

New Research on the Benefits of Universal Preschool

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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,
Deborah Phillips, and Martha Zaslow**

**Society for Research in Child Development;
Foundation for Child Development**

Investing in Our Future: The Evidence Base on Preschool Education

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FOUNDATION FOR CHILD DEVELOPMENT

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

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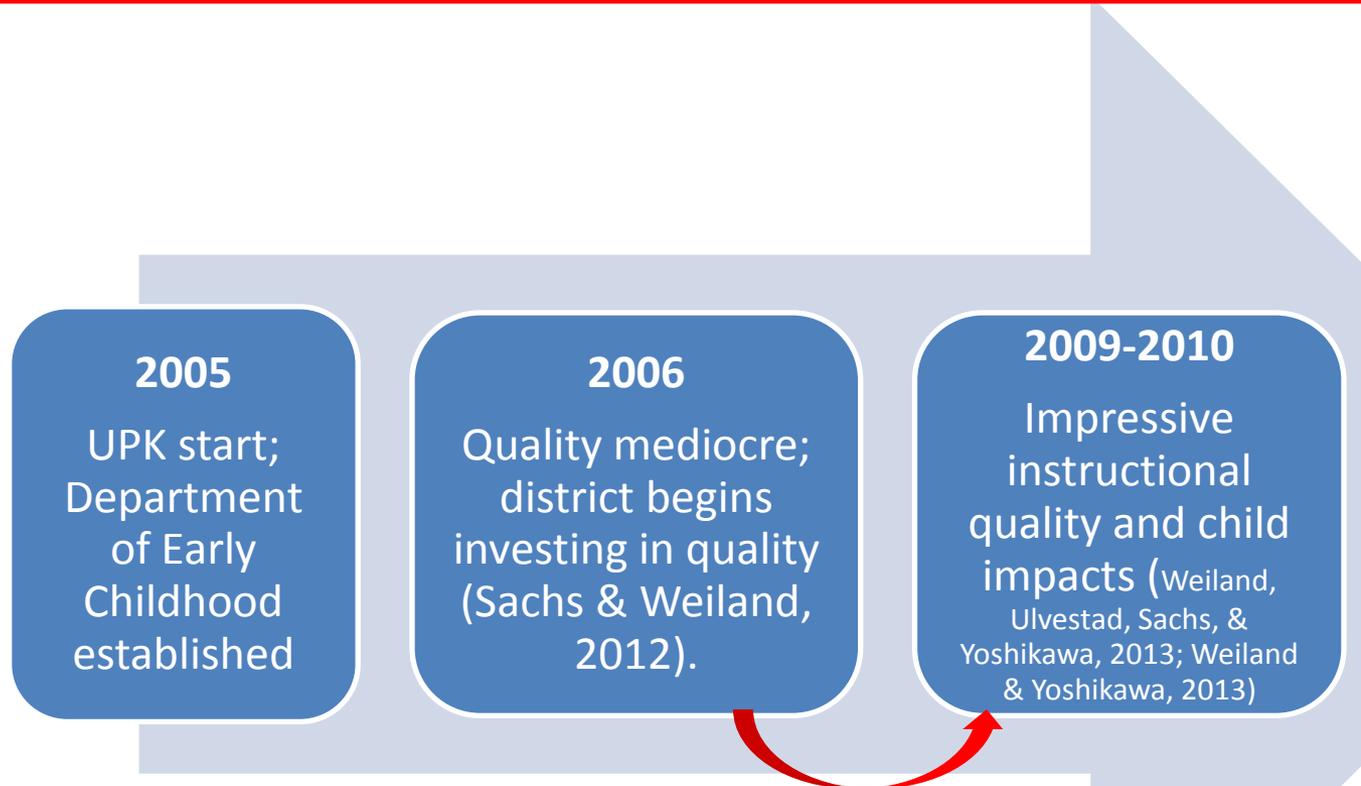
2006

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.

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2009-2010

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

2013-2015

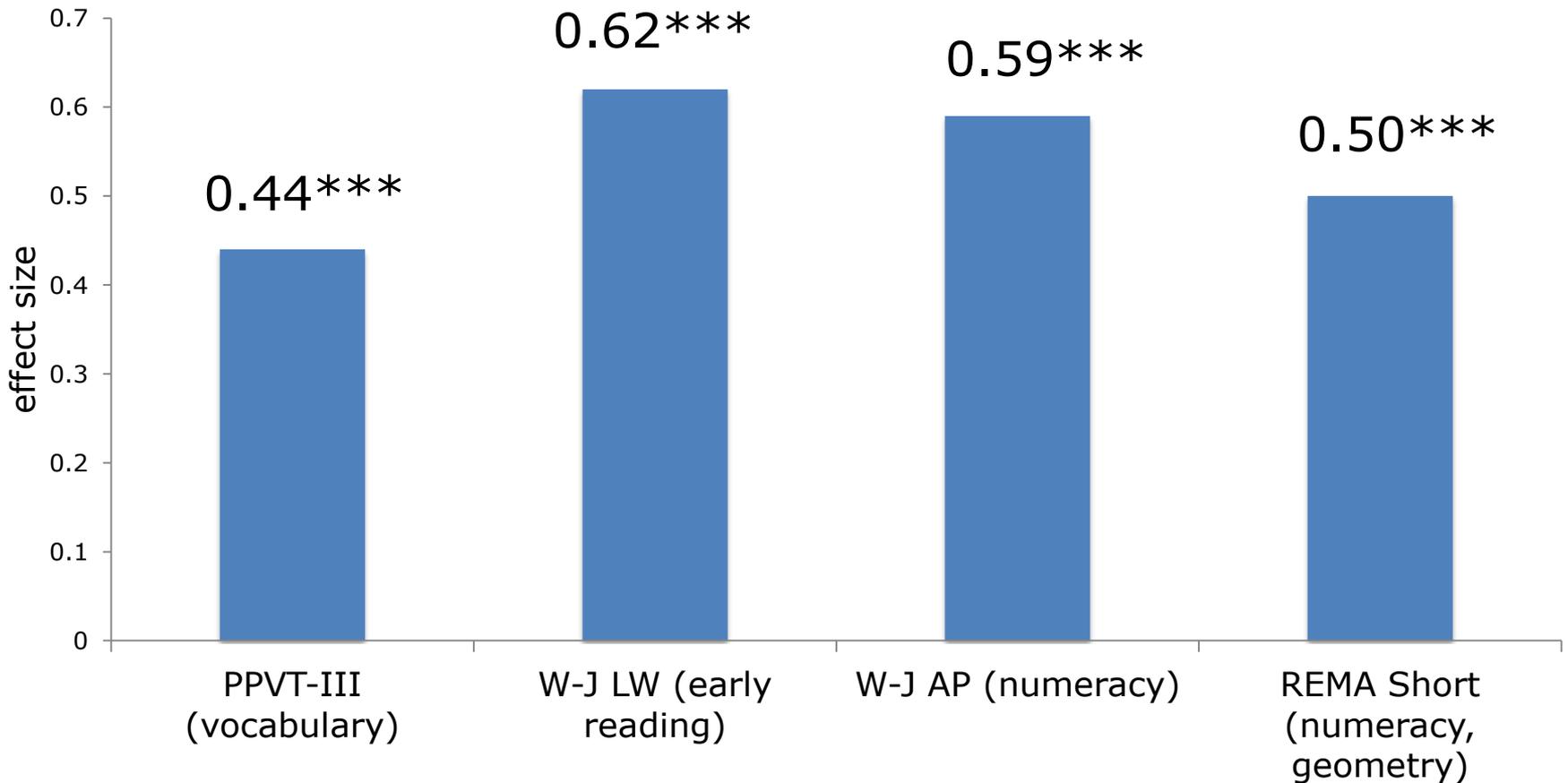
Pilot
expansion
effort (Weiland,
Yudron & Sachs,
2013)

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

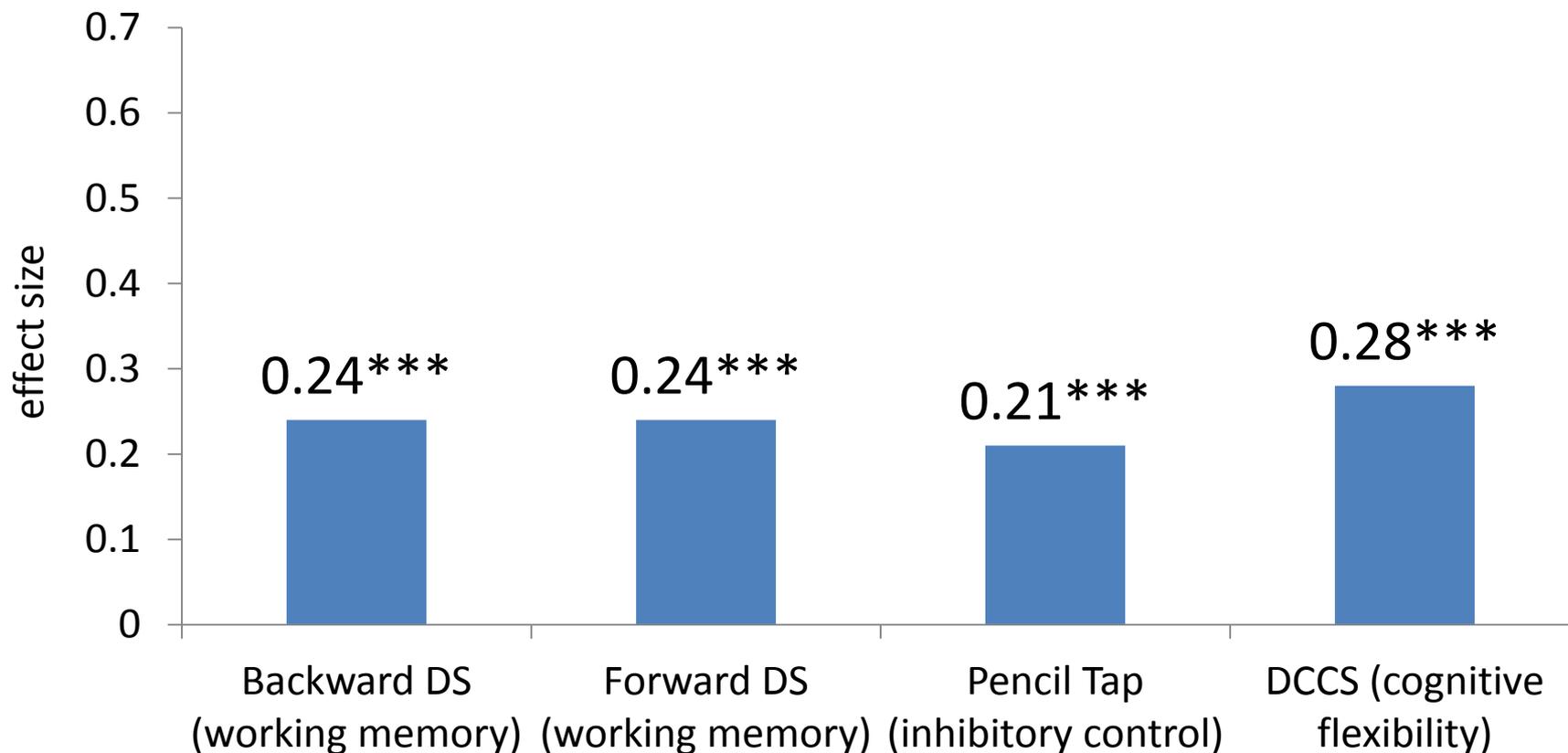
Results: Largest effects on language and math of public preK studies to date in the US

(Weiland & Yoshikawa, 2013)



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

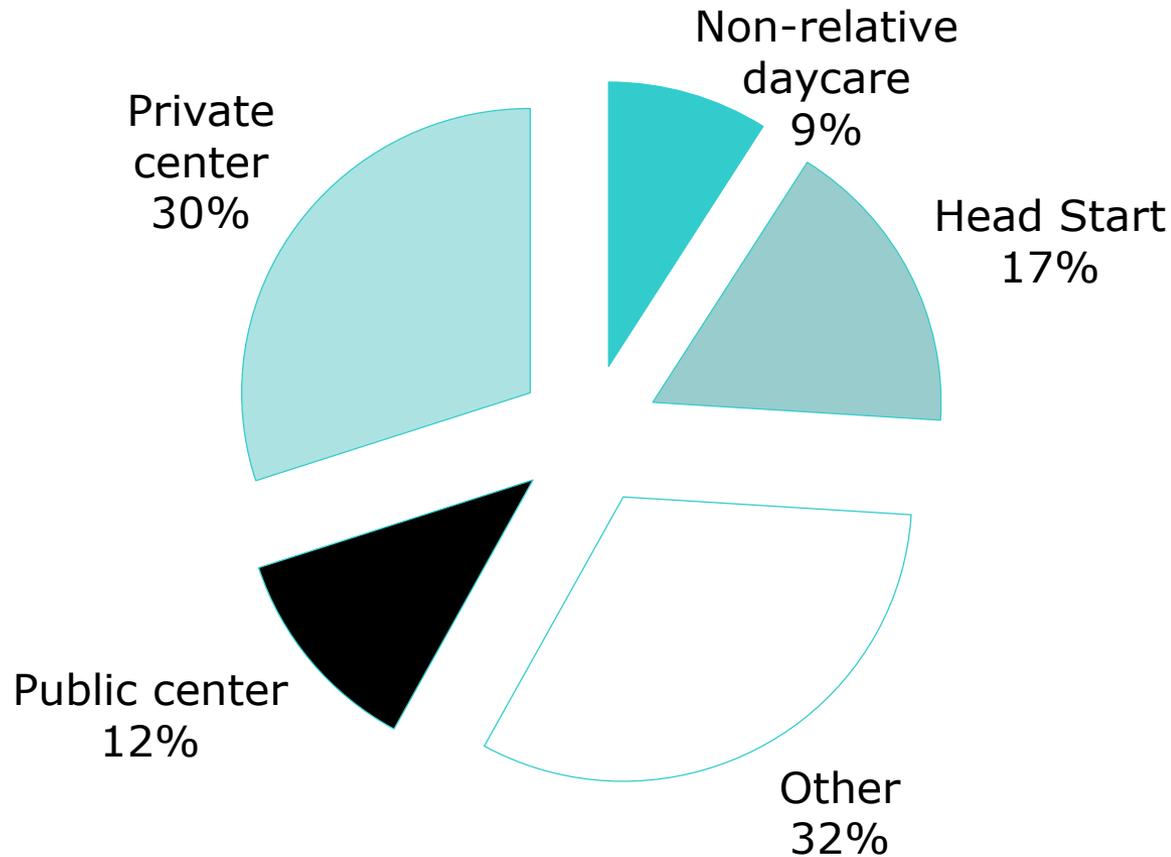
(Weiland & Yoshikawa, 2013)



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

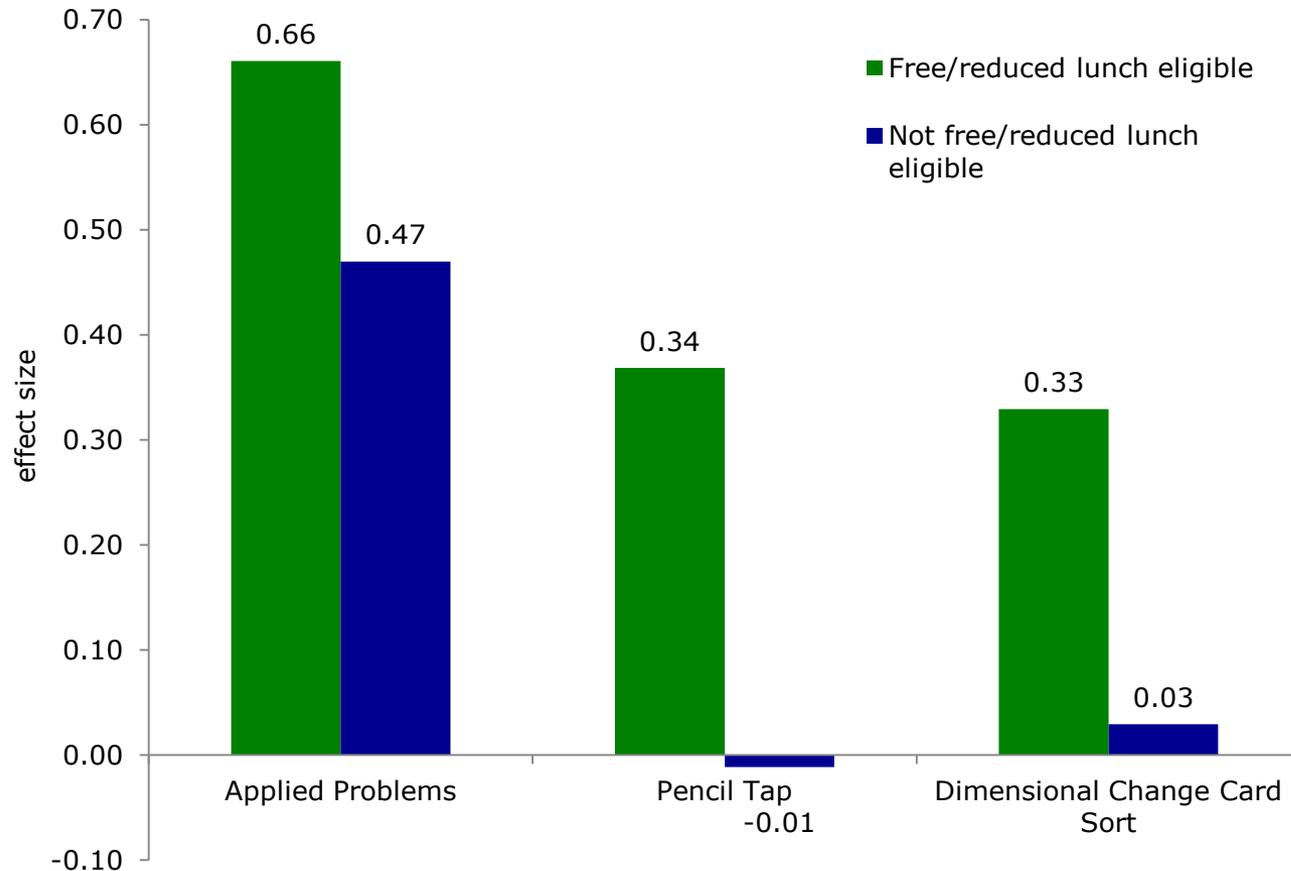
- **BOSTON:**

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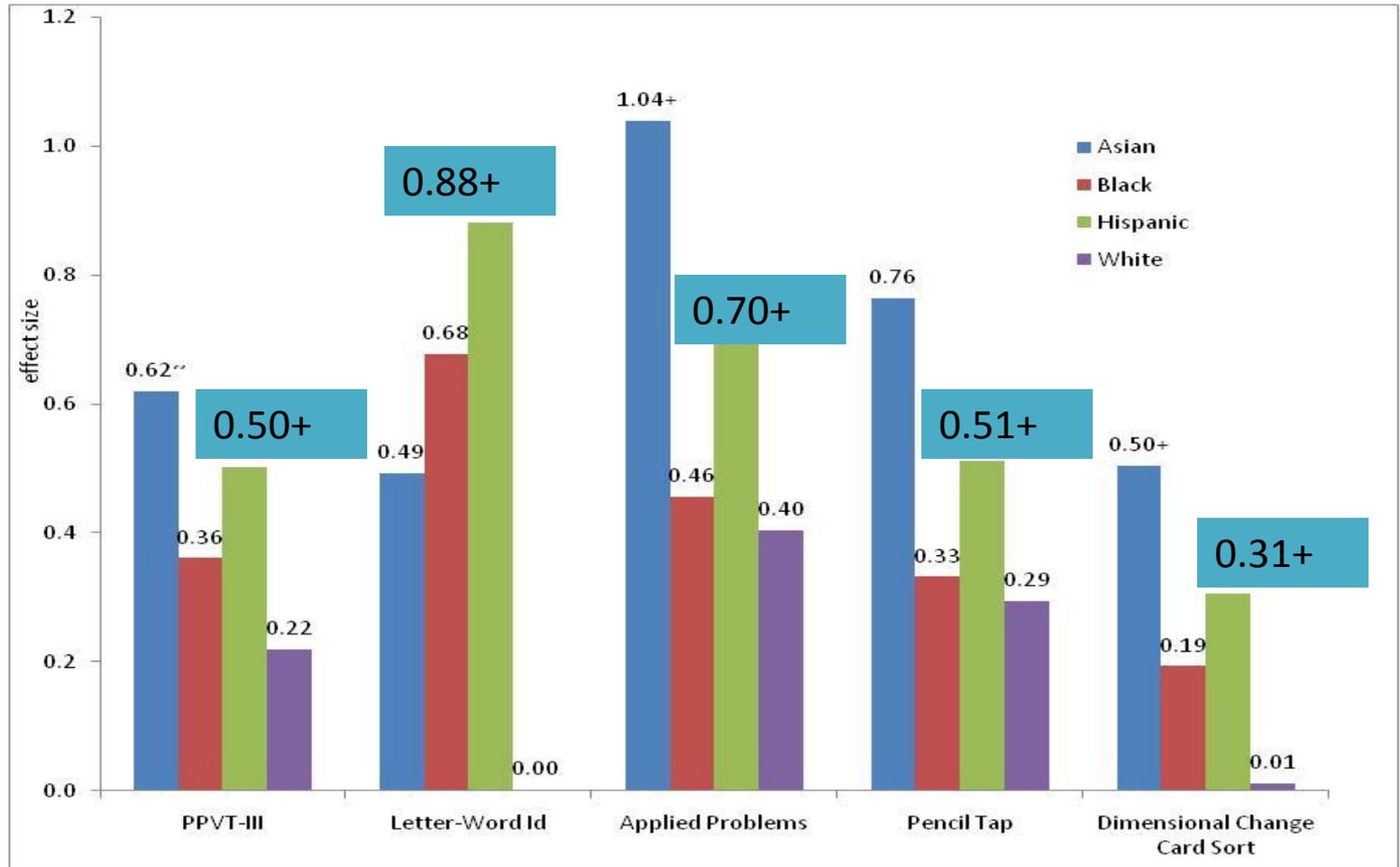
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Appendix: Free/reduced lunch subgroup effects



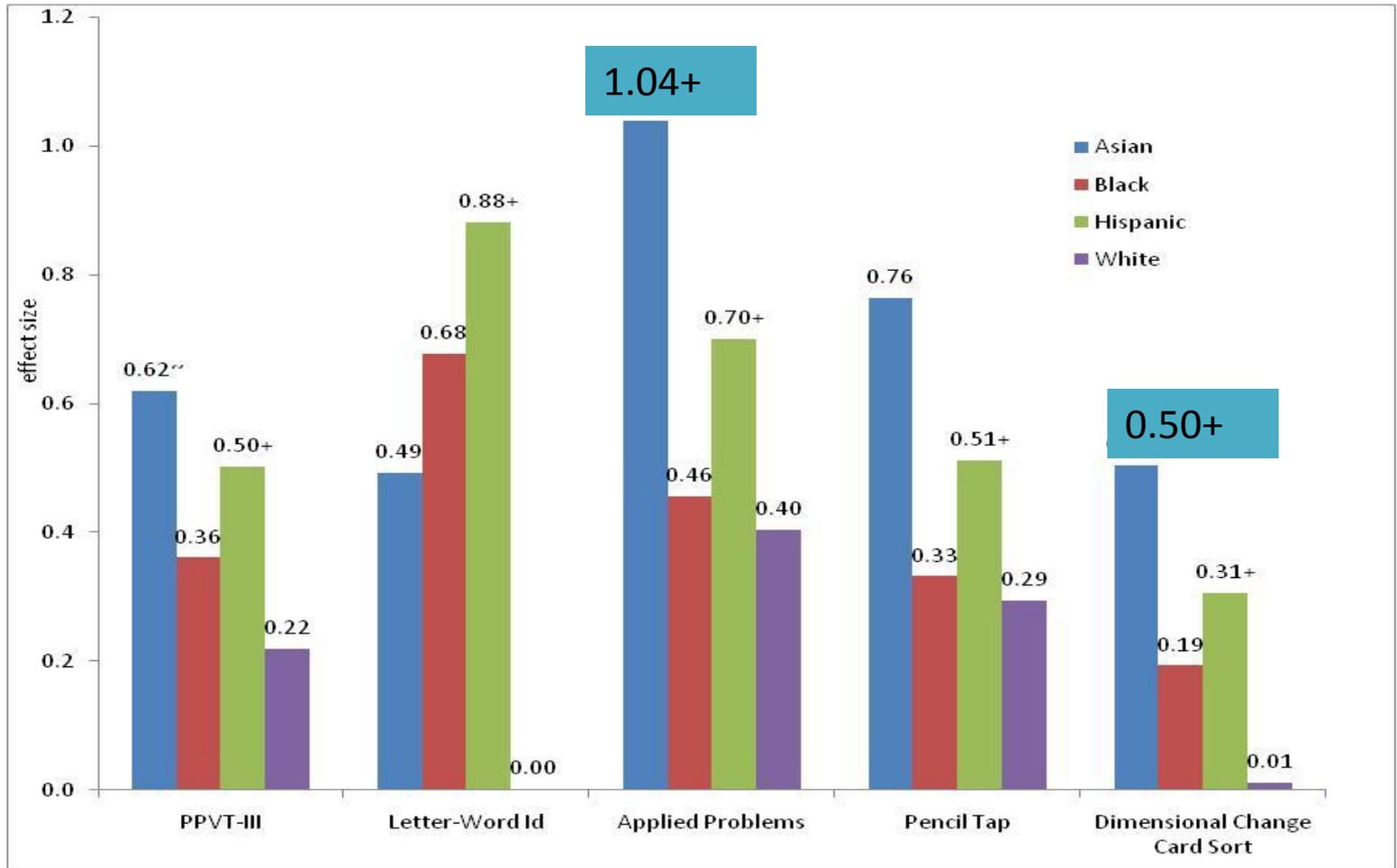
Appendix: Race/ethnicity subgroup effects



+ robust to bandwidth and functional form

~ not robust to bandwidth and/or functional form

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