The Research Evidence on the Importance of Early Childhood

Diane Whitmore Schanzenbach
Northwestern University, The National Bureau of Economic Research & The Brookings Institution
Large share of children live in households that struggle to provide basic needs.
Low-income children less likely to have 2 parents, More likely to have working mother.
Increasing concentration of poverty makes challenges larger.

Poverty highly concentrated—increasingly so—in neighborhoods and schools.
Two Types of Early Life Investments

Increasing household incomes
- Food stamps -> modest (~15%) increase in resources that can be used for food
- 1 in 8 Americans participate

Improving early childhood education
- Pre-school expansion
- Education quality

*Made possible by new analysis techniques, data availability*

*Giving my highlights here – much more out there*
What is impact of alleviating poverty during early life?

Introduction of Food Stamp Program (now SNAP)
- Vouchers that can be used to purchase most grocery store foods
- Increased spending power by 15-20%
- Debate within economics whether impacts of vouchers for food different from cash

Rollout design allows us to measure causal impact of reducing poverty
- Compare children born in different counties in same state
- Compare children born at different times in same counties
Long-term impacts of Food Stamp Program

Original introduction 1963-1975

Use cross-county variation in access at different ages

Use design to look at variety of outcomes: spending, labor supply, birth outcomes, and long-term health & economic outcomes
Food Stamps during Pregnancy Improve Birth Outcomes

Availability of food stamps in the county leads to an increase in birth weight and a reduction in the incidence of low birth weight.

Larger effects on children born to African American mothers.

Effects concentrated at the bottom of the birth weight distribution.

Figure shows reduction in likelihood born with birth weight < X.
Large improvements in health, economic outcomes – especially for women

More good health (women)

Fewer biomarkers of bad health

More economic self-sufficiency (women)
Timing matters: Early investments have larger health payoff

Largest impacts when had resources prior to birth

Important impacts during first 4 years of life
What is causal impact of expanding early childhood education?

Expansion of preschool programs

◦ High or middle quality, targeted to some of most needy
◦ High or middle quality, targeted to most/all of needy in area
◦ High or middle quality, broadly available to needy and higher income
◦ Low quality, targeted to most needy

Variety of designs

◦ Randomized experiments
◦ Comparing siblings
◦ Comparing variation in access
Impacts of Preschool Projects on Long-run Economic and Social Outcomes

Both Perry and Abecedarian increased employment and decreased arrests for men while increasing high school graduation and physical activity for women.


Note: Hollow bars are not statistically significant at the 10 percent level.
Children of high income mothers more likely to attend preschool, majority private programs

Fewer than half of children of low-income mothers attend, overwhelmingly public programs, Head Start
Head Start has long-term impacts, improving high school graduation. Also, college attendance, emotional outcomes (self-control, self-esteem), own practices as parents.
In response, states have expanded public preschool offerings
differ widely by “quality” measured by inputs (class size, teacher education)
Access varies as well
Tradeoff between access and quality: more enrollment slots for less expensive, lower quality programs
A few states different
Today’s expansions: Statewide, high-quality pre-k

Compare cohorts before & after state-wide program

Who attends? Low-income shift from no pre-K to pre-K. High-income shift from private pre-K to public pre-K

Persistent, strong, significant impacts on low-income students

Small, statistically insignificant impacts on higher-income students – possibly because small change in likelihood of attending
Evidence: Preschool can increase learning if it improves quality of inputs.

- Perry preschool
  - Narrowly targeted
  - Intensive intervention
  - Large change in learning environment

- Strong lifetime impacts
  - $8 return for every $1 spent (Heckman)
Evidence: Preschool can increase learning if it improves quality of inputs

- **Head Start**
  - (less) Narrowly targeted
  - Less intensive intervention
  - Substantial (but smaller) change in learning environment

- **Positive lifetime impacts**
  - Smaller than Perry
  - Currie, Deming
Evidence: Preschool can increase learning if it improves quality of inputs.

- Preschool today
  - More children attend overall
  - High-SES attend private, high quality programs
  - Low-SES attend public programs, varied quality
  - Head Start less likely to represent improvement relative to counterfactual
Evidence: Preschool can increase learning if it improves quality of inputs

- **High-quality public program: low SES**
  - Improves skills
  - Smaller improvement b/c counterfactual higher

- **High-quality public program: high-SES**
  - Substitution from private to public
  - May reduce skills
  - Families better off, less out of pocket spending
Evidence: Preschool can increase learning if it improves quality of inputs

Impact depends on:
- Quality of the counterfactual
- Level of quality of new public program
- Extent of substitution from private to public
What we know 1: These Investments have Large, Long-Lasting Returns

Mature literature: Returns on Investment Large
- ”Model” programs (Perry, Abecedarian)
- Head Start
- Growing literature on state programs
- Related literature on non-education interventions
  - Food Stamp Program
  - Medicaid

Long-term impacts on real life outcomes: earnings, education, criminal activity, welfare use
- Initial positive impacts on learning
- Academic interest in “fade-out” in middle years
What We Know 2: Impact Depends on What Child Would Otherwise Be Doing

Research literature in economics stuck in basic question: “does it work?”
- This is no longer the relevant question in US

Landscape has changed:
- Earlier literature: preschool or not
- Today: which type of preschool
  - Cannot compare impact of one type (Head Start) to mix of alternatives
  - Fundamental problem with Head Start Impact Study randomized trial
What We Need to Know: How do Children’s Interactions Help or Hinder Impacts?

After preschool, children still educated in classrooms

- If preparation for early grades differs, ECE can be working for or against more productive elementary schools
- If bringing up worst performers: can make later grades more successful for entire class
- If ECE moves some children to top of class, but teacher still must teach remedial skills to others, ECE children may get bored, regress

How to allocate spaces when not all children can be enrolled

- Randomly assign individuals: best for evaluation, not necessarily best for education
- Understand how to target groups, neighborhoods—and reform later education
High-priority Research Questions as we scale up

Quality
- Lower-cost way to measure program/classroom quality
- Training programs, practices support quality improvement
  - Dahlke study in Ohio on teacher observation: Measurable, positive impacts on student outcomes

Design
- Targeted or universal?
  - How approach cost-sharing for higher-income families?
  - How start rollout?
- Cost-tradeoff for dosage: multiple years? Full day?

System
- Impacts on broader child-care market
- Interactions with later schools, parent employment
- Interactions with other policies that increase household financial resources