What policy makers should know about Pre-K effectiveness

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Potential Gains from Pre-K Investments

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

Decreased Costs to Government
- Schooling costs
- Social services costs
- Crime costs
- Health care costs (teen pregnancy and smoking)
What does all the evidence say, part 1: Cognitive gains from 0-5 ECE in the US (123 studies since 1960)

Note: 1 sd = achievement gap, so High Quality preschool closes nearly half the achievement gap
WSIPP: Summary of results from 49 rigorous studies

Estimation of test score fade-out
Meta-Analytic results
What do we learn from the meta-analyses?

1. Cognitive effects are positive and shrink after children enter school but do not disappear.
2. More rigorous studies find bigger effects.
3. Some programs have bigger effects, those with:
   – Intentional teaching
   – Individualization & small groups
   – Less emphasis on comprehensive services
4. Effects on social skills and school success also persist
5. Larger short-term gains yield larger long-term gains
Pre-K quality nationally is low (but NE is better)
Head Start Effect Sizes over Time

-0.2 0 0.2 0.4 0.6 0.8 1 1.2 1.4

Math  Language  Literacy

K  1st  1st  1st  3rd  3rd

Effect Sizes at end of Pre-K and K entry
Pre-K Effect Sizes at 1st - 8th Grade
National Head Start Impact Study

- One year of Head Start had small positive impacts
- Lasting effects were very small or absent, but:
  - Study is for just one year of Head Start
  - Does not take into account that some in treatment group did not go to Head Start and many in control group attended other preschools
  - Head Start had very small impacts from the start
Literacy outcomes across groups

WJ-III Letter-Word Identification

Mean Estimates

Year

Fall 2002 Baseline
Spring 2003 Head Start
Fall 2003 Kindergarten
Spring 2004
Fall 2004
Spring 2005 1st Grade

Control Group
Head Start Group
Math outcomes across groups

WJ-III Applied Problems

- Control Group
- Head Start Group

Year

Mean Estimates

- Fall 2002 Baseline
- Spring 2003 Head Start
- Fall 2003
- Spring 2004 Kindergarten
- Fall 2004
- Spring 2005 1st Grade

Values:
- Fall 2002 Baseline: 370
- Spring 2003 Head Start: 390
- Fall 2003: 400
- Spring 2004 Kindergarten: 410
- Fall 2004: 420
- Spring 2005 1st Grade: 430
- Fall 2006: 440
- Spring 2007: 450
- Fall 2008: 460
- Spring 2009: 470
Head Start Was Improved after the Evaluation
How do we increase program effectiveness?
NJ Example: Universal High Quality
In 31 High Poverty Districts

- High standards for learning, teaching, curriculum
- Fully qualified teachers
- Maximum of 15 children per classroom
- 6 hour educational day, 180-days per year
- Continuous improvement system with coaching
- Adequate funding with public school salaries
- Part of systemic reform P-3
- All 3 and 4 yr. olds in 31 school systems
- Public-private system with 60% private providers
Continuous Improvement Cycle

First set expectations for learning and teaching

Measure and Assess Progress

Analyze and Plan

Implement – Professional Development and Technical Assistance
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)
NJ 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: 0.14
2 year Abbott pre-k: 0.17

0.20
0.25
0.30
0.35
0.40

0.00
0.10
0.20
0.30

0.40

LAL 4th LAL 5th Math 4th Math 5th Science 4th

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%
Takeaway Lessons

1. Pre-K gains decline but do not (always) disappear
2. Expect some convergence or catch up, but recognize it has costs (e.g., special education)
3. Big gains from the start needed for lasting gains
4. Core of quality is good teaching with a strong curriculum
5. Good teaching system wide requires a continuous improvement system
6. Every year matters—K-3 realignment may be required to get full advantage of pre-K