Effectiveness and benefit-cost analysis of early childhood education

WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY
Washington State Institute for Public Policy
Non-partisan research at legislative/board direction

Created by the 1983 Legislature

✓ Apply expertise of academia to needs of state policymakers
✓ Connect The Evergreen State College (based in Olympia) with state government
✓ Goal: better informed policy making
Legislative Assignment

“... the Washington state institute for public policy shall conduct a comprehensive retrospective outcome evaluation and return on investment analysis of the early childhood program established in RCW 43.215.400 ...

... Report findings from a review of the research evidence on components of successful early education program strategies...”

SB 5904, Laws of 2013
Are there evidence-based policies that improve outcomes with a positive return on investment?

1. **What works; what does not?**
   - We meta-analyze all rigorous evaluations of policies to improve public outcomes of legislative interest.

2. **What’s economic?**
   - Benefits, costs, and risk
   - Consistent “apples to apples” framework
Step 1: Evaluate all of the rigorous research literature

- Test scores after ECE
- High school graduation
- Grade retention
- Special education
- Crime
- Teen births

Effect size:
- Test scores after ECE: +0.4
- High school graduation: +0.3
- Grade retention: +0.1
- Special education: +0.2
- Crime: +0.3
- Teen births: +0.5

State/district programs:
- 15 studies

Head Start:
- 11 studies

Increase in outcome
Decrease in outcome
Step 2: What is the return on investment?

<table>
<thead>
<tr>
<th>State- and district-funded programs</th>
<th>Benefits</th>
<th>Costs</th>
<th>Benefits minus costs</th>
<th>Benefit to cost ratio</th>
<th>Odds that the program breaks even</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$33,222</td>
<td>$7,129</td>
<td>$26,092</td>
<td>$4.66</td>
<td>83%</td>
</tr>
<tr>
<td>Head Start</td>
<td>$25,624</td>
<td>$8,791</td>
<td>$16,833</td>
<td>$2.91</td>
<td>78%</td>
</tr>
</tbody>
</table>
Is WA’s early childhood education program working?

Step 1: Construct an analysis group of similar children

Step 2: Identify ECEAP participants

Step 3: Conduct a statistical analysis to compare groups

Washington children who received “Basic Food” at age 3 or 4 and subsequently attended WA public schools

ECEAP participants
N = 5,436

Comparison group
N = 24,290

Compare outcomes between the two groups
Results

- ECEAP participants had significantly higher test scores than the comparison group.
- ECEAP’s effect is similar to the effect of the average ECE program.

**Effect of ECEAP on Fifth Grade State Test Scores**

<table>
<thead>
<tr>
<th></th>
<th>Reading</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current pass rate*</td>
<td>57%</td>
<td>47%</td>
</tr>
<tr>
<td>Estimated pass rate with ECEAP</td>
<td>64%</td>
<td>53%</td>
</tr>
<tr>
<td>Change</td>
<td>+7%</td>
<td>+6%</td>
</tr>
</tbody>
</table>

*2013 MSP pass rate for low-income fifth grade students
QUESTIONS?

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