Evidence-Based Early Education Policy: New evidence, Perils, and Possibilities
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RUTGERS
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Potential Gains from ECD Investments

Educational Success and Economic Productivity
- Achievement test scores
- Special education and grade repetition
- High school graduation
- Behavior problems, delinquency, and crime
- Employment, earnings, and welfare dependency
- Smoking, drug use, depression

Decreased Costs to Government
- Schooling costs
- Social services costs
- Crime costs
- Health care costs (teen pregnancy and smoking)
Cognitive gains from ECD programs 0-5 in the US (123 studies since 1960)

![Bar chart showing cognitive gains at different ages and study designs.](image-url)
What works?

• Intentional teaching
• Balanced curriculum
  – Cognitive and Socio-Emotional
• Individualization
  – Small-group and one-on-one
• Well-educated, adequately paid staff
• Strong supervision and monitoring
Empirical evidence: the age-return curve
(important to distinguish avg. and marg. returns)

Key Lessons

Immediate impact should be at least twice the size of desired long-term impact

Some programs are much more effective than others

Multiple approaches are effective, but educational quality is a key element

Earlier is not necessarily higher payoff
Three early education sectors

• **Private child care and preschool**
  – Lowest quality
  – Minimal benefits

• **Head Start and Early Head Start**
  – Better quality
  – Modest benefits

• **State Pre-K**
  – Highly variable quality
  – Highly variable benefits
State Pre-K and Head Start Enrollment as Percentage of Total Population

3-Year-Olds:
- None: 53%
- Other: 33%
- SpEd: 3%
- HdSt: 7%
- State Pre-K: 4%

4-Year-Olds:
- None: 26%
- Other: 35%
- SpEd: 3%
- HdSt: 11%
- State Pre-K: 25%

*Other
†Special Ed

Data from the 2008-2009 school year
Access

Belfield (A decade of change, NIEER online reports)

• Since 1995 no change in ECE 0-5 except 4’s
• Little change in private fee paying for 3&4s
• Increase in paid care & fees ($1000) for birth to 2—only 13% 0-2, 27% at 2 in paid care.
• NHES shows shift from FFN to centers at 4
PERCENT OF NATIONAL POPULATION ENROLLED

- 3-year-olds
- 4-year-olds

<table>
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<tr>
<th>Year</th>
<th>3-year-olds</th>
<th>4-year-olds</th>
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<tbody>
<tr>
<td>2002</td>
<td>3%</td>
<td>14%</td>
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<td>2%</td>
<td>16%</td>
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<td>2009</td>
<td>4%</td>
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<tr>
<td>2010</td>
<td>4%</td>
<td>27%</td>
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Preschool Quality (California)

Percent Good or Better

Private   Head Start   Public Pre-K
Private Child Care

• Quality is not high even for high income families
• For poor children the question is whether it is a net positive or negative for development
• Subsidies may lead to worse child outcomes because of lack of standards
• Modest positive effects on maternal employment
  – But this is largely unchanged in a decade and less full time, though hours not changed much overall.
• Subsidies need to be tied to higher quality
Head Start Impact Study 2010

- Small to vanishing cognitive effects
  - Few small effects at 3 & 4
  - 2 of 22 effects significant at grade 1
- Most social-emotional effects not found at 3 or 4
- Dental care significantly better during HS
- Parent reported health effect
- Parenting practices—little (at 3) to no (at 4) impact
- Even with adjust. for study problems gains small
- Serves 800,000, costs nearly $7 billion
Early Head Start Impact Study (5th grade)

• 3 yrs EHS no more effective than 1 yr of Head St
  – From 10th to 13th percentile for cognitive ability
  – Parent reads daily increased 52% to 57%
  – No cognitive effects at K, no effects at all in 5th grade

• Better than typical child care is not enough
• Some programs may be more effective—but we don’t know which ones!
• EHS serves over 100,000 children and costs nearly $2 billion
Birth to 3 Generally

- Home visiting increases to $400 million in 2013
- Nurse-Family Partnership has strongest evidence
  - Key effects are limited to subpopulations
  - Evidence not from independent studies
- NFP may or may not be more effective than EHS
- We need randomized trials of alternative approaches at scale—not just scale up.
- Infant and toddler development is too important not to do more research on what works best.
Pre-K Program Effectiveness Varies

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<th>Head Start</th>
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<tr>
<td>Language</td>
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<td>.26</td>
<td>.09 (.13)</td>
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<td>Math</td>
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<td>Literacy</td>
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<td>.99</td>
<td>.80</td>
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Effects in standard deviations. Figures in parentheses are adjusted for noncompliance.

Early Head Start is 0-3, more expensive and less effective than Head Start.
Oklahoma: Effective Pre-K for All

Preschool programs strengthen reading, writing, and math skills

- TPS Pre K
- Head Start

Program impacts in months

Letter-Word ID
Spelling
Applied Problems

Woodcock-Johnson achievement subtest
NJ Raised Quality in Public and Private

ECERS-R Score (1=minimal, 3=poor 5= good 7=excellent)

00 Total (N = 232) 08 Total (N = 407)
Increased Quality in NJ Pre-K
Improved Education Outcomes

• Gains in language, literacy, math
• 2 years have twice the effect of 1
• 2 years closed 40% of the achievement gap
• Effects sustained through 2\textsuperscript{nd} grade
• Grade repetition cut in half by 2nd grade
Key Features of Effective Programs

- High levels of teacher education and professional development
- Teacher to child ratio allowing for frequent one on one and small group interactions
- Adequate teacher compensation
- Strong supervision and support
- Intensive educational focus
- Balanced curriculum
- Sufficient quantity of education
What We Need for Evidence Based Practice

• Shape policy & practice with systematic experiments
• Conduct RCTs—Try it and see if it works if not RCT
• Collect data on implementation and cost
• Replicate what seems promising—once is not enough
• Partner to get scale detect effects
• Measure what matters for the long haul
• Distrust nonexperimental studies (selection bias)
  – Especially if national or statewide
  – Especially when sorting is likely—parent choice, student assignment, teacher assignment
Perils and Possibilities

• Will the federal govt. put quality first?
• Larger federal role greatly increased weak programs—will they be reformed?
• Will the federal government fund experiments that challenge orthodox views?
• Will EL RtT let states to focus on the achievable or require too much, too fast?
Perils and Possibilities

• Will states put quality first?
• Will states hold the line on EC budget cuts?
• Will combining Early Learning programs pull everyone down?
• Will government invest in evidence based policy—not just new data systems?