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Early Learning Programs: How do we Improve Children's Outcomes?

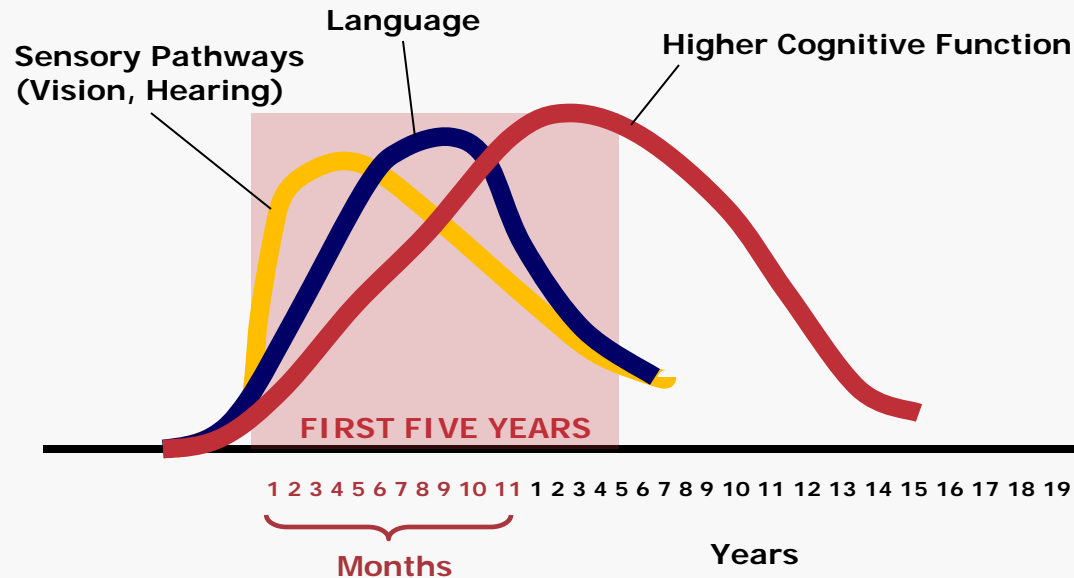
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Why focus on the early years?

Neural Circuits are Wired in a Bottom-Up Sequence

(700 synapses formed per second in the early years)



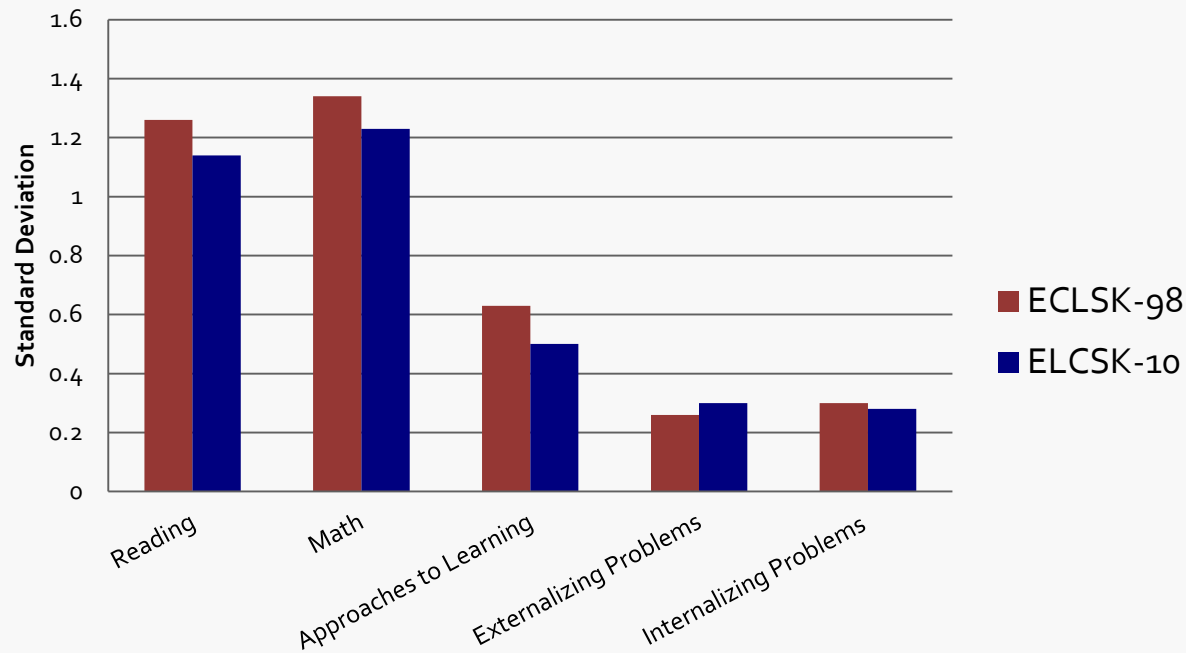
Source: C.A. Nelson (2000)

Early Experience Shapes Brain Development

- “Use it or lose it:” connections strengthen or are pruned
- The brain is most “plastic,” or able to make new connections, early in childhood
- Experience varies widely as a function of family social and economic factors

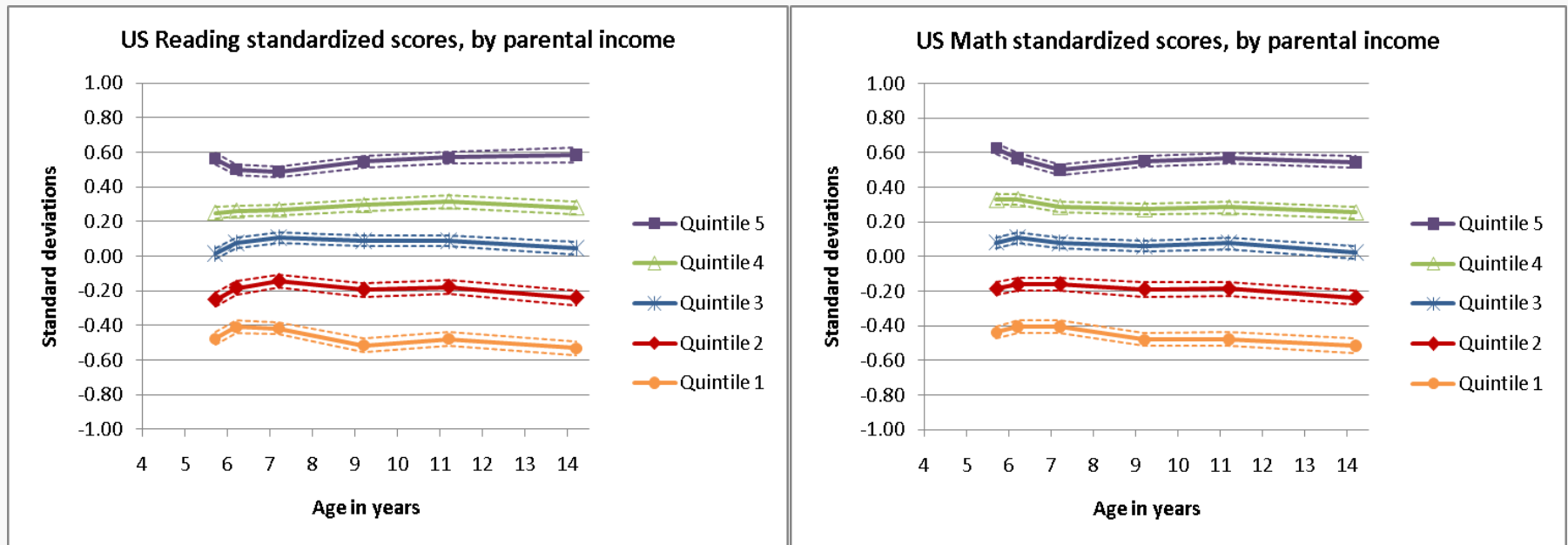


Skill and behavior gaps between high- and low-income kindergarteners

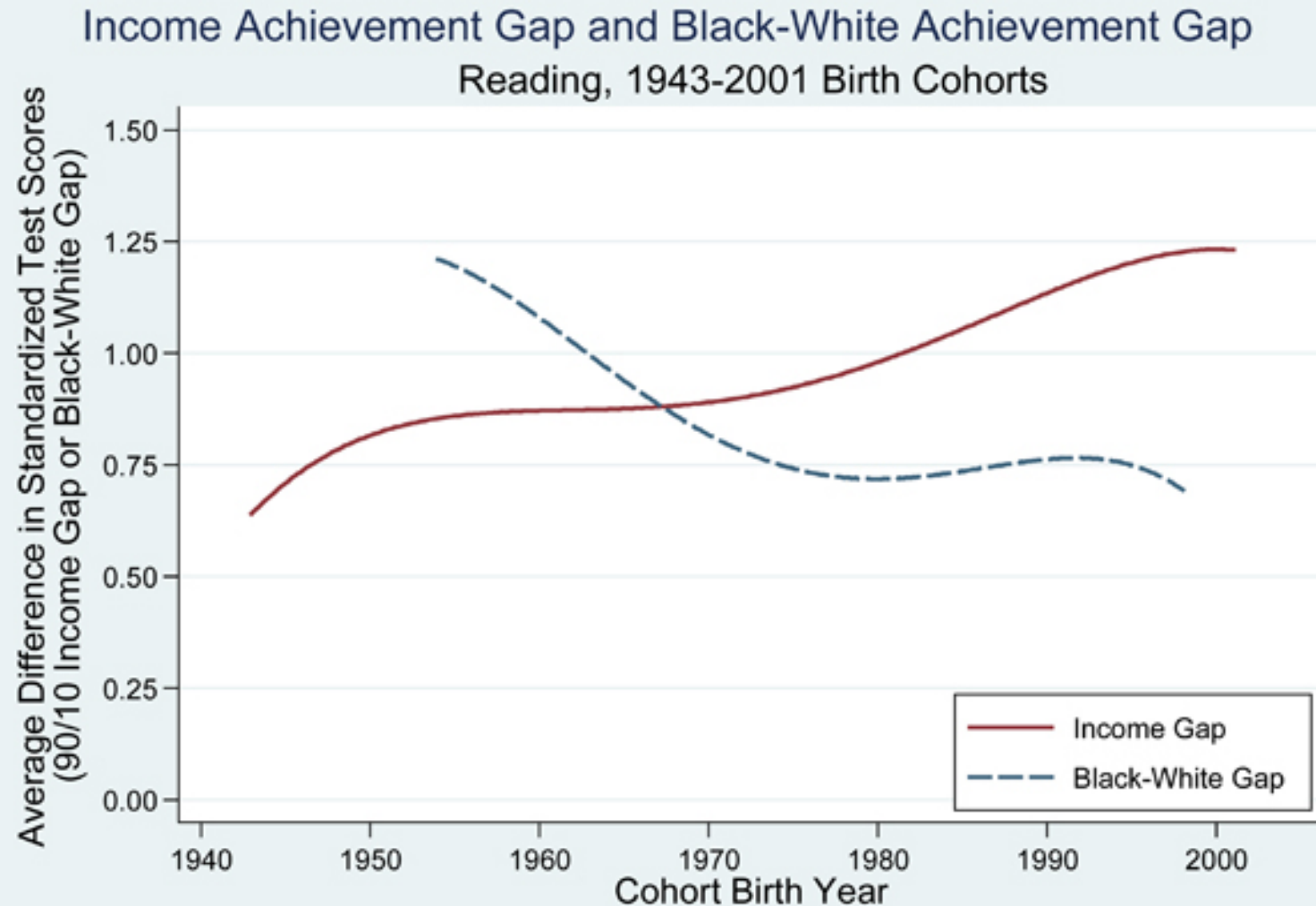


Notes: The graph shows standard deviation differences in skills and behavior for children in the lowest income quintile and the highest income quintile, Sources: Early Childhood Longitudinal Study Cohorts of 1998, 2010.

Low-income children enter school with low-levels of academic skills & these differences persist

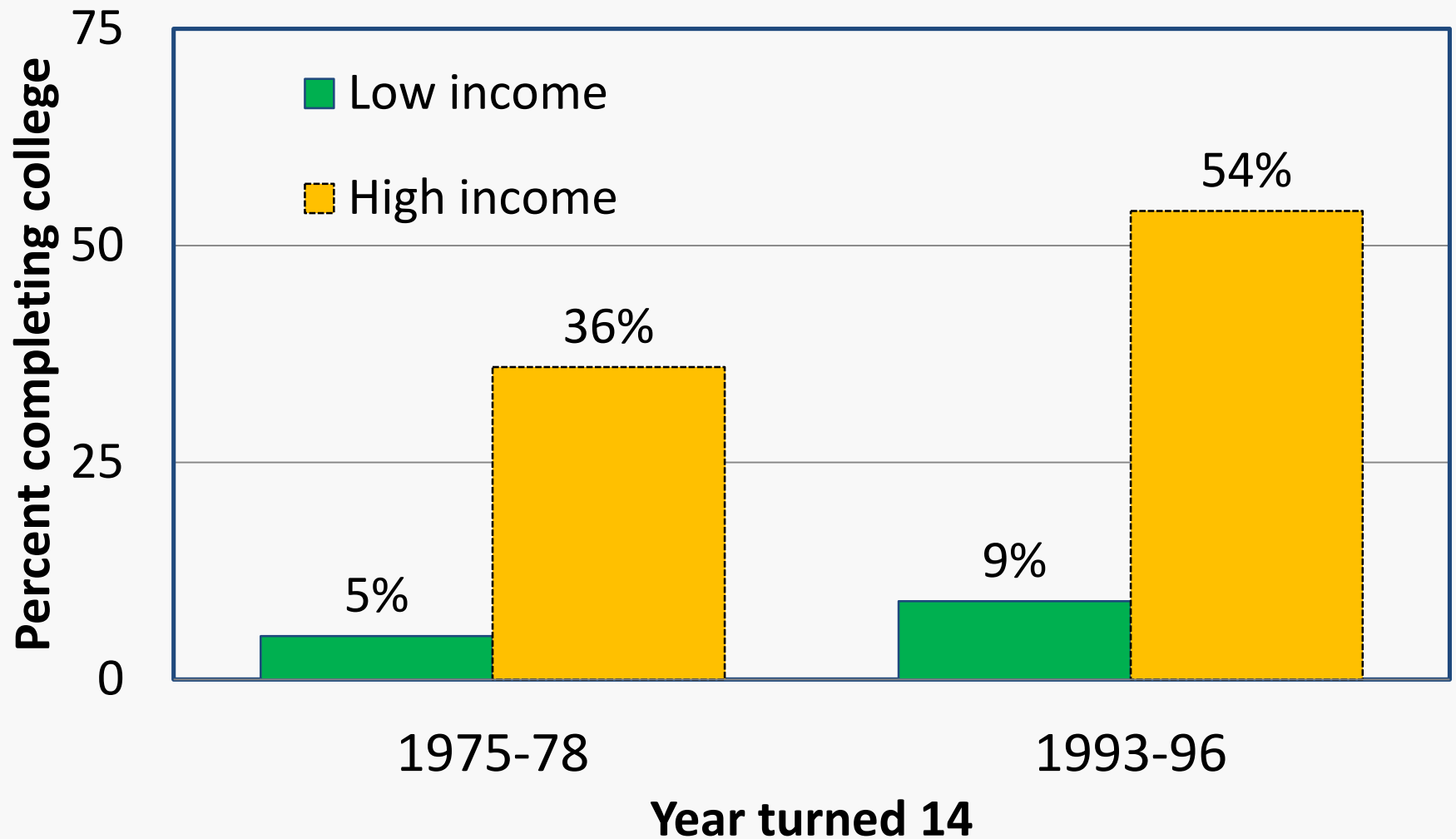


Achievement gaps by race and income, by birth year



Source: Reardon (2011)

College graduation rates for low and high income children



Source: Calculations based on Bailey and Dynarski (2011). Low and high incomes are defined as the bottom and top quartiles of the parent income distribution.

Predictive importance for later school achievement (standardized coefficients)

School-entry:		Grades 1 to 8:	
		Reading	Math
	Reading	.24*	.09*
	Math	.26*	.41*
	Engagement/attention	.08*	.10*
	Anti-social (- expected)	.01 ns	.01 ns
	Mental health (- expected)	-.01 ns	.01 ns

Duncan et al (2007)'s meta-analysis of six longitudinal data sets, five of which control for prior IQ

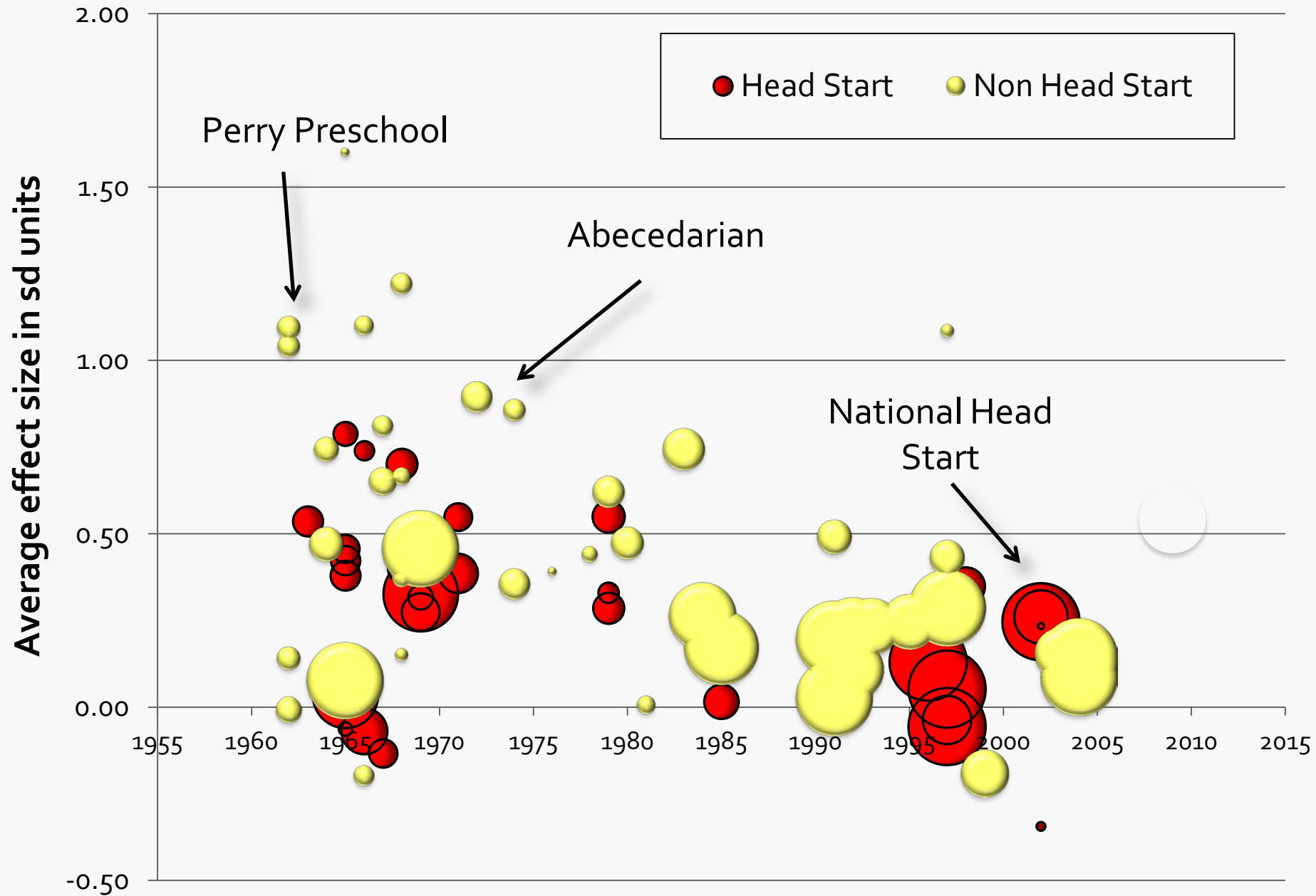
To improve later achievement **build
early math and reading skills**

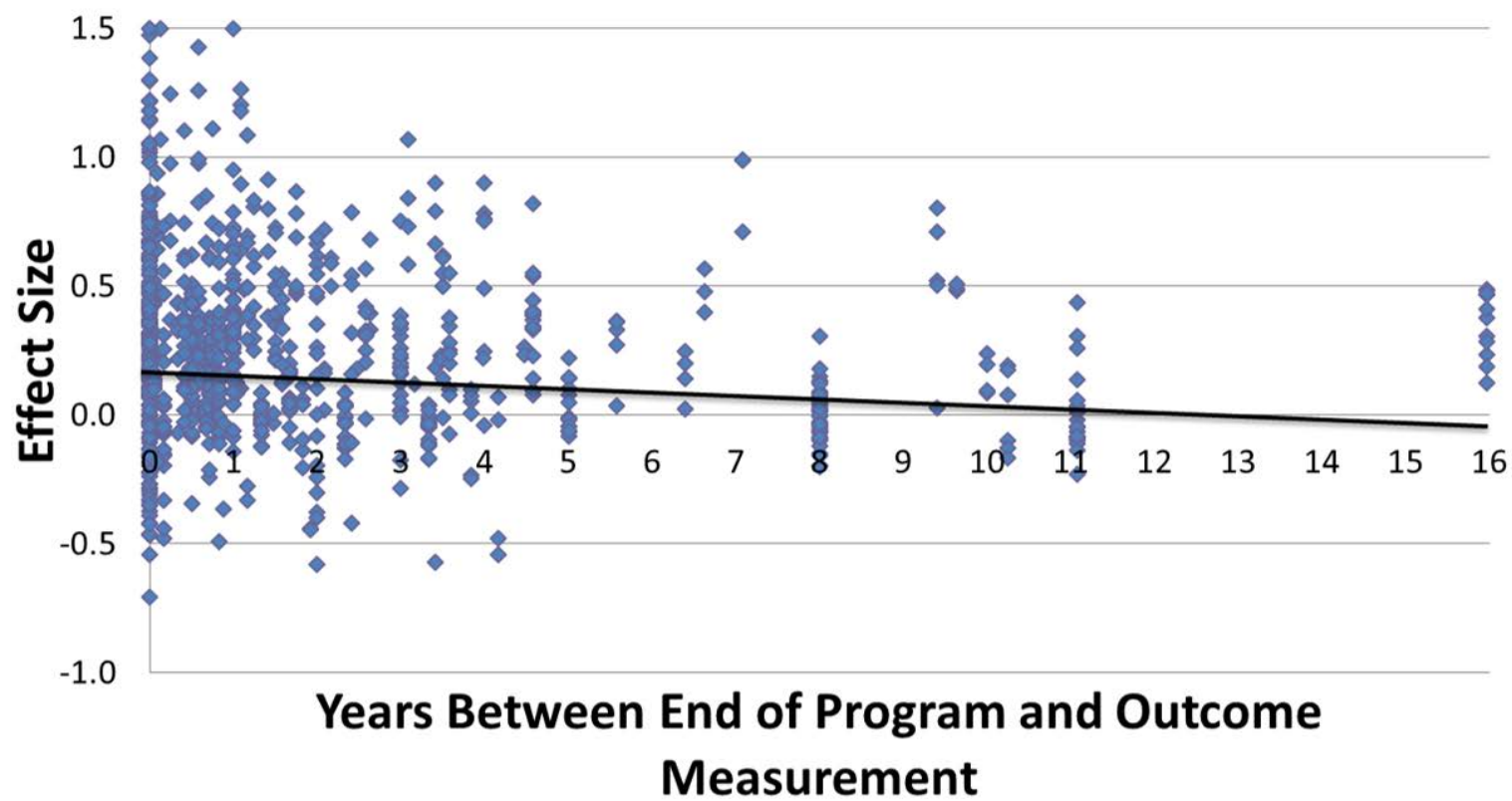
BUT, for educational attainment and crime, early aggressive problem behavior and especially persistent problem behavior matters too.

How effective are ECE programs at building skills?

- Evidence from strong evaluation studies published between 1960-2007
- End of treatment effect sizes (vs. longer-run studies)

Average cognitive impact at end of treatment







ECE: Access and Cost

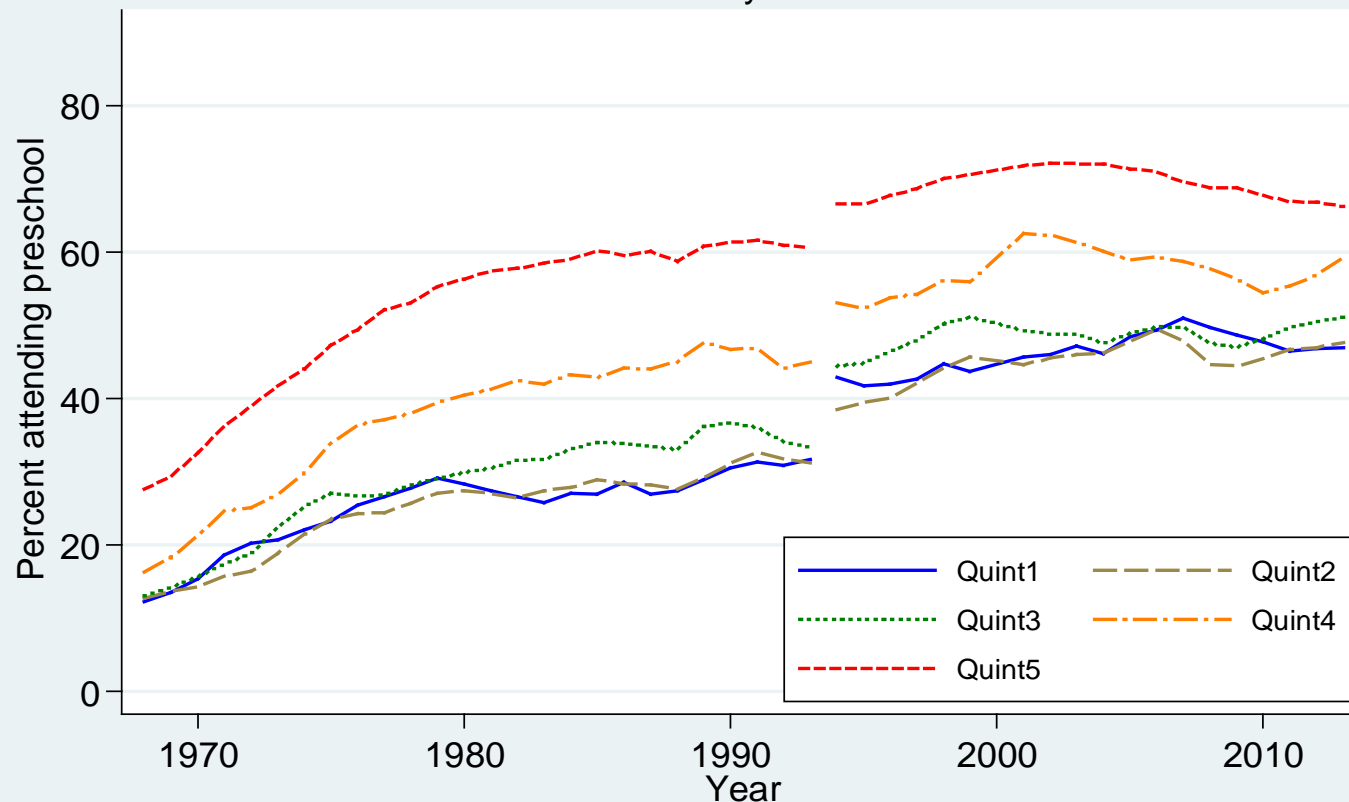


ECE Funding & Enrollment

- Three largest funding streams for ECE: Head Start (\$8.8 billion) and State Prekindergarten (\$7.4 billion), CCDBG (\$6.7 billion)
 - Head Start serves 3- and 4-year-olds
 - Prek serves mostly 4-year-olds
 - CCDBG serves all ages and all types of care
- In year before Kindergarten about 75% of children experience ECE in a mix of full- and part-day programs
 - 90% of top income quintile
 - 65-69% of bottom three income quintiles
 - Lower enrollment among Hispanics, Immigrants, and Rural populations

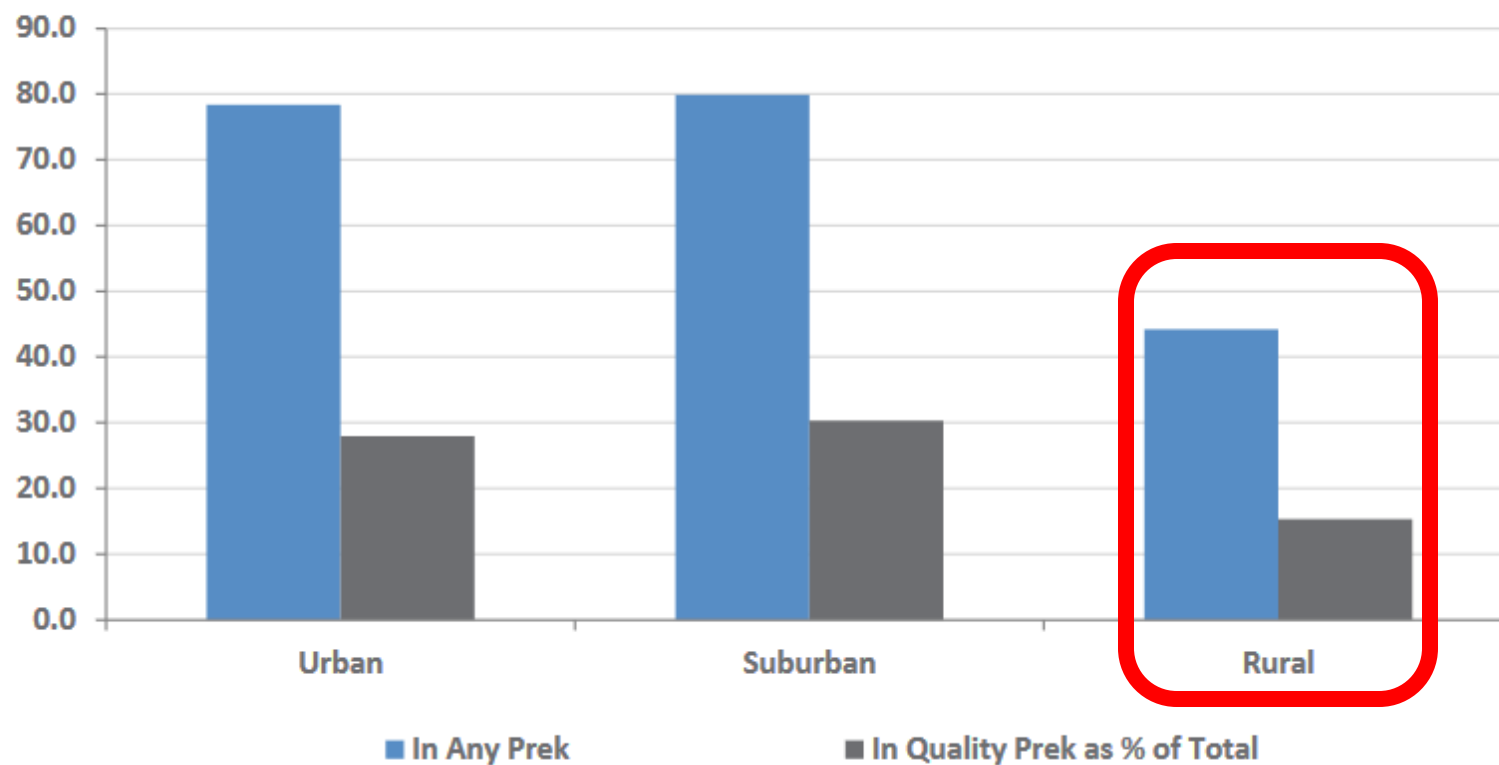
Current ECE Enrollment Trends by Income Quintile

Figure 1: Percent of children enrolled in preschool by family income quintile:
3- and 4-year olds



Note: Data from October CPS, data shown are from 3 year moving averages

Figure 19. Center Enrollment and Quality by Locale at Age 4, 2005



Nores and Barnett, 2014

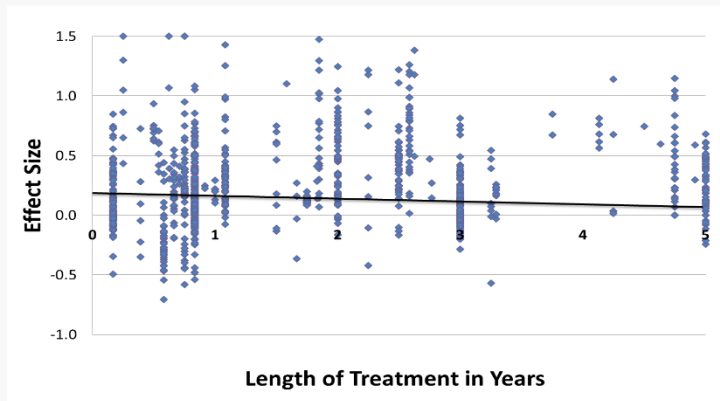
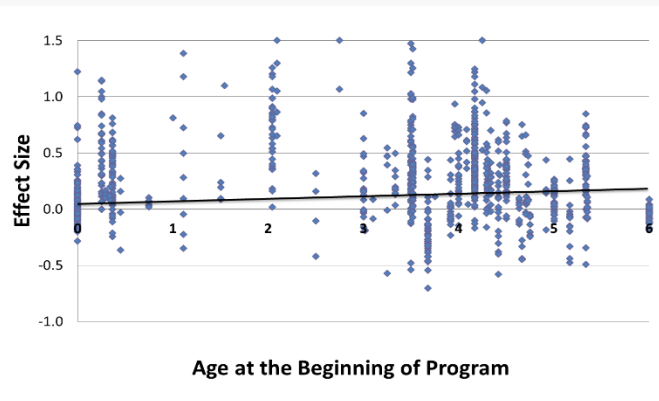


ECE: Improving Child Outcomes



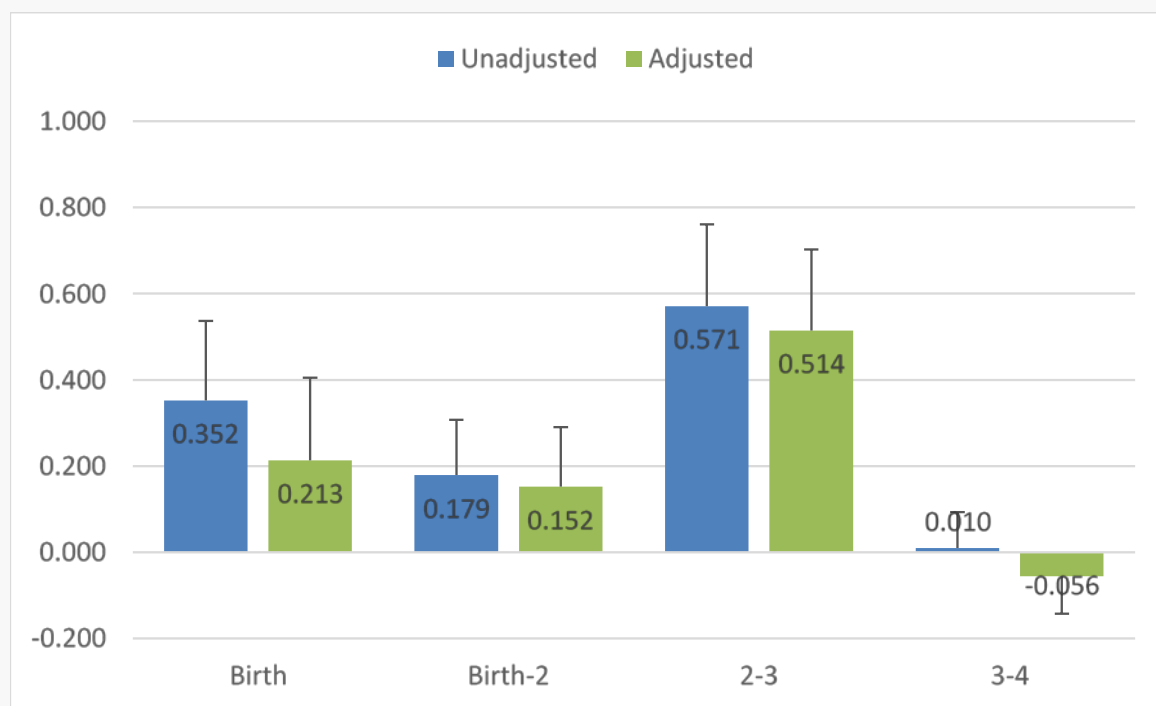
What have we learned about effectiveness factors?

- What about early starting and long lasting ECE programs?



Ages 2 and 3...

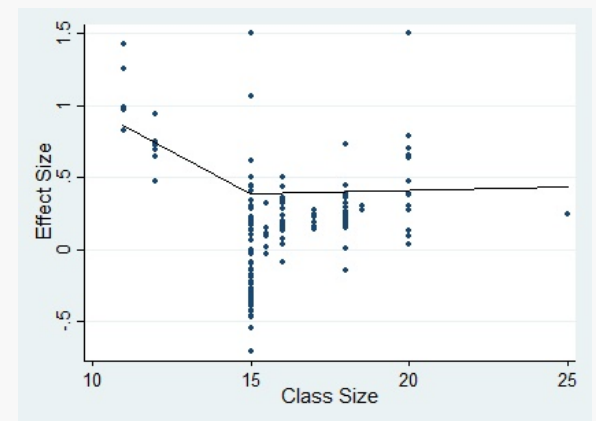
Figure 5. Coefficients on Starting Age Unadjusted and Adjusted for Covariates (from Appendix Table 5)



Note: Bars indicates standard errors of coefficients.

Effectiveness factors

- Curricular enhancements? YES, increased effects sizes of .5-.7 sd
 - Aligned with key outcomes
- Class Size reduction? Only when class sizes are very small (15 or smaller)



Non-Effectiveness Factors

- Parent Engagement Efforts? On average no, but some stand out as effective
 - Planned, developed and focused parenting programs
- Increased Teacher Education Requirements
 - Having some specific early childhood training is important, but little evidence that accruing formal education credits improve children's outcomes

Conclusions

- Early Learning Programs and early experiences and learning provide the foundation for later learning
- There are some children who would benefit from ELPs who don't have access
- We need to learn how to deliver better child outcomes
 - What happens in classroom matters
 - Within reason, structural program features won't be an efficient way to improve child outcomes