

New Research on the Benefits of Universal Preschool

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Seattle City Council, February 3, 2013

Today's agenda

- We review the most rigorous evidence on preschool evidence in two parts:
 - 1) The current, full evidence base for universal preschool
 - 2) Information on the highly successful Boston Public Schools preschool program – program history, features, and impacts
- Goals: Inform Seattle's Preschool for All Plan in its current phase of development and spark further conversation

Part 1

Investing in Our Future: The Evidence Base on Preschool Education

**Hirokazu Yoshikawa, Christina Weiland, Jeanne
Brooks-Gunn, Margaret Burchinal, William
Gormley, Jens Ludwig, Katherine Magnuson,
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**Society for Research in Child Development;
Foundation for Child Development**

Investing in Our Future: The Evidence Base on Preschool Education

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OCTOBER 2013



Society for Research in Child Development

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Key Issues Raised by Universal Preschool Proposals

- Is preschool at scale worth the investment? Is this the case when the evidence goes beyond tightly controlled demonstration?
- What are specific dimensions of quality that make a difference for children's outcomes?
- Can quality preschool be implemented at scale?
- Does preschool benefit children above as well as below the poverty line?
- What about other subgroups, such as children who are dual language learners and children with special needs?
- Is a second year of preschool beneficial?
- What family support services make a difference in preschool?

Current Research Brief

- Aims to address these and other questions with synthesis of the evidence base for preschool education
- Emphasis on recent research
- Guidelines for inclusion of evaluation research meeting criteria for rigor

Does Recent as well as Earlier Evidence Support Investment in Preschool?

- **Quality preschool education is a profitable investment** (Barnett; Bartik; Gormley; Heckman; Karoly)
 - **Older demonstration programs:**
 - Perry Preschool Chicago Parent-Child Centers (benefit-cost ratios of 7 to 1 or higher)
 - Abecedarian (longer 0-5 program): 2.5
 - **More recent evidence from at-scale public preschool:**
 - Benefit-cost ratio of Tulsa prekindergarten program: between 3 and 5 to 1; including robust ratio for non-poor children

Can At Scale Preschool Work When It's Universal?

- Average impact of 1 year of preschool at end of the 4 year old year: one third of a year of additional learning beyond comparison groups (meta-analysis of 84 studies)
- At-scale, high quality universal public preschool programs can have substantial impacts on children's early learning (language, literacy and math skills):
 - Tulsa and Boston each produced between half a year and full year of additional learning beyond comparison groups (most of whom were in other centers / preschools)

Which Features of Quality Are Important?

- Structural Quality (group size; adult-child ratio; teacher qualifications)
- Process Quality (quality of teacher-child interaction, including emotional support as well as classroom practices to support engagement and learning)
- Structural quality features help to create conditions for positive process quality, but do not ensure that it will occur.

Does Quality Matter for Children?

- Children make larger gains when quality is higher
 - Warm, responsive teacher-child interactions
 - Teachers encouraging children to speak – “serve and return” conversation
 - Opportunities to engage with varied materials
 - High quality interactions and activities to foster learning
- But average quality is in the middle range for both state and locally sponsored preK and Head Start; small minority of programs truly poor; only small minority of programs of excellent quality
- Instructional quality is particularly low

What are Effective Approaches to High Quality?

- Most promising recent evidence: Combination of
 - 1) Developmentally focused instruction / curricula (focused on particular set of skills – e.g., language / literacy; math; socio-emotional skills)
 - 2) Intensive on-site or video-based professional development (mentoring / coaching ; often with frequency of 2X a month or more)
 - 3) Regular monitoring of child progress that is not high stakes, but to inform teachers' practice – adjust content and approach based on how individual children are doing
- Strong set of recent examples, including some at scale, for language / literacy; math; socio-emotional
- Some combinations (e.g., language + socio-emotional; language + math)

What Does the Evidence Say About Comprehensive Services?

- Evidence supports focus on:
 - **Health** (Evidence from Head Start evaluations suggests importance of focus on immunizations; comprehensive screening; regular medical home; dental services)
 - **Parenting education** – (Meta analysis indicates that parenting education can double impact on cognitive skills, but only if provided with opportunities for practice, modeling and feedback on interactions with children; parenting classes that simply provide information make no difference)

Is an Additional Year of Preschool Beneficial?

- Second year (e.g., at age 3 in addition to at age 4):
 - Larger total gains, but added impact of additional year usually smaller than gains from 1 year
 - However not clear the extent to which this pattern reflects combined classrooms with 3- and 4-year-olds, and 3-year-olds experiencing same learning activities or curriculum if they have a second year

What is the Pattern of Short- vs. Long-Term Effects?

- In follow-up evaluations, test scores converge between children who received preschool and those who did not
- Limited follow-up data thus far in studies of public preK: Sustained impacts of Tulsa through 3rd grade for math among boys
- Even when there is convergence on test scores, there is evidence of long-term effects on important early adult outcomes in both demonstration programs and programs at scale (Head Start --Deming and Currie; Perry Preschool; Abecedarian)

Are There Positive Effects for Different Subgroups?

- **Socioeconomic Status:**
 - High-quality preschool benefits both low- and middle-income children, with substantial effects on both groups, but greater impact on children living in or near poverty (Tulsa; Boston)
- **Race/ethnicity:**
 - No clear pattern of differences. Children of all racial/ethnic groups can benefit

Are There Positive Effects for Different Subgroups?

- **Dual Language Learners and Children of Immigrants**
 - Positive impacts on language and math outcomes as strong or stronger for dual language learners and children of immigrants
 - Stronger for Tulsa, Boston
- **Children with Special Needs**
 - Benefits for this group, though few studies

Part 2

Impacts and Features of the Boston Public Schools Preschool program



Why look to Boston?

- Model matches the “strongest hope” for improving instruction quality in preschool (Yoshikawa et al., 2013)
- Some of the strongest impacts on children to date (Weiland & Yoshikawa, 2013)
- Like Seattle, implemented across an entire city

Boston Preschool History

2005

UPK start;
Department
of Early
Childhood
established



Structural quality investments

- Teachers paid on the same scale as K-12 teachers
- Teachers subject to same educational requirements as K-12 teachers
 - (including masters degree within 5 years)
- Not means-tested; open to any child in the city, regardless of family income
- 1:11 teacher-student ratio

Boston Preschool History

“Boston preschools falling far short of goals... hobbled by mediocre instruction” – Boston Globe, 2007

2005

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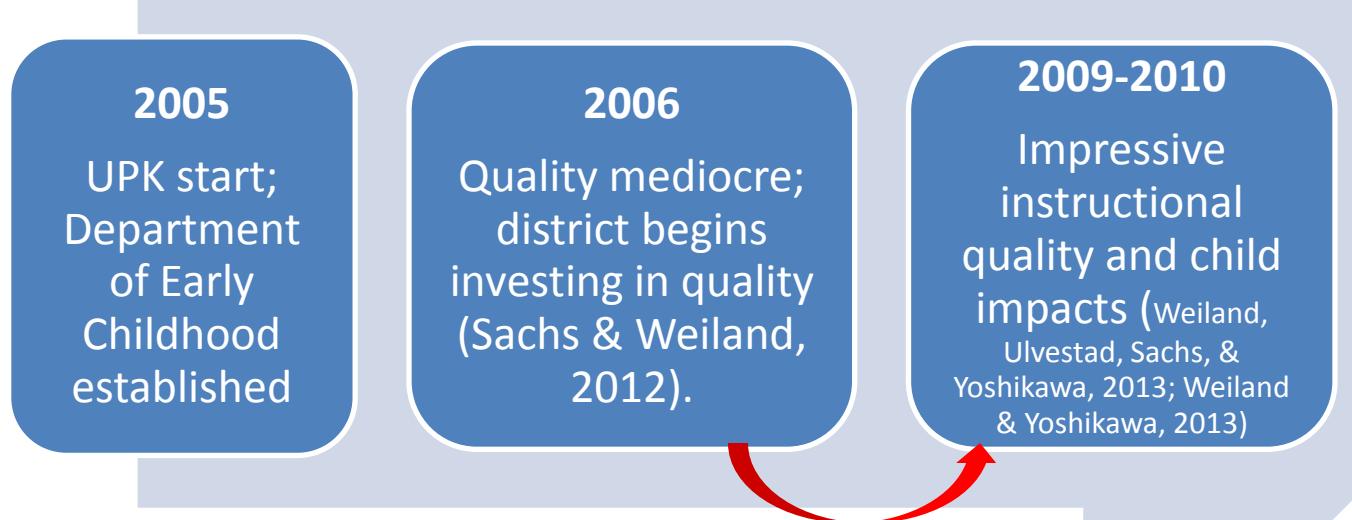
2006

Quality mediocre;
district begins
investing in quality
(Sachs & Weiland,
2012).

Process quality investments

- Proven language, literacy, and mathematics curricula
- Paired with training on the curriculum (6 days math; 7 days language and literacy) and weekly to bi-weekly in-classroom coaching by an expert coach
- Classroom quality observed and evaluated by outside researchers bi-annually. Data are non-punitive. Fed back to teachers to improve their practice and used for district-wide planning.

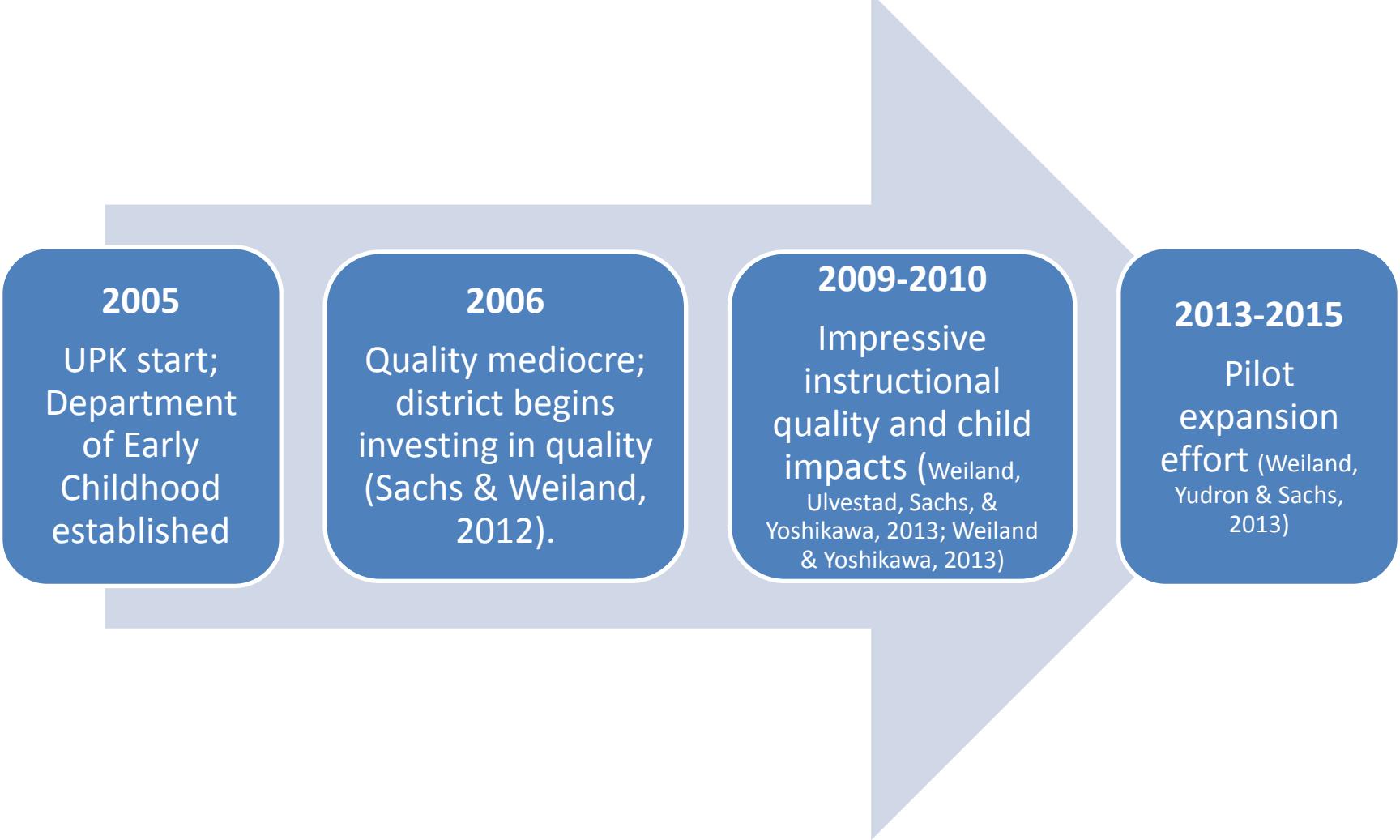
Boston Preschool History



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2009-2010

Impressive
instructional
quality and child
impacts (Weiland,
Ulvestad, Sachs, &
Yoshikawa, 2013; Weiland
& Yoshikawa, 2013)

2013-2015

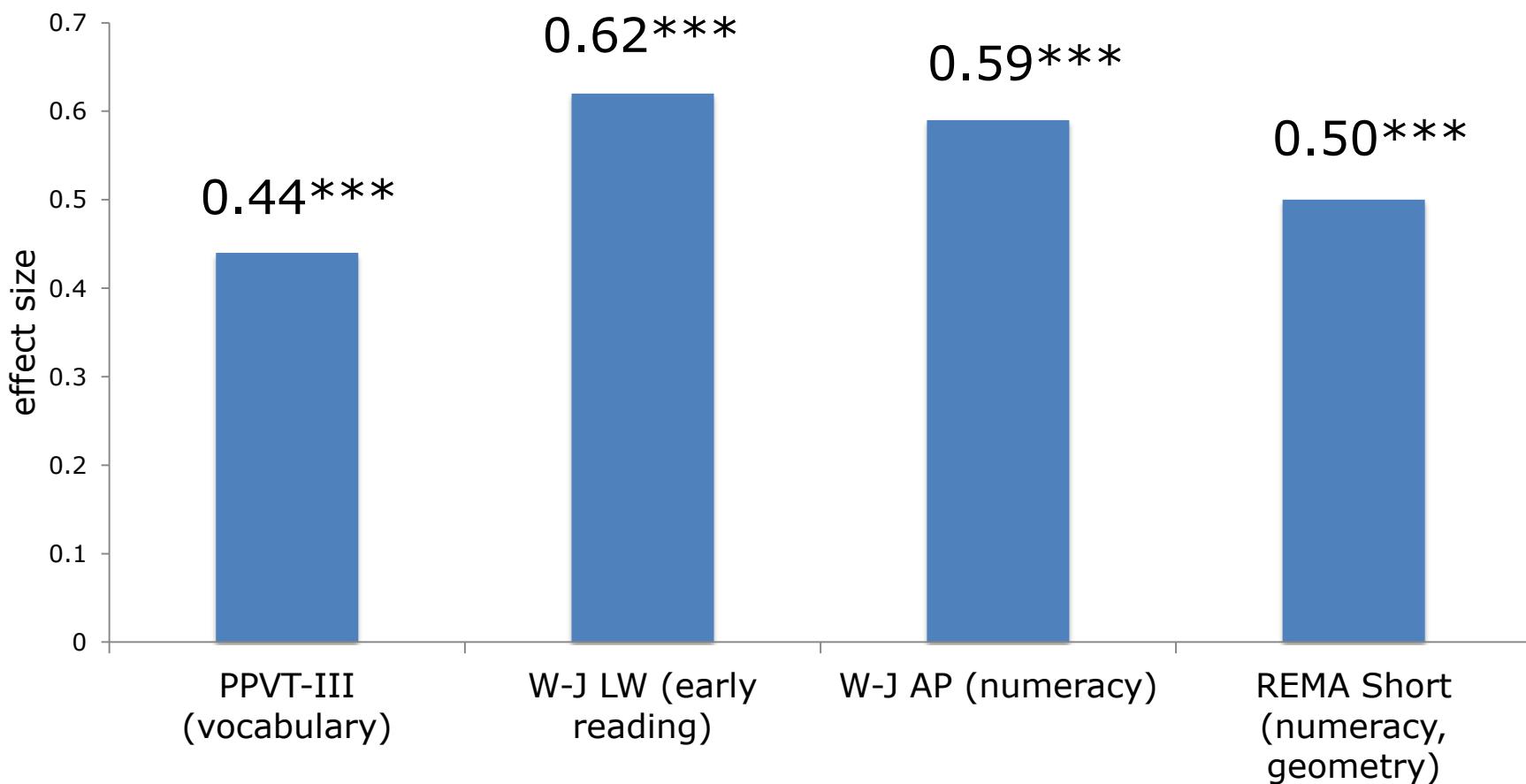
Pilot
expansion
effort (Weiland,
Yudron & Sachs,
2013)

Study details

- Rigorous design
- 2,018 children included
- 85% of district schools and 70% of students in those schools
- Diverse student population
 - 11% Asian, 27% Black, 41% Hispanic, 3% Other, 18% White
 - Home language: 50% English, 27% Spanish, 22% Other
 - 69% receive free/reduced lunch, 9% students with disabilities

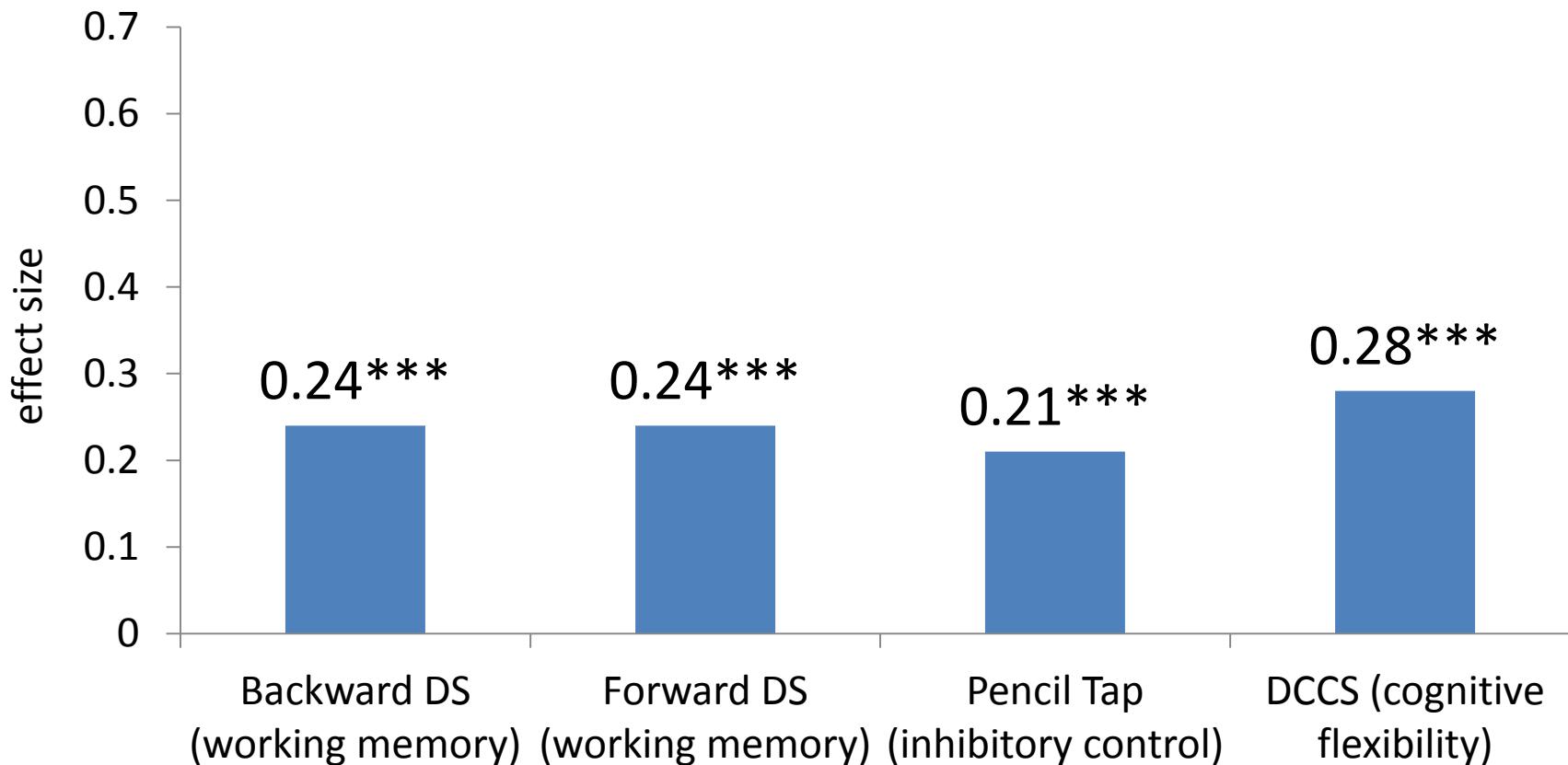
Results: Largest effects on language and math of public preK studies to date in the US

(Weiland & Yoshikawa, 2013)



Results: Positive “Spillover” Effects on All Three Dimensions of Executive Function Skills

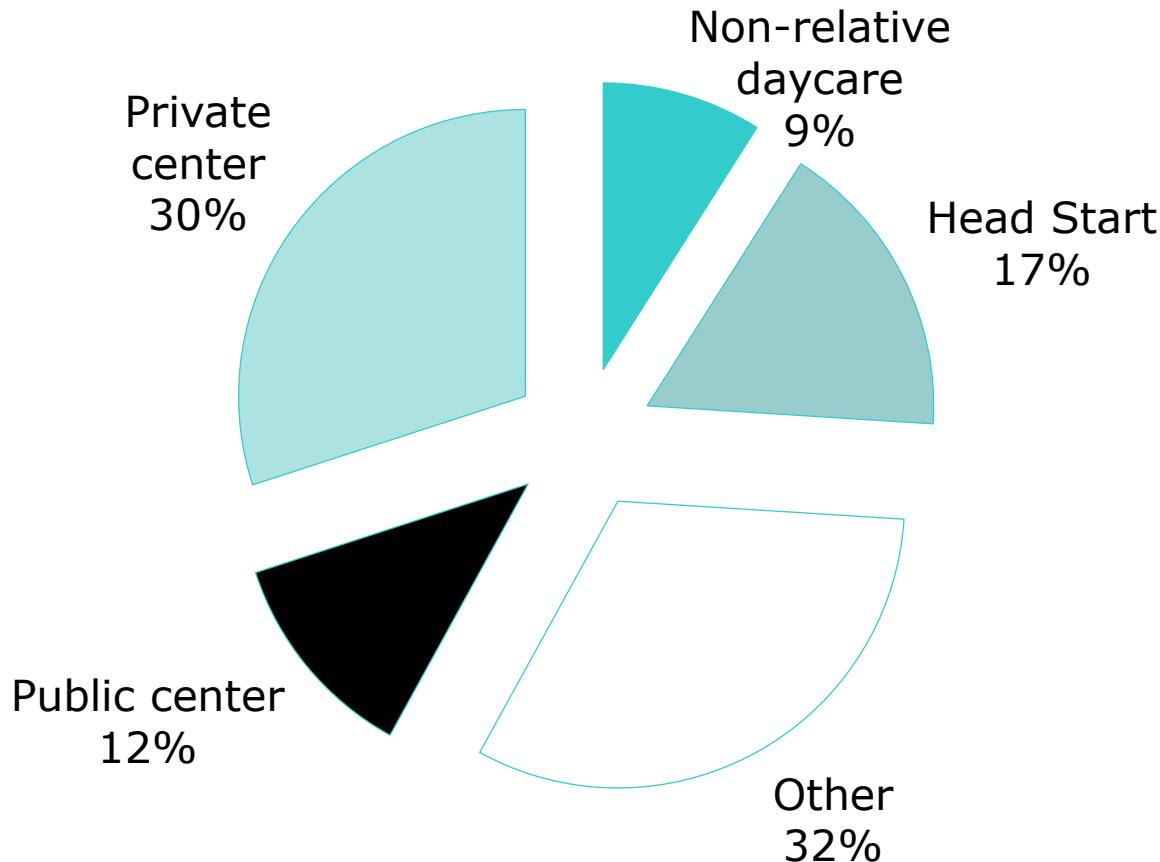
(Weiland & Yoshikawa, 2013)



Results: Subgroups

- Subgroups: All children benefitted, but impacts particularly impressive and larger for children from lower-income families and Latino children.
 - Closed the school readiness gap among poor and non-poor children in mathematics
 - Eliminated the school readiness gap between Latino and White children in early reading and mathematics
 - Narrowed school readiness gaps between White and Asians and between White and Black students.

Results: Impacts achieved even though majority of control group children attended other preschool programs



Implications of Boston

- Adds to evidence base for publicly funded Pre-K
- High-quality coaching system can be implemented to support two curricula
- Math results particularly compelling
- Some evidence of larger effects for some subgroups (particularly Latino students), but benefits largely accruing to everyone
- Contributes to discussion around how to maintain instructional quality at scale

Conclusion: Lessons for Seattle

- Importance of intensive professional development with frequent in-classroom coaching / mentoring
- Evidence-based curricula that coaches / mentors support
- Consider curricular sequence of what 3 and 4 year olds experience in the classroom
- Outreach to groups least likely to enroll (children from immigrant families, e.g.)
- Critical role of rigorous evaluation

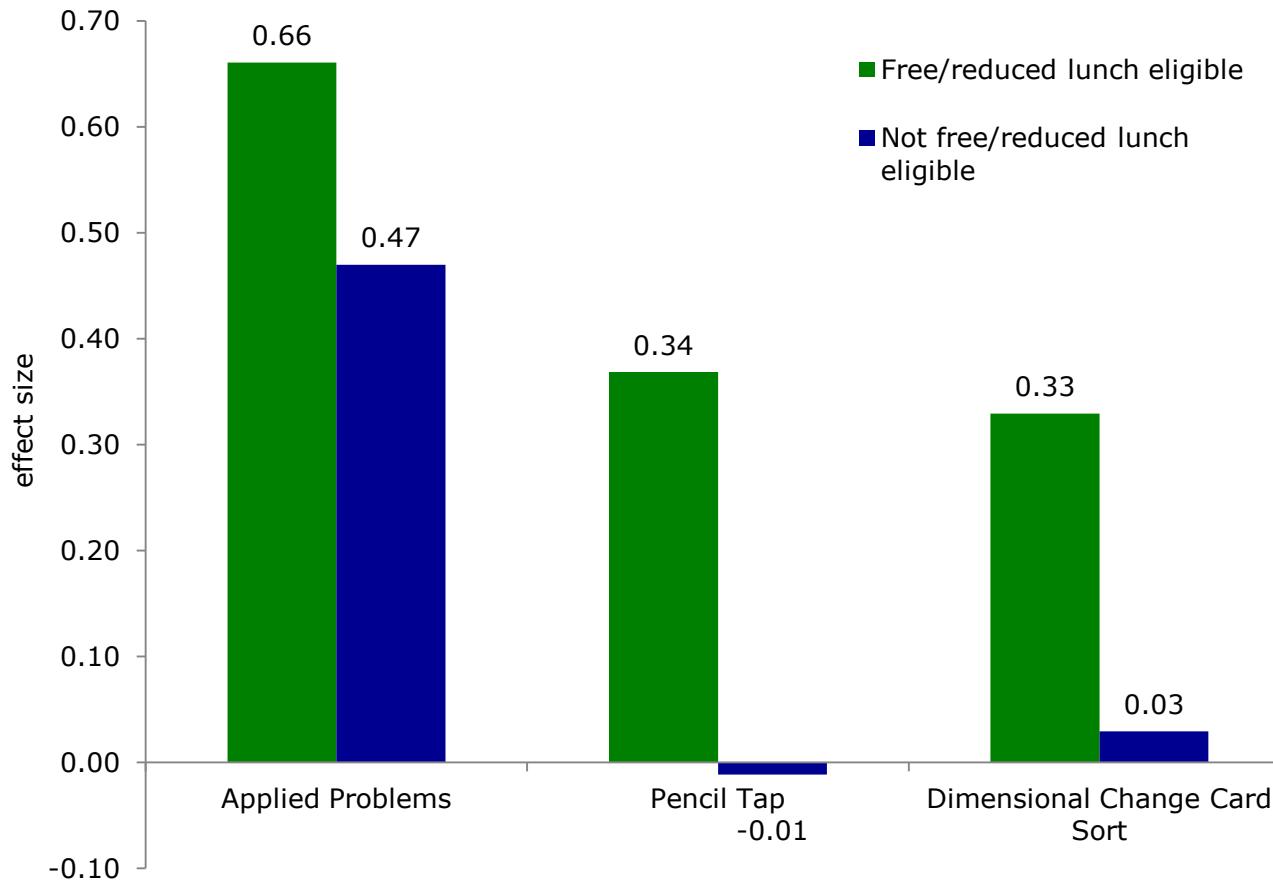
Acknowledgements

- **BOSTON:**
- BPS: Participating families, teachers, principals, early childhood coaches, Jason Sachs and the BPS Department of Early Childhood, the BPS Office of Research, Assessment and Evaluation.
- Carolyn Layzer and Abt Associates
- Co-PI's: Nonie Lesaux, Richard Murnane, and John Willett
- Our research assistants: Kjersti Ulvestad, Carla Schultz, Michael Hurwitz, Julia Hayden, Hadas Eidelman, Kam Sripada, Ellen Fink, Julia Foodman, Deni Peri, Caitlin Over, and John Goodson
- Our grant officer and funder: Caroline Ebanks at the Institute of Education Sciences

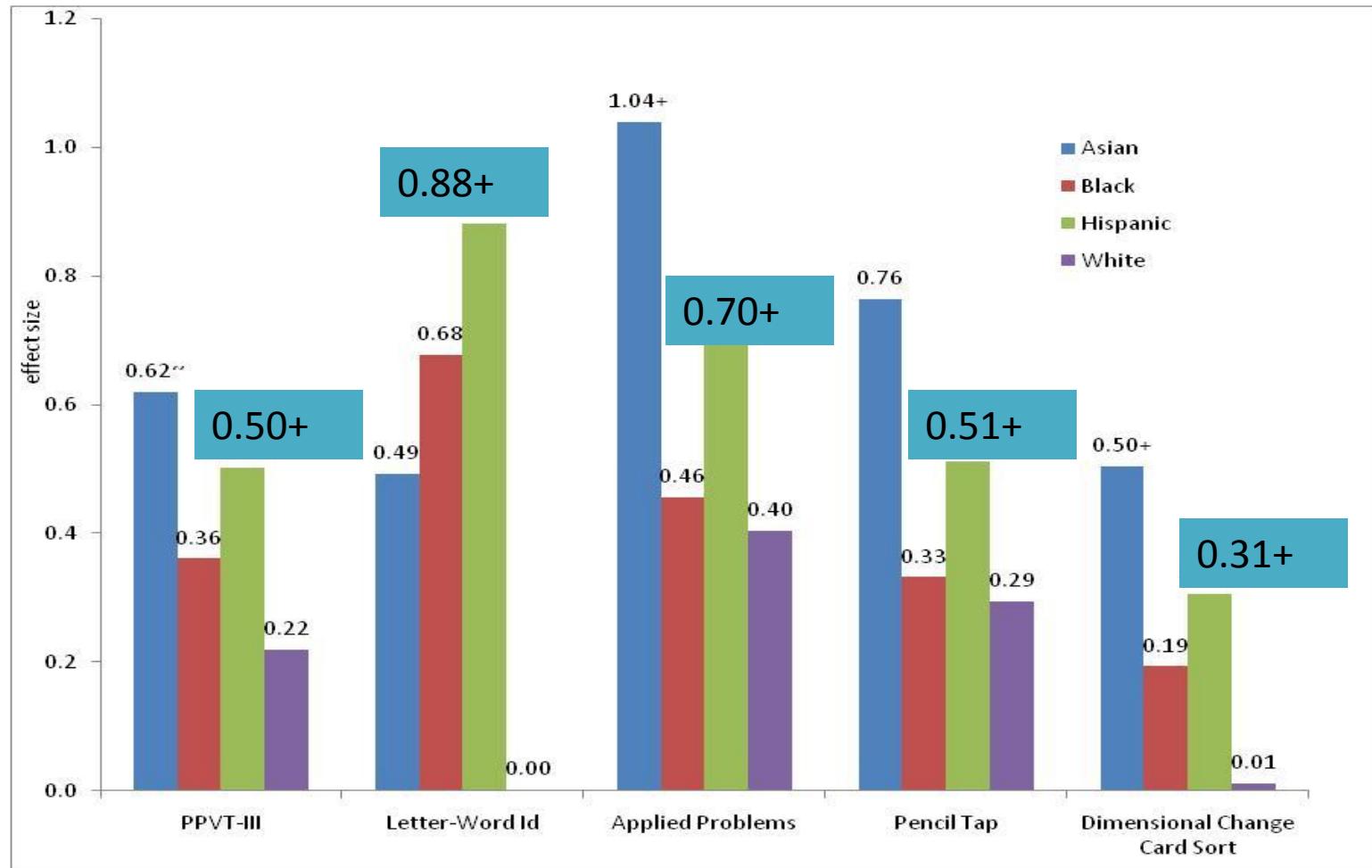
INVESTING IN OUR FUTURE REPORT:

- Thanks to reviewers: J. Lawrence Aber, Karen Bierman, Mary Catherine Arbour, Maia Connors, Greg Duncan, Philip Fisher, Ruth Friedman, Eugene Garcia, Ron Haskins, Jacqueline Jones, Laura Justice, Nonie Lesaux, Joan Lombardi, Pamela Morris, Adele Robinson, Jack Shonkoff, Catherine Tamis-LeMonda, Elizabeth Votruba-Drzal, and Jane Waldfogel

Appendix: Free/reduced lunch subgroup effects



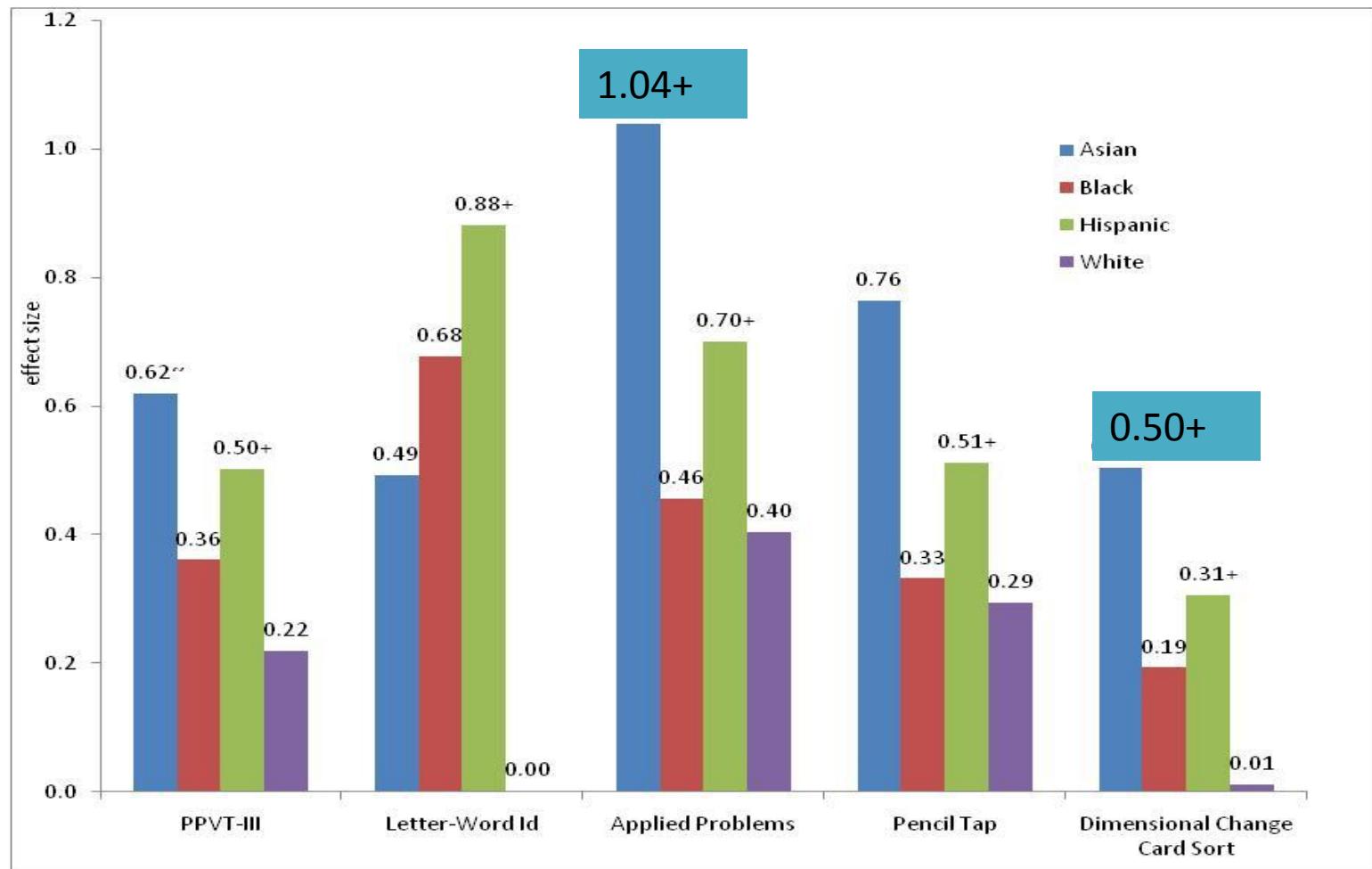
Appendix: Race/ethnicity subgroup effects



+ robust to bandwidth and functional form

~ not robust to bandwidth and/or functional form

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