	($96)
Totals	$5,882	$2,750	$2,753	$17	$11,402

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

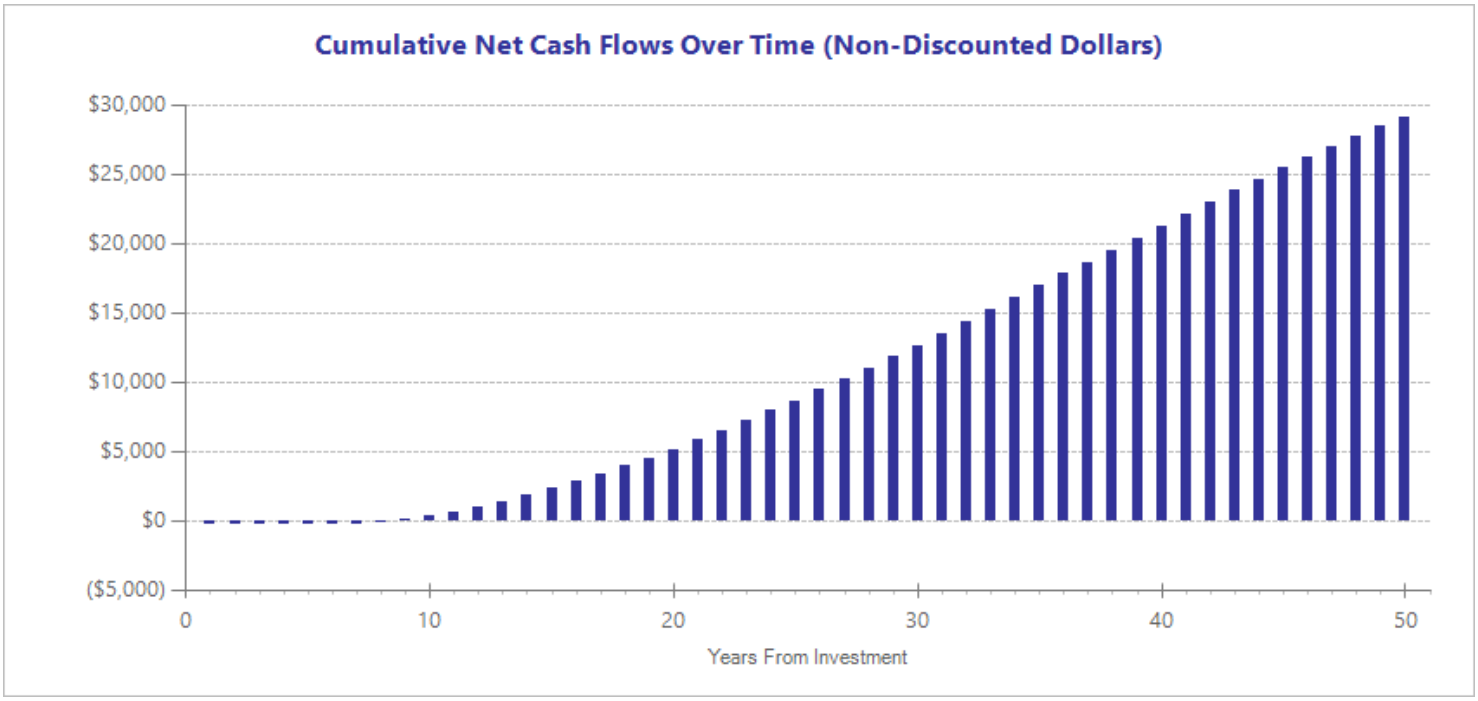
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$191	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($194)
Uncertainty (+ or - %)	10 %

In the evaluation included this analysis, teachers participated in an average of 20 hours of training and coaching time. We calculate the value of staff time using average Washington State compensation costs (including benefits) for 8th grade teachers as reported by the Office of the Superintendent of Public Instruction. We add additional costs reported in the evaluation to account for consultant time and video equipment. To calculate a per-student annual cost, we use the average number of students per classroom in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	1	419	0.230	0.001	0.099	0.065	13	0.081	0.072	17

Citations Used in the Meta-Analysis

Allen, J.P., Mikami, A.Y., Pianta, R.C., Gregory, A., & Lun, J. (2011). An interaction-based approach to enhancing secondary school instruction and student achievement. *Science*, *333*(6045), 1034-1037.

Conjoint Behavioral Consultation

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Conjoint Behavioral Consultation is a family-school partnership model that aims to decrease students' disruptive behaviors. The program uses a series of consultation sessions conducted in small groups that include a classroom teacher, 2-3 parents, and a trained behavior consultant. The participants work to identify specific disruptive behaviors, select alternative goals that promote prosocial behavior, implement an intervention plan, and evaluate progress. The intervention plans may use a variety of strategies to reduce disruptive behavior including positive reinforcement, environmental structuring (e.g. setting rules), skills training, or removal of privileges. The consultant may conduct a home visit with each family to assist in intervention delivery.

Benefit-Cost Summary

Program benefits	
Participants	$44
Taxpayers	$32
Other (1)	$41
Other (2)	($348)
Total	($231)
Costs	($706)
Benefits minus cost	($937)

Summary statistics	
Benefit to cost ratio	($0.33)
Benefits minus costs	($937)
Probability of a positive net present value	1 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$2	$5	$1	$8
Labor market earnings (hs grad)	$40	$17	$20	$0	$76
Health care (disruptive behavior disorder)	$4	$13	$17	$7	$41
Adjustment for deadweight cost of program	$0	$0	$0	($355)	($355)
Totals	$44	$32	$41	($348)	($231)

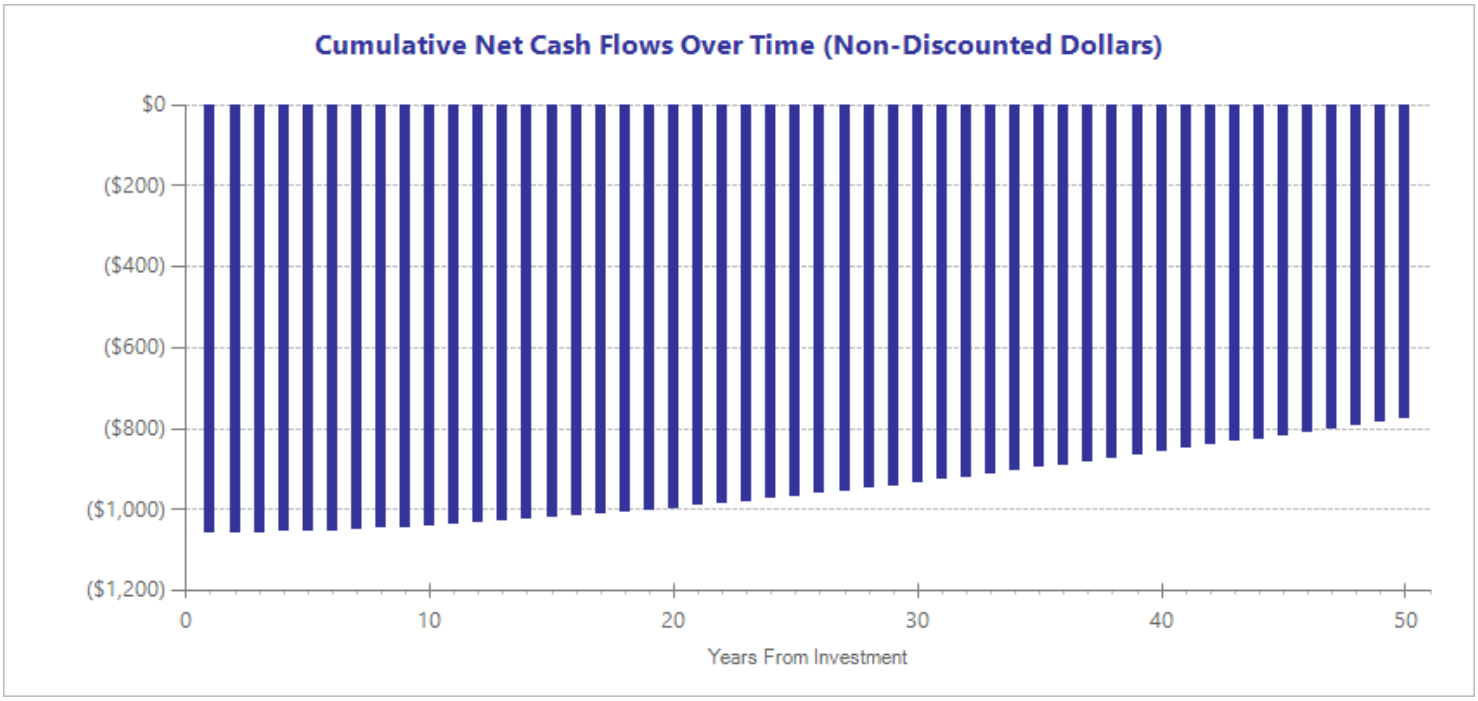
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$706	1	2014	Present value of net program costs (in 2014 dollars)	($706)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	10 %

The cost estimate is based on a program delivered through a combination of small group sessions (in partnership with a classroom teacher) and individual home-visits in which a school counselor acts as the behavior consultant, receives 64 hours of training, and serves 15 students. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for K-12 staff as reported by the Office of the Superintendent of Public Instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Externalizing behavior symptoms	Primary	1	113	-0.172	0.218	-0.074	0.140	7	-0.035	0.074	10

Citations Used in the Meta-Analysis

Sheridan, S.M., Bovaird, J.A., Glover, T.A., Garbacz, S.A., Witte, A., & Kwon, K. (2012). A randomized trial examining the effects of Conjoint Behavioral Consultation and the mediating role of the parent-teacher relationship. *School Psychology Review*, 41(1), 23-46.

Daily Behavior Report Cards

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Daily Behavior Report Cards (DBRC) are a systematic method of communicating with parents about a student's behavior in school. The report cards are sent home with the child or electronically, and the student must return the form the following morning with the parent's signature. Behavioral reinforcements or consequences are delivered to students by parents or teachers and are selected based on the individual child.

Benefit-Cost Summary

Program benefits	
Participants	$163
Taxpayers	$95
Other (1)	$117
Other (2)	($11)
Total	$364
Costs	($50)
Benefits minus cost	$314

Summary statistics	
Benefit to cost ratio	$7.27
Benefits minus costs	$314
Probability of a positive net present value	63 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$3	$10	$2	$15
Labor market earnings (hs grad)	$155	$66	$76	$0	$297
Health care (disruptive behavior disorder)	$8	$25	$31	$12	$77
Adjustment for deadweight cost of program	$0	$0	$0	($25)	($25)
Totals	$163	$95	$117	($11)	$364

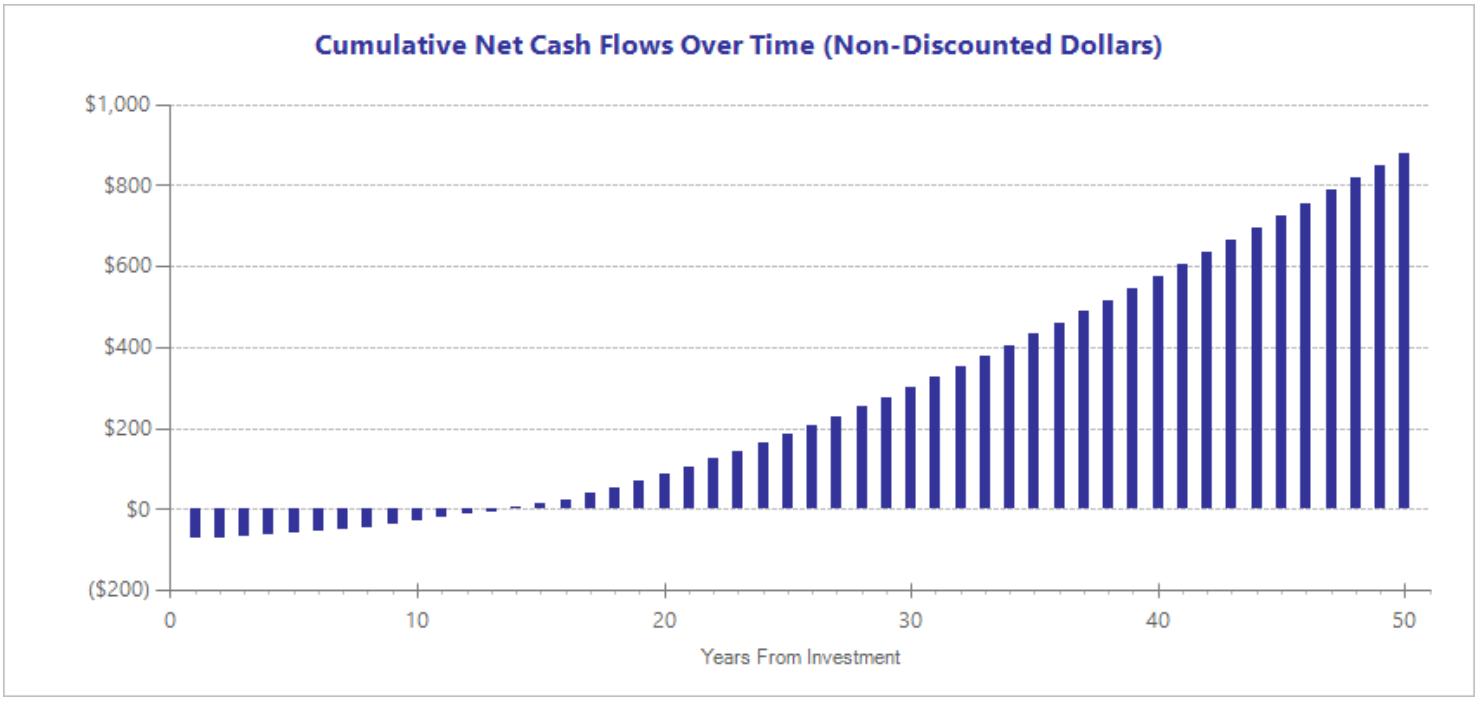
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$50	1	2014	Present value of net program costs (in 2014 dollars)	($50)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	10 %

Cost estimates are based on small rewards given to children for positive behavior during three weeks of intervention and one minute per day of teacher time, as documented in Chaflouleas, S. Riley-Tillman, T. C., & McDougal, J.I. (2002) Good, bad, or in-between: How does the Daily Behavior Report Card rate? Psychology in the Schools, 39(2), 157-169.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Externalizing behavior symptoms	Primary	1	31	-0.682	0.067	-0.150	0.372	8	-0.071	0.195	11
Internalizing symptoms	Primary	1	31	-1.065	0.005	-0.234	0.382	8	-0.170	0.305	10
Attention deficit hyperactivity disorder symptoms	Primary	1	31	-0.283	0.439	-0.062	0.366	8	0.000	0.018	9

Citations Used in the Meta-Analysis

Williams, K., Noell, G.H., Jones, B.A., Gansle, K.A. (2012) Modifying students' classroom behaviors using an Electronic Daily Behavior Report Card. *Children and Family Behavioral Therapy*, *34*(4), 269-289.

"Double-dose" classes

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Double dose classes are provided to middle- and high-school students struggling in reading or, more typically, math. Students particpating in this intervention enroll in two reading or math classes instead of one, thus doubling their instructional time in these subjects.

Benefit-Cost Summary

Program benefits	
Participants	$6,629
Taxpayers	$3,461
Other (1)	$2,910
Other (2)	$53
Total	$13,054
Costs	($495)
Benefits minus cost	$12,559

Summary statistics	
Benefit to cost ratio	$26.36
Benefits minus costs	$12,559
Probability of a positive net present value	98 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$9	$29	$5	$43
Labor market earnings (test scores)	$6,704	$2,859	$3,312	$0	$12,875
Health care (educational attainment)	($75)	$592	($430)	$297	$384
Adjustment for deadweight cost of program	$0	$0	$0	($248)	($248)
Totals	$6,629	$3,461	$2,910	$53	$13,054

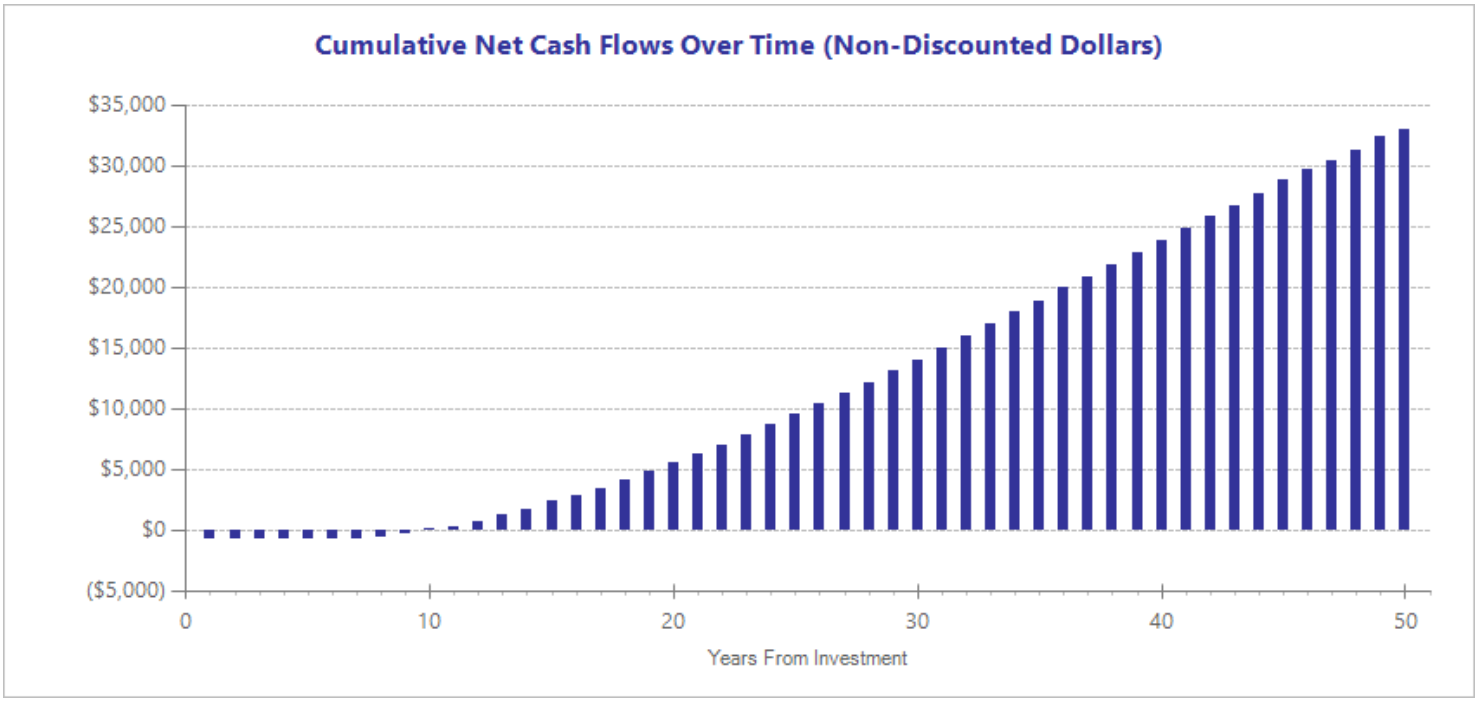
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$488	1	2013	Present value of net program costs (in 2014 dollars)	($495)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the studies reviewed for this estimate, providing "double dose" classes required hiring approximately 15% more teachers to cover the additional classes (this figure accounts for a partial cost offset from hiring fewer elective course teachers). Teachers were provided with three days of professional development and curriculum materials for implementation. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for K-8 teachers as reported by the Office of the Superintendent of Public Instruction and add per-student curriculum and teacher training costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	5	30857	0.093	0.230	0.093	0.041	13	0.093	0.041	17
High school graduation	Primary	2	10463	0.045	0.040	0.045	0.022	18	0.045	0.022	18

Citations Used in the Meta-Analysis

Bartik, T.J., & Lachowska, M. (2014). *The effects of doubling instruction efforts on middle school students' achievement: Evidence from a mutiyear regression-discontinuity design* (Working Paper 14-205). Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

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Fryer, R.G. (2011). *Injecting successful charter school strategies into traditional public schools: Early results from an experiment in Houston* (NBER Working Paper 17494). Cambridge, MA: National Bureau of Economic Research.

Taylor, E. (2014). Spending more of the school day in math class: Evidence from a regression discontinuity in middle school. *Journal of Public Economics, 117*, 162-181.

Educator professional development: Use of data to guide instruction

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: One form of professional development (PD) involves training educators how to use student academic assessment data to modify and improve instruction. In this "train the trainers" approach, administrators and teacher-leaders directly receive the training and then share what they have learned with classroom teachers. This type of PD is usually paired with computer software that tracks and reports student assessment data to teachers. The specific types of assessments and software evaluated and included in this meta-analysis are (in no particular order) Individualized Student Instruction (ISI) using A2i software and Ohio's Personalized Assessment Reporting System (PARS).

Benefit-Cost Summary

Program benefits	
Participants	($1,281)
Taxpayers	($601)
Other (1)	($599)
Other (2)	($35)
Total	($2,516)
Costs	($18)
Benefits minus cost	($2,534)

Summary statistics	
Benefit to cost ratio	($139.38)
Benefits minus costs	($2,534)
Probability of a positive net present value	31 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	($1,288)	($549)	($637)	$0	($2,474)
Health care (educational attainment)	$7	($52)	$38	($26)	($34)
Adjustment for deadweight cost of program	$0	$0	$0	($9)	($8)
Totals	($1,281)	($601)	($599)	($35)	($2,516)

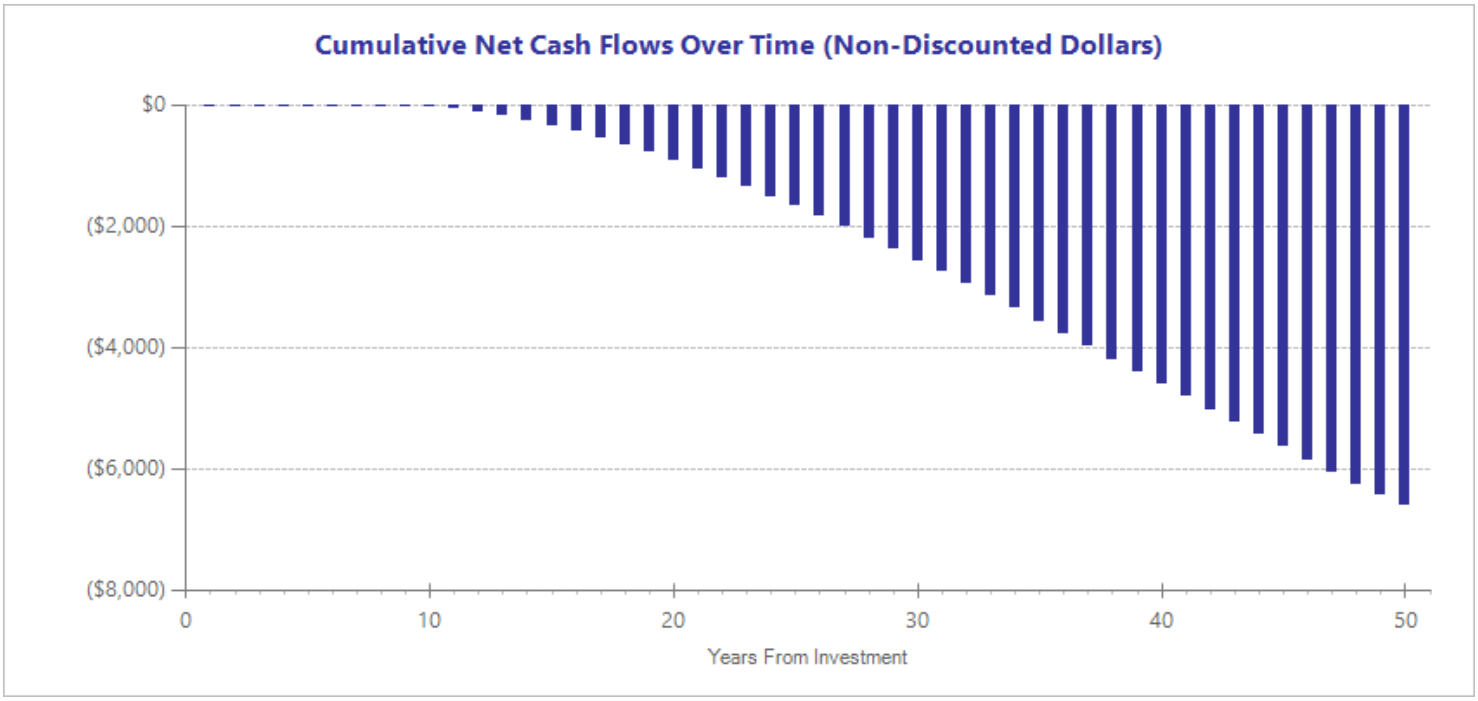
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$18	1	2013	Present value of net program costs (in 2014 dollars)	($18)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in this meta-analysis, educators received an average of three hours of training in how to use student assessment data to guide instruction. We calculate the value of PD time using average teacher salaries (including benefits) as reported by the Office of Superintendent of Public Instruction. To calculate a per-student annual cost, we divide compensation costs by the number of students per classroom in Washington's prototypical schools formula and add per-student materials, supplies, and operating costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	2	26047	-0.030	0.409	-0.030	0.036	10	-0.020	0.040	17

Citations Used in the Meta-Analysis

Carlson, D., Borman, G.D., & Robinson, M. (2011). A multistate district-level cluster randomized trial of the impact of data-driven reform on reading and mathematics achievement. *Educational Evaluation and Policy Analysis*, *33*(3), 378-398.

May, H., & Robinson, M.A. (2007). *A randomized evaluation of Ohio's personalized assessment report system (PARS).* Madison, WI: Consortium for Policy Research in Education.

Families and Schools Together (FAST)

Benefit-cost estimates updated July 2015. Literature review updated April 2012.

Program Description: Families and Schools Together is a multi-family after-school program. Originally developed to serve young school-age children at risk of school failure, the program is now also offered in schools with high rates of poverty and other risk factors. The goals of the program are to increase parent involvement in schools, strengthen the parent-child relationship, reduce stress by developing parent support groups, and prevent substance abuse by the child and family. Groups of 8 to 12 families meet for 8 consecutive weeks for two and one-half hours after school or early in the evenings. Teams of trained facilitators conduct meetings that involve experiential learning, parent-child play, and a shared meal.

Benefit-Cost Summary

Program benefits	
Participants	$917
Taxpayers	$331
Other (1)	$697
Other (2)	($937)
Total	$1,009
Costs	($1,843)
Benefits minus cost	($834)

Summary statistics	
Benefit to cost ratio	$0.55
Benefits minus costs	($834)
Probability of a positive net present value	47 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$16	$47	$8	$70
Labor market earnings (test scores)	$860	$367	$433	$0	$1,660
K-12 grade repetition	$0	($226)	$0	($113)	($340)
Health care (disruptive behavior disorder)	$57	$176	$217	$87	$537
Adjustment for deadweight cost of program	$0	$0	$0	($919)	($919)
Totals	$917	$331	$697	($937)	$1,009

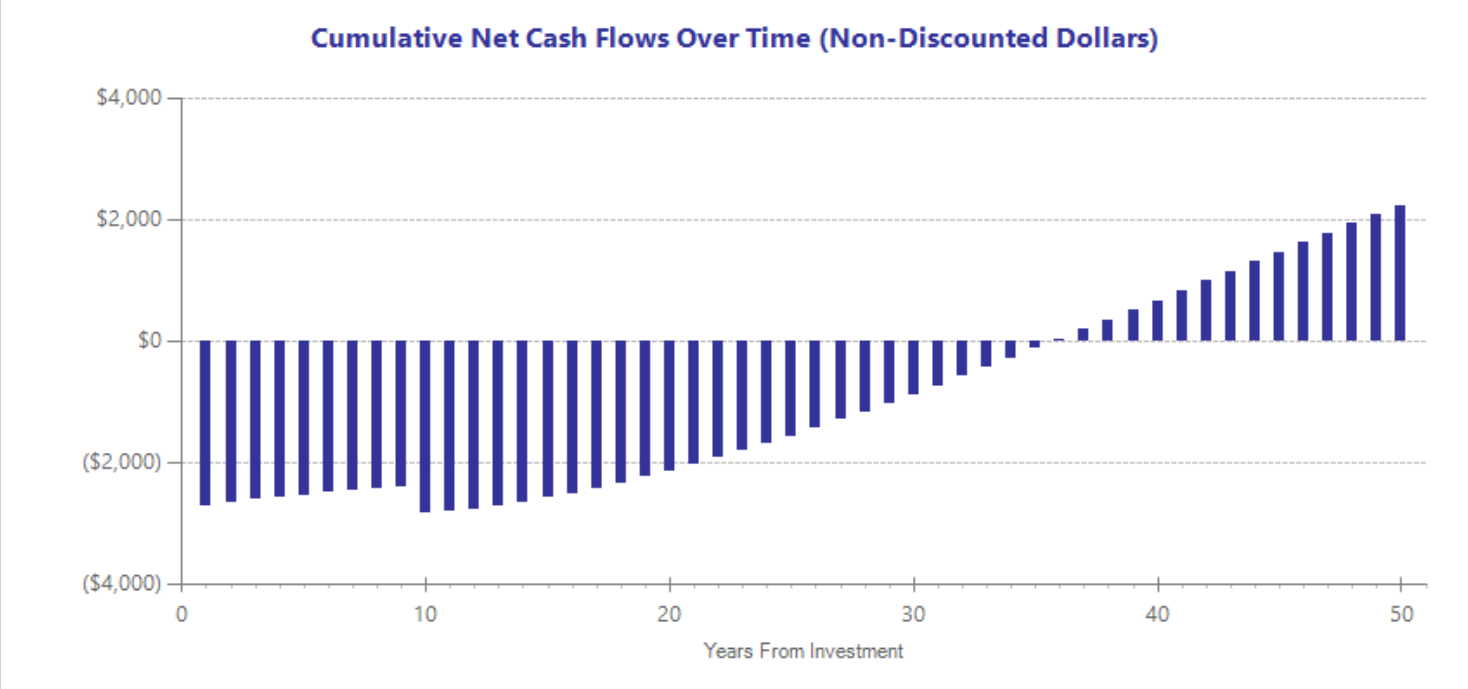
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,694	1	2009	Present value of net program costs (in 2014 dollars)	($1,843)
Comparison costs	$0	0	2009	Uncertainty (+ or - %)	10 %

Kratochwill (2009) provided costs for the program evaluated in Madison WI. Implementation (actual presentation of the program) cost $1194 per child, plus an average cost of $500 per child to train the program faciliators. See Kratochwill, T. R., McDonald, L., Levin, J. R., Scalia, P. A., & Coover, G. (2009). Families and Schools Together: An experimental study of multi-family support groups for children at risk. Journal of School Psychology, 47(4), 245-265.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	3	179	0.104	0.487	0.027	0.122	8	0.015	0.134	17
K-12 grade repetition	Primary	1	140	0.288	0.176	0.288	0.212	9	0.288	0.212	17
Externalizing behavior symptoms	Primary	5	391	-0.284	0.007	-0.210	0.081	8	-0.100	0.059	11
Internalizing symptoms	Primary	5	391	-0.011	0.890	-0.017	0.079	8	-0.012	0.062	10
Grade point average	Primary	1	140	-0.086	0.485	-0.086	0.123	8	-0.086	0.123	17

Citations Used in the Meta-Analysis

Kratochwill, T. R., McDonald, L., Levin, J. R., Scalia, P. A., & Coover, G. (2009). Families and Schools Together: An experimental study of multi-family support groups for children at risk. *Journal of School Psychology*, *47*(4), 245-265.

Kratochwill, T. R., McDonald, L., Levin, J. R., Young Bear-Tibbetts, H., & Demaray, M. K. (2004). Families and Schools Together: An experimental analysis of a parent-mediated multi-family group program for American Indian children. *Journal of School Psychology*, *42*(5), 359-383..

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McDonald L. (2003) The Asian American FAST Project: Among Adaptation of Families and Schools Together. Madison, WIS: WCER.

McDonald, L., Moberg, D. P., Brown, R., Rodriguez-Espiricueta, I., Flores, N. I., Burke, M. P., & Coover, G. (2006). After-school multifamily groups: A randomized controlled trial involving low-income, urban, Latino children. *Children and Schools*, *28*(1), 25-34.

Fast Track prevention program

Benefit-cost estimates updated July 2015. Literature review updated April 2012.

Program Description: Fast Track is a comprehensive prevention program, delivered over the course of 10 years, that seeks to reduce multiple risk factors in children's lives. The program consists of various developmentally appropriate interventions at different ages, with the most intensive intervention taking place at younger ages.

Benefit-Cost Summary

Program benefits	
Participants	$1,265
Taxpayers	$2,123
Other (1)	$3,830
Other (2)	($29,652)
Total	($22,434)
Costs	($60,877)
Benefits minus cost	($83,312)

Summary statistics	
Benefit to cost ratio	($0.37)
Benefits minus costs	($83,312)
Probability of a positive net present value	0 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$660	$2,130	$329	$3,120
Labor market earnings (hs grad)	$1,067	$455	$528	$0	$2,049
Health care (ADHD)	$15	$47	$58	$24	$145
Health care (emergency department visits)	$183	$960	$1,114	$479	$2,736
Adjustment for deadweight cost of program	$0	$0	$0	($30,485)	($30,484)
Totals	$1,265	$2,123	$3,830	($29,652)	($22,434)

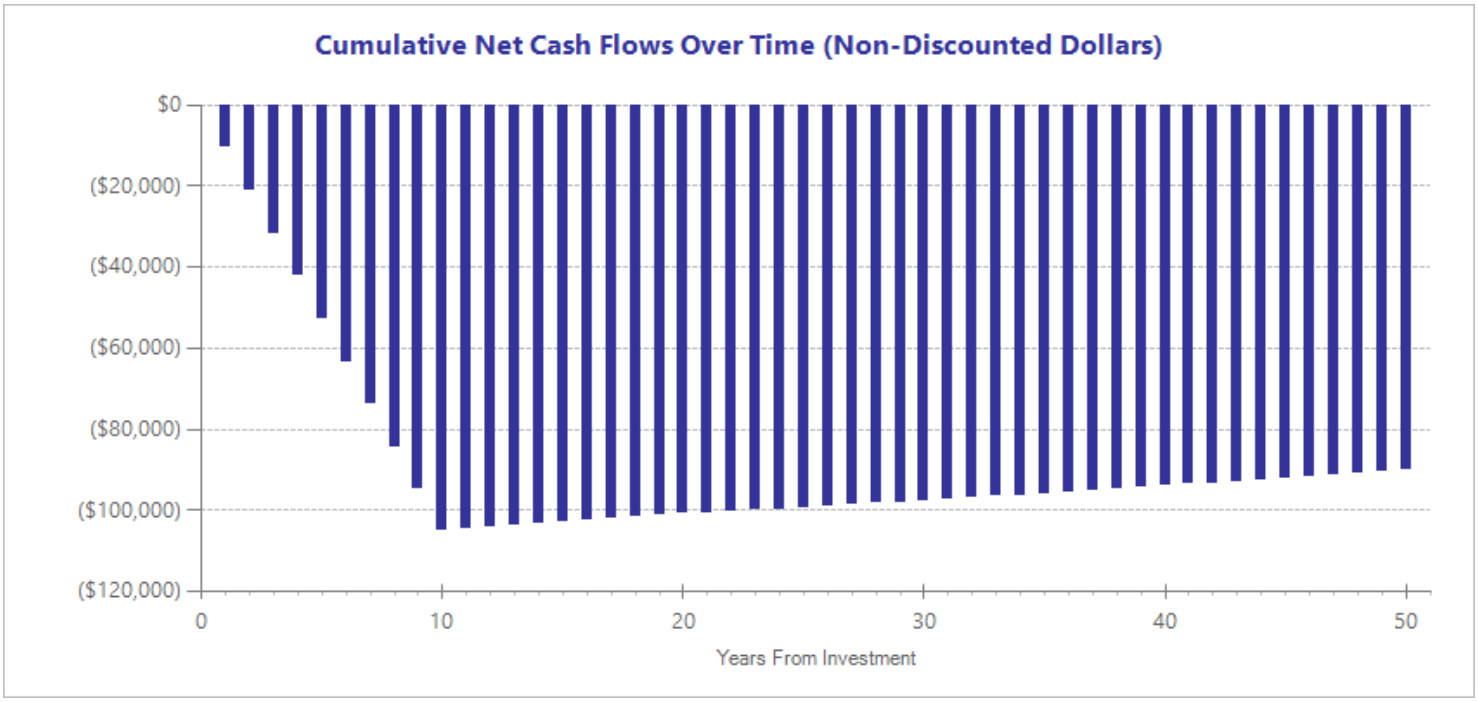
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$5,828	10	2004	Present value of net program costs (in 2014 dollars)	($60,877)
Comparison costs	$0	10	2004	Uncertainty (+ or - %)	10 %

Costs derived from estimate reported in Foster, E.M., Jones, D.E., & the Conduct Problems Prevention Research Group (2006). Can a costly intervention be cost-effective? An analysis of violence prevention. Archives of General Psychiatry, 63(11), 1284-1291.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	445	-0.173	0.010	-0.173	0.067	15	-0.099	0.089	18
Disruptive behavior disorder symptoms	Primary	1	445	-0.198	0.191	-0.198	0.151	15	-0.028	0.098	17
Attention deficit hyperactivity disorder symptoms	Primary	1	445	-0.151	0.199	-0.151	0.117	15	-0.018	0.082	17
Emergency department visits	Primary	1	445	-0.177	0.048	-0.177	0.089	19	-0.177	0.089	29
Hospitalization (psychiatric)	Primary	1	445	0.006	0.972	0.006	0.171	19	0.006	0.171	29

Citations Used in the Meta-Analysis

Conduct Problems Prevention Research Group. (2007). Fast track randomized controlled trial to prevent externalizing psychiatric disorders: Findings from grades 3 to 9. *Journal of the American Academy of Child & Adolescent Psychiatry*, *46*(10), 1250-1262.

Conduct Problems Prevention Research Group. (2010). Fast Track intervention effects on youth arrests and delinquency. *Journal of Experimental Criminology*, *6*(2), 131-157.

Conduct Problems Prevention Research Group. (2011). The effects of the Fast Track preventive intervention on the development of conduct disorder across childhood. *Child Development*, *82*(1), 331-345.

Jones, D., Godwin, J., Dodge, K. A., Bierman, K. L., Coie, J. D., Greenberg, M. T., . . . Pinderhughes, E. E. (2010). Impact of the fast track prevention program on health services use by conduct-problem youth. *Pediatrics*, *125*(1), e130-e136.

First Step to Success

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: First Step to Success is an early intervention program for students at-risk for behavior problems. The program has three components: universal screening, classroom intervention, and home-based intervention. A behavior coach works with students, families, and teachers to teach replacement behaviors. The behavior coach generally works for 50-60 hours on each case over a 3-month period.

Benefit-Cost Summary

Program benefits	
Participants	$385
Taxpayers	$189
Other (1)	$232
Other (2)	($279)
Total	$527
Costs	($589)
Benefits minus cost	($63)

Summary statistics	
Benefit to cost ratio	$0.89
Benefits minus costs	($63)
Probability of a positive net present value	49 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$3	$10	$2	$15
Labor market earnings (test scores)	$376	$160	$192	$0	$728
Health care (disruptive behavior disorder)	$8	$25	$30	$13	$76
Adjustment for deadweight cost of program	$1	$0	$0	($293)	($292)
Totals	$385	$189	$232	($279)	$527

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

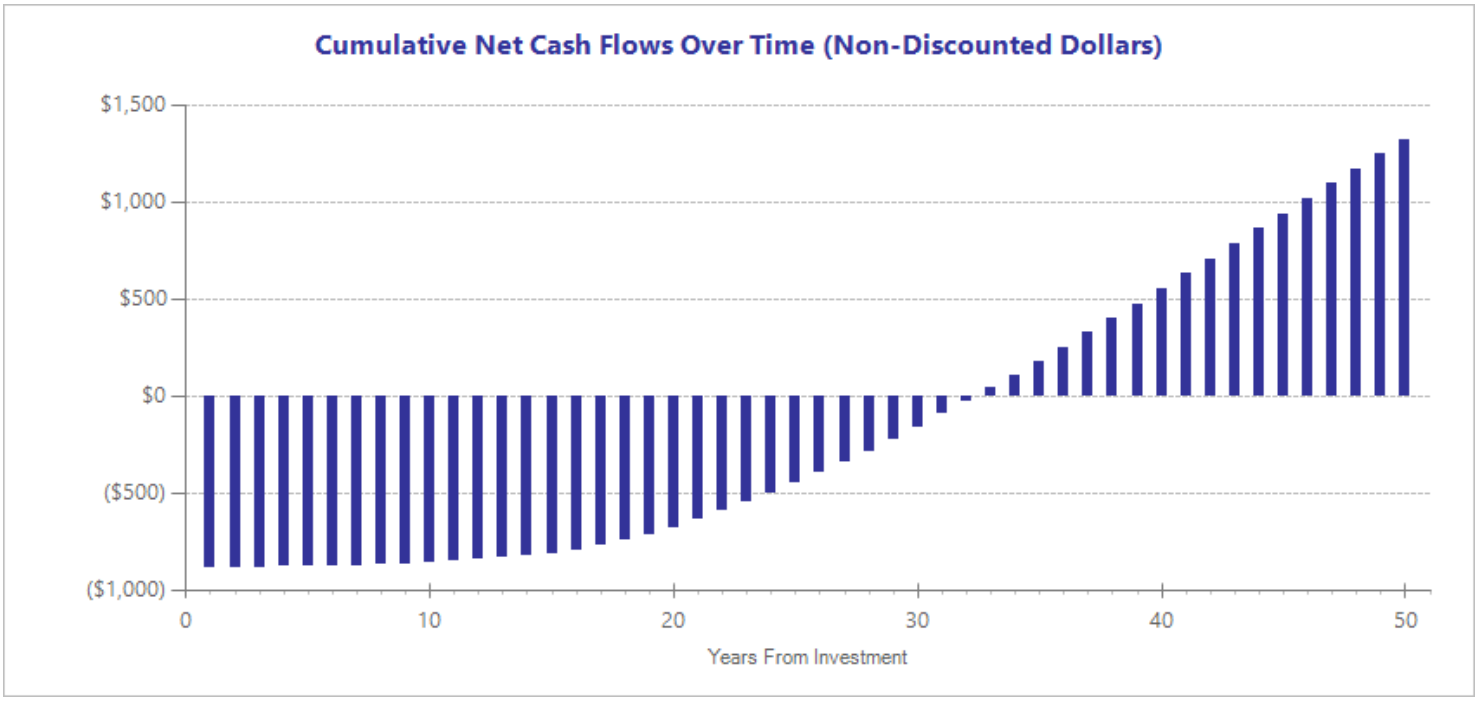
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$500	1	2005
Comparison costs	$0	1	2005

Summary statistics	
Present value of net program costs (in 2014 dollars)	($589)
Uncertainty (+ or - %)	10 %

Cost information is based on program materials and behavior coach time, as documented in Walker, H. M., Golly, A., McLane, J. Z., & Kimmich, M. (2005). The Oregon First Step to Success replication initiative: Statewide results of an evaluation of program's impact. Journal of Emotional and Behavioral Disorders, 13(3), 163–172.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	2	243	0.022	0.847	0.022	0.114	5	0.007	0.125	17
Disruptive behavior disorder symptoms	Primary	1	23	-1.066	0.001	-0.105	0.319	5	-0.076	0.251	8

Citations Used in the Meta-Analysis

Sumi, W.C., Woodbridge, M.W., Javitz, H.S., Thornton, S.P., Wagner, M., . . . & Severson, H.H. (2013). Assessing the effectiveness of First Step to Success: Are short-term results the first step to long-term behavioral improvements?. *Journal of Emotional and Behavioral Disorders*, *21*(1), 66-78.

Walker, H.M., Kavanagh, K., Stiller, B., Golly, A., Severson, H.H., & Feil, E.D. (1998). First step to success: An early intervention approach for preventing school antisocial behavior. *Journal of Emotional and Behavioral Disorders*, *6*(2), 66-80.

Walker, H.M., Seeley, J.R., Small, J., Severson, H.H., Graham, B.A., Feil, E.G., & Forness, S.R. (2009). A randomized controlled trial of the First Step to Success Early Intervention: Demonstration of program efficacy outcomes in a diverse, urban school district. *Journal Of Emotional And Behavioral Disorders*, 17(4), 197-212.

Good Behavior Game

Benefit-cost estimates updated July 2015. Literature review updated April 2012.

Program Description: The Good Behavior Game is a two-year classroom management strategy designed to improve aggressive/disruptive classroom behavior and prevent later criminality. The program is universal and can be applied to general populations of early elementary school children (grades 1 and 2).

Benefit-Cost Summary

Program benefits	
Participants	$5,468
Taxpayers	$2,870
Other (1)	$803
Other (2)	$248
Total	$9,389
Costs	($160)
Benefits minus cost	$9,229

Summary statistics	
Benefit to cost ratio	$58.56
Benefits minus costs	$9,229
Probability of a positive net present value	85 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$154	$420	$78	$651
Health care (smoking)	$66	$416	$365	$209	$1,057
Labor market earnings (alcohol abuse/dependence)	$5,392	$2,300	$0	$42	$7,734
Property loss (alcohol abuse/dependence)	$10	$0	$19	$0	$28
Adjustment for deadweight cost of program	$0	$0	$0	($81)	($81)
Totals	$5,468	$2,870	$803	$248	$9,389

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

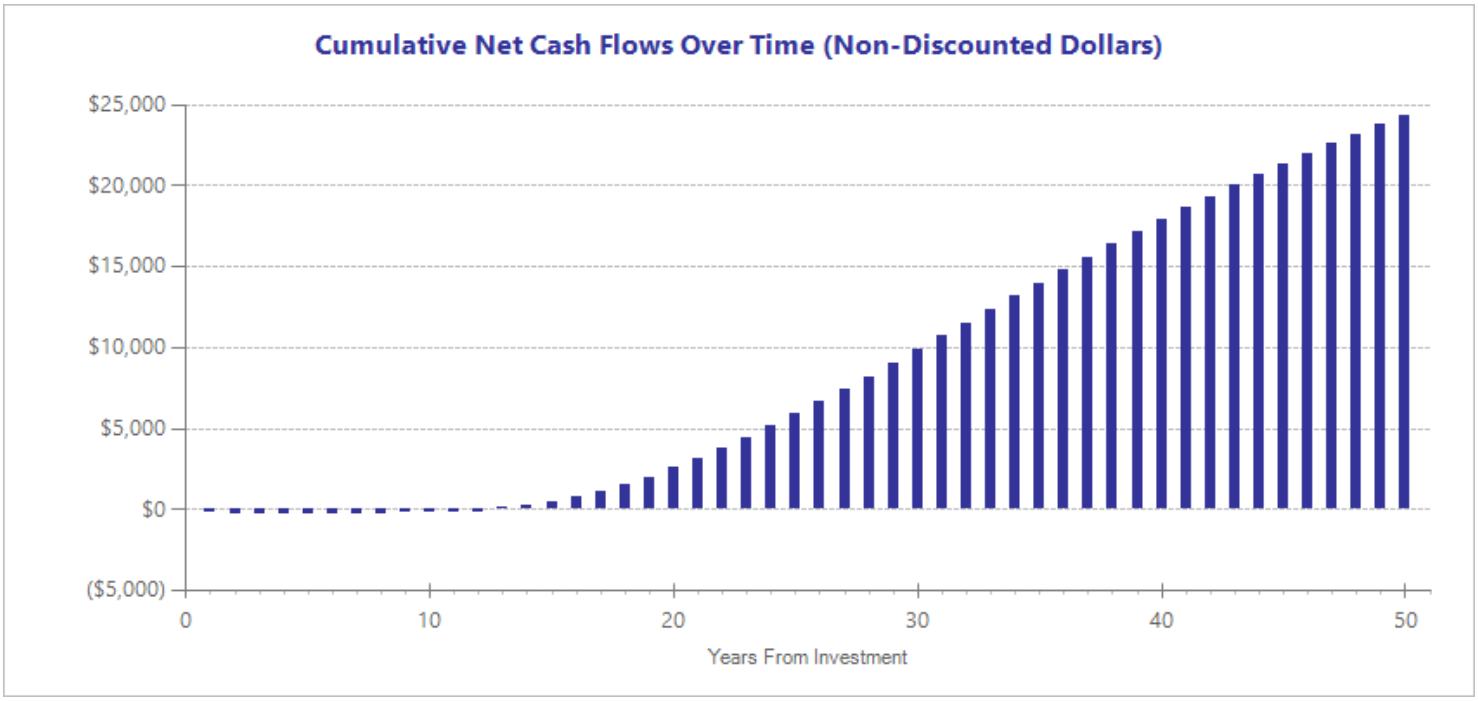
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$78	2	2011
Comparison costs	$0	1	2011

Summary statistics	
Present value of net program costs (in 2014 dollars)	($160)
Uncertainty (+ or - %)	10 %

Costs include teacher training, classroom supplies, district GBG coach training, subcontractor support, and travel costs. The estimate is based on training for 30 teachers and one coach over two years and a cumulative 3,375 students served in GBG classrooms over five years. Information for this costs estimate was provided by Jeanne Poduska, Sc D, American Institutes for Research.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	1	239	-0.108	0.582	-0.041	0.197	20	-0.041	0.197	30
High school graduation	Primary	1	175	0.162	0.174	0.062	0.119	20	0.062	0.119	20
Smoking before end of middle school	Primary	2	540	-0.231	0.002	-0.088	0.073	12	-0.088	0.073	22
Regular smoking	Primary	1	175	-0.593	0.001	-0.225	0.091	20	-0.225	0.091	30
Alcohol abuse or dependence	Primary	1	176	-0.609	0.001	-0.231	0.150	20	-0.231	0.150	30
Major depressive disorder	Primary	2	399	-0.178	0.160	-0.138	0.127	20	-0.072	0.156	22
Illicit drug abuse or dependence	Primary	1	175	-0.304	0.001	-0.115	0.090	20	-0.115	0.090	30
Anxiety disorder	Primary	2	399	-0.192	0.242	-0.192	0.165	20	-0.100	0.202	22
Externalizing behavior symptoms	Primary	1	425	-0.437	0.001	-0.437	0.084	12	-0.208	0.098	15
Suicide attempts	Primary	1	178	-0.195	0.279	-0.074	0.180	20	-0.074	0.180	25
Antisocial personality disorder	Primary	1	179	-0.295	0.032	-0.112	0.137	20	-0.112	0.137	25

Citations Used in the Meta-Analysis

Kellam, S.G., & Anthony, J.C. (1998). Targeting early antecedents to prevent tobacco smoking: Findings from an epidemiologically based randomized field trial. *American Journal of Public Health*, *88*(10), 1488-1495.

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Storr, C.L., Ialongo, N.S., Kellam, S.G., & Anthony, J.C. (2002). A randomized controlled trial of two primary school intervention strategies to prevent early onset tobacco smoking. *Drug and Alcohol Dependence*, *66*(1), 51-60.

Vuijk, P., van Lier, P.A.C., Crijnen, A.A.M., & Huizink, A.C. (2007). Testing sex-specific pathways from peer victimization to anxiety and depression in early adolescents through a randomized intervention trial. *Journal of Affective Disorders*, *100*(1-3), 221-226.

Wilcox, H.C., Kellam, S.G., Brown, C.H., Poduska, J.M., Ialongo, N.S., Wang, W., & Anthony, J.C. (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence*, *95*(Suppl. 1), S60-S73.

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Mentoring for students: community-based (with volunteer costs)

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In community-based mentoring programs, volunteer adults are paired with at-risk middle- and high-school students to meet weekly at locations of their choosing for relationship building and guidance. Community-based organizations provide the adult mentors with training and oversight. Mentors are expected to build relationships with mentees with the aim of improving a variety of outcomes including crime rates, academic achievement, and substance abuse. This analysis includes evaluation findings for (in no particular order) the Washington State Mentors program, Big Brothers Big Sisters, Across Ages, Sponsor-a-Scholar, Career Beginnings, the Buddy System, and other, locally developed programs.

Benefit-Cost Summary

Program benefits	
Participants	$7,026
Taxpayers	$3,710
Other (1)	$1,592
Other (2)	($1,290)
Total	$11,038
Costs	($3,241)
Benefits minus cost	$7,797

Summary statistics	
Benefit to cost ratio	$3.41
Benefits minus costs	$7,797
Probability of a positive net present value	60 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($387)	($1,210)	($194)	($1,791)
Labor market earnings (hs grad)	$7,156	$3,052	$3,557	$0	$13,765
Property loss (alcohol abuse/dependence)	$1	$0	$1	$0	$2
Health care (educational attainment)	($132)	$1,044	($756)	$525	$681
Adjustment for deadweight cost of program	$1	$1	$1	($1,622)	($1,619)
Totals	$7,026	$3,710	$1,592	($1,290)	$11,038

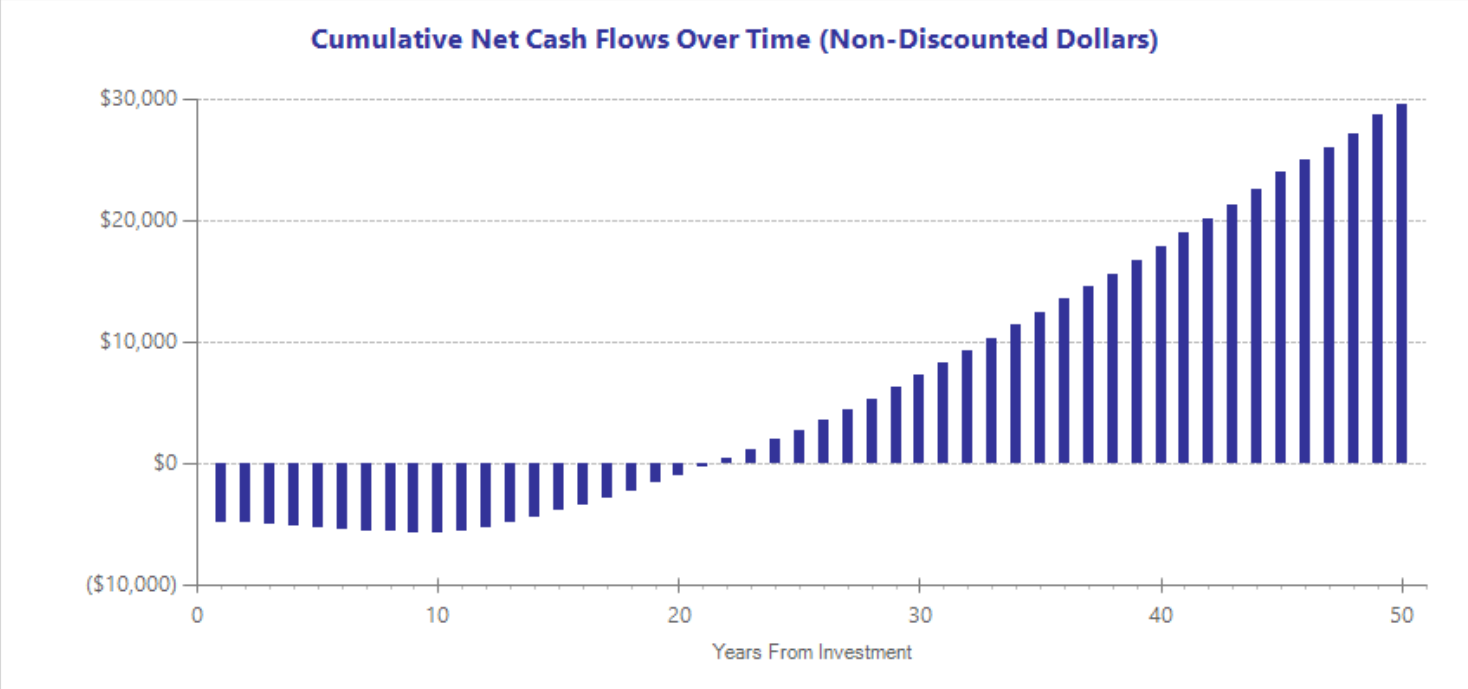
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,748	1	2005	Present value of net program costs (in 2014 dollars)	($3,241)
Comparison costs	$0	1	2005	Uncertainty (+ or - %)	10 %

Cost estimates are based on the Big Brothers/Big Sisters program as described in Herrera, C., Grossman, J.B., Kauh, T.J., Feldman, A.F., & McMaken, J. (2007). *Making a difference in schools: The Big Brothers Big Sisters school-based mentoring impact study.* Philadelphia, PA: Public/Private Ventures. The cost of volunteer time is based on the Office of Financial Management State Data Book average adult salary for 2012 multiplied by 1.44 to account for benefits. In the evaluated community-based programs, mentors meet with mentees, on average, once per week over the course of one year. Cost estimates exclude donated space.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	6	1877	0.093	0.025	0.082	0.041	14	0.082	0.041	24
High school graduation	Primary	2	758	0.293	0.040	0.101	0.143	18	0.101	0.143	18
Cannabis use before end of middle school	Primary	1	85	-0.179	0.412	-0.056	0.218	14	-0.081	0.225	15
Alcohol use before end of middle school	Primary	1	85	-0.295	0.178	-0.091	0.219	14	-0.037	0.224	15
Grade point average	Primary	5	1157	0.095	0.027	0.077	0.043	14	0.077	0.043	17
Smoking in high school	Primary	1	43	0.212	0.343	-0.212	0.223	17	-0.212	0.223	17
Illicit drug use in high school	Primary	1	43	-0.352	0.117	-0.352	0.224	14	-0.352	0.224	24
School attendance	Primary	4	920	0.022	0.879	-0.015	0.135	14	-0.015	0.135	14
Major depressive disorder	Primary	1	348	-0.140	0.066	-0.140	0.076	14	0.000	0.013	15
Illicit drug use before end of middle school	Primary	2	722	-0.390	0.004	-0.379	0.137	14	-0.379	0.137	24

Citations Used in the Meta-Analysis

Aseltine, R.H., Dupre, M., & Lamlein, P. (2000). Mentoring as a drug prevention strategy: An evaluation of across ages. *Adolescent and Family Health*, *1*(1), 11-20.

Buman, B., & Cain, R. (1991). *The impact of short term, work oriented mentoring on the employability of low-income youth.* (Available from Minneapolis Employment and Training Program, Minneapolis, MN).

Cave, G., & Quint, J. (1990). *Career Beginnings impact evaluation: Findings from a program for disadvantaged high school students.* New York: MDRC.

Fo, W.S.O., & O'Donnell, C.R. (1979). The Buddy System: Relationship and contingency conditions in a community intervention program for youth with nonprofessionals as behavior change agents. In J. S. Stumphauzer (Ed.), *Progress in behavior therapy with delinquents* (pp.302-316). Springfield, IL: Charles C. Thomas.

Grossman, J.B., & Tierney, J.P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters program. *Evaluation Review*, *22*(3), 403-426.

Hanlon, T.E., Bateman, R.W., Simon, B.D., O'Grady, K.E., & Carswell, S.B. (2002). An early community-based intervention for the prevention of substance abuse and other delinquent behavior. *Journal of Youth and Adolescence*, *31*(6), 459-471.

Harmon, M.A. (1996). Reducing drug use among pregnant and parenting teens: A program evaluation and theoretical examination. *Dissertation Abstracts International*, *56*(08), 3319A.

Herrera, C., DubBois, D.L., & Grossman, J.B. (2013). *The Role of Risk: Mentoring Experiences and Outcomes for Youth with Varying Risk Profiles.* Philadelphia, PA: Public/Private Ventures, MDRC.

Johnson, A. (1999). *Sponsor-a-Scholar: Long-term impacts of a youth mentoring program on student performance* (Document No. PR99-99). Princeton, NJ: Mathematica Policy Research.

O'Donnell, C.R., Lydgate, T., & Fo, W.S.O. (1979). The Buddy System: Review and follow-up. *Child Behavior Therapy*, 1, 161-169.

Mentoring for students: community-based (taxpayer costs only)

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In community-based mentoring programs, volunteer adults are paired with at-risk middle- and high-school students to meet weekly at locations of their choosing for relationship building and guidance. Community-based organizations provide the adult mentors with training and oversight. Mentors are expected to build relationships with mentees with the aim of improving a variety of outcomes including crime rates, academic achievement, and substance abuse. This analysis includes evaluation findings for (in no particular order) the Washington State Mentors program, Big Brothers Big Sisters, Across Ages, Sponsor-a-Scholar, Career Beginnings, the Buddy System, and other locally developed programs.

Benefit-Cost Summary

Program benefits	
Participants	$7,055
Taxpayers	$3,713
Other (1)	$1,598
Other (2)	($317)
Total	$12,048
Costs	($1,283)
Benefits minus cost	$10,764

Summary statistics	
Benefit to cost ratio	$9.39
Benefits minus costs	$10,764
Probability of a positive net present value	66 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($387)	($1,213)	($194)	($1,794)
Labor market earnings (hs grad)	$7,184	$3,064	$3,559	$0	$13,807
Property loss (alcohol abuse/dependence)	$1	$0	$1	$0	$2
Health care (educational attainment)	($130)	$1,036	($750)	$518	$674
Adjustment for deadweight cost of program	$1	$0	$0	($642)	($641)
Totals	$7,055	$3,713	$1,598	($317)	$12,048

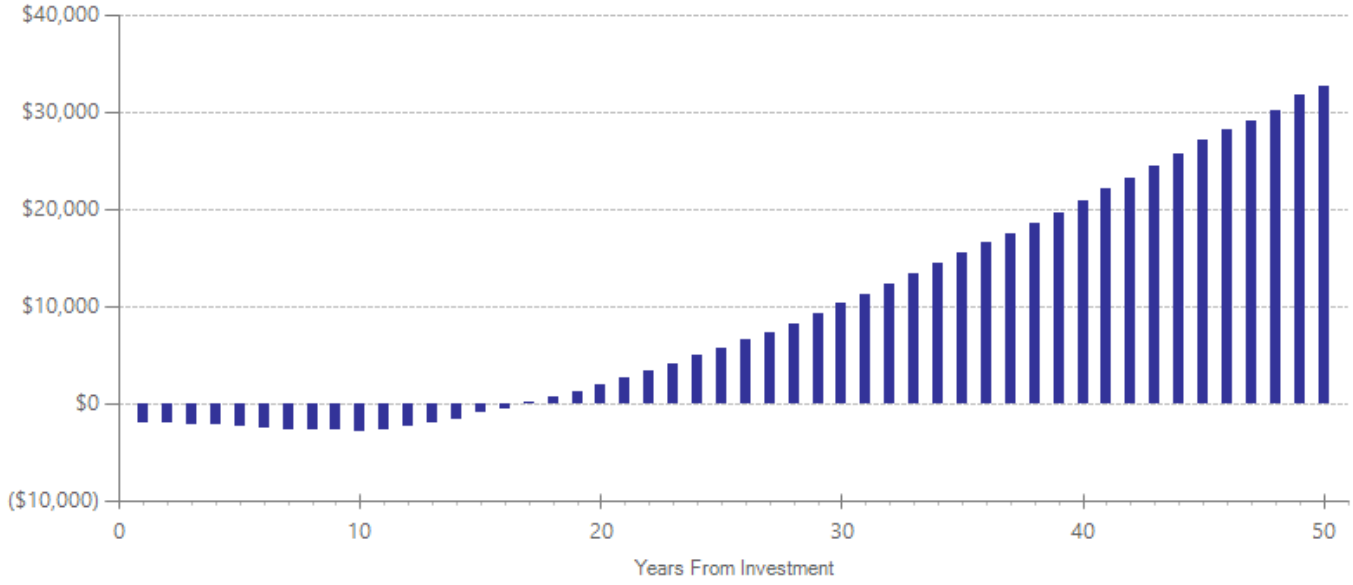
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,088	1	2005	Present value of net program costs (in 2014 dollars)	($1,283)
Comparison costs	$0	1	2005	Uncertainty (+ or - %)	10 %

Cost estimates are based on the Big Brothers/Big Sisters program as described in Herrera, C., Grossman, J.B., Kauh, T.J., Feldman, A.F., & McMaken, J. (2007). *Making a difference in schools: The Big Brothers Big Sisters school-based mentoring impact study.* Philadelphia, PA: Public/Private Ventures. Cost estimates exclude volunteer time and donated space.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	6	1877	0.093	0.025	0.082	0.041	14	0.082	0.041	24
High school graduation	Primary	2	758	0.293	0.040	0.101	0.143	18	0.101	0.143	18
Cannabis use before end of middle school	Primary	1	85	-0.179	0.412	-0.056	0.218	14	-0.081	0.225	15
Alcohol use before end of middle school	Primary	1	85	-0.295	0.178	-0.091	0.219	14	-0.037	0.224	15
Grade point average	Primary	5	1157	0.095	0.027	0.077	0.043	14	0.077	0.043	14
Smoking in high school	Primary	1	43	0.212	0.343	-0.212	0.223	17	-0.212	0.223	17
Illicit drug use in high school	Primary	1	43	-0.352	0.117	-0.352	0.224	14	-0.352	0.224	24
School attendance	Primary	4	920	0.022	0.879	-0.015	0.135	14	-0.015	0.135	14
Major depressive disorder	Primary	1	348	-0.140	0.066	-0.140	0.076	14	0.000	0.013	15
Illicit drug use before end of middle school	Primary	2	722	-0.390	0.004	-0.379	0.137	14	-0.379	0.137	24

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Buman, B., & Cain, R. (1991). *The impact of short term, work oriented mentoring on the employability of low-income youth.* (Available from Minneapolis Employment and Training Program, Minneapolis, MN).

Cave, G., & Quint, J. (1990). *Career Beginnings impact evaluation: Findings from a program for disadvantaged high school students.* New York: MDRC.

Fo, W.S.O., & O'Donnell, C.R. (1979). The Buddy System: Relationship and contingency conditions in a community intervention program for youth with nonprofessionals as behavior change agents. In J. S. Stumphauzer (Ed.), *Progress in behavior therapy with delinquents* (pp.302-316). Springfield, IL: Charles C. Thomas.

Grossman, J.B., & Tierney, J.P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters program. *Evaluation Review*, *22*(3), 403-426.

Hanlon, T.E., Bateman, R.W., Simon, B.D., O'Grady, K.E., & Carswell, S.B. (2002). An early community-based intervention for the prevention of substance abuse and other delinquent behavior. *Journal of Youth and Adolescence*, *31*(6), 459-471.

Harmon, M.A. (1996). Reducing drug use among pregnant and parenting teens: A program evaluation and theoretical examination. *Dissertation Abstracts International*, *56*(08), 3319A.

Herrera, C., DubBois, D.L., & Grossman, J.B. (2013). *The Role of Risk: Mentoring Experiences and Outcomes for Youth with Varying Risk Profiles.* Philadelphia, PA: Public/Private Ventures, MDRC.

Johnson, A. (1999). *Sponsor-a-Scholar: Long-term impacts of a youth mentoring program on student performance* (Document No. PR99-99). Princeton, NJ: Mathematica Policy Research.

O'Donnell, C.R., Lydgate, T., & Fo, W.S.O. (1979). The Buddy System: Review and follow-up. *Child Behavior Therapy*, 1, 161-169.

Mentoring for students: school-based (with volunteer costs)

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In school-based mentoring programs, mentors and students meet weekly at school for one-to-one relationship building and guidance. Mentors are adult volunteers, school staff, or high school students. Community-based organizations coordinate with school staff and provide mentors with training and oversight. The programs included in this analysis are (in no particular order) the national Student Mentoring Program, Big Brothers Big Sisters, Project CHANCE, SMILE, and other, locally developed programs.

Benefit-Cost Summary

Program benefits	
Participants	$14,712
Taxpayers	$8,926
Other (1)	$5,831
Other (2)	$351
Total	$29,819
Costs	($1,816)
Benefits minus cost	$28,003

Summary statistics	
Benefit to cost ratio	$16.42
Benefits minus costs	$28,003
Probability of a positive net present value	68 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$58	$181	$29	$268
Labor market earnings (hs grad)	$17,215	$7,343	$8,513	$0	$33,071
Labor market earnings (test scores)	($2,193)	($935)	($1,081)	$0	($4,210)
Health care (educational attainment)	($310)	$2,460	($1,782)	$1,236	$1,604
Adjustment for deadweight cost of program	$0	$0	$0	($914)	($915)
Totals	$14,712	$8,926	$5,831	$351	$29,819

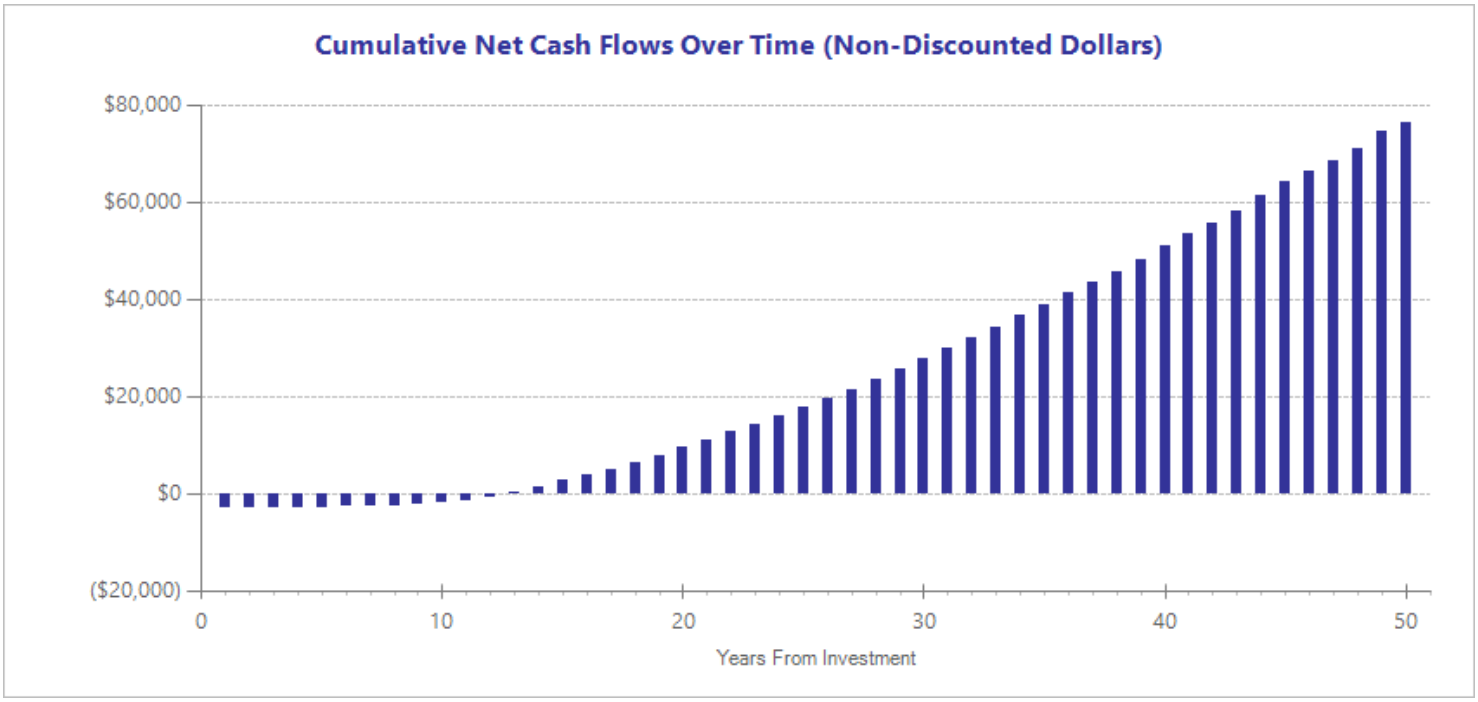
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,539	1	2005	Present value of net program costs (in 2014 dollars)	($1,816)
Comparison costs	$0	1	2005	Uncertainty (+ or - %)	10 %

Cost estimates are based on the Big Brothers/Big Sisters program as described in Herrera, C., Grossman, J.B., Kauh, T.J., Feldman, A.F., & McMaken, J. (2007). *Making a difference in schools: The Big Brothers Big Sisters school-based mentoring impact study.* Philadelphia, PA: Public/Private Ventures. The cost of volunteer time is based on the Office of Financial Management State Data Book average adult salary for 2012 multiplied by 1.44 to account for benefits. In the evaluated school-based programs, mentors meet with mentees, on average, once per week during the school year. Approximately half of the mentors in the evaluated programs were high school students and were not included in the volunteer cost estimates. Cost estimates exclude donated space.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	2	1694	0.013	0.787	-0.013	0.049	14	-0.013	0.049	24
High school graduation	Primary	1	66	0.689	0.029	0.262	0.316	18	0.262	0.316	18
Illicit drug use before end of middle school	Primary	1	531	0.109	0.321	0.109	0.110	14	0.109	0.110	24
Grade point average	Primary	5	2009	0.026	0.410	0.024	0.032	14	0.024	0.032	14
School attendance	Primary	4	1771	0.121	0.063	0.073	0.038	14	0.073	0.038	14
Office discipline referrals	Primary	2	547	-0.509	0.137	-0.255	0.124	14	-0.255	0.124	24
Test scores	Primary	1	1163	-0.034	0.501	-0.034	0.050	14	-0.030	0.055	17

Citations Used in the Meta-Analysis

Bernstein, L., Rappaport, C.D., Olsho, L., Hunt, D., Levin, M. (with Dyous, C., . . . Rhodes, W.) (2009). *Impact evaluation of the U.S. Department of Education's Student Mentoring Program: Final report.* Washington, DC : National Center for Education Evaluation and Regional Assistance.

Converse, N., & Lignugaris-Kraft, B. (2008). Evaluation of a school-based mentoring program for at-risk middle school youth. *Remedial and Special Education*, *30*(1), 33-46.

DeSocio, J., VanCura, M., Nelson, L.A., Hewitt, G., Kitzman, H., & Cole, R. (2007). Engaging truant adolescents: Results from a multifaceted intervention pilot. *Preventing School Failure*, *51*(3), 3-9.

Flaherty, B.P. (1985). An experiment in mentoring for high school students assigned to basic courses. *Dissertation Abstracts International*, *46*(02), 352A.

Herrera, C., Grossman, J.B., Kauh, T.J., & McMaken, J. (2011). Mentoring in schools: An impact study of Big Brothers Big Sisters school-based mentoring. *Child Development*, *82*(1), 346-361.

Karcher, M.J. (2008). The study of mentoring in the learning environment (SMILE): A randomized evaluation of the effectiveness of school-based mentoring. *Prevention Science*, *9*(2), 99-113.

Mentoring for students: school-based (taxpayer costs only)

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In school-based mentoring programs, mentors and students meet weekly at school for one-to-one relationship building and guidance. Mentors are adult volunteers, school staff, or high school students. Community-based organizations coordinate with school staff and provide mentors with training and oversight. The programs included in this analysis are (in no particular order) the national Student Mentoring Program, Big Brothers Big Sisters, Project CHANCE, SMILE, and other locally developed programs.

Benefit-Cost Summary

Program benefits	
Participants	$14,666
Taxpayers	$8,873
Other (1)	$5,815
Other (2)	$668
Total	$30,022
Costs	($1,163)
Benefits minus cost	$28,858

Summary statistics	
Benefit to cost ratio	$25.80
Benefits minus costs	$28,858
Probability of a positive net present value	70 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$58	$180	$29	$266
Labor market earnings (hs grad)	$17,171	$7,324	$8,486	$0	$32,980
Labor market earnings (test scores)	($2,199)	($938)	($1,087)	$0	($4,224)
Health care (educational attainment)	($307)	$2,428	($1,764)	$1,219	$1,577
Adjustment for deadweight cost of program	$1	$1	$1	($581)	($578)
Totals	$14,666	$8,873	$5,815	$668	$30,022

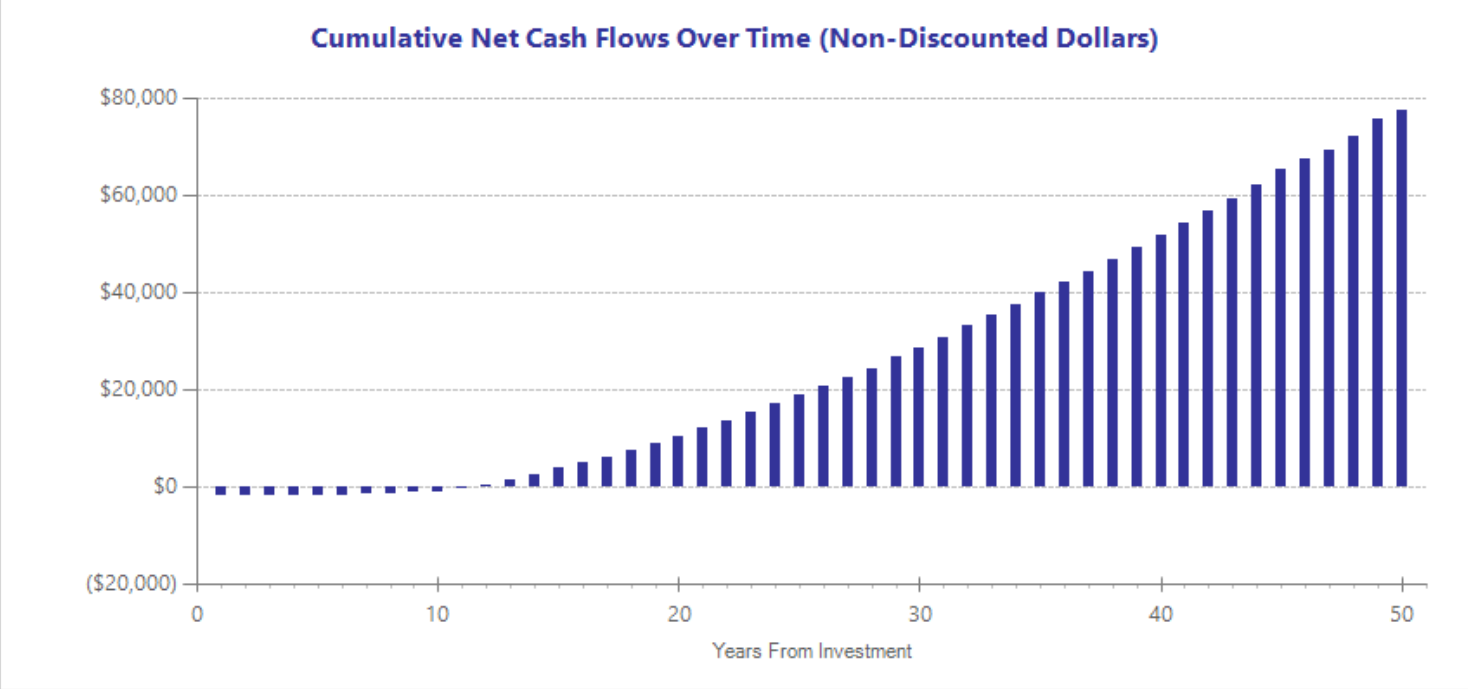
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$987	1	2005	Present value of net program costs (in 2014 dollars)	($1,163)
Comparison costs	$0	1	2005	Uncertainty (+ or - %)	10 %

Cost estimates are based on the Big Brothers/Big Sisters program as described in Herrera, C., Grossman, J.B., Kauh, T.J., Feldman, A.F., & McMaken, J. (2007). *Making a difference in schools: The Big Brothers Big Sisters school-based mentoring impact study.* Philadelphia, PA: Public/Private Ventures. Cost estimates exclude volunteer time and donated space.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	2	1694	0.013	0.787	-0.013	0.049	14	-0.013	0.049	24
High school graduation	Primary	1	66	0.689	0.029	0.262	0.316	18	0.262	0.316	18
Illicit drug use before end of middle school	Primary	1	531	0.109	0.321	0.109	0.110	14	0.109	0.110	24
Grade point average	Primary	5	2009	0.026	0.410	0.024	0.032	14	0.024	0.032	14
School attendance	Primary	4	1771	0.121	0.063	0.073	0.038	14	0.073	0.038	14
Office discipline referrals	Primary	2	547	-0.509	0.137	-0.255	0.124	14	-0.255	0.124	24
Test scores	Primary	1	1163	-0.034	0.501	-0.034	0.050	14	-0.030	0.055	17

Citations Used in the Meta-Analysis

Bernstein, L., Rappaport, C.D., Olsho, L., Hunt, D., Levin, M. (with Dyous, C., . . . Rhodes, W.) (2009). *Impact evaluation of the U.S. Department of Education's Student Mentoring Program: Final report.* Washington, DC : National Center for Education Evaluation and Regional Assistance.

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Flaherty, B.P. (1985). An experiment in mentoring for high school students assigned to basic courses. *Dissertation Abstracts International*, *46*(02), 352A.

Herrera, C., Grossman, J.B., Kauh, T.J., & McMaken, J. (2011). Mentoring in schools: An impact study of Big Brothers Big Sisters school-based mentoring. *Child Development*, *82*(1), 346-361.

Karcher, M.J. (2008). The study of mentoring in the learning environment (SMILE): A randomized evaluation of the effectiveness of school-based mentoring. *Prevention Science*, *9*(2), 99-113.

Out-of-school-time tutoring by adults

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The out-of-school time tutoring programs included in this analysis provide one-on-one or small-group tutoring support to struggling students in English language arts and/or mathematics outside of the regular school day (usually after school). The evaluated tutoring programs provide, on average, about 40 hours of tutoring time to students each year. Tutors are typically specially trained adults (e.g. instructional aides and community volunteers) and receive approximately 10 hours of training.

Benefit-Cost Summary

Program benefits	
Participants	$2,615
Taxpayers	$1,229
Other (1)	$1,219
Other (2)	($411)
Total	$4,652
Costs	($930)
Benefits minus cost	$3,722

Summary statistics	
Benefit to cost ratio	$5.00
Benefits minus costs	$3,722
Probability of a positive net present value	90 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$2,628	$1,121	$1,297	$0	$5,046
Health care (educational attainment)	($14)	$108	($78)	$54	$71
Adjustment for deadweight cost of program	$0	$0	$0	($465)	($464)
Totals	$2,615	$1,229	$1,219	($411)	$4,652

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

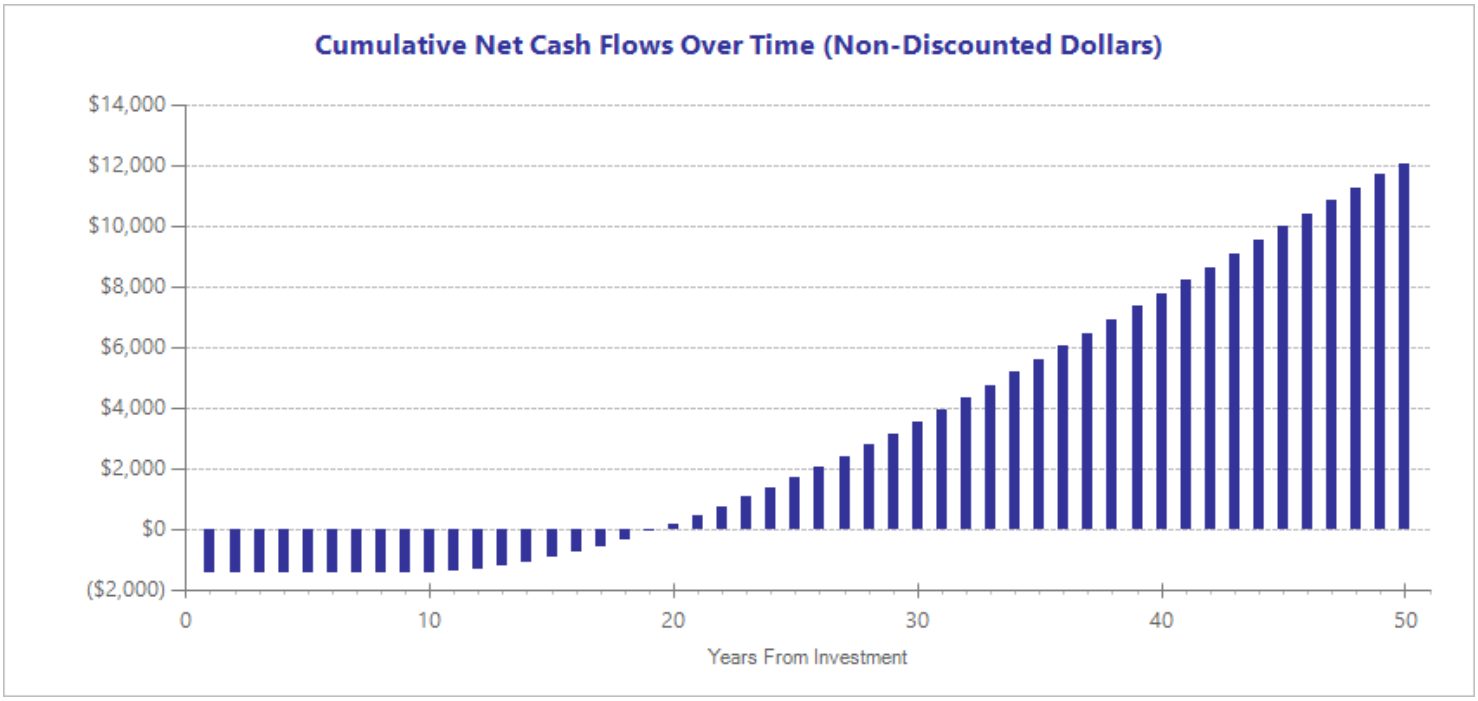
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$917	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($930)
Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, the average after-school tutoring program provides 40 hours of intervention and ten hours of training. The cost estimate assumes that adult instructional aides or community volunteers provide tutoring to groups of two students. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for instructional aides as reported by the Office of the Superintendent of Public Instruction and add per-student materials, supplies, and operating costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	6	6082	0.259	0.033	0.068	0.018	9	0.041	0.020	17

Citations Used in the Meta-Analysis

Baker, S., Gersten, R., & Keating, T. (2000). When less may be more: A 2-year longitudinal evaluation of a volunteer tutoring program requiring minimal training. *Reading Research Quarterly*, *35*(4), 494-519.

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Parents as tutors with teacher oversight

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In "parents as tutors" programs, teachers meet with parents in person and maintain contact over the phone to train and encourage parents to engage in planned, structured academic activities with their children at home, usually in the form of one-on-one reading tutoring. This review does not include the impact on children's academic achievement from parent involvement in general; only school-based programs are included.

Benefit-Cost Summary

Program benefits	
Participants	$1,848
Taxpayers	$870
Other (1)	$867
Other (2)	($361)
Total	$3,223
Costs	($805)
Benefits minus cost	$2,418

Summary statistics	
Benefit to cost ratio	$4.00
Benefits minus costs	$2,418
Probability of a positive net present value	56 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$1,857	$792	$922	$0	$3,571
Health care (educational attainment)	($10)	$78	($56)	$39	$51
Adjustment for deadweight cost of program	$1	$0	$0	($401)	($399)
Totals	$1,848	$870	$867	($361)	$3,223

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

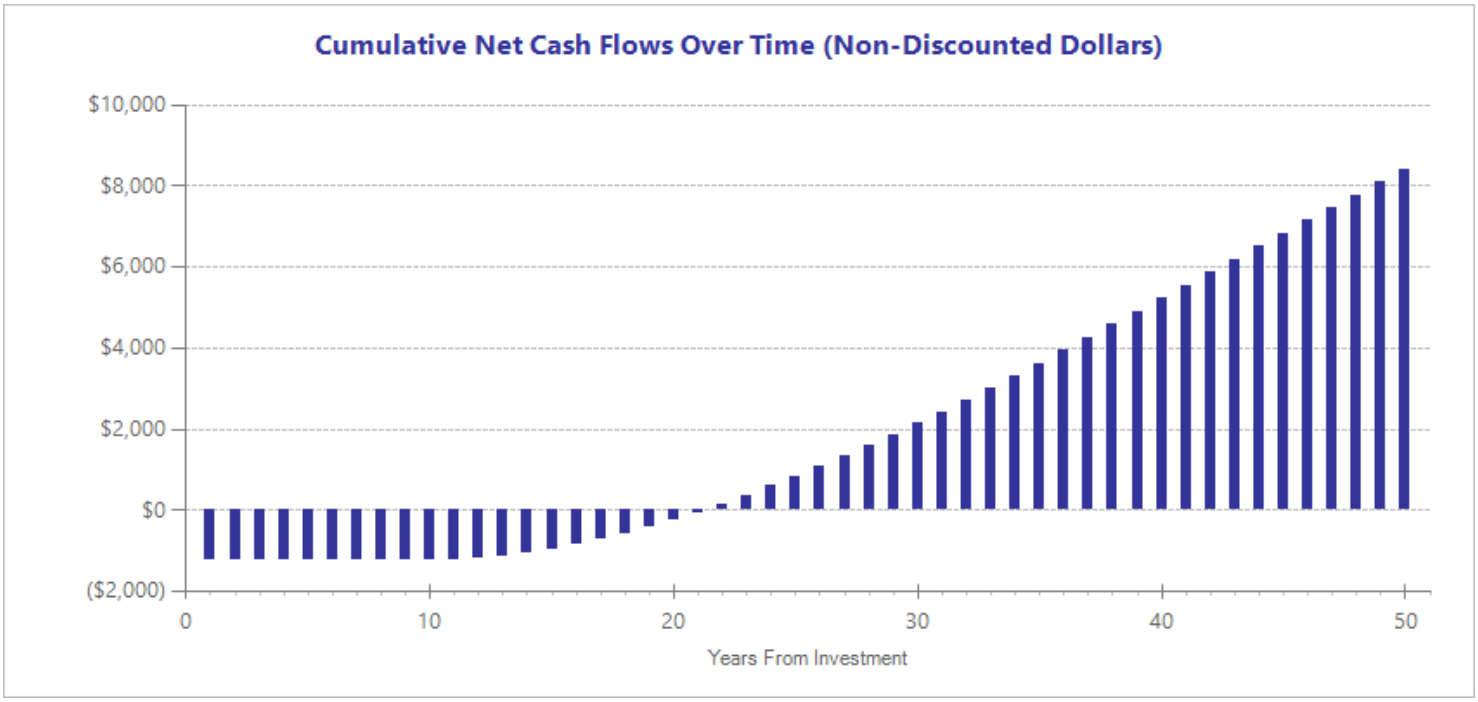
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$794	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($805)
Uncertainty (+ or - %)	10 %

To estimate costs, we assume that teachers spend an average of one-quarter hour per week to maintain contact with parents during the school year, based on the evaluations included in our analysis. We calculate the value of teacher time using average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	9	8302	0.167	0.149	0.050	0.116	9	0.030	0.128	17

Citations Used in the Meta-Analysis

Erion, R.J. (1994). Parent tutoring, reading instruction and curricular assessment. *Dissertation Abstracts International*, *54*(11), 4035A.

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Positive Action*

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

*This program was updated in August 2015. For the most up-to-date results, please visit http://www.wsipp.wa.gov/BenefitCost

Program Description: This school-based program is aimed at improving social and emotional learning and school climate. Positive Action consists of a detailed curriculum of approximately 140 short lessons throughout the school year in grades K-6 and 82 in grades 7-8. School climate components of the program reinforce the classroom curriculum and include training and professional development, resource coordination, program promotion, and incentives for positive behavior.

Benefit-Cost Summary

Program benefits	
Participants	$4,531
Taxpayers	$2,134
Other (1)	$2,458
Other (2)	($110)
Total	$9,014
Costs	$438
Benefits minus cost	$8,576

Summary statistics	
Benefit to cost ratio	$20.57
Benefits minus costs	$8,576
Probability of a positive net present value	87 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$31	$86	$16	$132
Labor market earnings (test scores)	$4,490	$1,915	$2,220	$0	$8,625
K-12 grade repetition	$0	$68	$0	$34	$102
Property loss (alcohol abuse/dependence)	$2	$0	$4	$0	$6
Health care (anxiety disorder)	$39	$120	$149	$60	$368
Adjustment for deadweight cost of program	$0	$0	$0	($219)	($219)
Totals	$4,531	$2,134	$2,458	($110)	$9,014

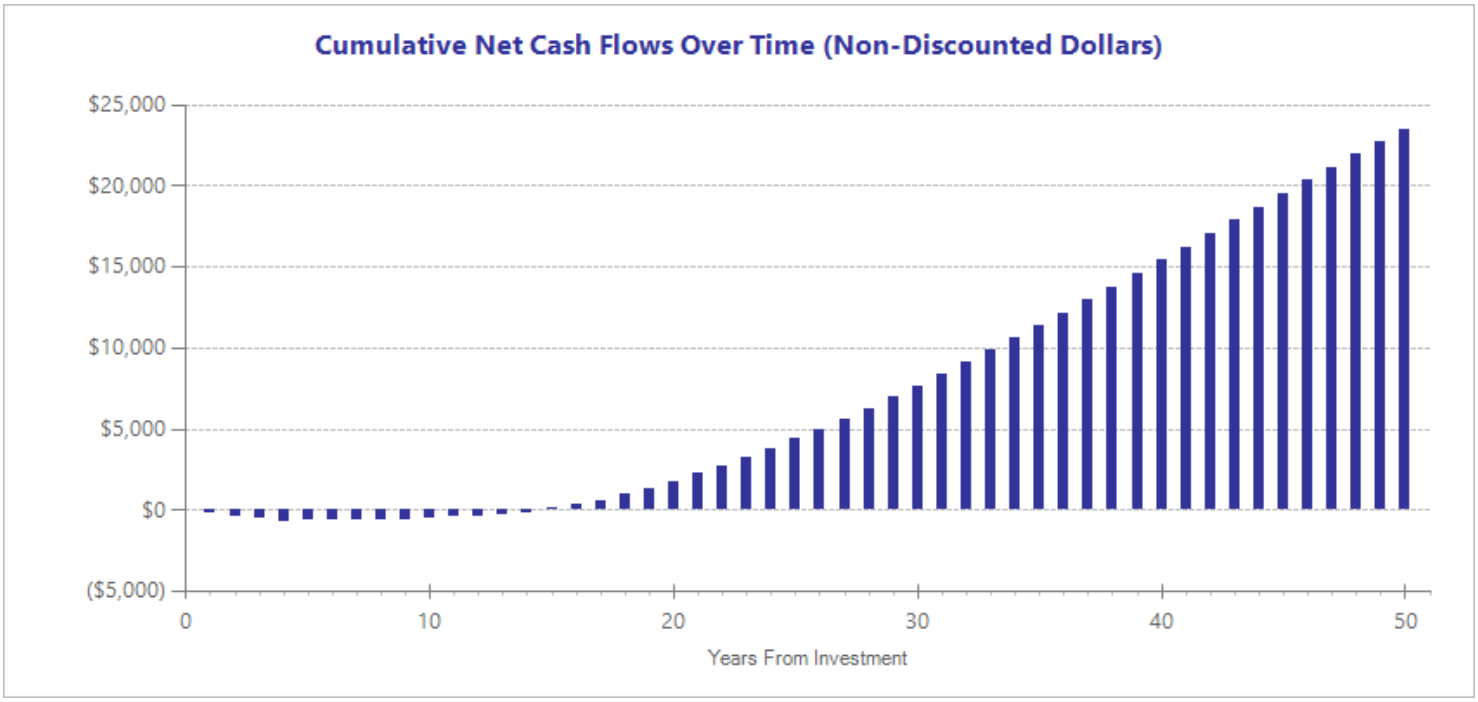
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$115	4	2014	Present value of net program costs (in 2014 dollars)	$438
Comparison costs	$0	4	2014	Uncertainty (+ or - %)	10 %

The studies that we reviewed evaluated schools after an average of 3.5 years of implementing the Positive Action program. The cost includes the price of the Positive Action program kit for the first year (average cost of $425 for 30 students); a refresher kit for each subsequent year (average of $102.11 for 30 students for 2.5 years); teacher training at an average of $3,100 for 30 teachers; and a Positive Action school-wide climate kit costing $450 for a school with 30 classrooms (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. To calculate a per-student annual cost, we use the average number of students per classroom in Washington's prototypical school formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Smoking before end of middle school	Primary	2	1171	-0.341	0.002	-0.130	0.108	11	-0.130	0.108	15
Alcohol use before end of middle school	Primary	2	1171	-0.414	0.001	-0.158	0.082	11	-0.158	0.082	15
Illicit drug use before end of middle school	Primary	1	976	-0.771	0.001	-0.293	0.203	11	-0.293	0.203	15
Cannabis use before end of middle school	Primary	1	195	-0.348	0.026	-0.132	0.157	15	-0.132	0.157	15
Initiation of sexual activity	Primary	1	976	-1.039	0.001	-0.395	0.214	11	-0.395	0.214	11
Test scores	Primary	5	13991	0.309	0.046	0.104	0.055	11	0.075	0.061	17
School attendance	Primary	4	17656	0.586	0.001	-0.208	0.038	10	-0.208	0.038	10
Suspensions/expulsions	Primary	4	10429	-0.224	0.042	-0.120	0.007	10	-0.120	0.007	10
K-12 grade repetition	Primary	1	5754	-0.307	0.001	-0.117	0.007	11	-0.117	0.007	17
Obesity	Primary	1	195	-0.210	0.047	-0.080	0.106	15	0.000	0.086	18
Major depressive disorder	Primary	1	195	-0.139	0.502	-0.053	0.206	15	0.000	0.059	16
Anxiety disorder	Primary	1	195	-0.257	0.213	-0.098	0.207	15	-0.045	0.025	16

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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Flay, B.R., & Allred, C.G. (2003). Long-term effects of the Positive Action program. *American Journal of Health Behavior*, *27*(Suppl. 1), S6-S21.

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Snyder, F., Vuchinich, S., Acock, A., Washburn, I., Beets, M., & Li, K. (2010). Impact of the Positive Action program on school-level indicators of academic achievement, absenteeism, and disciplinary outcomes: A matched-pair, cluster randomized, controlled trial. *Joural of Research on Educational Effectiveness*, 3(1), 26-55.

Second Step

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Second Step is a classroom-based social skills program for reducing aggressive behavior in elementary school-aged children. Second Step focuses on teaching social-emotional competencies and self-regulation skills including nonviolent response techniques. Lessons are taught by a trained teacher in a classroom setting.

Benefit-Cost Summary

Program benefits	
Participants	$45
Taxpayers	$19
Other (1)	$22
Other (2)	($59)
Total	$26
Costs	($119)
Benefits minus cost	($93)

Summary statistics	
Benefit to cost ratio	$0.22
Benefits minus costs	($93)
Probability of a positive net present value	34 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$0	$0	$0	$0
Labor market earnings (hs grad)	$43	$18	$22	$0	$83
Health care (disruptive behavior disorder)	$0	$0	$0	$0	($1)
Adjustment for deadweight cost of program	$2	$1	$1	($59)	($56)
Totals	$45	$19	$22	($59)	$26

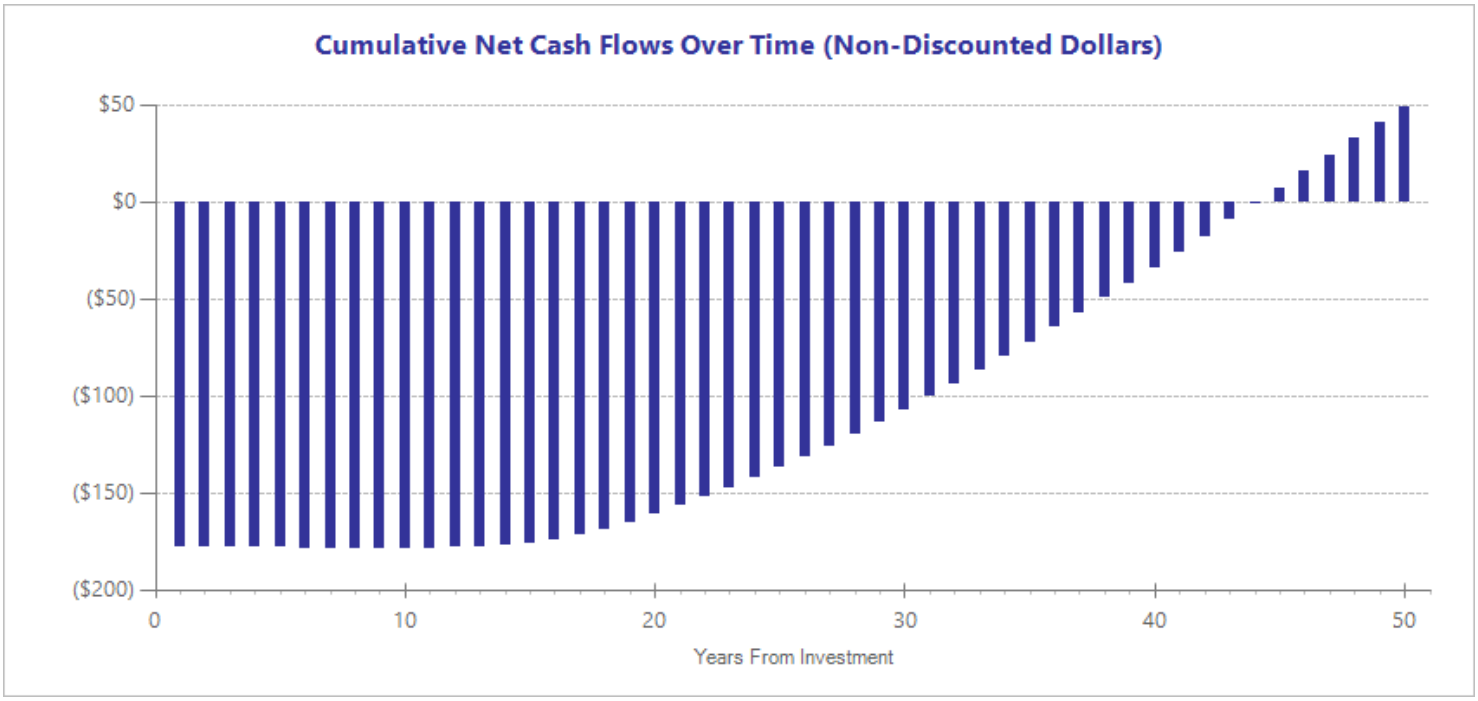
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$117	1	2013	Present value of net program costs (in 2014 dollars)	($119)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

To estimate costs, we assume that teachers spend an average of 15 hours teaching Second Step lessons (30 sessions of 30 minutes). Based on the evaluations included in our analysis, teachers also attend a two-day training. We calculate the value of teacher time using average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction. Our cost estimate also includes curriculum cost as reported by Second Step (https://store.cfchildren.org/committee-for-children-programs-and-materials-c36.aspx) and registration costs for teachers to attend two days of training (http://nrepp.samhsa.gov/ViewIntervention.aspx?id=66).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Suspensions/expulsions	Primary	1	1074	0.028	0.849	0.028	0.144	10	0.028	0.144	10
Internalizing symptoms	Primary	1	238	-0.255	0.205	-0.059	0.201	9	-0.043	0.158	11
Externalizing behavior symptoms	Primary	2	584	0.000	0.997	0.000	0.118	9	0.000	0.061	12
School attendance	Primary	1	1074	0.203	0.159	0.203	0.144	10	0.203	0.144	10

Citations Used in the Meta-Analysis

Grossman, D.C., Neckerman, H.J., Koepsell, T.D., Liu, P.Y., Asher, K.N., Beland, K, . . . Rivara, F.P. (1997). Effectiveness of a violence prevention curriculum among children in elementary school: A randomized controlled trial. *Journal of the American Medical Association*, *277*(20), 1605-1611.

Neace, W.P., & Muñoz, M.A. (2012). Pushing the boundaries of education: Evaluating the impact of Second Step®: A violence prevention curriculum with psychosocial and non-cognitive measures. *Child & Youth Services*, *33*(1), 46-69.

Schick, A., & Cierpka, M. (2005). Faustlos: Evaluation of a curriculum to prevent violence in elementary schools. *Applied and Preventive Psychology*, *11*(3), 157-165.

School-wide positive behavior programs*

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

*This program was updated in August 2015. For the most up-to-date results, please visit http://www.wsipp.wa.gov/BenefitCost

Program Description: The "positive behavior" programs in this analysis include School-wide Positive Behavioral Interventions and Supports (SPBIS) and the Responsive Classroom (note: the Positive Action program is examined separately). These programs encourage pro-social behavior for all students rather than using discipline to control problem behaviors among troubled students. School-wide behavior programs typically include a specialized curriculum, professional development for teachers and staff, and encouragement of and rewards for positive behaviors such as being on time and listening in the classroom.

Benefit-Cost Summary

Program benefits	
Participants	$9,074
Taxpayers	$4,286
Other (1)	$4,226
Other (2)	$85
Total	$17,671
Costs	($224)
Benefits minus cost	$17,447

Summary statistics	
Benefit to cost ratio	$78.84
Benefits minus costs	$17,447
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$9,123	$3,891	$4,511	$0	$17,526
Health care (educational attainment)	($50)	$394	($285)	$197	$257
Adjustment for deadweight cost of program	$0	$0	$0	($112)	($111)
Totals	$9,074	$4,286	$4,226	$85	$17,671

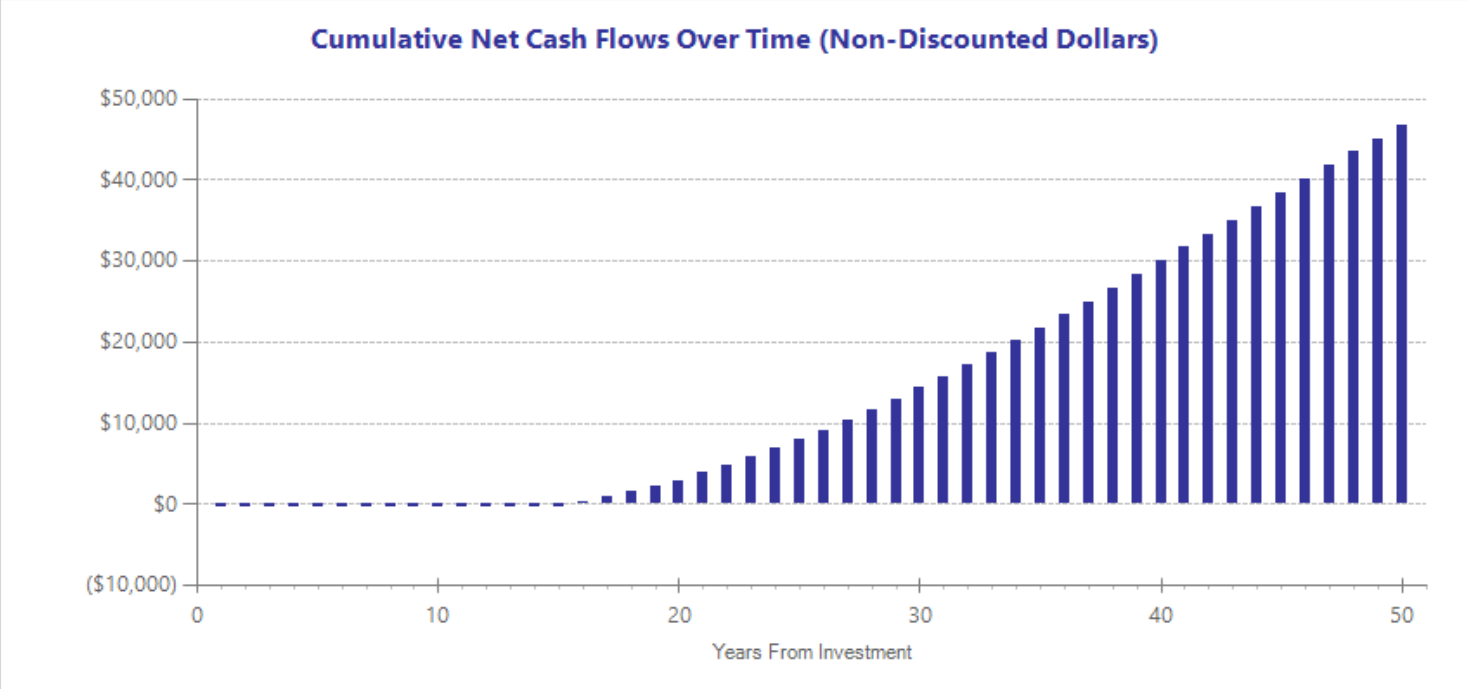
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$221	1	2013	Present value of net program costs (in 2014 dollars)	($224)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

Costs are WSIPP estimates based on a model for the total cost for implementation as described in Blonigen, B.A., Harbaugh, W.T., Singell, L.D., Horner, R.H., Irvin, L.K., & Smolkowski, K.S. (2008). Application of economic analysis to school-wide positive behavior support (SWPBS) programs. Journal of Positive Behavior Interventions, 10(1), 5-19. The cost estimate assumes district-wide implementation of a positive behavior program in ten schools. We calculate the value of staff time using average Washington State compensation costs (including benefits) as reported by the Office of the Superintendent of Public Instruction. To calculate a per-student annual cost, we use the average number of students per school in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	4	15294	0.264	0.001	0.264	0.055	7	0.158	0.061	17

Citations Used in the Meta-Analysis

Horner, R.H., Smolkowski, K., Todd, A.W., Esperanza, J., Sugai, G., Eber, L., & Nakasato, J. (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions*, 11(3), 133-144.

Rimm-Kaufman, S., Fan, X., Chiu Y., & You W. (2007). The contribution of the Responsive Classroom approach on children's academic achievement: Results from a three year longitudinal study. *Journal of School Psychology*, 45, 401-421.

Special literacy instruction for English language learner students

Benefit-cost estimates updated July 2015. Literature review updated July 2014.

Program Description: English-based literacy programs in these evaluations involve a structured, direct instruction approach to teaching reading to ELL students. Some programs include multimedia components such as computer-based instruction. These programs are compared with literacy instruction-as-usual.

Benefit-Cost Summary

Program benefits	
Participants	$3,947
Taxpayers	$1,949
Other (1)	$1,787
Other (2)	($21)
Total	$7,661
Costs	($295)
Benefits minus cost	$7,366

Summary statistics	
Benefit to cost ratio	$25.95
Benefits minus costs	$7,366
Probability of a positive net present value	80 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$3,979	$1,697	$1,969	$0	$7,645
Health care (educational attainment)	($32)	$252	($182)	$126	$164
Adjustment for deadweight cost of program	$0	$0	$0	($147)	($147)
Totals	$3,947	$1,949	$1,787	($21)	$7,661

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

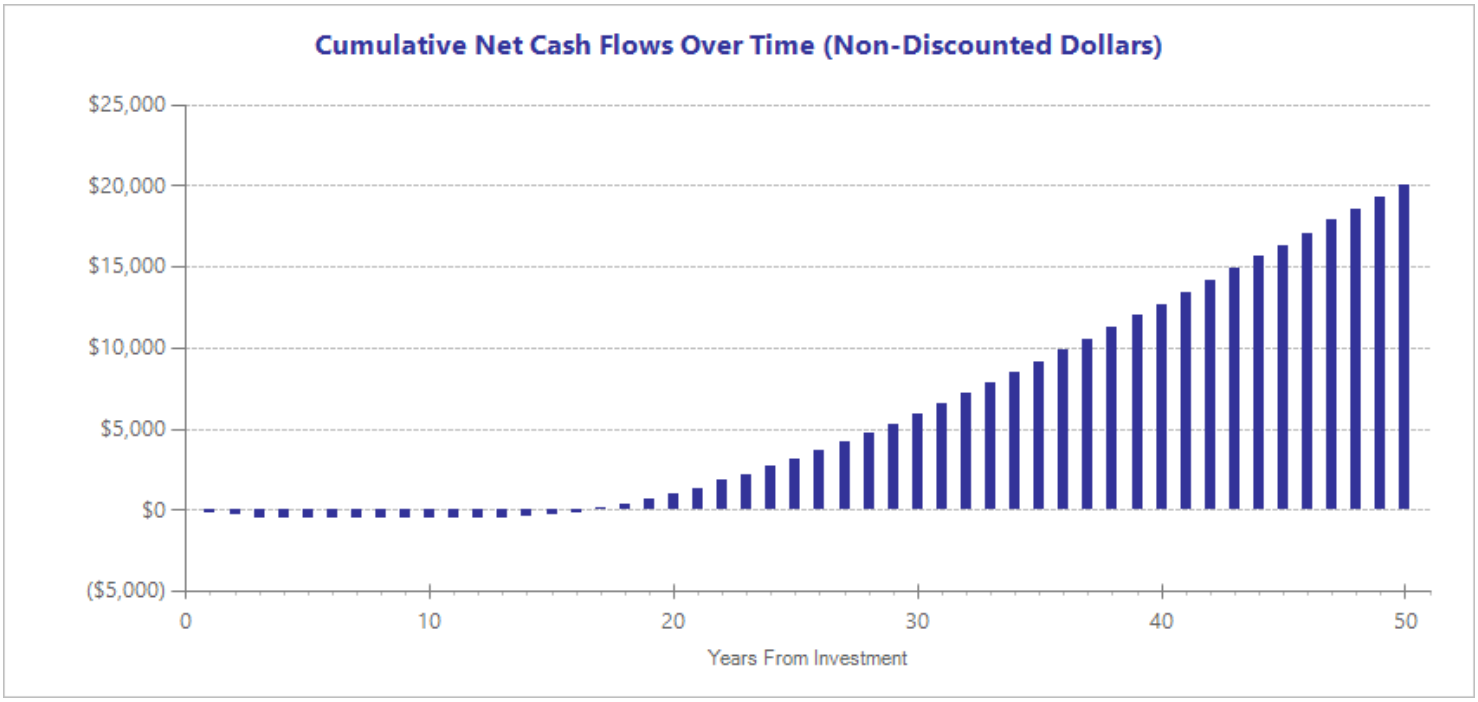
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$1,398	2.8	2009
Comparison costs	$1,298	2.8	2009

Summary statistics	
Present value of net program costs (in 2014 dollars)	($295)
Uncertainty (+ or - %)	20 %

The cost estimate reflects the sum of local, state, and federal dollars allocated per-student (averaged across Washington State school districts) for the 2008-09 school year. All students who qualify for the state Transitional Bilingual Instructional Program (TBIP) receive some form of services, so the comparison group cost is the same as the program group cost. Because specialized literacy programs may require supplemental materials and training, we added $100 to the cost estimate and increased the uncertainty around the cost estimate to 20 percent. Source for dollars allocated per-student: Office of Superintendent of Public Instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	6	423	0.306	0.001	0.147	0.069	7	0.069	0.076	17

Citations Used in the Meta-Analysis

Chambers, B., Cheung, A. C. K., Madden, N. A., Slavin, R. E., & Gifford, R. (2006). Achievement effects of embedded multimedia in a Success for All Reading program. *Journal of Educational Psychology*, *98*(1), 232-237.

Farver, J. A. M., Lonigan, C. J., & Eppe, S. (2009). Effective early literacy skill development for young Spanish-speaking English language learners: An experimental study of two methods. *Child Development*, *80*(3), 703-719.

Solari, E. J., & Gerber, M. M. (2008). Early comprehension instruction for Spanish-speaking English language learners: Teaching text-level reading skills while maintaining effects on word-level skills. *Learning Disabilities Research & Practice*, *23*(4), 155-168.

Troia, G. A. (2004). Migrant students with limited English proficiency: Can Fast ForWord Language make a difference in their language skills and academic achievement? *Remedial and Special Education*, *25*(6), 353-366.

Vaughn, S., Cirino, P. T., Tolar, T., Fletcher, J. M., Cardenas-Hagan, E., Carlson, C. D., & Francis, D. J. (2008). Long-term follow-up of Spanish and English interventions for first-grade English language learners at risk for reading problems. *Journal of Research on Educational Effectiveness*, *1*(3), 179-214.

Summer book programs: Multi-year intervention

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The summer book program included in this analysis provides 12 free books to elementary students each year for three consecutive years. The program focuses on early elementary students in 1st and 2nd grade. The main goal is to increase book access and voluntary summer reading for children from low-income families. Students self-select books each year at a book fair. The available books are screened for text difficulty.

Benefit-Cost Summary

Program benefits	
Participants	$5,986
Taxpayers	$2,809
Other (1)	$2,812
Other (2)	$14
Total	$11,621
Costs	($215)
Benefits minus cost	$11,406

Summary statistics	
Benefit to cost ratio	$54.13
Benefits minus costs	$11,406
Probability of a positive net present value	70 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$6,016	$2,566	$2,988	$0	$11,571
Health care (educational attainment)	($31)	$243	($176)	$121	$157
Adjustment for deadweight cost of program	$0	$0	$0	($107)	($107)
Totals	$5,986	$2,809	$2,812	$14	$11,621

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

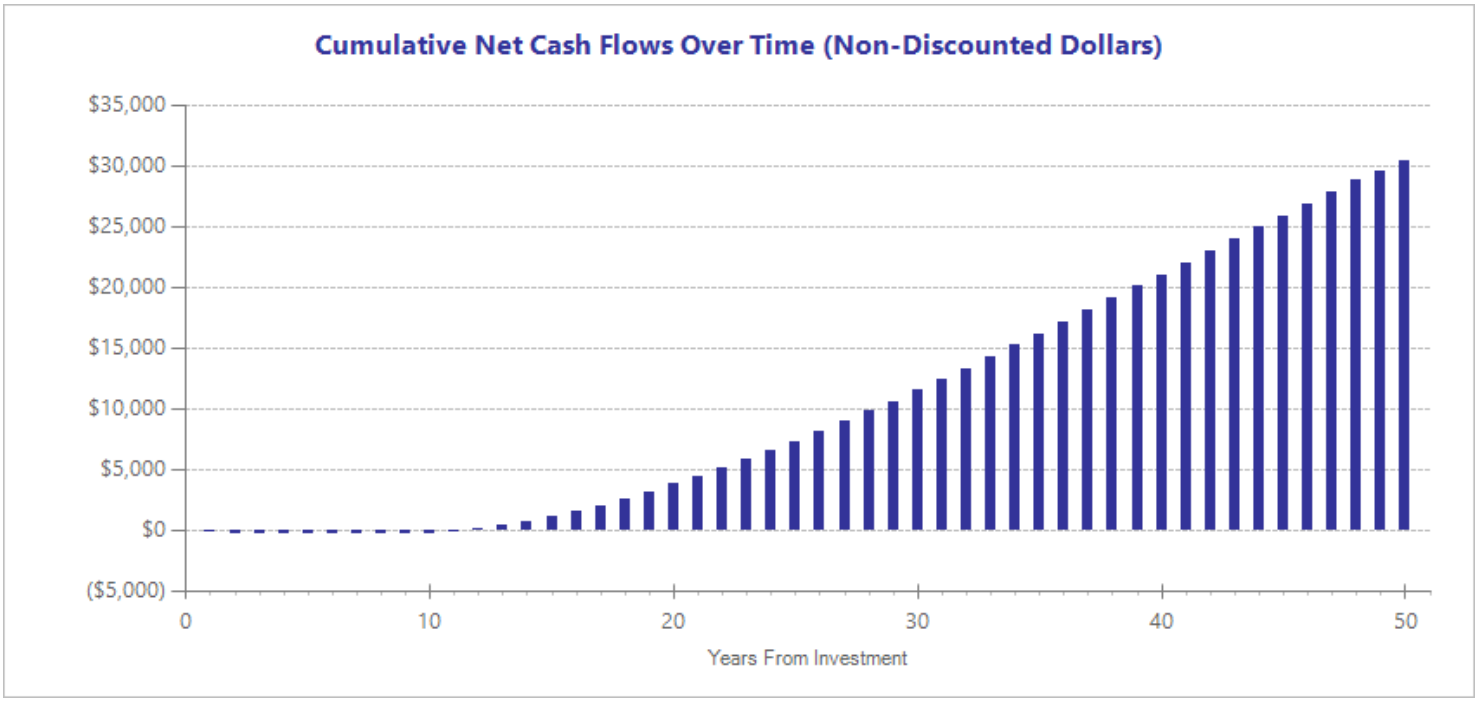
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$73	3	2013
Comparison costs	$0	3	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($215)
Uncertainty (+ or - %)	10 %

To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction to account for the time it takes teachers to administer the program. In addition to compensation, the estimate accounts for the cost of purchasing 12 books per student each year.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	1	852	0.138	0.346	0.138	0.147	10	0.091	0.162	17

Citations Used in the Meta-Analysis

Allington, R. L., McGill-Franzen, A., Camilli, G., Williams, L., Graff, J., Zeig, J., Zmach, C., ... Nowak, R. (2010). Addressing summer reading setback among economically disadvantaged elementary students. *Reading Psychology*, *31*(5), 411-27.

Summer book programs: One-year intervention

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The summer book programs included in this analysis provide free books to elementary school students. Generally, the goal of summer book programs is to increase print exposure, the number of books at home, and voluntary reading time. Books are matched to each student's reading level and area of interest and are mailed to students weekly over the summer break. The mailing includes a form for the student to complete after finishing the book. This analysis includes school-based programs only and does not include bookmobiles or public library programs. The studies included in this analysis measure the program's impact after one summer.

Benefit-Cost Summary

Program benefits	
Participants	$788
Taxpayers	$370
Other (1)	$370
Other (2)	($24)
Total	$1,504
Costs	($78)
Benefits minus cost	$1,426

Summary statistics	
Benefit to cost ratio	$19.26
Benefits minus costs	$1,426
Probability of a positive net present value	58 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$792	$338	$394	$0	$1,523
Health care (educational attainment)	($4)	$32	($23)	$15	$20
Adjustment for deadweight cost of program	$0	$0	$0	($39)	($39)
Totals	$788	$370	$370	($24)	$1,504

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

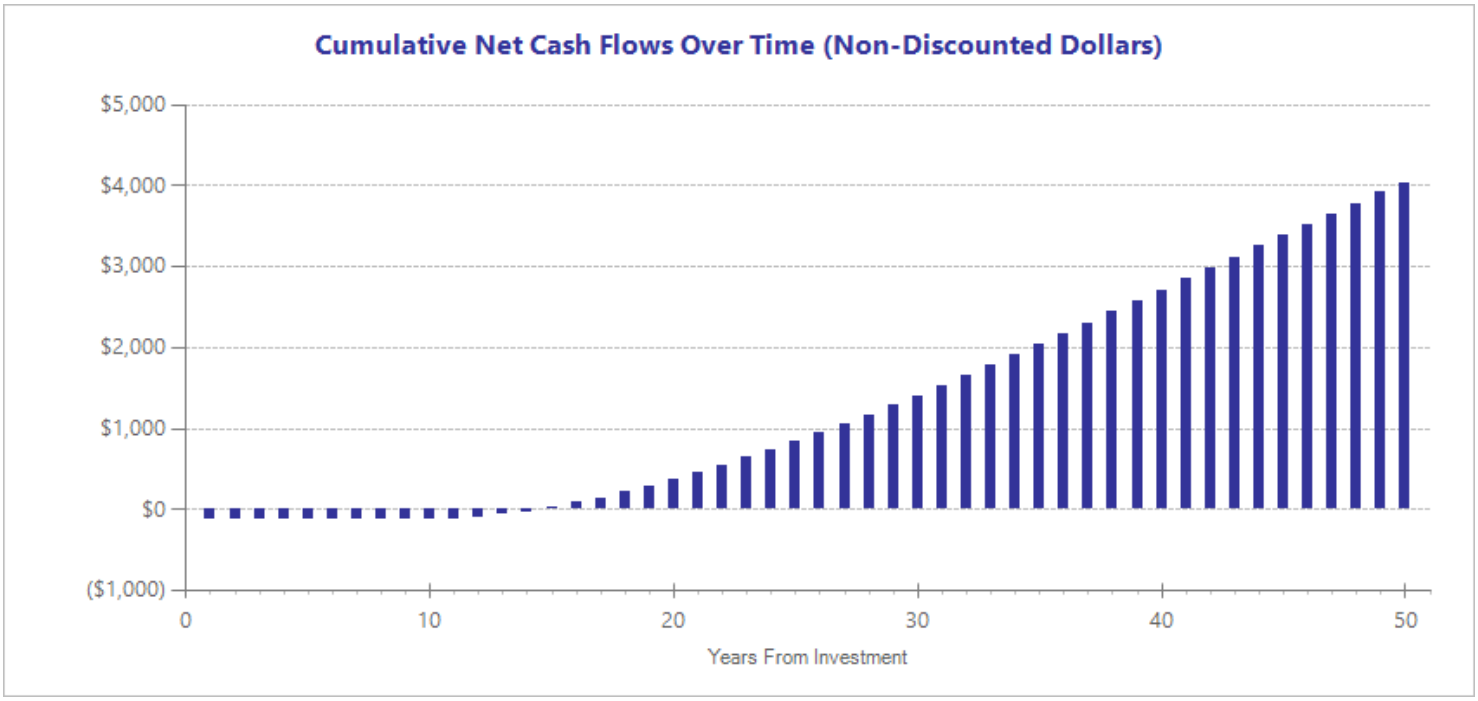
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$77	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($78)
Uncertainty (+ or - %)	10 %

To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction to account for the time it takes teachers to administer the program. In addition to compensation, the estimate accounts for the cost of purchasing and shipping ten books to each student's home.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	3	1018	0.020	0.680	0.019	0.048	10	0.013	0.053	17

Citations Used in the Meta-Analysis

Kim, J.S. (2007). The effects of a voluntary summer reading intervention on reading activities and reading achievement. *Journal of Educational Psychology*, *99*(3), 505-515.

Kim, J.S., & White, T.G. (2008). Scaffolding voluntary summer reading for children in grades 3 to 5: An experimental study. *Scientific Studies of Reading*, *12*(1), 1-23.

Wilkins, C., Gersten, R., Decker, L. E., Grunden, L., Brasiel, S., Brunnert, K., & Jayanthi, M. (2012). *Does a Summer Reading Program Based on Lexiles Affect Reading Comprehension?* Final Report (NCEE 2012-4006). Washington DC: U.S. Department of Education, National Center for Education Evaluation and Regional Assistance.

Summer book programs: One-year intervention, with additional support

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The summer book programs included in this analysis provide free books to students paired with additional reading support (e.g., lessons from certified teachers). Generally, the goal of summer book programs is to increase print exposure, the number of books at home, and voluntary reading time. Books are matched to each student's reading level and area of interest and are mailed to students weekly over the summer break. The mailing includes a form for the student to complete after finishing the book. This analysis includes school-based programs only and does not include bookmobiles or public library programs. The studies included in this analysis measure the program's impact after one summer.

Benefit-Cost Summary

Program benefits	
Participants	$449
Taxpayers	$211
Other (1)	$210
Other (2)	($48)
Total	$821
Costs	($116)
Benefits minus cost	$706

Summary statistics	
Benefit to cost ratio	$7.11
Benefits minus costs	$706
Probability of a positive net present value	57 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$452	$193	$223	$0	$867
Health care (educational attainment)	($2)	$18	($13)	$9	$12
Adjustment for deadweight cost of program	$0	$0	$0	($58)	($58)
Totals	$449	$211	$210	($48)	$821

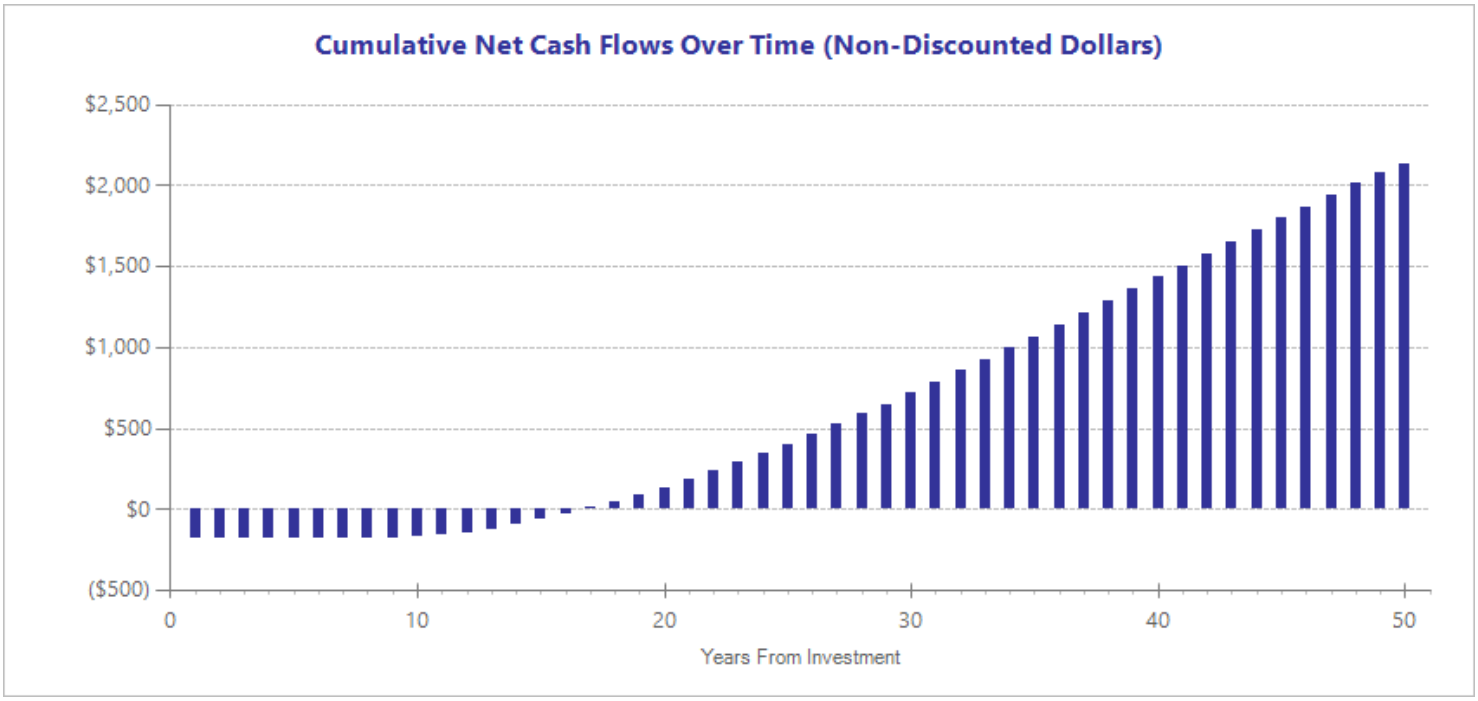
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$114	1	2013	Present value of net program costs (in 2014 dollars)	($116)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction to account for class time and time to administer the program. In addition to compensation, the estimate accounts for the cost of purchasing and shipping ten books to each student's home. The costs do not include parent time for involvement in reading instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	5	3340	0.021	0.419	0.010	0.026	10	0.007	0.029	17

Citations Used in the Meta-Analysis

Guryan, J., Kim, J.S., & Quinn, D.M. (2014). *Does reading during the summer build reading skills? Evidence from a randomized experiment in 463 classrooms* (NBER Working Paper 20689). Cambridge, MA: National Bureau of Economic Research.

Kim, J.S. (2006). Effects of a voluntary summer reading intervention on reading achievement: Results from a randomized field trial. *Educational Evaluation and Policy Analysis, 28*(4), 335-355.

Kim, J.S., & Guryan, J. (2010). The efficacy of a voluntary summer book reading intervention for low-income Latino children from language minority families. *Journal of Educational Psychology, 102*(1), 20-31.

Kim, J.S., & White, T.G. (2008). Scaffolding voluntary summer reading for children in grades 3 to 5: An experimental study. *Scientific Studies of Reading, 12*(1), 1-23.

Pagan, S. (2010). *Children reading for pleasure: Investigating predictors of reading achievement and the efficacy of a paired-reading intervention to foster children's literacy skills.* (Doctoral dissertation, Carleton University, 2010, UMI No. NR70556).

Summer learning programs: Academically focused

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: This analysis includes a variety of summer learning programs in which academic improvement is the main goal, often with a focus on remediation and/or prevention of summer learning loss. The programs encompass a range of models and include both community- and school-provided programs. Some programs offer services beyond academic support, such as enrichment and recreation. Based on the studies in this analysis, a typical program lasts about six weeks. This analysis excludes programs that focus on other goals such as general youth development or job training and programs that combine summer learning programs with additional support during the school year.

Benefit-Cost Summary

Program benefits	
Participants	$2,430
Taxpayers	$1,143
Other (1)	$1,132
Other (2)	($524)
Total	$4,181
Costs	($1,148)
Benefits minus cost	$3,033

Summary statistics	
Benefit to cost ratio	$3.64
Benefits minus costs	$3,033
Probability of a positive net present value	82 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$2,442	$1,042	$1,205	$0	$4,688
Health care (educational attainment)	($13)	$101	($73)	$51	$66
Adjustment for deadweight cost of program	$0	$0	$0	($574)	($574)
Totals	$2,430	$1,143	$1,132	($524)	$4,181

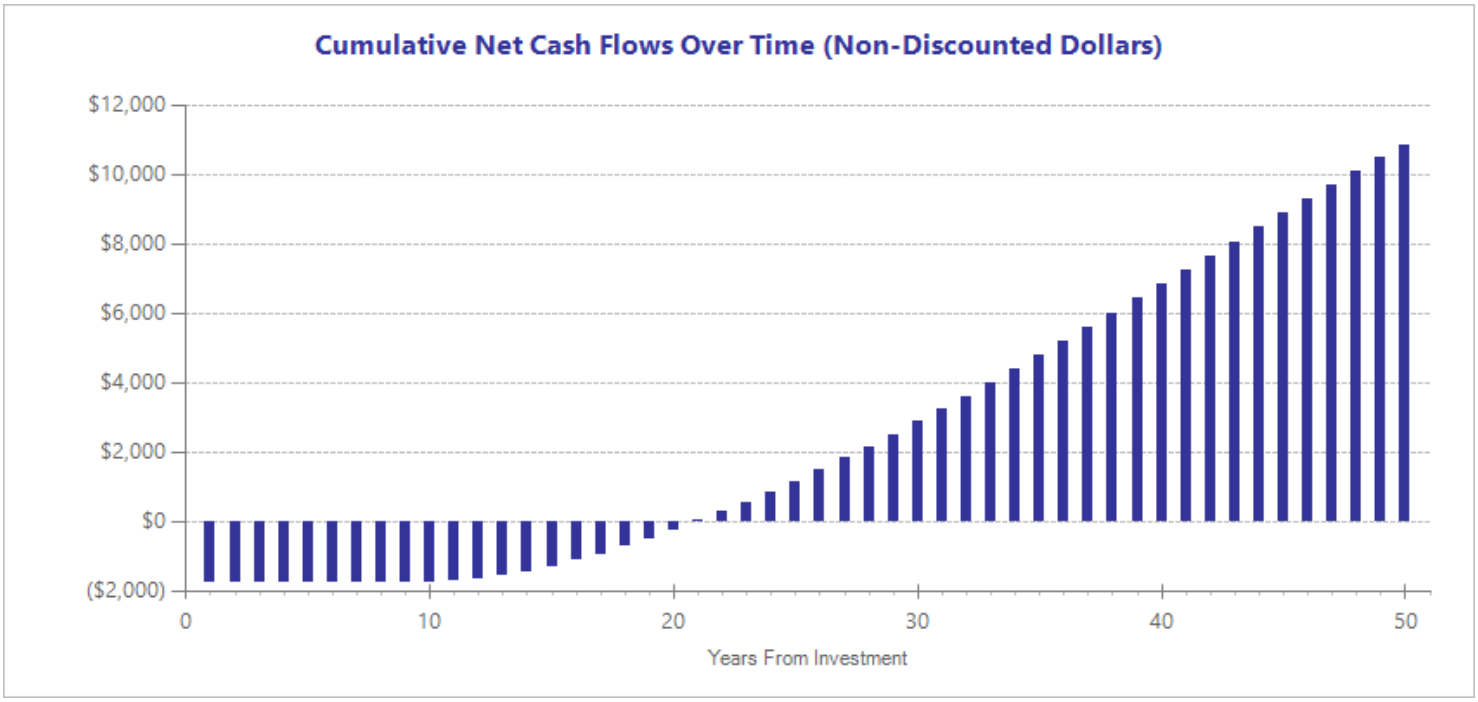
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,132	1	2013	Present value of net program costs (in 2014 dollars)	($1,148)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in this meta-analysis, the average summer program included 140 service hours and 40 hours of staff training/planning time. Teachers had, on average, 15 students in each class. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for K–8 teachers as reported by the Office of the Superintendent of Public Instruction, divided by the average number of students per class in the evaluated programs. We include per-student annual materials, supplies, and operating costs. The cost estimate provided here does not account for meals or transportation.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	13	46259	0.064	0.002	0.064	0.020	9	0.038	0.022	17

Citations Used in the Meta-Analysis

Borman, G.D., & Dowling, N. (2006). Longitudinal achievement effects of multiyear summer school: Evidence from the Teach Baltimore randomized field trial. *Educational Evaluation & Policy Analysis, 28*(1), 25-48.

Borman, G.D., Goetz, M. E., & Dowling, N.M. (2009). Halting the summer achievement slide: A randomized field trial of the KindergARTen summer camp. *Journal of Education for Students Placed at Risk, 14*(2), 133-147.

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Jacob, B.A., & Lefgren, L. (2004). Remedial education and student achievement: A regression-discontinuity analysis. *The Review of Economics and Statistics, 86*(1), 226-244.

Mariano, L.T., & Martorell, P. (2013). The academic effects of summer instruction and retention in New York City. *Educational Evaluation and Policy Analysis*, *35*(1), 96-117.

Matsudaira, J.D. (2008). Mandatory summer school and student achievement. *Journal of Econometrics*, *142*(2), 829-850.

Opalinski, G.B. (2006). *The effects of a middle school summer school program on the achievement of NCLB identified subgroups* (Doctoral dissertation, University of Oregon, 2006, UMI No. 3224110).

Schacter, J., & Jo, B. (2005). Learning when school is not in session: A reading summer day-camp intervention to improve the achievement of exiting first-grade students who are economically disadvantaged. *Journal of Research in Reading*, *28*(2), 158-169.

Zvoch, K., & Stevens, J. (2011). Summer school and summer learning: An examination of the short- and longer-term changes in student literacy. *Early Education & Development*, *22*(4), 649-675.

Zvoch, K., & Stevens, J. J. (2013). Summer school effects in a randomized field trial. *Early Childhood Research Quarterly*, *28*(1), 24-32.

Teacher professional development: Induction/mentoring

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Teacher induction programs typically assign an experienced teacher-mentor to new teachers in the first and second year of their careers. In more intensive programs, additional support includes professional development opportunities and structured collaboration time with other teachers at the school. The evaluations included in the meta-analysis examine more-intensive programs in comparison with less-intensive programs.

Benefit-Cost Summary

Program benefits	
Participants	$1,915
Taxpayers	$897
Other (1)	$893
Other (2)	$0
Total	$3,706
Costs	($75)
Benefits minus cost	$3,630

Summary statistics	
Benefit to cost ratio	$49.10
Benefits minus costs	$3,630
Probability of a positive net present value	63 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$1,925	$821	$949	$0	$3,694
Health care (educational attainment)	($10)	$76	($56)	$38	$48
Adjustment for deadweight cost of program	$0	$0	$0	($37)	($37)
Totals	$1,915	$897	$893	$0	$3,706

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

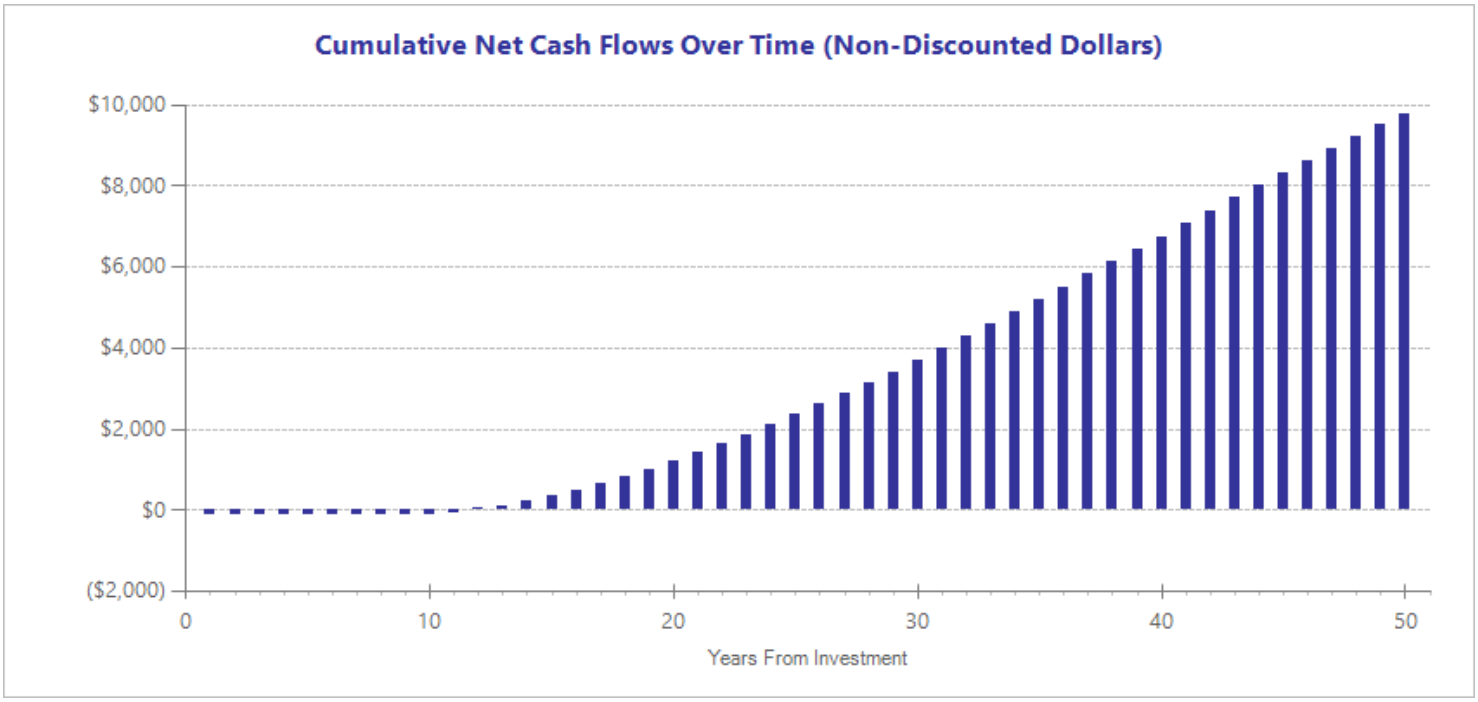
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$106	1	2013
Comparison costs	$29	1	2009

Summary statistics	
Present value of net program costs (in 2014 dollars)	($75)
Uncertainty (+ or - %)	20 %

The cost estimate for the treatment group—those receiving more intensive mentoring—is based on Washington State's per-first-year teacher allocation for the Beginning Educator Support Team (BEST) program in FY 2013. The cost estimate for the comparison group is the FY 2009 per-teacher allocation for the Teacher Assistance Program (TAP) in Washington State. Each of these estimates is divided by the number of students per classroom in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	4	1623	0.046	0.572	0.046	0.082	10	0.030	0.090	17

Citations Used in the Meta-Analysis

Glazerman, S., Isenberg, E., Dolfin, S., Bleeker, M., Johnson, A., Grider, M., . . . Ali, M. (2010). *Impacts of comprehensive teacher induction: Final results from a randomized controlled study.* Washington, DC: National Center for Education Evaluation and Regional Assistance.

Rockoff, J.E. (2008). *Does mentoring reduce turnover and improve skills of new employees? Evidence from teachers in New York City (Working Paper No. 13868).* Cambridge, MA: National Bureau of Economic Research.

Wechsler, M.E., Caspary, K., Humphrey, D.C., & Matsko, K.K. (2010). *Examining the effects of new teacher induction*. Menlo Park, CA: SRI International.

Teacher professional development: Not targeted

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Generally, professional development (PD) for K–12 teachers includes activities such as workshops, conferences, summer institutes, and time set aside during the school year for staff development. The evaluations included in this analysis examine impacts on student outcomes from providing more time and funding for teacher PD without directing how those resources are used.

Benefit-Cost Summary

Program benefits	
Participants	$1
Taxpayers	$0
Other (1)	$0
Other (2)	($44)
Total	($43)
Costs	($88)
Benefits minus cost	($130)

Summary statistics	
Benefit to cost ratio	($0.49)
Benefits minus costs	($130)
Probability of a positive net present value	28 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$0	$0	$0	$0	$1
Health care (educational attainment)	$0	$0	$0	$0	$0
Adjustment for deadweight cost of program	$0	$0	$0	($44)	($43)
Totals	$1	$0	$0	($44)	($43)

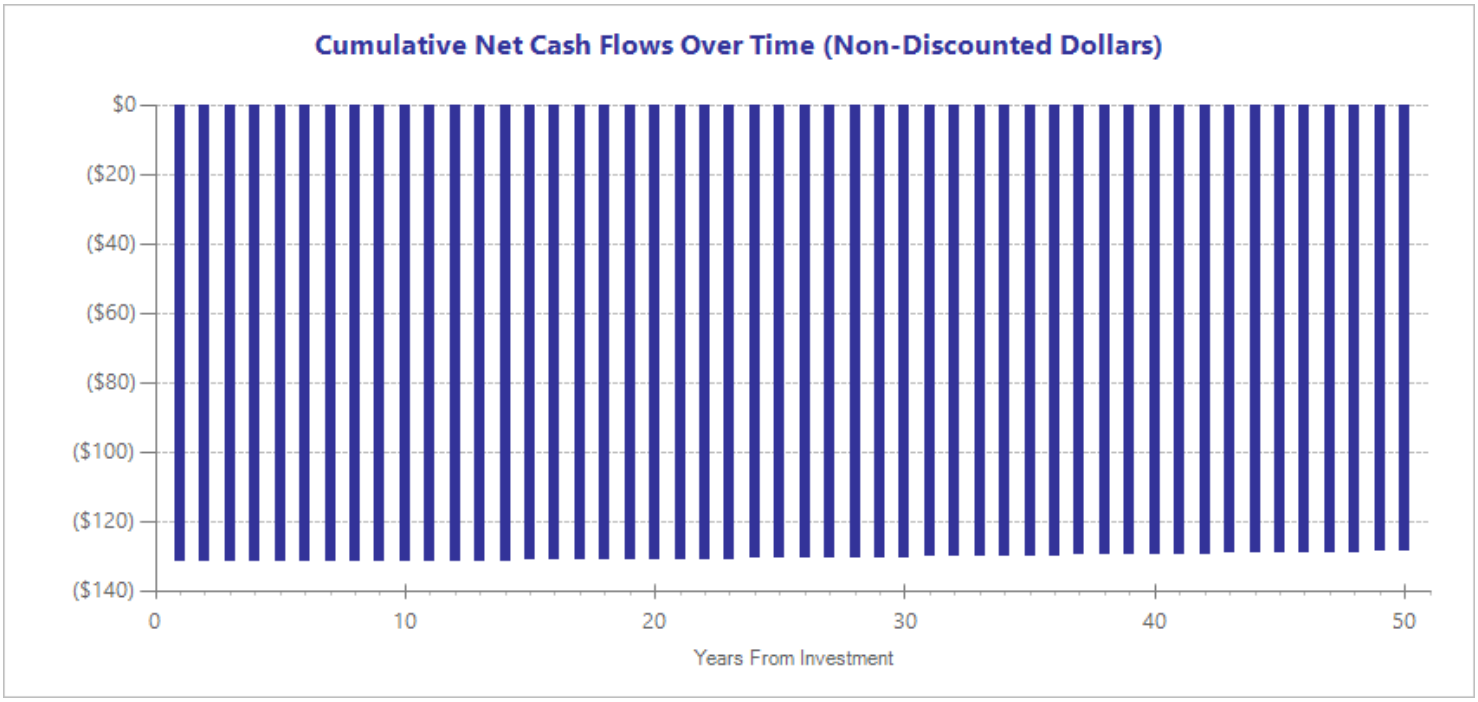
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$86	1	2013	Present value of net program costs (in 2014 dollars)	($88)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, teachers received an average of 20 additional hours of non-targeted professional development (PD) in comparison with the usual amount of PD time. We calculate the value of PD time using average teacher salaries (including benefits) in Washington State as reported by the Office of Superintendent of Public Instruction. To calculate a per-student annual cost, we divide compensation costs by the number of students per classroom in Washington's prototypical schools formula and add per-student materials, supplies, and operating costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	12	461497	0.000	0.999	0.000	0.002	10	0.000	0.002	17

Citations Used in the Meta-Analysis

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Teacher professional development: Online, targeted

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Generally, professional development (PD) for K–12 teachers includes activities such as workshops, conferences, summer institutes, and time set aside during the school year for staff development. Online, targeted PD provides online training and collaboration with a focus on improving teaching in a particular content areas (such as reading, math, and science) and/or a particular grade level.

Benefit-Cost Summary

Program benefits	
Participants	$877
Taxpayers	$411
Other (1)	$414
Other (2)	($130)
Total	$1,573
Costs	($295)
Benefits minus cost	$1,278

Summary statistics	
Benefit to cost ratio	$5.33
Benefits minus costs	$1,278
Probability of a positive net present value	59 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$880	$375	$439	$0	$1,694
Health care (educational attainment)	($4)	$35	($25)	$17	$22
Adjustment for deadweight cost of program	$2	$1	$1	($147)	($144)
Totals	$877	$411	$414	($130)	$1,573

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

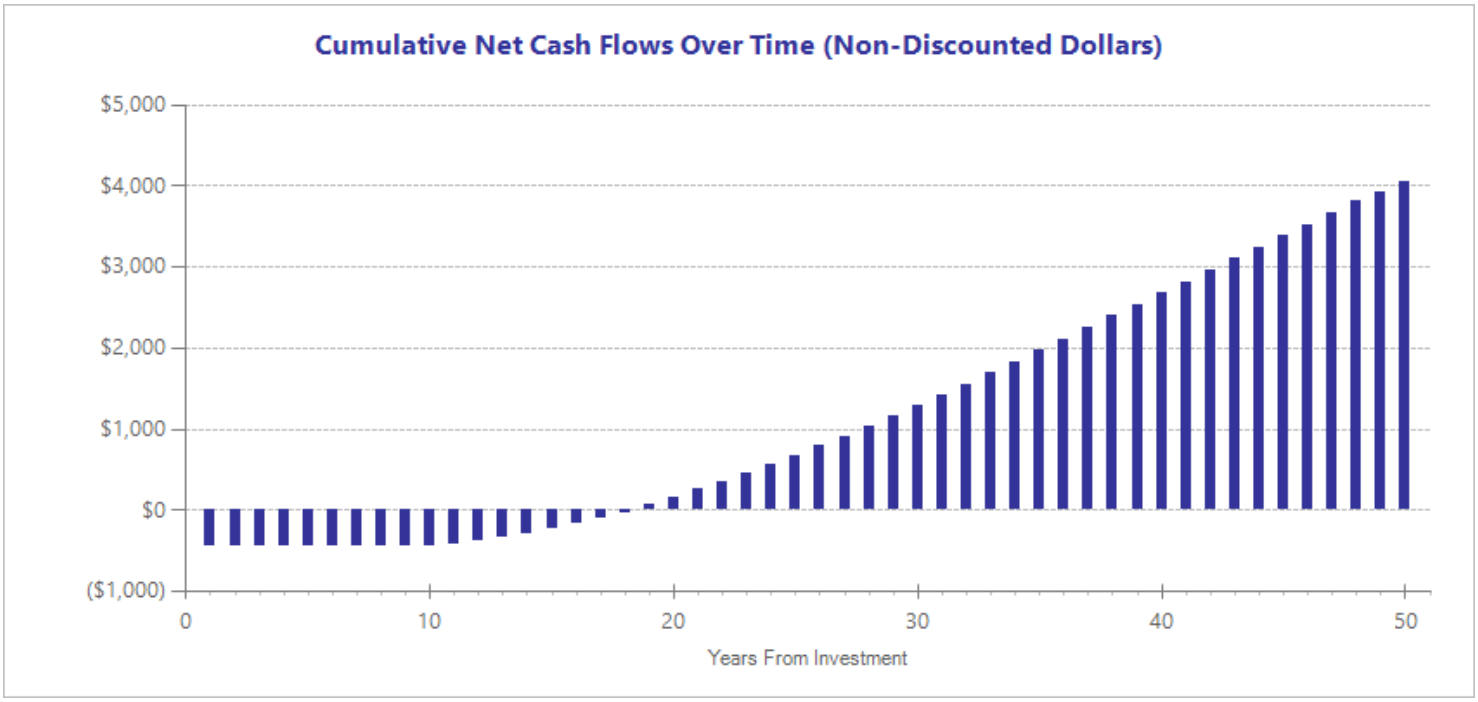
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$291	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($295)
Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, teachers received an average of 70 additional hours of targeted online professional development (PD) in comparison with the usual amount of PD time. We calculate the value of PD time using average teacher salaries (including benefits) in Washington State as reported by the Office of Superintendent of Public Instruction. To calculate a per-student annual cost, we divide compensation costs by the number of students per classroom in Washington's prototypical schools formula and add per-student materials, supplies, and operating costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	3	2245	0.142	0.002	0.020	0.037	10	0.013	0.041	17

Citations Used in the Meta-Analysis

Dash, S., de, Kramer, R.M., O'Dwyer, L.M., Masters, J., & Russell, M. (2012). Impact of online professional development on teacher quality and student achievement in fifth grade mathematics. *Journal of Research on Technology in Education*, *45*(1), 1-26.

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Teacher professional development: Targeted

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: Generally, professional development (PD) for K–12 teachers includes activities such as workshops, conferences, summer institutes, and time set aside during the school year for staff development. Targeted PD focuses on improving teaching in a particular content area (such as reading, math, and science) and/or a particular grade level. The specific types of PD evaluated and included in this meta-analysis are (in no particular order): Language Essentials for Teachers of Reading and Spelling (LETRS), Pacific Communities with High Performance in Literacy Development (Pacific CHILD), Cognitively Guided Instruction, Math & Science Partnerships (MSP), Teaching Science, Mathematics and Relevant Technologies (Teaching SMART), Discovery Model Schools Initiative, the Integrated Mathematics Assessment, Teaching Cases, and Metacognitive Analysis. Most forms of targeted PD include a summer institute in addition to training provided during the regular school year.

Benefit-Cost Summary

Program benefits	
Participants	$3,076
Taxpayers	$1,444
Other (1)	$1,433
Other (2)	($69)
Total	$5,884
Costs	($264)
Benefits minus cost	$5,620

Summary statistics	
Benefit to cost ratio	$22.32
Benefits minus costs	$5,620
Probability of a positive net present value	76 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$3,092	$1,319	$1,524	$0	$5,934
Health care (educational attainment)	($16)	$125	($91)	$63	$82
Adjustment for deadweight cost of program	$0	$0	$0	($132)	($132)
Totals	$3,076	$1,444	$1,433	($69)	$5,884

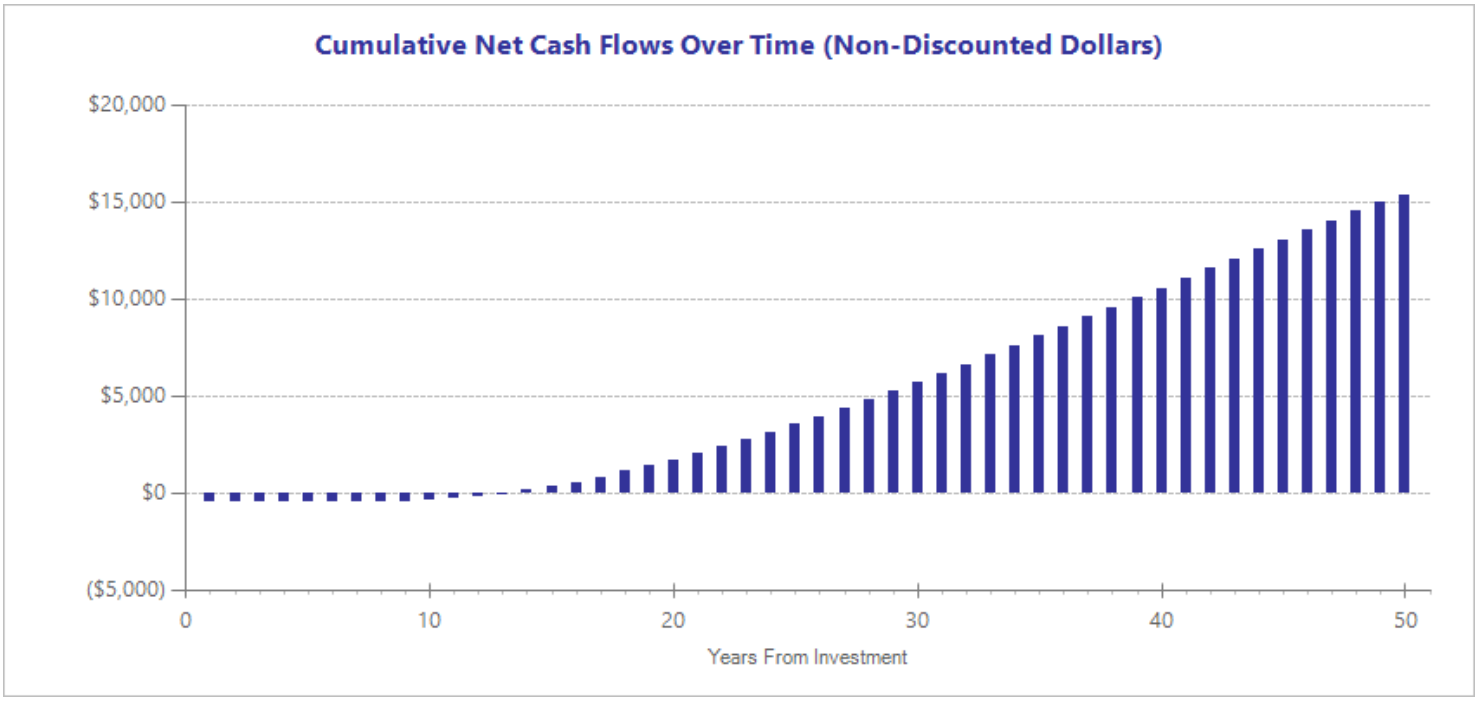
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$260	1	2013	Present value of net program costs (in 2014 dollars)	($264)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, teachers received an average of 63 additional hours of targeted professional development (PD) in comparison with the usual amount of PD time. We calculate the value of PD time using average teacher salaries (including benefits) in Washington State as reported by the Office of Superintendent of Public Instruction. To calculate a per-student annual cost, we divide compensation costs by the number of students per classroom in Washington's prototypical schools formula and add per-student materials, supplies, and operating costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	14	11652	0.198	0.008	0.071	0.055	10	0.047	0.061	17

Citations Used in the Meta-Analysis

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Saxe, G., Gearhart, M., & Nasir, N. (2001). Enhancing students' understanding of mathematics: A study of three contrasting approaches to professional support. *Journal of Mathematics Teacher Education*, *4*(1), 55-79.

Teacher professional development: Use of data to guide instruction

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: One form of teacher professional development (PD) involves training teachers how to use student academic assessment data to modify and improve instruction. This type of PD is usually paired with computer software that tracks and reports student assessment data to teachers. The specific types of assessments and software that have been evaluated and are included in this meta-analysis are (in no particular order): ISI (Individualized Student Instruction) using A2i software, Data-Driven District (3D), mCLASS/Acuity, Looking at Student Work, Formative Assessments of Student Thinking in Reading (FAST-R), and 4sight.

Benefit-Cost Summary

Program benefits	
Participants	$4,642
Taxpayers	$2,179
Other (1)	$2,168
Other (2)	$40
Total	$9,030
Costs	($109)
Benefits minus cost	$8,921

Summary statistics	
Benefit to cost ratio	$83.20
Benefits minus costs	$8,921
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$4,666	$1,990	$2,305	$0	$8,961
Health care (educational attainment)	($24)	$189	($137)	$95	$123
Adjustment for deadweight cost of program	$0	$0	$0	($54)	($54)
Totals	$4,642	$2,179	$2,168	$40	$9,030

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

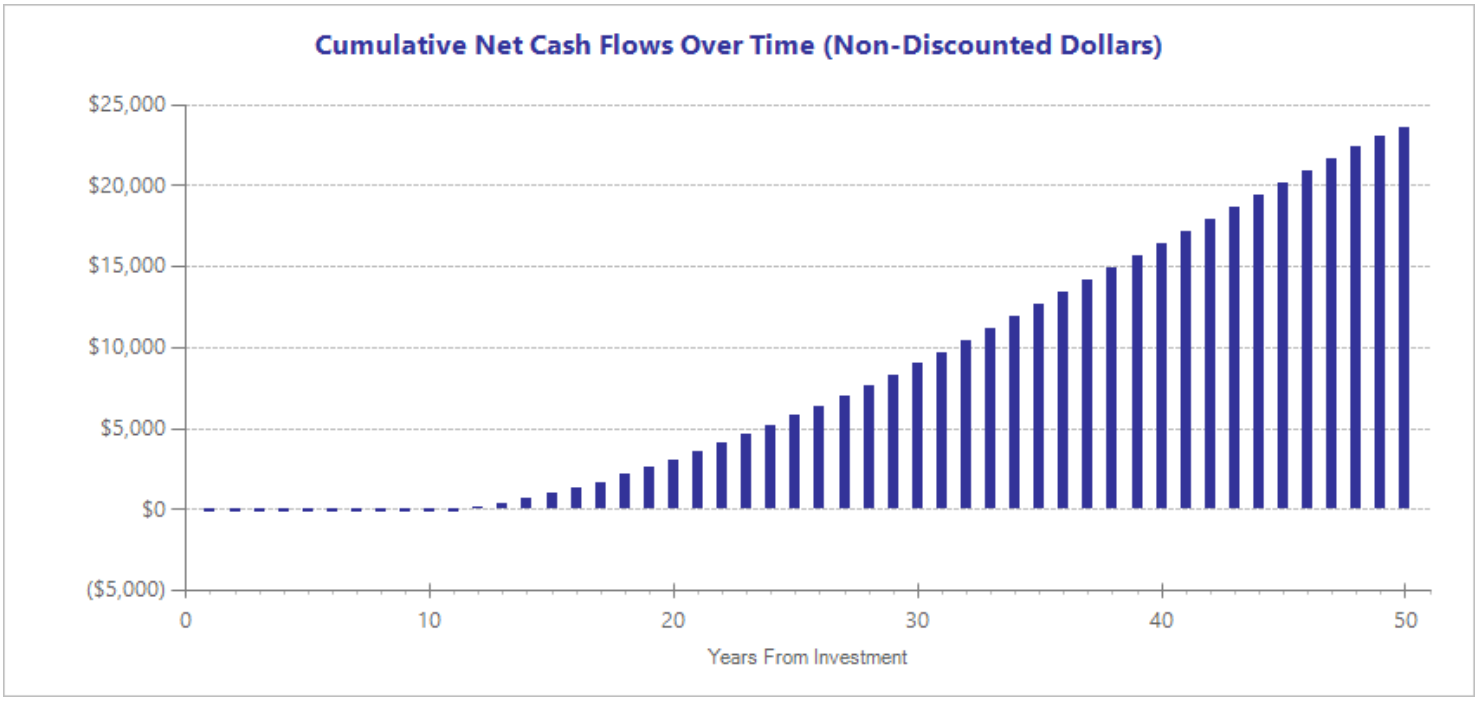
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$107	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($109)
Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, teachers received an average of 26 hours of training in how to use student assessment data to guide instruction. We calculate the value of PD time using average teacher salaries (including benefits) in Washington State as reported by the Office of Superintendent of Public Instruction. To calculate a per-student annual cost, we divide compensation costs by the number of students per classroom in Washington's prototypical schools formula and add per-student materials, supplies, and operating costs.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	10	10541	0.228	0.001	0.107	0.014	10	0.071	0.015	17

Citations Used in the Meta-Analysis

Al Otaiba, S., Connor, C.M., Folsom, J.S., Greulich, L., Meadows, J., & Li, Z. (2011). Assessment data-informed guidance to individualize kindergarten reading instruction: Findings from a cluster-randomized control field trial. *The Elementary School Journal*, *111*(4), 535-560.

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Tutoring: By adults for English language learner students

Benefit-cost estimates updated July 2015. Literature review updated July 2014.

Program Description: One-on-one tutoring programs for ELL students are analyzed, in comparison with instruction-as-usual for ELL students.

Benefit-Cost Summary

Program benefits	
Participants	$4,178
Taxpayers	$2,064
Other (1)	$1,901
Other (2)	($578)
Total	$7,566
Costs	($1,429)
Benefits minus cost	$6,137

Summary statistics	
Benefit to cost ratio	$5.29
Benefits minus costs	$6,137
Probability of a positive net present value	61 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$4,212	$1,796	$2,095	$0	$8,103
Health care (educational attainment)	($34)	$268	($194)	$134	$174
Adjustment for deadweight cost of program	$0	$0	$0	($713)	($712)
Totals	$4,178	$2,064	$1,901	($578)	$7,566

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

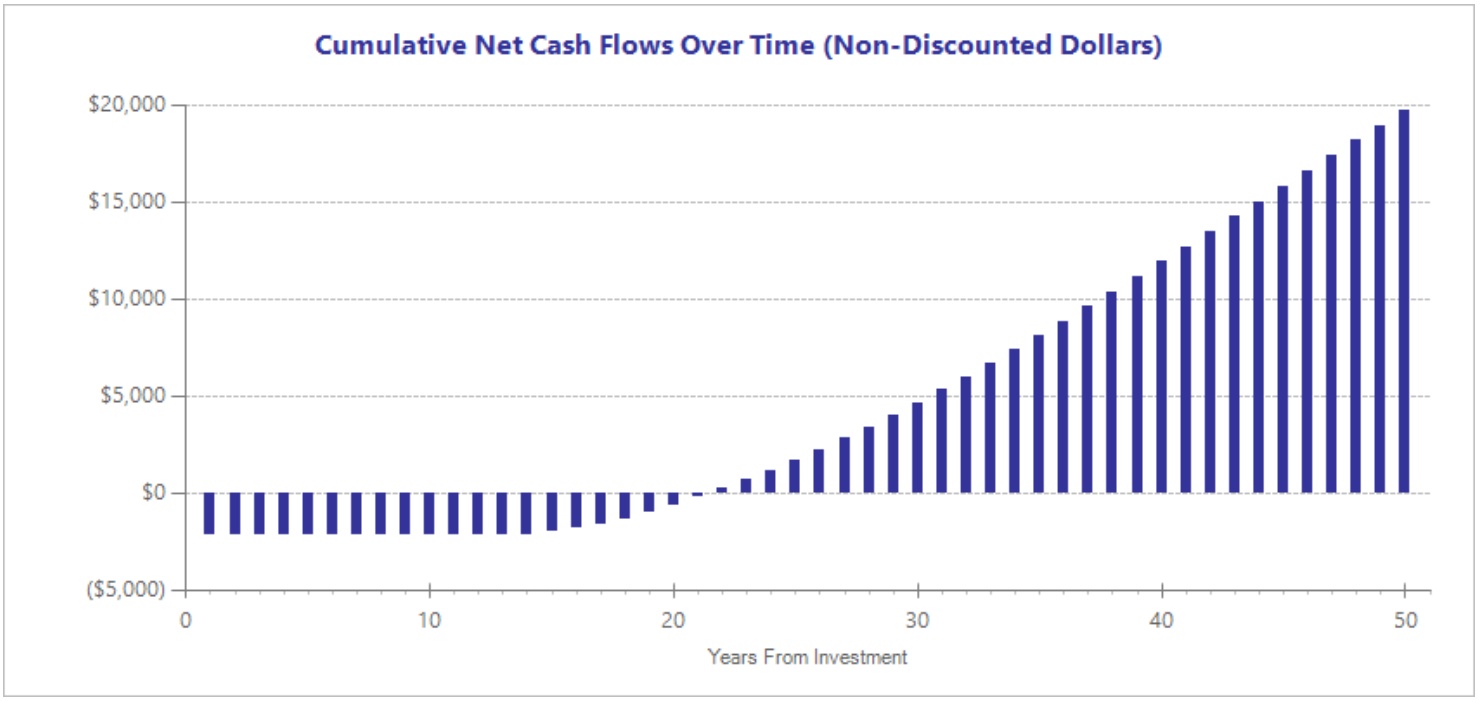
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$2,612	1	2009
Comparison costs	$1,298	1	2009

Summary statistics	
Present value of net program costs (in 2014 dollars)	($1,429)
Uncertainty (+ or - %)	20 %

Cost estimates are based on the following assumptions derived from the programs described in the studies included in the meta-analysis: on average, the programs lasted for 4.5 months, with 60 sessions of about 25 minutes each. The programs provide 1 to 3 hours of training. We use average teacher salaries (including benefits) in Washington State to compute the value of tutors' time. We assume that tutoring costs are in addition to regular classroom instruction, for which the cost estimate reflects the sum of local, state, and federal dollars allocated per-student (averaged across Washington State school districts) for the 2008-09 school year. We increased the uncertainty around the cost estimate to 20 percent. Source for dollars allocated per-student: Office of Superintendent of Public Instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	4	114	0.182	0.264	0.155	0.163	7	0.073	0.179	17

Citations Used in the Meta-Analysis

Calhoon, M. B., Al Otaiba, S., Cihak, D., King, A., & Avalos, A. (2007). Effects of a peer-mediated program on reading skill acquisition for two-way bilingual first-grade classrooms. *Learning Disability Quarterly*, *30*(3), 169-184.

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Tutoring: By adults, one-on-one, non-structured

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The tutoring programs included in this analysis provide one-on-one assistance to struggling students in English language arts and/or mathematics. The evaluated programs typically allow tutors to exercise their own discretion when selecting and implementing tutoring strategies. The programs provide, on average, about 30 hours of tutoring time to an individual student each year. The tutors are non-certificated adults (e.g. instructional aides and community volunteers) who receive approximately two hours of training per year.

Benefit-Cost Summary

Program benefits	
Participants	$1,714
Taxpayers	$809
Other (1)	$800
Other (2)	($683)
Total	$2,639
Costs	($1,445)
Benefits minus cost	$1,194

Summary statistics	
Benefit to cost ratio	$1.83
Benefits minus costs	$1,194
Probability of a positive net present value	68 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$1,722	$735	$853	$0	$3,310
Health care (educational attainment)	($9)	$74	($53)	$37	$48
Adjustment for deadweight cost of program	$1	$0	$0	($719)	($718)
Totals	$1,714	$809	$800	($683)	$2,639

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

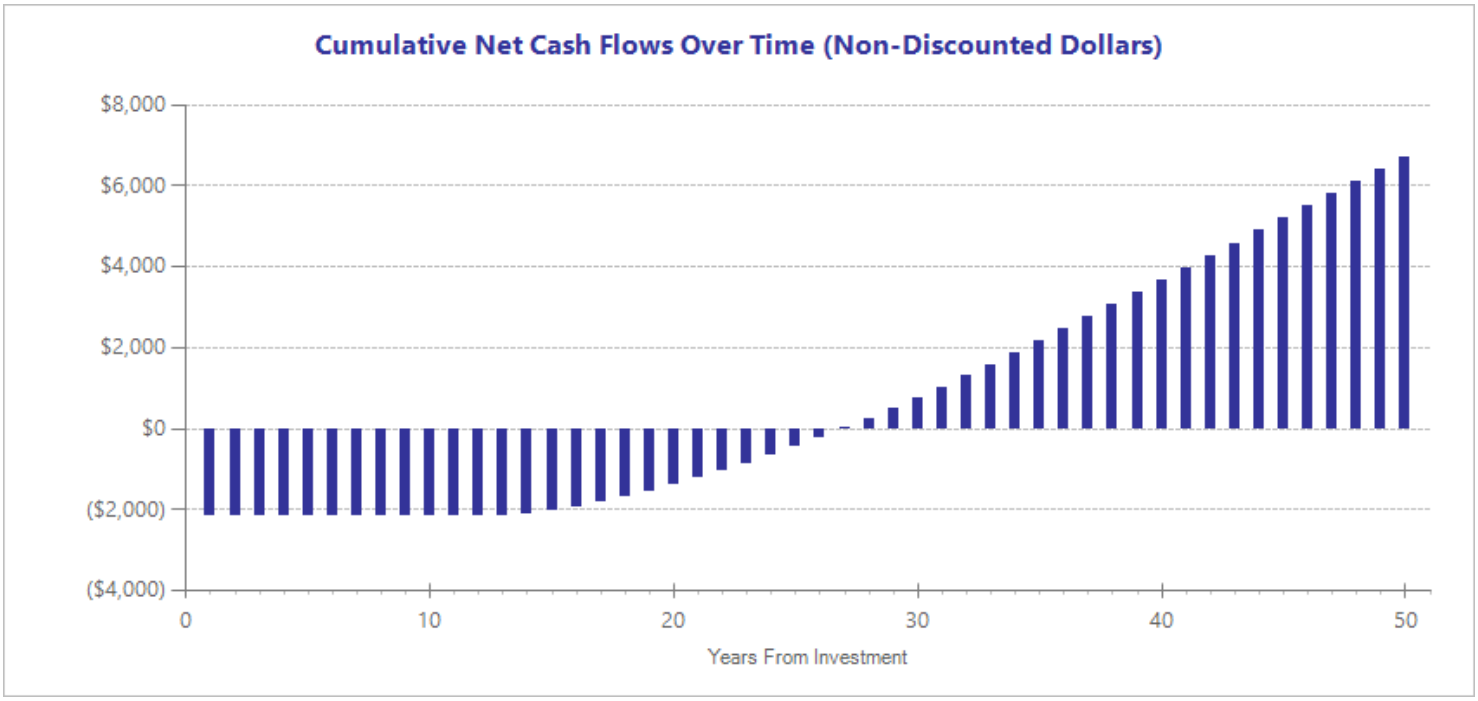
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$1,425	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2014 dollars)	($1,445)
Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, the average non-structured one-on-one tutoring program provides 30 hours of intervention per student and two hours of training time per tutor. The estimate assumes that certificated teachers provide approximately four hours of planning support and oversight. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher and instructional aides as reported by the Office of the Superintendent of Public Instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	15	12376	0.061	0.001	0.061	0.013	7	0.029	0.014	17

Citations Used in the Meta-Analysis

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Tutoring: By adults, one-on-one, structured

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The programs included in this analysis are structured, systematic approaches to tutoring struggling students in specific English language arts and/or mathematics skills. The evaluated programs include a variety of specific programs and curricula such as (in no particular order) Reading Recovery, Mathematics Recovery, Edmark Reading Program, Howard Street Tutoring, and Early Intervention Program. The programs provide, on average, about 30 hours of tutoring time to an individual student each year. Tutors are typically certificated teachers or specially trained adults (e.g. instructional aides and community volunteers). Tutors receive approximately ten hours of training per year with a focus on the specific content and general tutoring strategies.

Benefit-Cost Summary

Program benefits	
Participants	$5,749
Taxpayers	$2,710
Other (1)	$2,684
Other (2)	($1,031)
Total	$10,113
Costs	($2,323)
Benefits minus cost	$7,789

Summary statistics	
Benefit to cost ratio	$4.35
Benefits minus costs	$7,789
Probability of a positive net present value	90 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$5,779	$2,465	$2,861	$0	$11,105
Health care (educational attainment)	($31)	$244	($177)	$122	$158
Adjustment for deadweight cost of program	$1	$0	$0	($1,152)	($1,151)
Totals	$5,749	$2,710	$2,684	($1,031)	$10,113

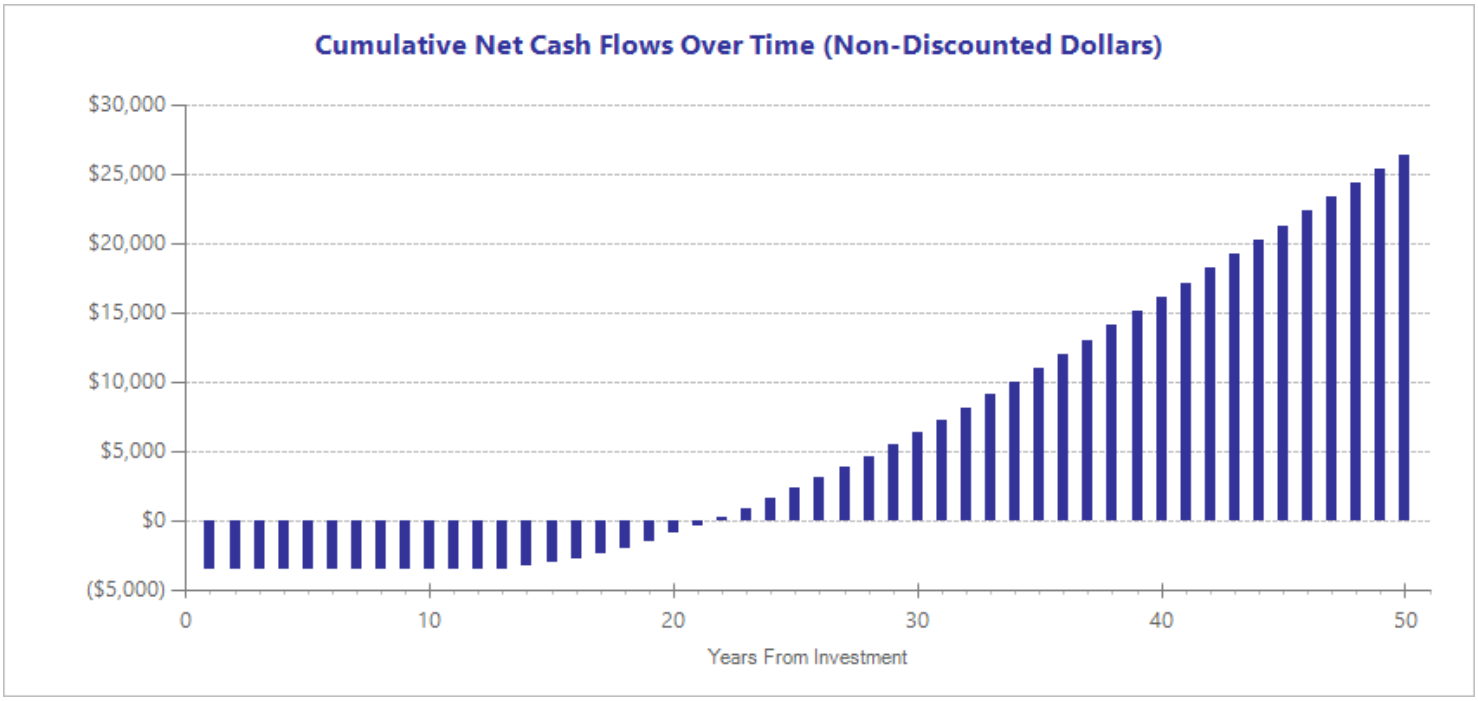
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,291	1	2013	Present value of net program costs (in 2014 dollars)	($2,323)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, the average structured one-on-one tutoring program provides 30 hours of intervention per student and ten hours of training time per tutor. The estimates assume that both certificated teachers and other adults (e.g. instructional aides) provide tutoring. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for K–8 teachers and instructional aides as reported by the Office of the Superintendent of Public Instruction.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	24	2120	0.515	0.001	0.204	0.039	7	0.096	0.043	17

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Tutoring: By certificated teachers, small-group, structured

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The programs included in this analysis are structured, systematic approaches to tutoring small-groups of struggling students in specific English language arts and/or mathematics skills. The evaluated programs include a variety of specific approaches and curricula such as (in no particular order) Read Aloud, Proactive Reading, Responsive Reading, Leveled Literacy, Spell Read, Corrective Reading, and Number Rockets. An average program provides about 40 hours of tutoring time to groups of two to six (usually three) early elementary students. Certificated teachers provide tutoring and receive about 35 hours of training with a focus on the specific content and strategies used in the programs.

Benefit-Cost Summary

Program benefits	
Participants	$5,815
Taxpayers	$2,739
Other (1)	$2,711
Other (2)	($589)
Total	$10,676
Costs	($1,426)
Benefits minus cost	$9,251

Summary statistics	
Benefit to cost ratio	$7.49
Benefits minus costs	$9,251
Probability of a positive net present value	95 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$5,845	$2,493	$2,889	$0	$11,228
Health care (educational attainment)	($31)	$246	($178)	$123	$160
Adjustment for deadweight cost of program	$0	$0	$0	($712)	($712)
Totals	$5,815	$2,739	$2,711	($589)	$10,676

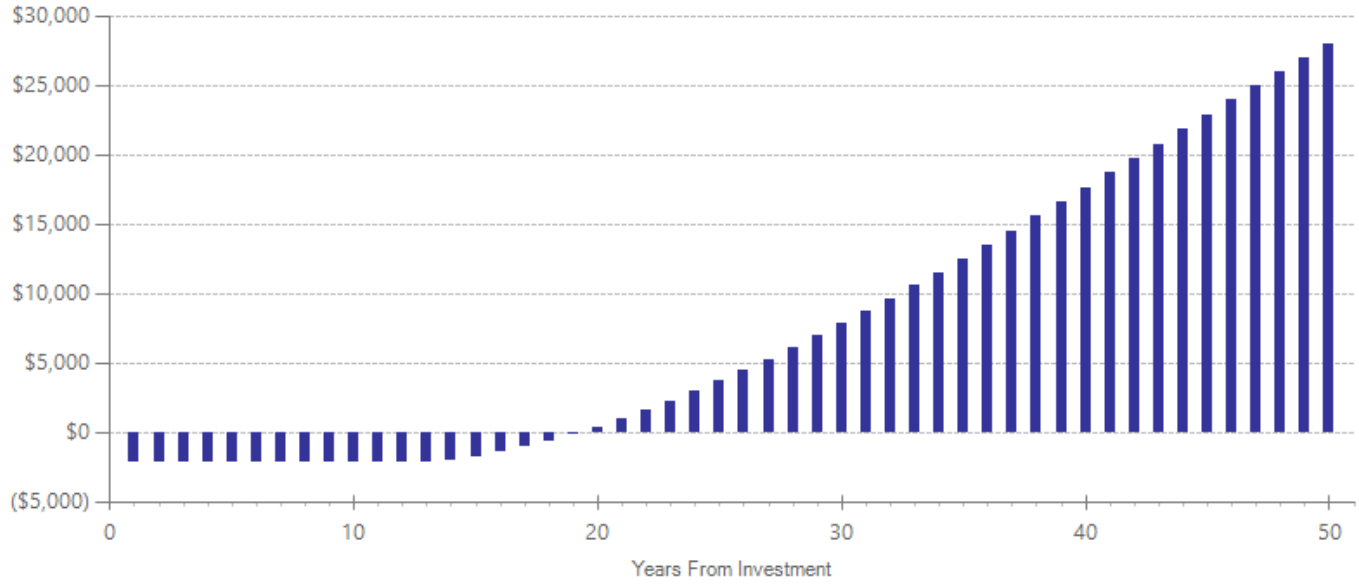
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,406	1	2013	Present value of net program costs (in 2014 dollars)	($1,426)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in this meta-analysis, a certificated teacher provides, on average, 40 hours of tutoring to nine students per year in groups of three and receives 35 hours of training. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction, divided by the total number of students served.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	14	1649	0.253	0.001	0.208	0.039	7	0.098	0.043	17

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Tutoring: By non-certificated adults, small-group, structured

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: The programs included in this analysis are structured, systematic approaches to tutoring small-groups of struggling students in specific English language arts and/or mathematics skills. The evaluated programs include a variety of specific programs and curricula such as (in no particular order) Quick Reads, Gottshall Early Reading Intervention, and Hot Math. The evaluated tutoring programs provide, on average, 22 hours of tutoring time to groups of two to six (usually three) early elementary students. Tutors are typically instructional aides or college student volunteers who receive 20 hours of training each year. Certificated teachers provide oversight and planning support.

Benefit-Cost Summary

Program benefits	
Participants	$3,469
Taxpayers	$1,637
Other (1)	$1,616
Other (2)	($196)
Total	$6,527
Costs	($544)
Benefits minus cost	$5,983

Summary statistics	
Benefit to cost ratio	$12.00
Benefits minus costs	$5,983
Probability of a positive net present value	75 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$3,488	$1,488	$1,724	$0	$6,699
Health care (educational attainment)	($19)	$150	($108)	$75	$97
Adjustment for deadweight cost of program	$1	$0	$0	($271)	($269)
Totals	$3,469	$1,637	$1,616	($196)	$6,527

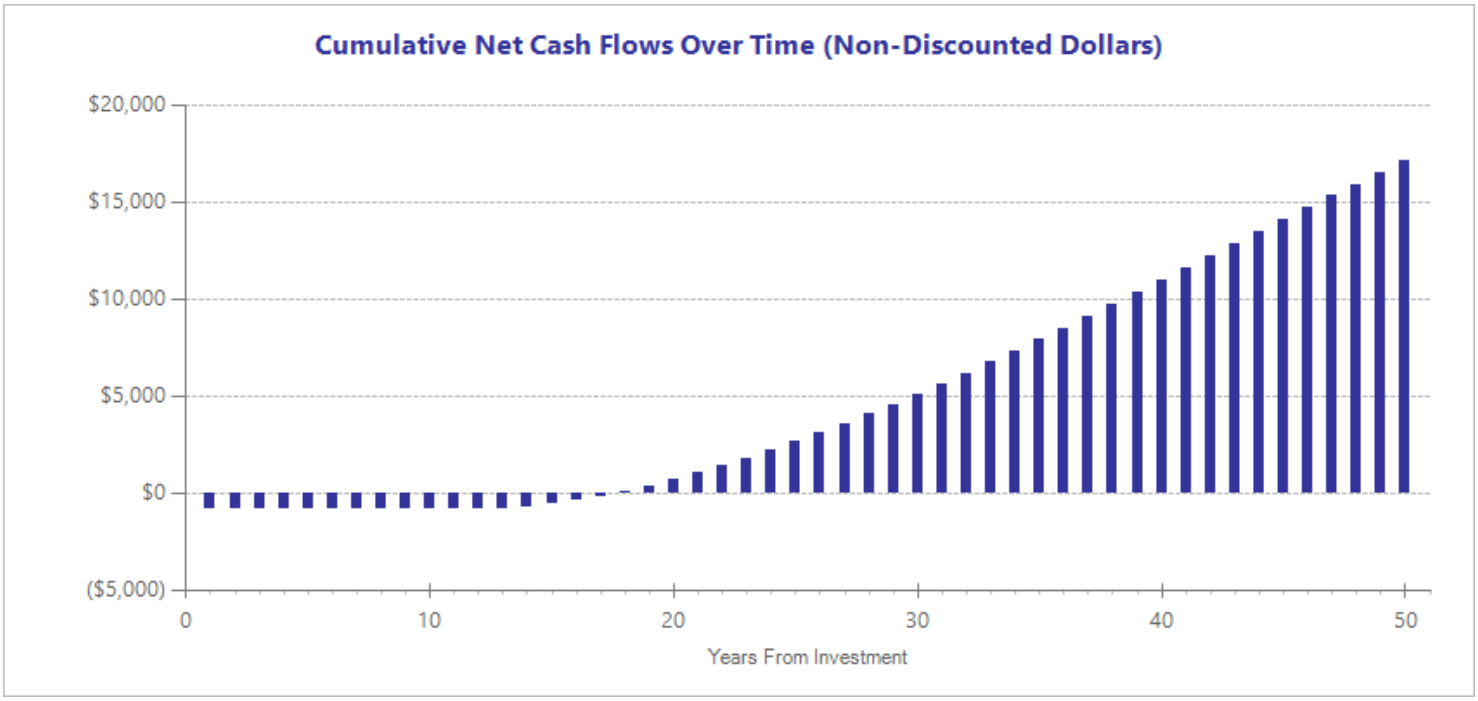
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$536	1	2013	Present value of net program costs (in 2014 dollars)	($544)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in this meta-analysis, a non-certificated adult (such as an instructional aide or college student) provides, on average, 22 hours of tutoring to six students per year in groups of three and receives 20 hours of training. A certificated teacher provides six hours of planning support and oversight per group. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for K–8 teachers and instructional aides as reported by the Office of the Superintendent of Public Instruction, divided by the total number of students served.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	9	611	0.318	0.001	0.126	0.064	7	0.059	0.070	17

Citations Used in the Meta-Analysis

Case, L.P., Speece, D.L., Silverman, R., Ritchey, K.D., Schatschneider, C., Cooper, D.H., . . . Jacobs, D. (2010). Validation of a supplemental reading intervention for first-grade children. *Journal of Learning Disabilities*, 43, 5.

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Tutoring: By peers, cross-age

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In cross-age peer tutoring, older students are paired with younger, underachieving students to provide one-on-one academic assistance. The evaluated tutoring programs in this analysis provide, on average, 30 hours of peer tutoring time each year and about 7.5 hours of training time for teachers and students to learn program procedures.

Benefit-Cost Summary

Program benefits	
Participants	$16,862
Taxpayers	$7,921
Other (1)	$7,881
Other (2)	$287
Total	$32,950
Costs	($117)
Benefits minus cost	$32,834

Summary statistics	
Benefit to cost ratio	$282.65
Benefits minus costs	$32,834
Probability of a positive net present value	82 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$16,949	$7,229	$8,382	$0	$32,560
Health care (educational attainment)	($87)	$691	($501)	$345	$447
Adjustment for deadweight cost of program	$1	$0	$0	($58)	($57)
Totals	$16,862	$7,921	$7,881	$287	$32,950

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$115	1	2013	Present value of net program costs (in 2014 dollars)	($117)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in the meta-analysis, the average cross-age peer tutoring program provides 30 hours tutoring time and 7.5 hours of training time per class. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction, divided by the number of students per classroom in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	2	34	0.556	0.025	0.441	0.261	9	0.265	0.287	17

Citations Used in the Meta-Analysis

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Tutoring: By peers, same-age and classwide

Benefit-cost estimates updated July 2015. Literature review updated June 2014.

Program Description: In same-age peer tutoring, students from the same classrooms provide academic assistance to struggling peers. Tutoring assistance occurs through one-on-one interactions or in small groups, and in some instances, students alternate between the role of tutor and tutee. The specific types of peer tutoring that have been evaluated and are included in this meta-analysis include (in no particular order): ClassWide Peer Tutoring, Peer-Assisted Learning Strategies, and Reciprocal Peer Tutoring. The evaluated programs provide, on average, 30 hours of peer tutoring time each year and about five hours of training time for teachers and students to learn program procedures.

Benefit-Cost Summary

Program benefits	
Participants	$5,553
Taxpayers	$2,612
Other (1)	$2,593
Other (2)	$62
Total	$10,821
Costs	($110)
Benefits minus cost	$10,711

Summary statistics	
Benefit to cost ratio	$98.63
Benefits minus costs	$10,711
Probability of a positive net present value	72 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$5,582	$2,381	$2,761	$0	$10,724
Health care (educational attainment)	($29)	$231	($167)	$117	$152
Adjustment for deadweight cost of program	$0	$0	$0	($55)	($55)
Totals	$5,553	$2,612	$2,593	$62	$10,821

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$108	1	2013	Present value of net program costs (in 2014 dollars)	($110)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

In the evaluations included in this meta-analysis, the average same-age peer tutoring program provides 30 hours tutoring time and five hours of training time per class. To calculate a per-student annual cost, we use average Washington State compensation costs (including benefits) for a K–8 teacher as reported by the Office of the Superintendent of Public Instruction divided by the number of students per classroom in Washington's prototypical schools formula.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	6	366	0.390	0.004	0.148	0.134	9	0.089	0.147	17

Citations Used in the Meta-Analysis

Dion, E., Roux, C., Landry, D., Fuchs, D., Wehby, J., & Dupere, V. (2011). Improving attention and preventing reading difficulties among low-income first-graders: A randomized study. *Prevention Science*, *12*(1), 70-79.

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Tutoring: Supplemental Educational Services (under Title I)

Benefit-cost estimates updated July 2015. Literature review updated May 2015.

Program Description: Current federal education law directs school districts who do not make "Adequate Yearly Progress" toward student proficiency standards to provide "Supplemental Educational Services" -- primarily out-of-school-time tutoring -- to eligible students at no charge to students and their families. Providers of SES include local and national for-profit and non-profit organizations as well as school districts themselves (unless they are identified as in need of improvement under AYP or have a waiver). This analysis estimates the impact of offering SES in school districts throughout the United States on reading and math test scores.

Benefit-Cost Summary

Program benefits	
Participants	$1,249
Taxpayers	$612
Other (1)	$568
Other (2)	($799)
Total	$1,629
Costs	($1,662)
Benefits minus cost	($33)

Summary statistics	
Benefit to cost ratio	$0.98
Benefits minus costs	($33)
Probability of a positive net present value	44 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2014). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (test scores)	$1,258	$537	$623	$0	$2,417
Health care (educational attainment)	($9)	$75	($54)	$38	$49
Adjustment for deadweight cost of program	$0	$0	$0	($837)	($837)
Totals	$1,249	$612	$568	($799)	$1,629

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization, the economic spillover benefits of improvement in human capital outcomes, and the benefits from private or employer-paid health insurance. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

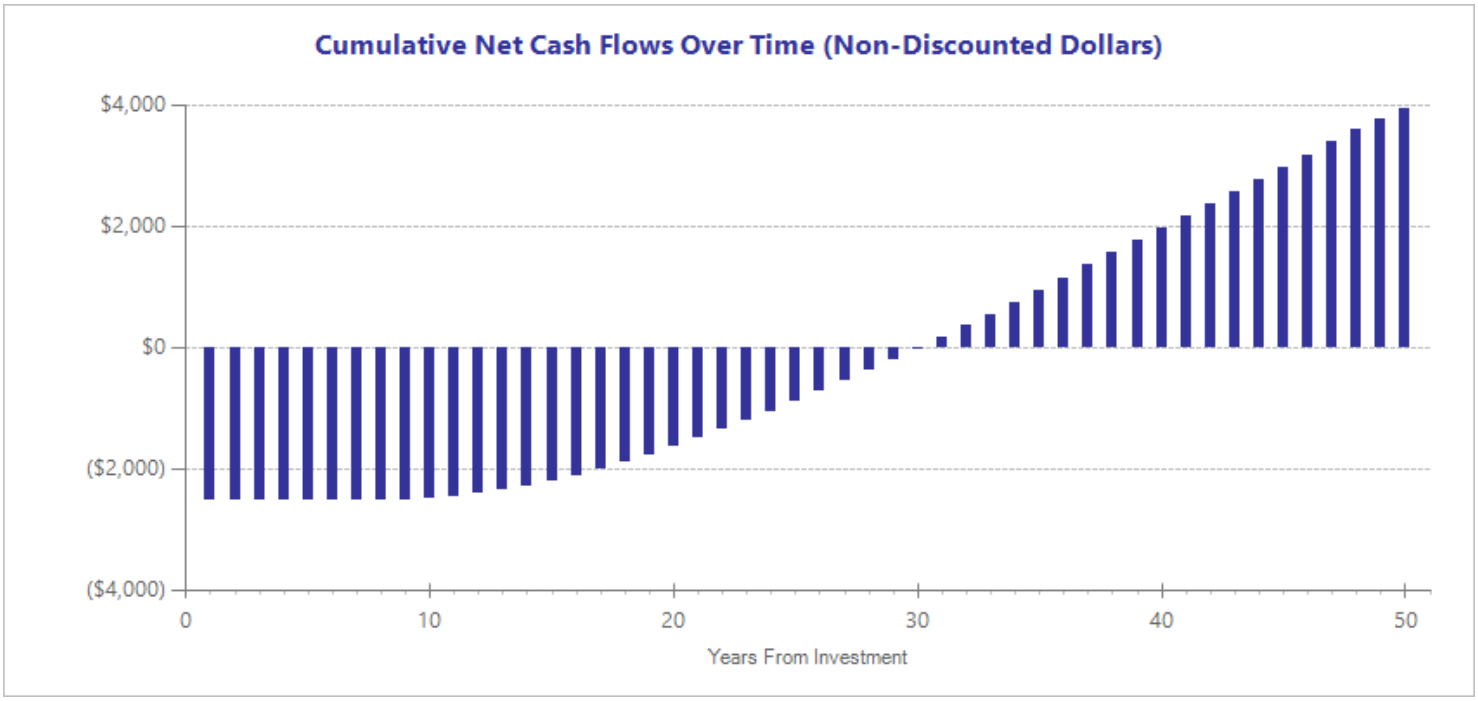
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$1,550	1	2010
Comparison costs	$0	1	2010

Summary statistics	
Present value of net program costs (in 2014 dollars)	($1,662)
Uncertainty (+ or - %)	30 %

Average costs are estimated in the ranges reported in Heinrich, C. J., Burch, P., Good, A., Acosta, R., Cheng, H., Dillender, M., Kirshbaum, C., ... Stewart, M. (2014). Improving the implementation and effectiveness of out-of-school time tutoring. Journal of Policy Analysis and Management, 1-34.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Test scores	Primary	22	293256	0.029	0.006	0.029	0.010	10	0.019	0.011	17

Citations Used in the Meta-Analysis

Deke, J., Gill, B., Dragoset, L., & Bogen, K. (2014). Effectiveness of Supplemental Educational Services. *Journal of Research on Educational Effectiveness*, 7(2), 137-165.

Heinrich, C.J., Burch, P., Good, A., Acosta, R., Cheng, H., Dillender, M., . . . Stewart, M. (2014). Improving the implementation and effectiveness of out of-school time tutoring. *Journal of Policy Analysis and Management*, 1-34.

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