Increasing Returns from Large Scale Investment in ECE

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“Paradox” of Early Care and Education Policy

Early experience has broad, persistent effects
- Learning, development, and health
- Educational, social, and economic success

ECE can produce high rates of return
- Lower remedial education, abuse/neglect, crime
- Higher earnings, better health, longer life
- Child care for parents: higher earnings, gender equity

Large scale public programs often fail to reproduce results
- Weaker, less persistent benefits
- Highly variable outcomes
- Lower rates of return, sometimes too low
What explains this paradox?

Small scale results not exactly reproducible
- Best case examples not fully generalizable
- Populations and contexts differ at scale

More importantly, *everyone* underinvests
- Parents underinvest due to externalities & uncertainty
- Governments also underinvest, favor quantity over quality

Underinvestment causes 2 major problems
- Design failure
- Implementation failure

Result is highly variable outcomes and returns
- Europe & Americas have positive returns but also failures
<table>
<thead>
<tr>
<th>Program</th>
<th>Population</th>
<th>Cost per Child $</th>
<th>Earnings Benefit</th>
<th>Full Benefits</th>
<th>Earnings B/C</th>
<th>Total B/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC 0-5</td>
<td>VERY LOW SES</td>
<td>$83 530</td>
<td>$147 359</td>
<td>$208 283</td>
<td>1.46</td>
<td>2.49</td>
</tr>
<tr>
<td>PERRY 3-5</td>
<td>VERY LOW SES</td>
<td>$20,854</td>
<td>$91,646</td>
<td>$179 446</td>
<td>4.39</td>
<td>8.60</td>
</tr>
<tr>
<td>CPC 3-5</td>
<td>LOW SES</td>
<td>$9,719</td>
<td>$32,933</td>
<td>$105,294</td>
<td>3.39</td>
<td>10.83</td>
</tr>
<tr>
<td>HEAD START 4-5 (Kay/Duncan)</td>
<td>LOW SES</td>
<td>$7,982</td>
<td>$20,022</td>
<td>$22,392</td>
<td>2.51</td>
<td>2.81</td>
</tr>
<tr>
<td>HEAD START 3/4/5 (NHIS)</td>
<td>LOW SES</td>
<td>$16.200</td>
<td>None</td>
<td>Negative</td>
<td>0</td>
<td>&lt;1</td>
</tr>
<tr>
<td>TENN VPK 4-5</td>
<td></td>
<td>$</td>
<td>Negative</td>
<td>?</td>
<td>&lt;0</td>
<td>?</td>
</tr>
<tr>
<td>OK/GA (Cascio) 4-5</td>
<td>UNIVERSAL</td>
<td>$4,086/7,427</td>
<td>$24,094</td>
<td>?</td>
<td>5.90</td>
<td>?</td>
</tr>
<tr>
<td>TULSA (Bartik) 4-5</td>
<td>UNIVERSAL</td>
<td>$9,183</td>
<td>$14,415</td>
<td>17,378</td>
<td>1.57</td>
<td>1.89</td>
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</tbody>
</table>
What is Needed for High Returns?

• Big, persistent change in early experience
• Deep learning in unconstrained domains
  • Language
  • Mathematics
  • Character (also creativity, dispositions?)
• Universal programs have bigger impacts
• Modest long-term gains yield high returns
• Build on prior investments year by year
Supreme Court asserts a child’s right to ECE as necessary to be a fully participating citizen.

- Design (and cost) based on children’s needs

- 31 cities with high poverty
- 44,000 children ages 3 and 4

- Part of systemic education reform

Example: Court Ordered Pre-K in NJ, USA
NJ Preschool Model

- Universal
- High expectations
- Adequate funding
- Strong teachers
- Small classes
- Ages 3 & 4 (2 years)
- Full day
- Public-private provider partnership
- Continuous improvement system (GPS)
Transformation of Quality in NJ UPK (ECERS-R)

1= Inadequate, 3=Minimal, 5=Good, 7=Excellent

Percentage of Classrooms

<table>
<thead>
<tr>
<th>Score Range</th>
<th>2000</th>
<th>2005</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00-1.99</td>
<td>3.9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2.00-2.99</td>
<td>2.5</td>
<td>19.9</td>
<td>0.2</td>
</tr>
<tr>
<td>3.00-3.99</td>
<td>34.6</td>
<td>12.6</td>
<td>4.2</td>
</tr>
<tr>
<td>4.00-4.99</td>
<td>27.7</td>
<td>45.3</td>
<td>32.2</td>
</tr>
<tr>
<td>5.00-5.99</td>
<td>12.1</td>
<td>33.9</td>
<td>47.4</td>
</tr>
<tr>
<td>6.00-7.00</td>
<td>1.7</td>
<td>5.7</td>
<td>16</td>
</tr>
</tbody>
</table>
NJ UPK Effects on Achievement Grades 4 and 5

LAL 4th: 0.12
LAL 5th: 0.26
Math 4th: 0.18
Math 5th: 0.22
Science 4th: 0.17

1 year Abbott pre-k
2 year Abbott pre-k
NJ Effects on Retention & Special Education at Grade 5

- Retention:
  - Abbott pre-K: 12%
  - No Abbott pre-K: 19%

- Special Education:
  - Abbott pre-K: 12%
  - No Abbott pre-K: 17%
Conclusion:
Invest in High Quality ECE for High Returns

• Set high goals for all children and teachers
• Design for goals guided by proven examples
• Set spending from design, not *vice versa*
• Universal but individualized, deep learning
• Public ECE agencies must support strong implementation not just set policy
• A GPS at every level—continuous measurement & adjustment—from classroom level up—no one right way for every place and time