



HI!

Cost Analysis for Evaluation in Education

A. Brooks Bowden
IES Methods Training
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Ingredients Method

Step 1: Ingredients

Step 2: Prices

Step 3: Costs

Many potential questions can be addressed under this step.

- What is the total social cost and cost per student of Program X?
- What portion of the costs are fixed or variable?
- What costs fall in year 1 versus later years?
- What is the cost of the program minus the cost of services received by the control group (net cost)?
- How does the cost vary by site?
- How does the cost per student change with scale?
- What costs were borne by the school?
- How were the costs financed?
- What were the costs for a subgroup, urban/rural, or for varying doses of the program?

What is the total cost?

What is the cost per student?

- Multiply quantity by price for each ingredient (~~X~~)
- Sum all costs for total cost (+)
- Divide total cost by number of students to calculate the cost per student (/)
- Subtract control cost from treatment cost (-)

Sample Cost Worksheet

Ingredient	Description, notes, and assumptions	Quantity	Price	Cost
<i>Personnel</i>				
...				
<i>Facilities</i>				
...				
<i>Materials and Equipment</i>				
...				
<i>Required Client Inputs</i>				
...				
<i>Other Inputs</i>				
...				
Total Cost				\$\$\$
<i>Number of students</i>				#
Average Cost Per Student				\$/Student

Table#. Costs of Responsive Classroom

Category	Ingredient	Total Cost
Personnel	Principals	\$175,130
Personnel	Teachers	\$922,160
Training	NEFC	\$444,050
Transportation	Travel and Lodging for annual conference	\$37,640
Materials	Books and Manuals	\$8,550
Facilities	Training Space	\$19,640
Total Cost		\$1,607,160
Cost Per Student		\$1,100

Note: Please see appendix # for details. Prices in 2013 US\$.

Do costs vary?

Is the cost estimate sensitive to assumptions?

- Attrition, ITT, TOT
- Sensitivity to ingredient or price assumptions
- Sensitivity to scale
- Site-level heterogeneity
- Variation in or distribution of costs by category

Table 1. Ingredients by site.

	Texas						Florida			Pooled	
	Site One	Site Two	Site Three	Site Four	Site Five	Site Six	Site One	Site Two	Site Three		
<i>Personnel</i>											
TS Staff: Directors	\$73,890	\$79,520	\$79,520	\$79,520	\$79,520	\$79,520	\$79,520	\$79,520	\$79,520	\$79,520	\$710,050
TS Staff: Counselors (A)	\$183,590	\$108,850	\$0	\$134,650	\$128,620	\$0	\$74,700	\$126,320	\$144,910	\$901,640	
TS Staff: Counselors (B)	\$0	\$0	\$195,210	\$107,220	\$100,000	\$176,640	\$132,770	\$66,380	\$53,610	\$831,830	
TS Staff: Other	\$25,970	\$46,000	\$70,610	\$18,560	\$83,820	\$49,340	\$45,860	\$107,540	\$45,860	\$493,560	
TS Work Study	\$0	\$5,220	\$6,960	\$11,240	\$0	\$0	\$3,480	\$7,540	\$4,640	\$39,080	
TS Staff: Prof. Development	\$420	\$3,220	\$2,370	\$1,290	\$1,520	\$1,580	\$3,970	\$4,310	\$2,580	\$21,260	
School Staff: Prncpl/Teachers	\$1,730	\$3,400	\$7,230	\$400	\$2,060	\$540	\$770	\$5,370	\$8,020	\$29,520	
School Staff: G. Counselors	\$8,360	\$9,430	\$4,560	\$3,990	\$3,540	\$3,460	\$12,770	\$680	\$22,810	\$69,600	
School Staff: Other	\$3,180	\$8,180	\$1,930	\$6,230	\$150	\$2,590	\$3,340	\$740	\$770	\$27,110	
In-kind Personnel	\$230	\$390	\$1,230	\$5,360	\$0	\$60	\$4,840	\$630	\$230	\$12,970	
<i>Facilities</i>											
Host College	\$20,100	\$17,360	\$9,850	\$30,530	\$25,770	\$15,200	\$12,340	\$16,080	\$26,870	\$174,100	
School Sites	\$510	\$10	\$6,790	\$34,050	\$690	\$5,620	\$1,980	\$9,290	\$7,270	\$66,210	
Overhead charged to TS	\$23,380	\$24,540	\$19,710	\$32,830	\$28,380	\$23,350	\$24,510	\$25,480	\$25,670	\$227,850	
<i>Materials/Equipment</i>											
TS Site	\$8,800	\$2,180	\$11,890	\$11,140	\$20,480	\$8,280	\$14,900	\$12,380	\$18,920	\$108,970	
Contributed	\$3,440	\$3,090	\$730	\$2,520	\$400	\$440	\$2,300	\$3,520	\$1,730	\$18,170	
<i>Other Inputs</i>											
Transportation	\$14,960	\$18,720	\$18,280	\$12,800	\$22,830	\$16,080	\$23,150	\$14,960	\$7,780	\$149,560	
Other TS Inputs	\$1,270	\$1,080	\$7,140	\$8,200	\$21,650	\$38,450	\$5,250	\$3,610	\$6,660	\$93,310	
Other In-kind Inputs	\$3,450	\$62,180	\$12,700	\$188,460	\$19,750	\$720	\$14,370	\$21,710	\$6,580	\$329,920	
Total Annual Cost	\$373,290	\$393,360	\$456,700	\$688,980	\$539,150	\$421,870	\$460,820	\$506,060	\$464,420	\$4,304,650	
Percent In-kind Resources	11%	26%	11%	41%	10%	7%	12%	13%	17%	17%	
Unit Cost	\$610	\$520	\$420	\$720	\$620	\$700	\$650	\$670	\$580	\$600	

Note: 2010 US dollars rounded to nearest ten. Pooled costs weighted by number of students served in 2010.

Table 2. Present value cost per student.

Site	Cost per Student (PV)
<i>Texas</i>	
Site One	\$4,800
Site Two	\$2,870
Site Three	\$2,770
Site Four	\$4,830
Site Five	\$2,680
Site Six	\$3,840
<i>Florida</i>	
Site One	\$2,820
Site Two	\$3,650
Site Three	\$2,520
Pooled Estimate	\$3,380

Note: Present value at age 18 using 3% discount rate in 2010 US dollars rounded to the nearest ten. Pooled estimates weighted by number of students served per site.

Table 6. Cost-effectiveness of Talent Search by Site.

Site	Cost Per Extra HS Completer	Cost Per Extra PS Enrollee
<i>Texas</i>		
Site One	\$52,740	\$66,660
Site Two	\$37,250	\$17,740
Site Three	\$131,930	\$38,480
Site Four	\$50,310	\$158,340
Site Five	-\$76,650	\$54,750
Site Six	\$142,360	\$54,910
<i>Florida</i>		
Site One	\$10,330	\$8,060
Site Two	\$29,560	\$56,600
Site Three	\$22,470	\$17,730
Pooled Estimate	\$40,960	\$31,480

Note: Present values at age 18 using a discount rate of 3% in 2010 US dollars rounded to the nearest ten. Pooled estimates weighted by number of students served per site.

Table 7. Sensitivity Testing for CERs

	Yield of new HSGs	Cost per new HSG	CER per \$100,000
Best estimate (pooled across 9 sites)	590	\$40,960	2.4
<i>A. Sampling:</i>			
Texas sample	214	\$81,420	1.2
Texas evaluation	362	\$38,390	2.6
Florida sample	376	\$17,980	5.6
Florida evaluation	126	\$21,370	4.7
<i>B. Outliers:</i>			
Least cost-effective site only	-30	-76650	-1.3
Most cost-effective site only	192	\$10,330	9.7
Excl. most and least effective	427	\$46,410	2.2
Excl. most and least cost	409	\$42,910	2.3
Excl. lowest and highest CER	427	\$46,410	2.2
<i>C. Statistical significance criteria:</i>			
Sites: stat. sig. +ve effects; all costs	489	\$49,370	2.0
Sites: stat. sig. +ve effects; associated costs	489	\$24,260	4.1
Sites: mean +ve effect; all costs	620	\$38,960	2.6
Sites: mean +ve effect; associated costs	620	\$35,210	2.8
<i>D. Treatment dosage:</i>			
PV cost with 3 years of treatment	590	\$23,270	4.3
PV cost with 1 year of treatment	590	\$7,300	13.7

Note: Present values at age 18 using a discount rate of 3% in 2010 US dollars rounded to the nearest ten. Pooled estimates weighted by number of students served per site.

Are additional costs induced by
the program?

- Measure any change in service receipt induced by the intervention
- Careful attention to treatment contrast
- More on this in a virtual session

Distribution of Financial Burden

How were the costs financed?

Who paid for the ingredients?

- Important to understand how various agents were involved in implementation
 - College Student Time
 - Volunteers
 - School staff time
 - Subsidies
 - Transfers or Fees
- Not additional ingredients, but how the list was financed

Worksheet for Cost Distribution

<i>Cost</i>	<i>Total Cost</i>	<i>Cost to Program</i>	<i>Cost to Other</i>	<i>Cost to Students</i>
<i>Ingredients</i>				
Personnel				
Facilities				
Materials and				
Equipment				
Other inputs				
Required client inputs				
Total ingredients cost				
User fees				
Cash subsidies				
Net costs				

Cost of Reading Partners per Program Group Student

Cost	Cost per Student	Distribution of Cost per Student			
		Cost to School	Cost to Volunteers	Cost to Reading Partners	Cost to AmeriCorps
Ingredients					
Reading Partners staff	690			690	
AmeriCorps members	930			930	
School staff	90	90			
Volunteer time and transportation	1,520		1,520		
Facilities	300	300			
Materials and equipment	80			80	
Total ingredients	3,610	390	1,520	1,700	0
Fee for service (\$)		320		-320	
AmeriCorps grant (\$)				-270	270
Net cost per student (Total ingredients + fee for service + AmeriCorps grant) (\$)		710	1,520	1,110	270
Portion of net cost per student (%)		20	42	31	7