

Early Childhood Programs: Lasting Benefits and Large Returns



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Potential Gains from ECEC Investments

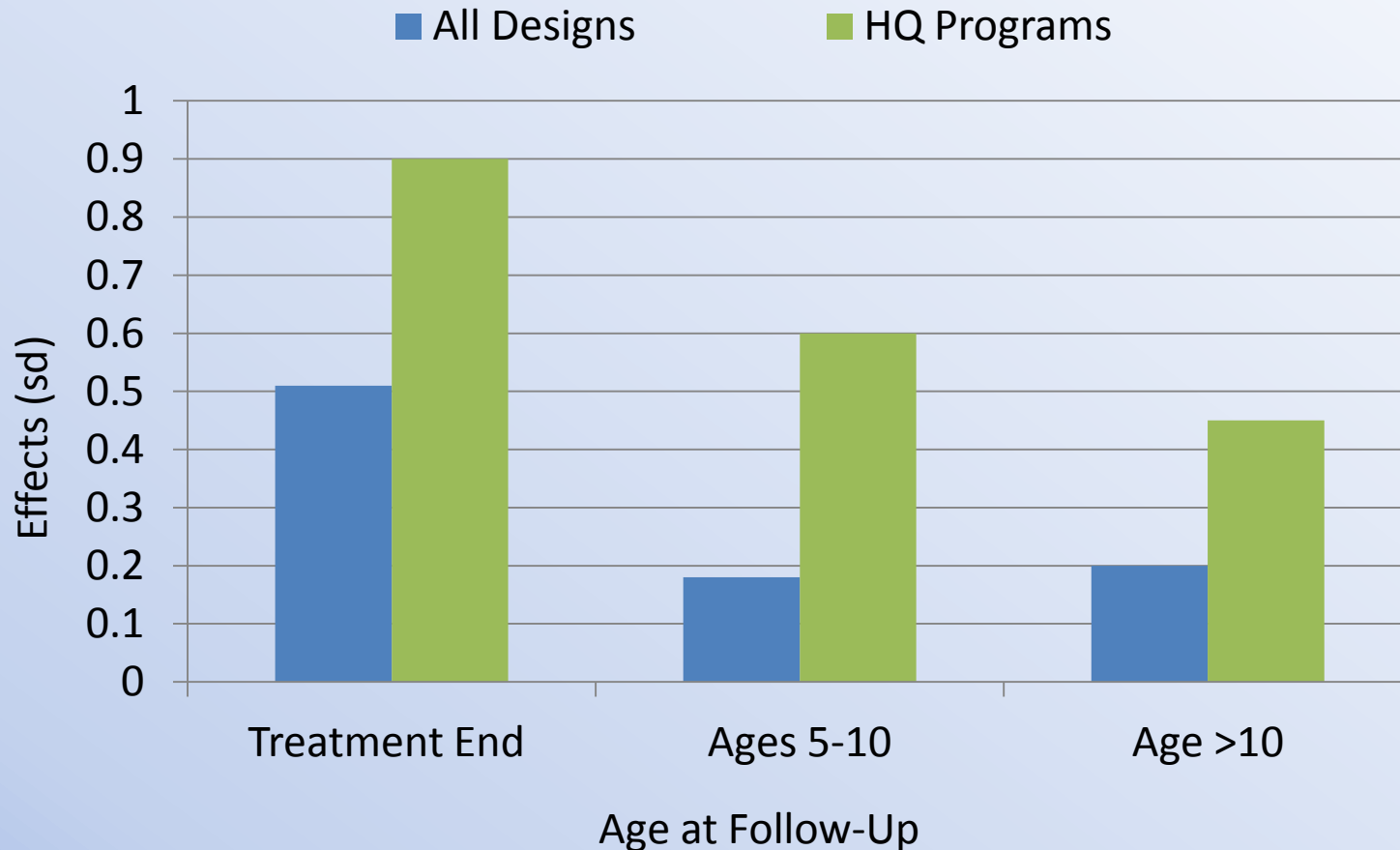
Educational Success and Economic Productivity

- 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)

What does all the evidence say: 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

What do we know from the US meta-analyses?

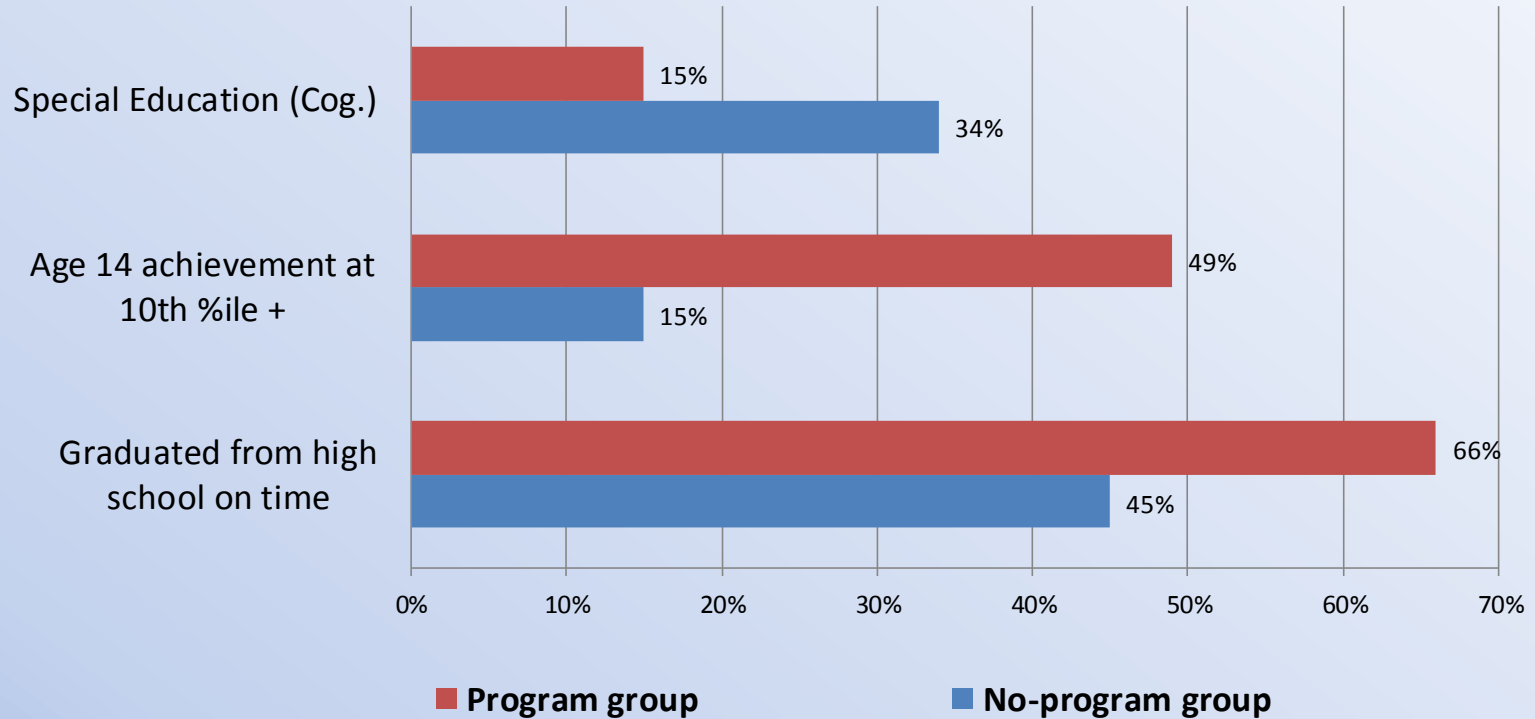
1. Cognitive effects are positive and shrink after children enter school but do not disappear.
2. Higher quality programs have bigger effects, those with:
 - Intentional teaching
 - Individualization & small groups
 - Less emphasis on comprehensive services (Head Start is less effective for cognitive gains)
3. Effects on socialization and school success also persist
4. Larger short-term gains likely to produce larger long-term gains

In-depth look: **The Big Three**

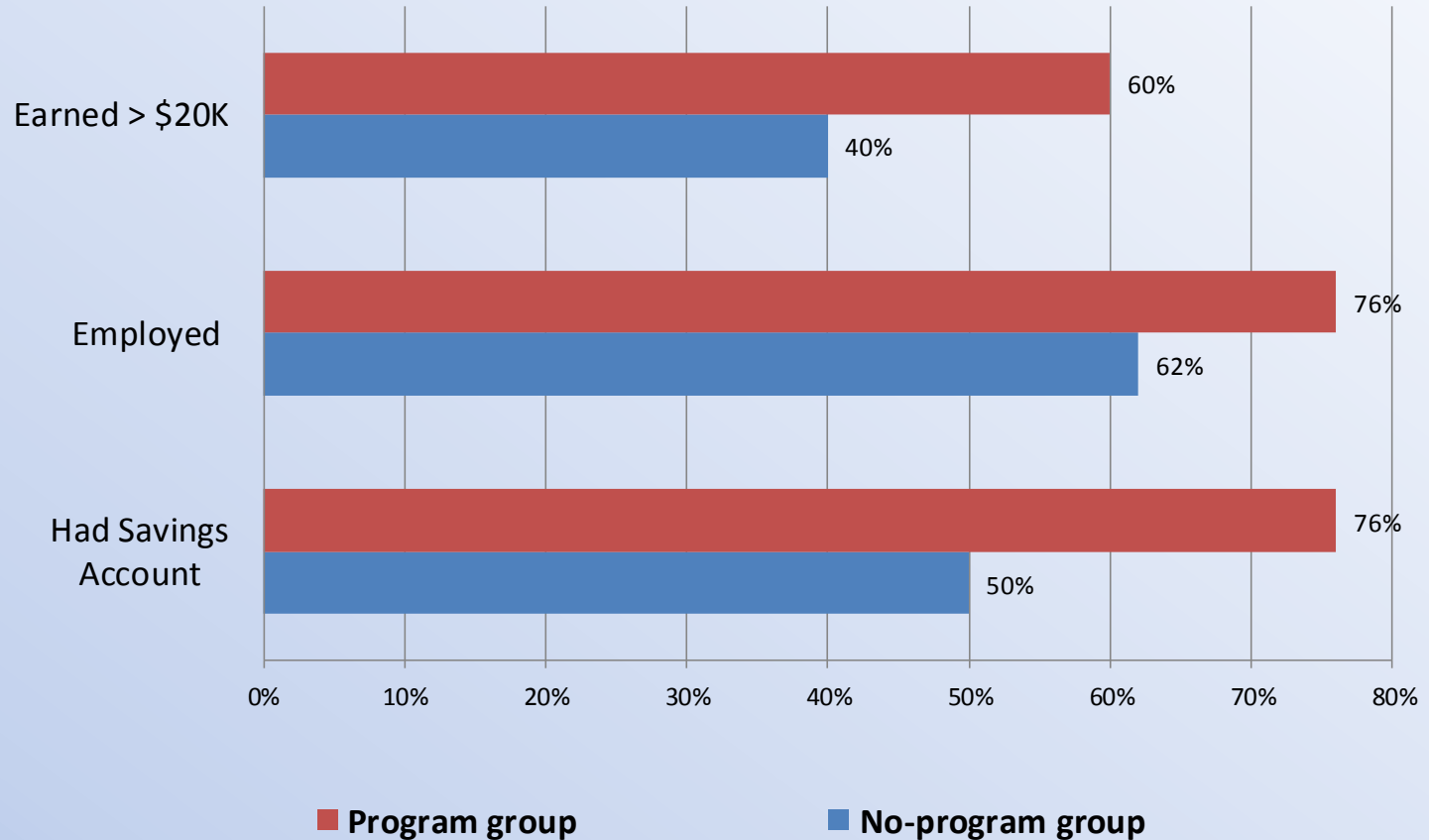
	Abecedarian	Chicago	High/Scope (Perry)
Year began	1972	1985	1962
Location	Chapel Hill, NC	Chicago, IL	Ypsilanti, MI
Sample size	111	1,539	123
Design	RCT	Matched neighborhood	RCT
Ages	6 wks-age 5	Ages 3-4	Ages 3-4
Program schedule	Full-day, year round	Half-day, school year	Half-day, school year

Barnett, W. S., & Masse, L. N. (2007). Early childhood program design and economic returns: Comparative benefit-cost analysis of the Abecedarian program and policy implications, *Economics of Education Review*, 26, 113-125; Temple, J. A., & Reynolds, A. J. (2007). Benefits and costs of investments in preschool education: Evidence from the Child-Parent Centers and related programs. *Economics of Education Review*, 26(1), 126-144; Schweinhart, L. J., Montie, J., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40* (Monographs of the High/Scope Educational Research Foundation, 14). Ypsilanti, MI: High/Scope Educational Research Foundation.

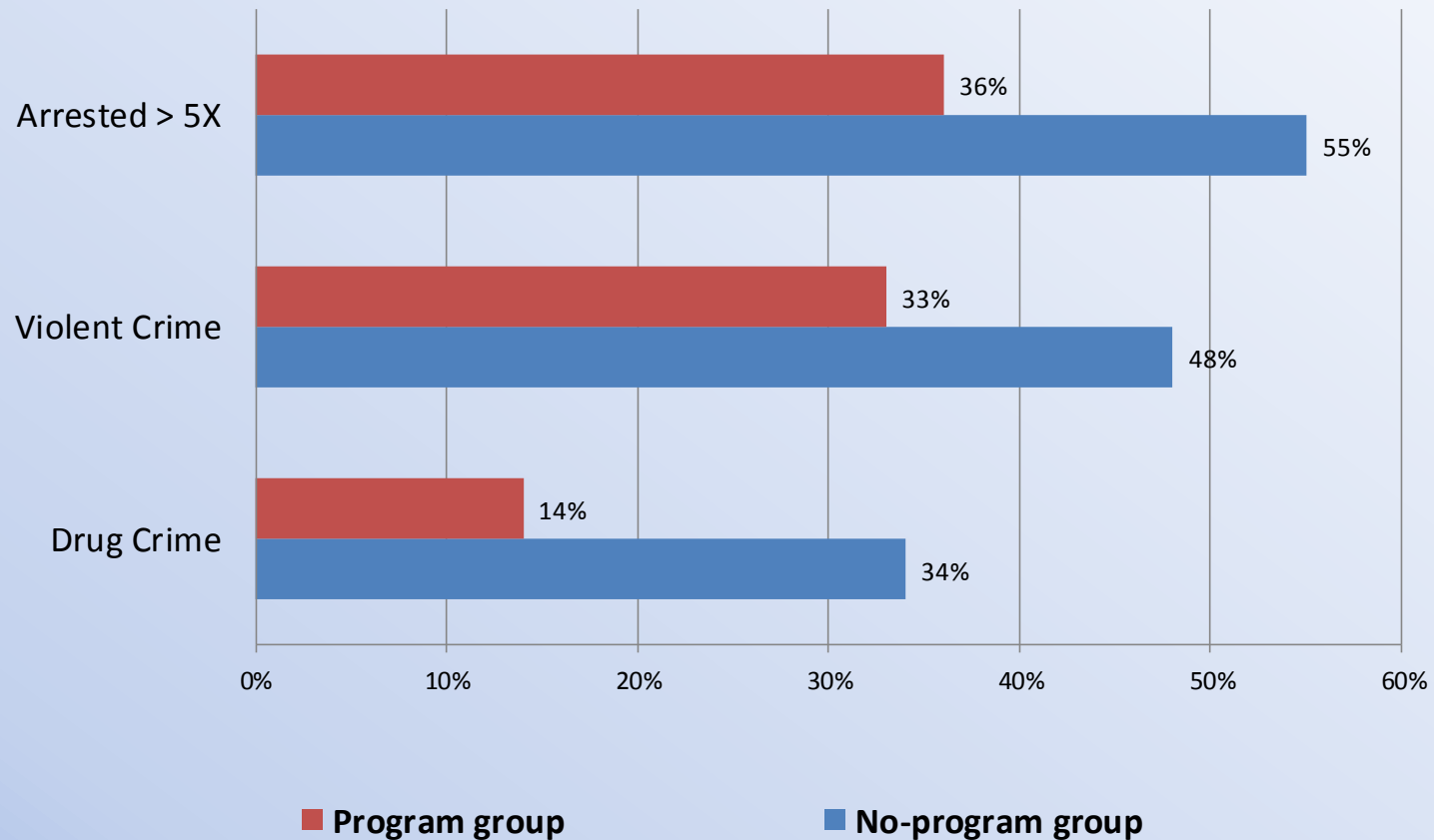
High/Scope Perry Preschool: Educational Effects



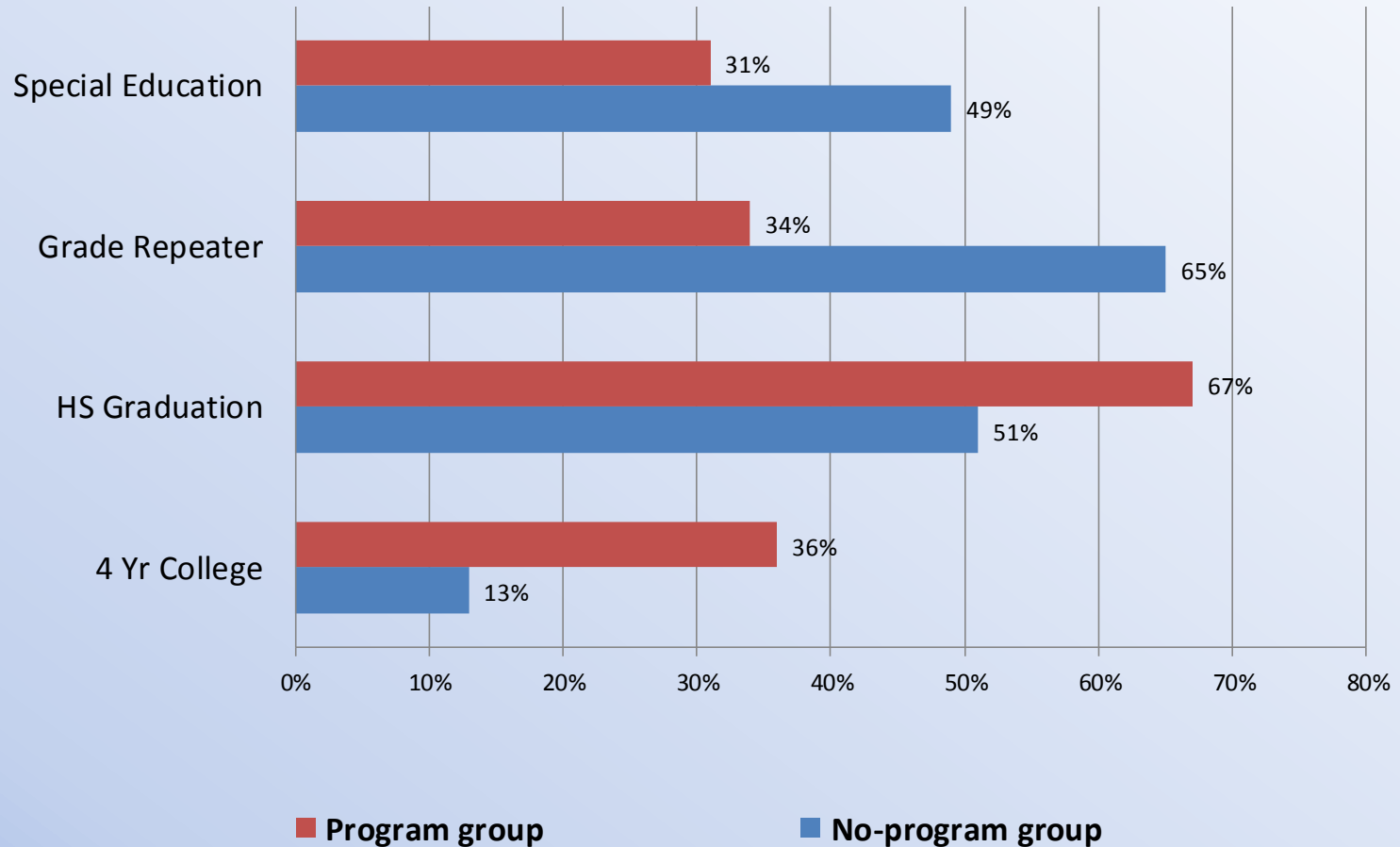
Perry Preschool: Economic Effects at 40



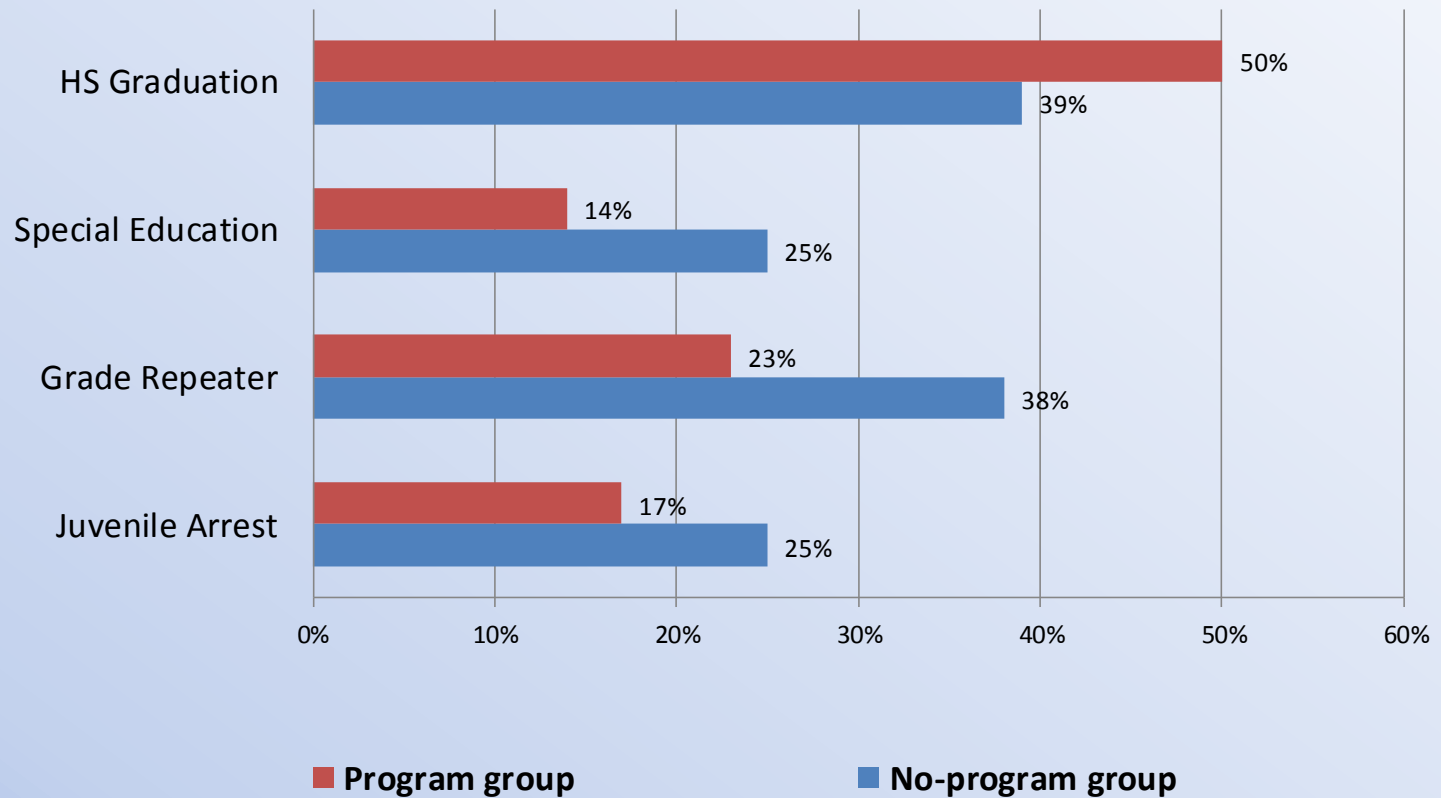
Perry Preschool: Crime Effects at 40



Abecedarian : Academic Benefits



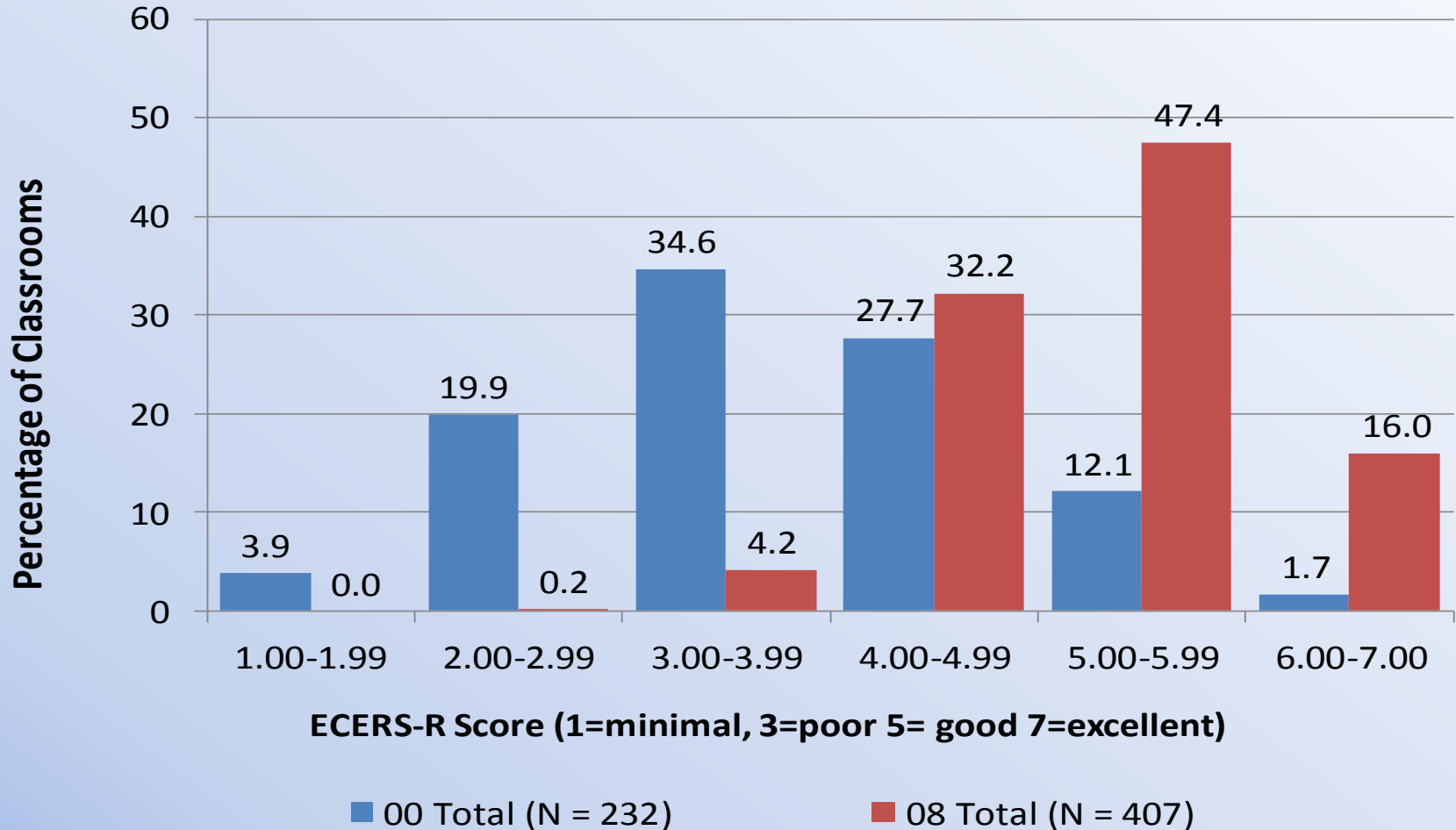
Chicago CPC: Academic and Social Benefits at School Exit



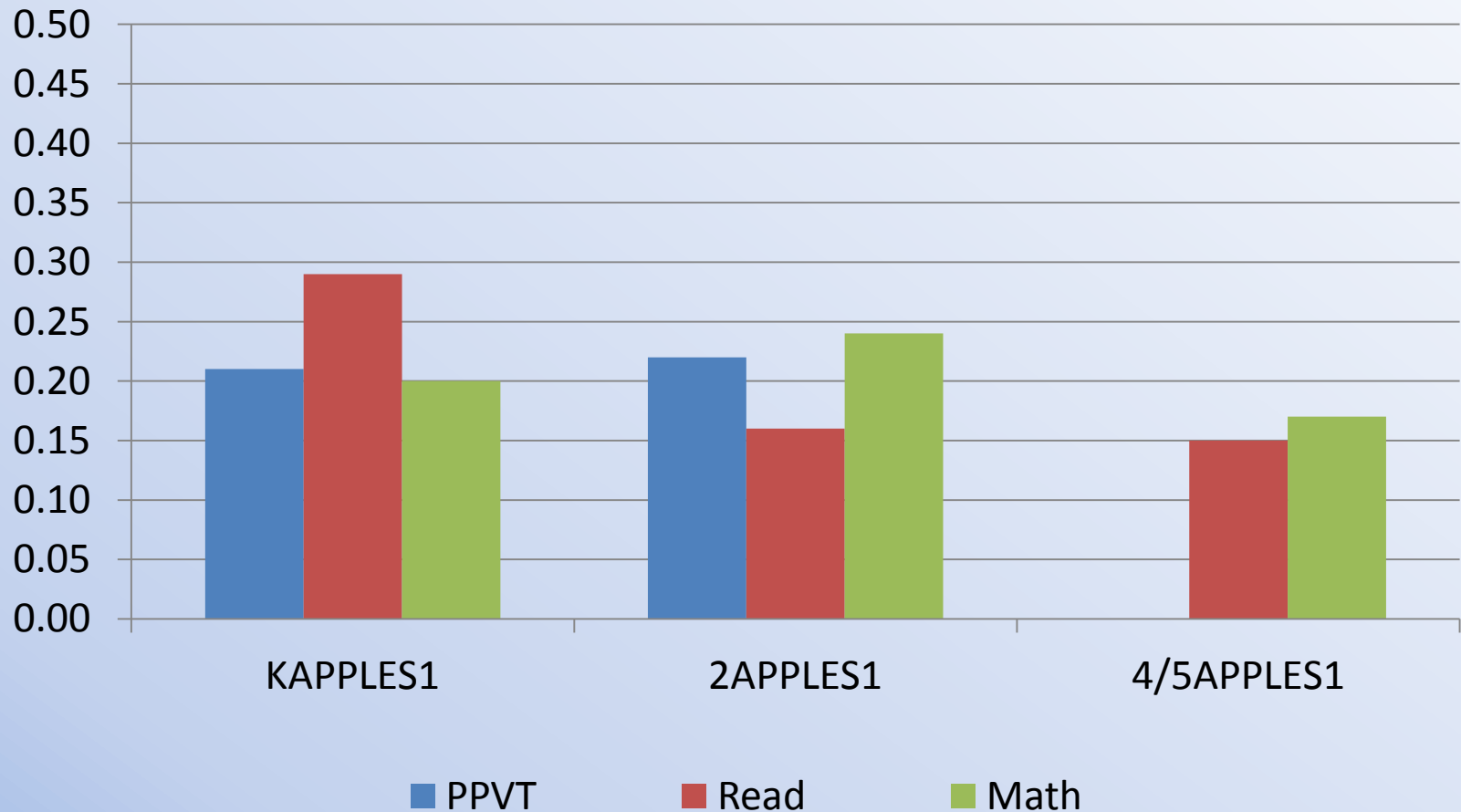
In depth look: **NJ Abbott,** **NJ's Urban Pre-K Transformation**

- Teacher with BA & ECE + asst. in each class;
- Full-day (6 hour educational day), 180-day program, plus extended day/full year;
- Access to all 3 and 4 yr. olds in 31 school systems;
- Maximum class size of 15 students;
- Evidence-based curricula;
- Early learning standards and program guidelines;
- Support for potential learning difficulties; and
- Professional development for key staff.

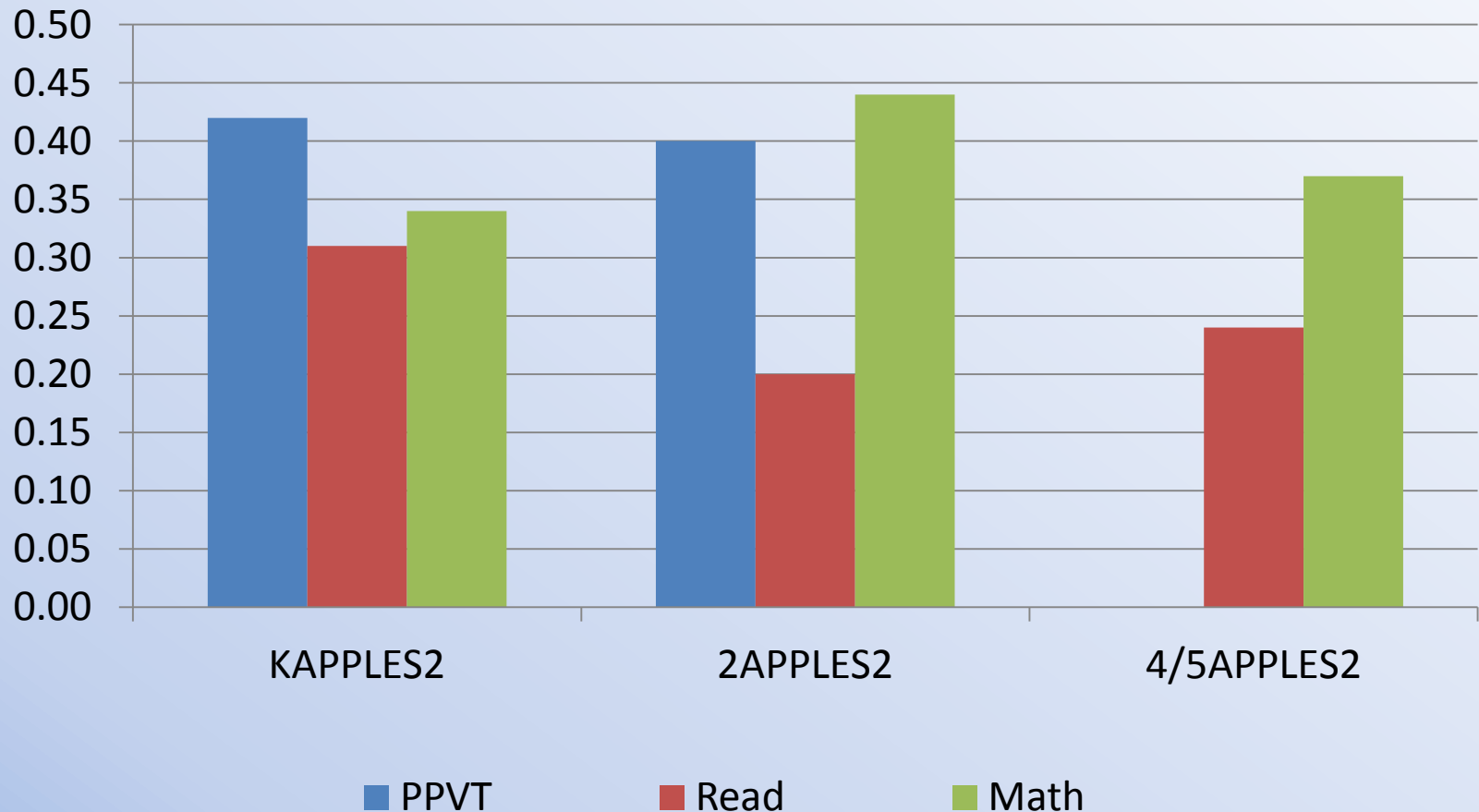
NJ Raised Quality in Public and Private



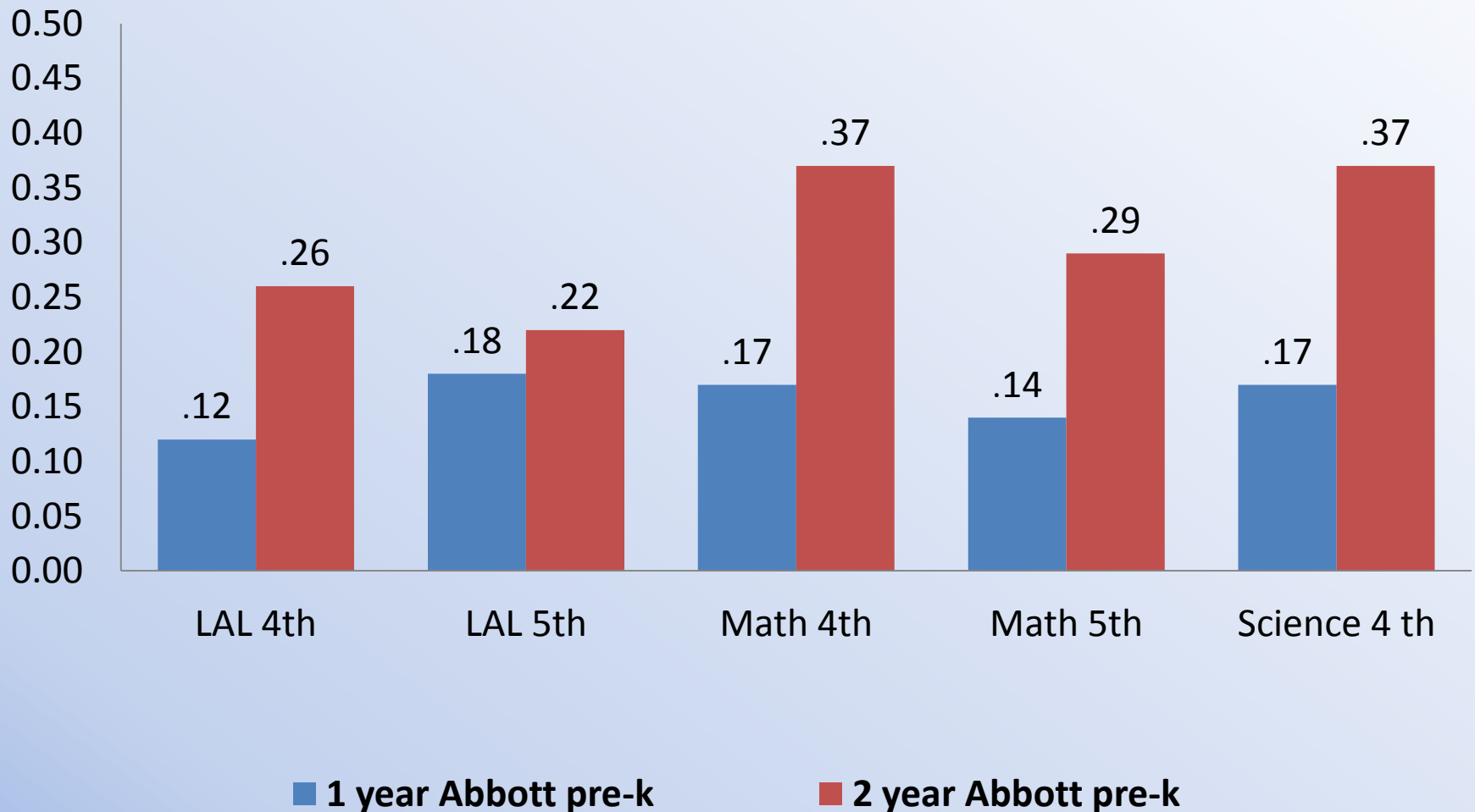
1 Year of NJ Abbott Pre-K: Effects Over Time



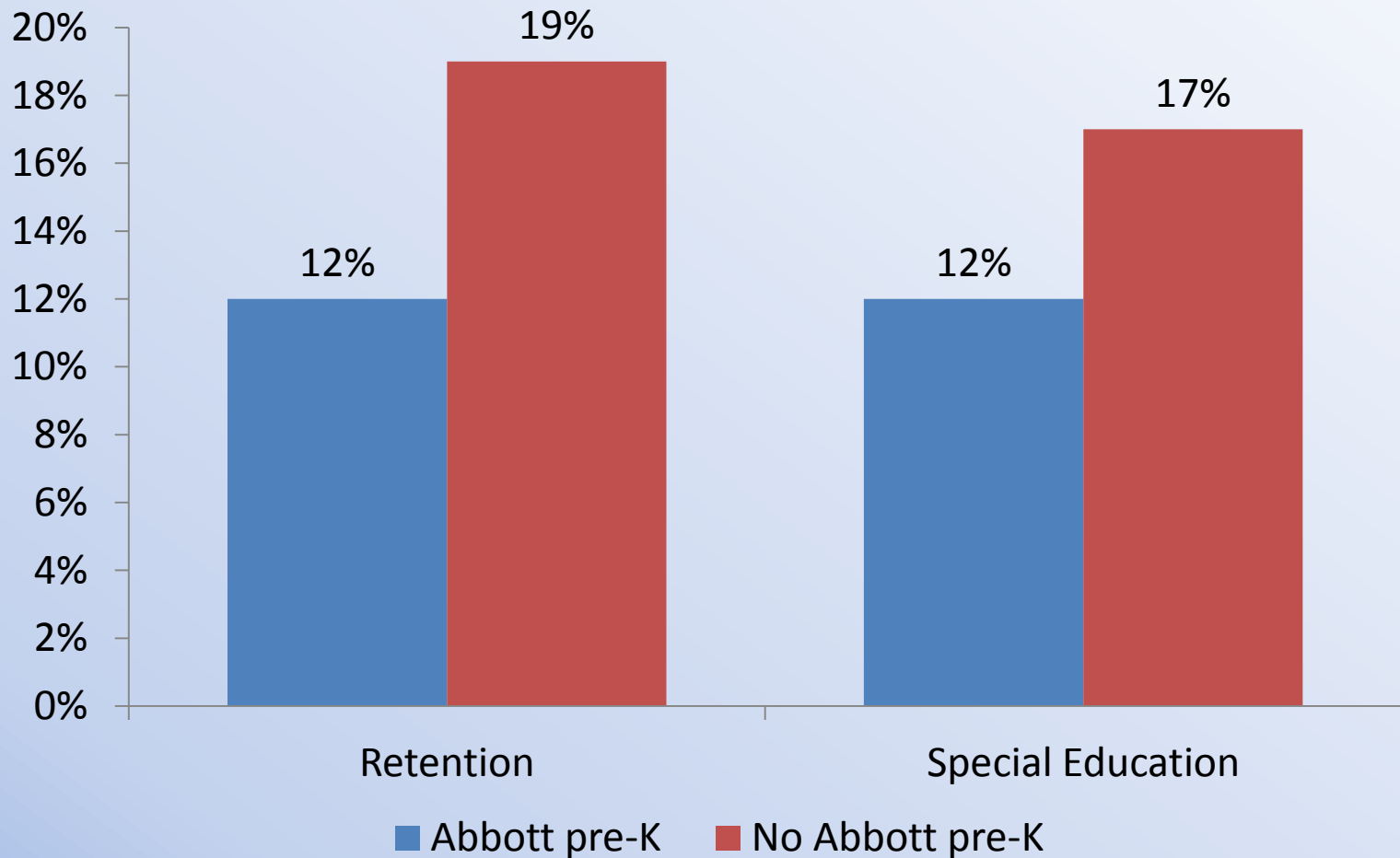
2 Years of Abbott Pre-K Effects Over Time



NJ Effects on Achievement Grades 4 and 5



NJ Effects on Retention & Special Education at Grade 5



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 2nd grade
- Grade repetition cut in half by 2nd grade

In depth look: **Boston's Pre-K**

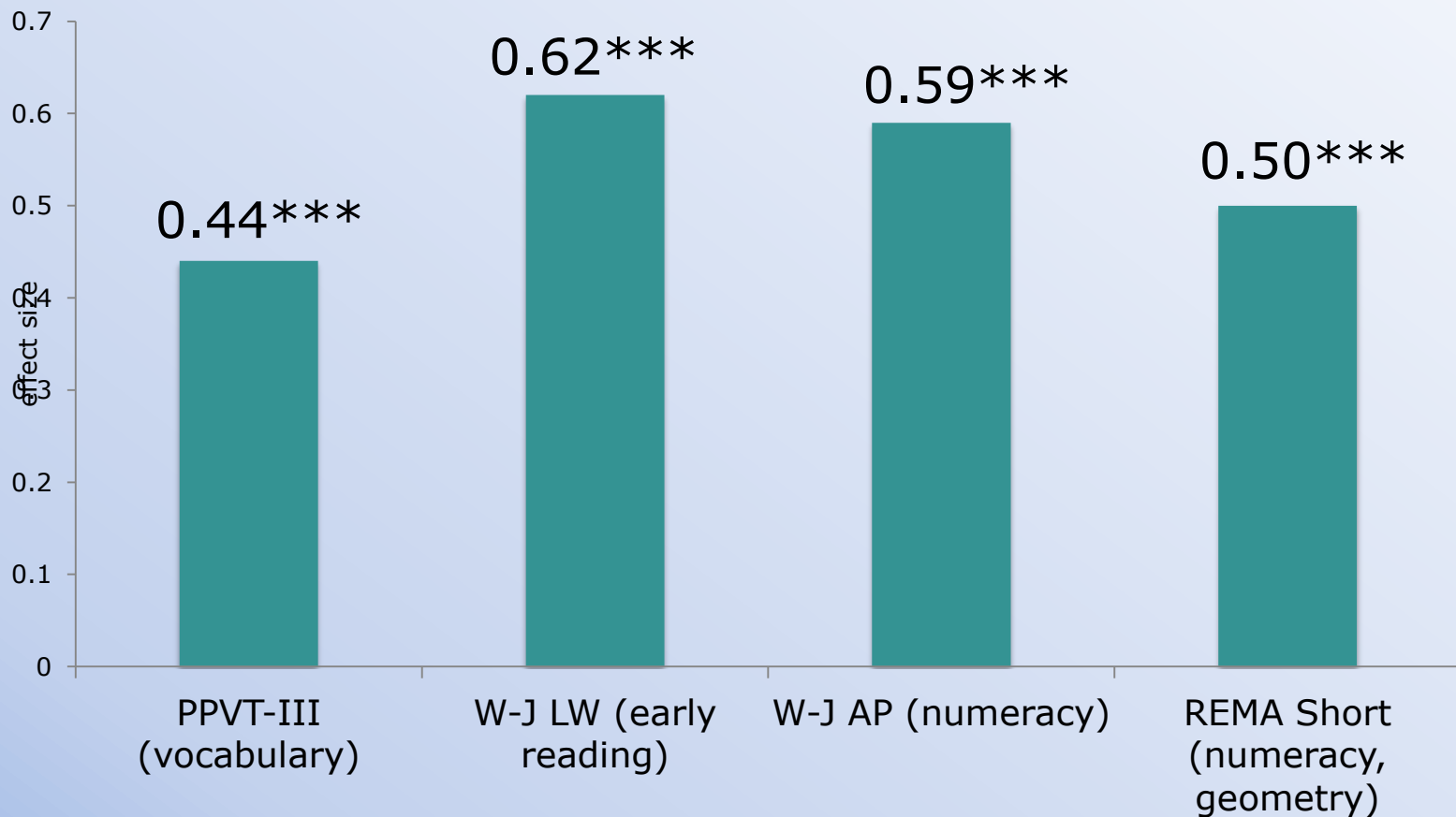
- Redirecting existing funds to quality improvement
- Boston Public Schools' (BPS) universal preK program: rapid expansion, 2006-2008; BA level teachers paid at K12 scale
- 2008 assessment of observed quality: mediocre levels
- Decision to stop expansion and invest in quality through developmentally focused curricula + coaching
- Choose evidence-based language and math curricula (OWL and Building Blocks) for district-wide implementation
- In-classroom coaching supports

In depth look: **Boston's Pre-K**

- Rigorous regression discontinuity 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
- Counterfactual: Majority of control group children were enrolled in other preschool programs
- **Studied: What are the causal impacts of BPS preschool on children's language, pre-literacy, math, and executive function at the beginning of kindergarten?**

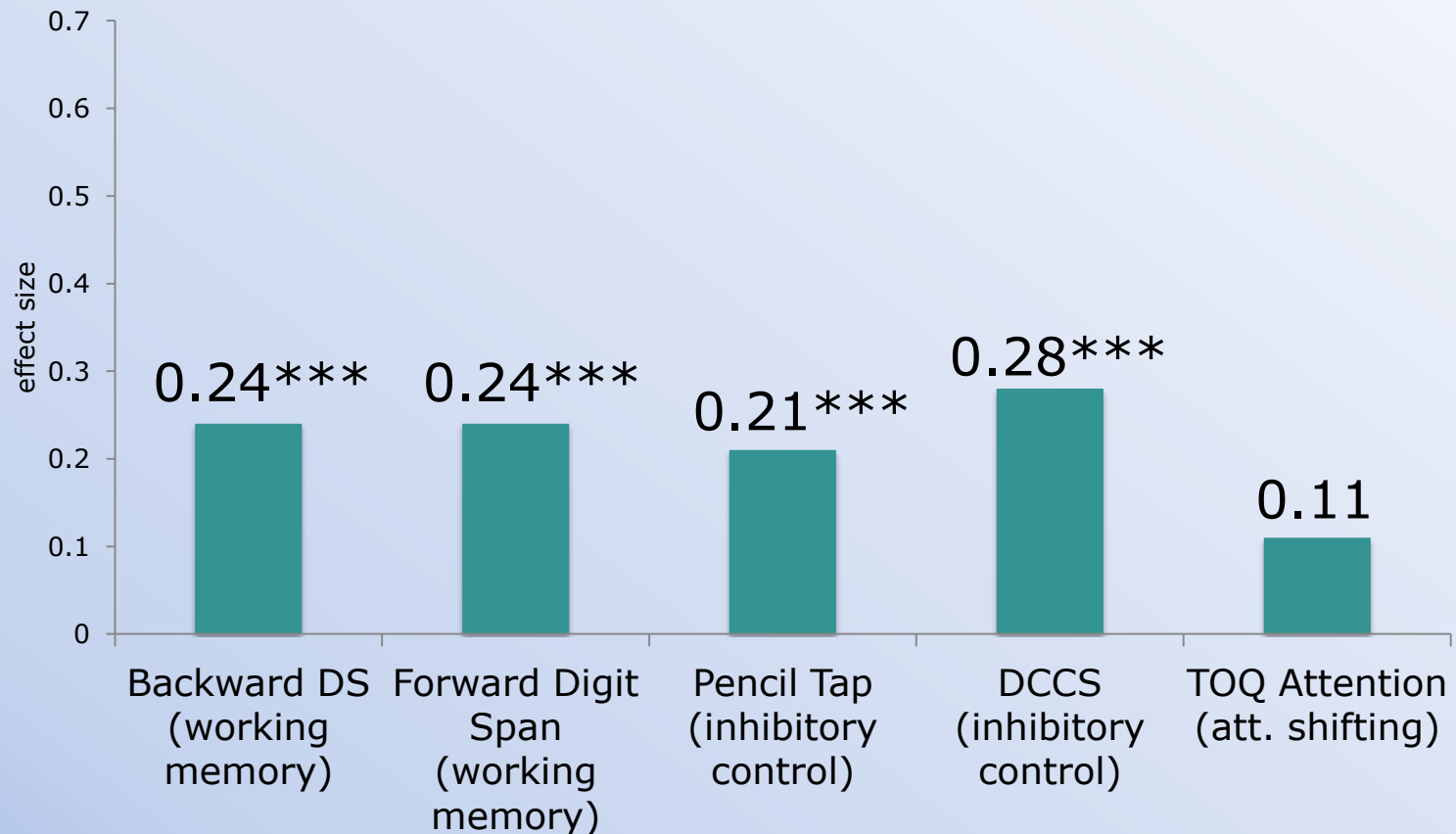
Largest effects on language and math of public preschool to date in the US

Weiland & Yoshikawa, 2013, *Child Development*



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

Weiland & Yoshikawa, 2013, *Child Development*



Large reductions in societal disparities at school entry

- Subgroups of interest: Free/reduced lunch (poverty status), race/ethnicity
- Boston Public Schools Preschool program:
 - **Reduced disparities substantially by class and race**
 - **Completely eliminated disparities between Latino and White students in early literacy and math skills.**

Takeaway Lessons



1. High Quality programs have shown persistent effects across various cognitive and behavioral domains.
2. Pre-K varies in initial and long-term effects—can only expect persistent gains from large initial gains, and that requires quality.
3. Proper design, high standards, adequate funding, and evaluation can ensure high cost/benefits
4. Essence of quality is strong individualized teacher-child interaction, especially 1:1 and in small groups.
5. 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 and/or DLLs (Tulsa, Boston).
6. ECEC *can* be a strong public investment: Increased educational achievement and attainment, Decreased economic and educational inequality and fewer social problems and Job and GDP growth (local and national).