

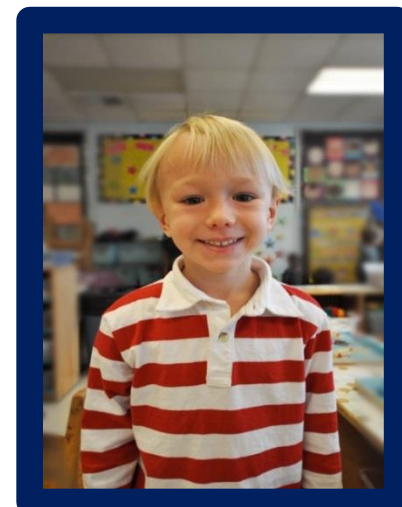


# SMART START, NC PRE-KINDERGARTEN PROGRAM, AND CHILD CARE SUBSIDIES

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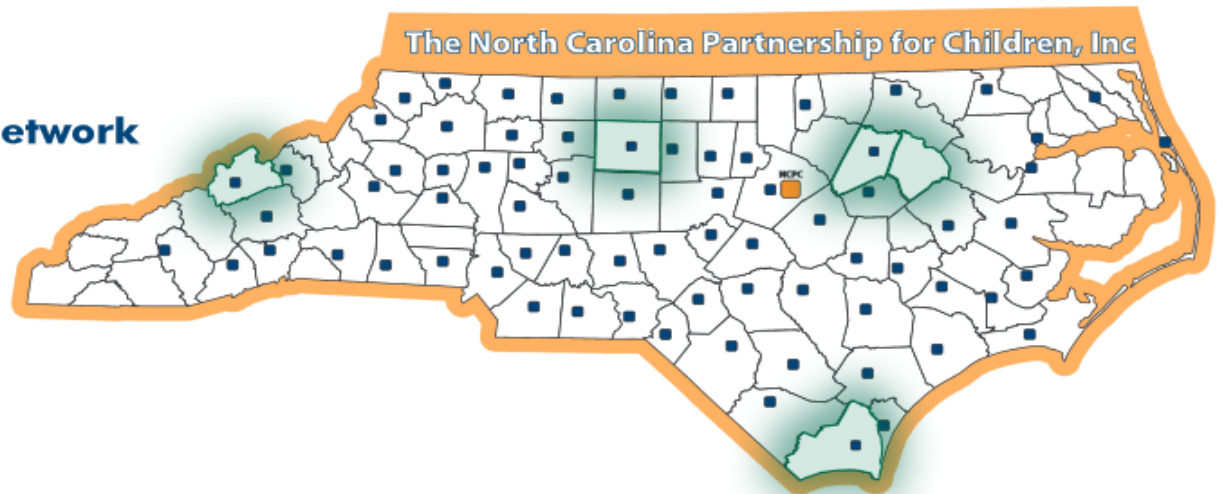
# Early Care, Education, and Parenting: Rationale for Programs

- Having a healthy start to life is essential for later development
- Parenting provides the physical and emotional foundations (Institute of Medicine Report, in progress)
- Early years critical for development of brain architecture
- Some children are especially vulnerable because of:
  - Poverty
  - Linguistic and cultural differences
  - Developmental disabilities
- Quality early care, education, and parenting programs can improve outcomes and close gaps

# North Carolina's Response: SMART START

- Began in 1993 in 18 counties
- Expanded to all 100 counties and 81 (now 75) local partnerships in 1997
- Innovative in its focus on local control
- Long-term goal : Helping NC children arrive at school “healthy and prepared to succeed” (from legislation)

## The Smart Start Network



# Driving Long-term Goals

## Program Efforts in 1990s (Bryant, 2007)

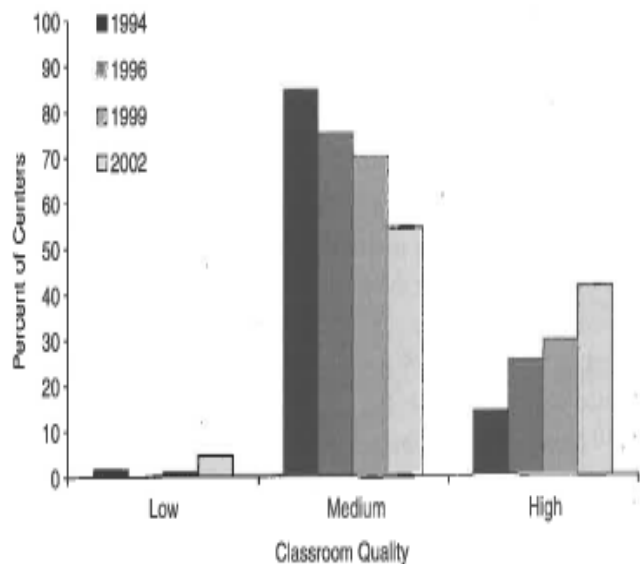
- Quality child care environments
- Family functioning
- Children's health care
- Increased/improved interagency collaboration

## Program Efforts in 2015 (Report to General Assembly, 2015)

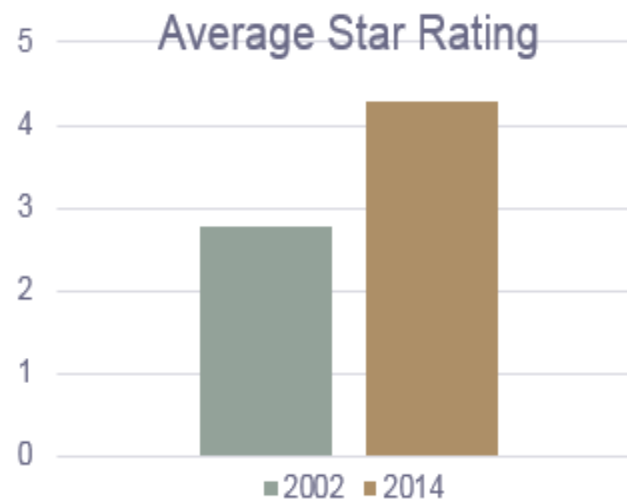
- Raising quality of early care
- Supporting families
- Advancing child health and nutrition
- Promoting early literacy
- Bryant (2008)

# Evaluations of Smart Start (FPG)

- 35 evaluations between 1993 and 2003
- Child Care Quality (30-40% of directed funds)

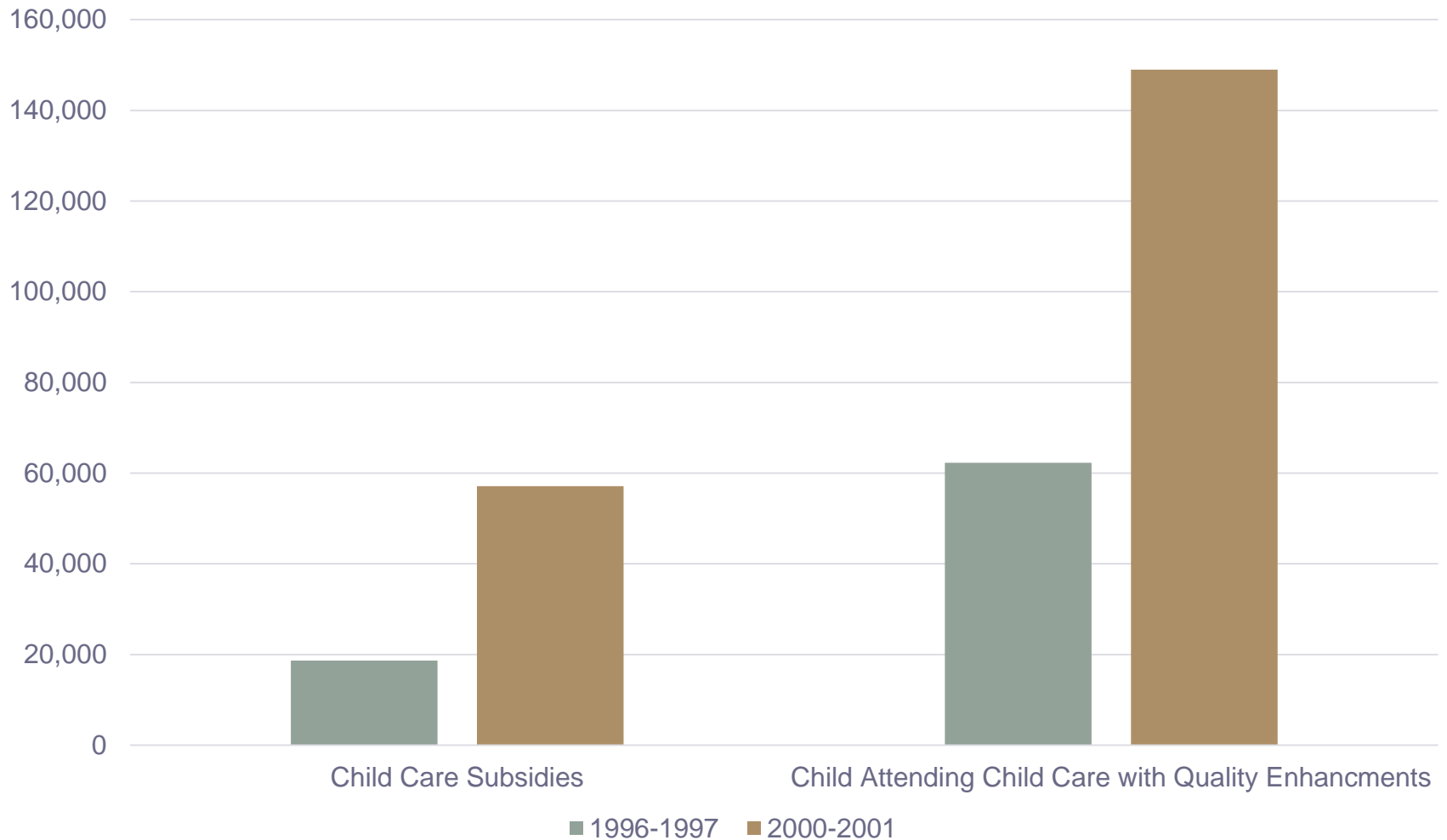


Bryant (2008)



(Report to General Assembly, 2015)

# Access to Child Care and Participation in Quality Programs (Bryant 2008)



# Smart Start Impact on Children's Health

- Children have regular sources for health care (association stronger for African American Children)
- Children more likely to have DPT vaccinations
- Fewer relied on emergency room for health care (although the sample size was very small for this)



Nora Kropp, Jonathan Kotch, Shelly Harris, & the Smart Start Evaluation Team  
October, 2001

# Evaluation of Impact of Smart Start on Children's Educational Outcomes

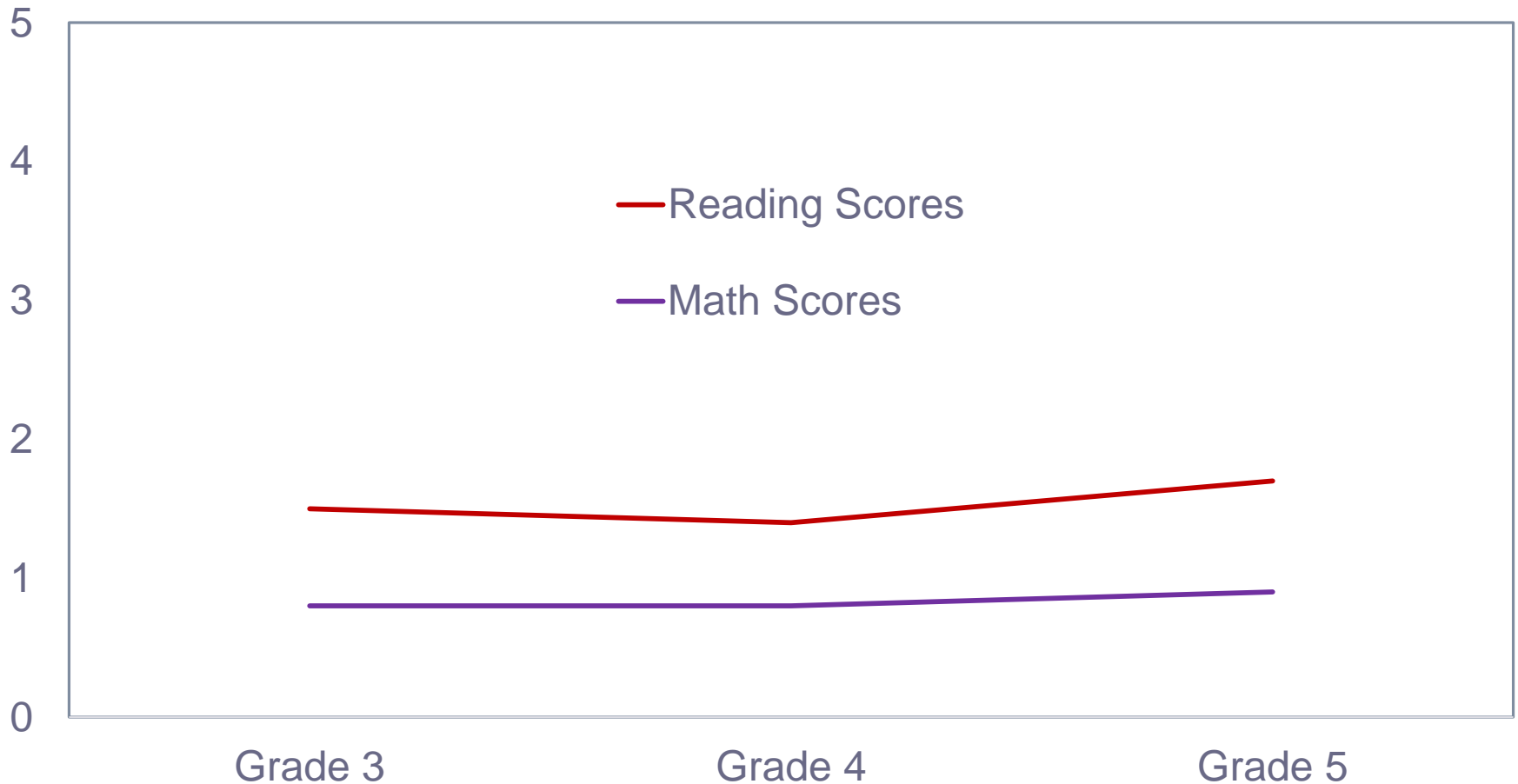
Recall rollout started in 18 counties and expanded to 100 counties, at different funding levels in different years

- DESIGN:** Follow 1,004,571 matched births in 13 cohorts from birth through fifth grade
- FUNDING:** Each child averaged \$220/yr x 5 yrs = \$1100.
- COMPARE:** Children born in a county that received high funding compared to children born in a low-funded county, with statistical rigor.

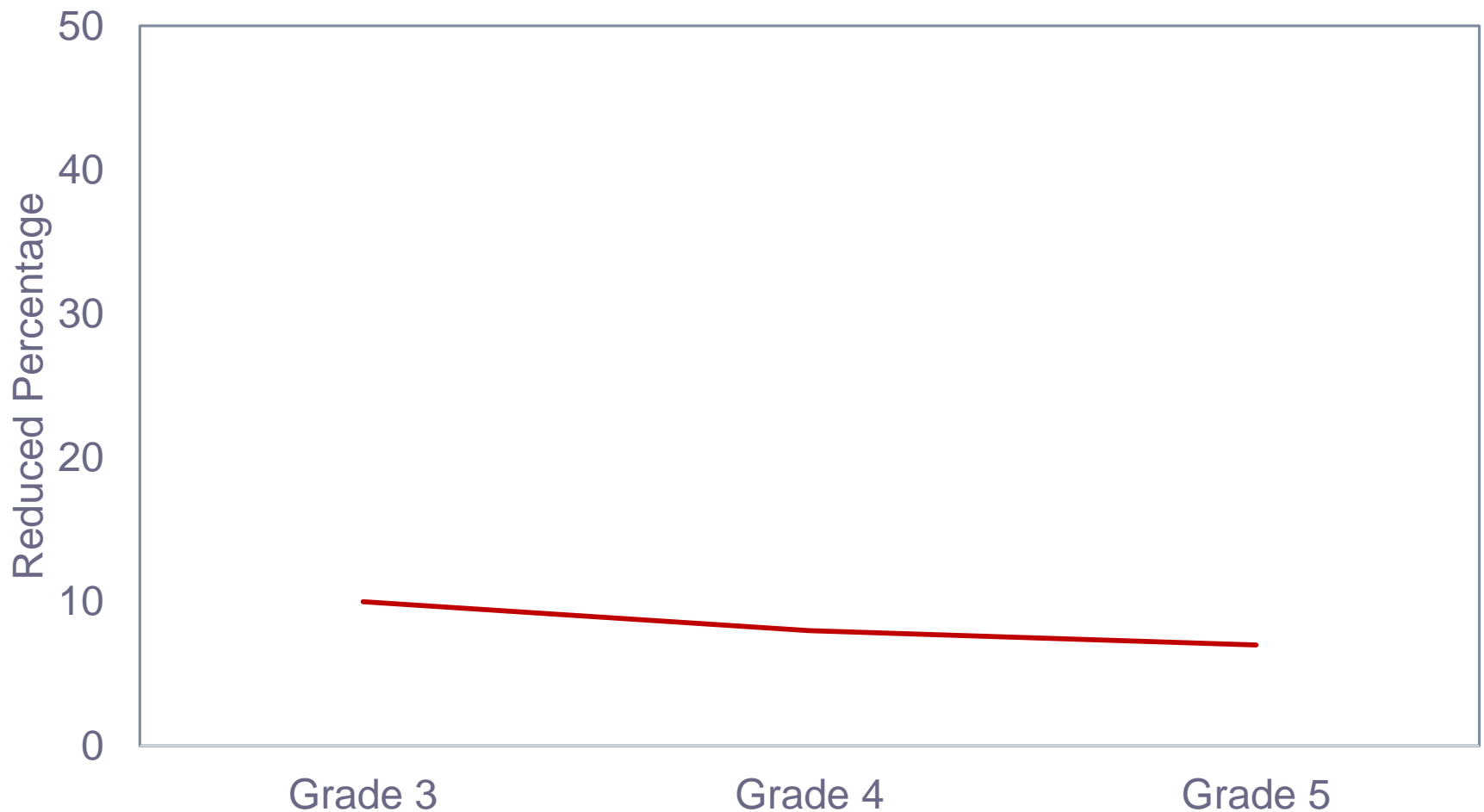
This evaluation asks whether funding to a county makes a difference in children's educational outcomes.



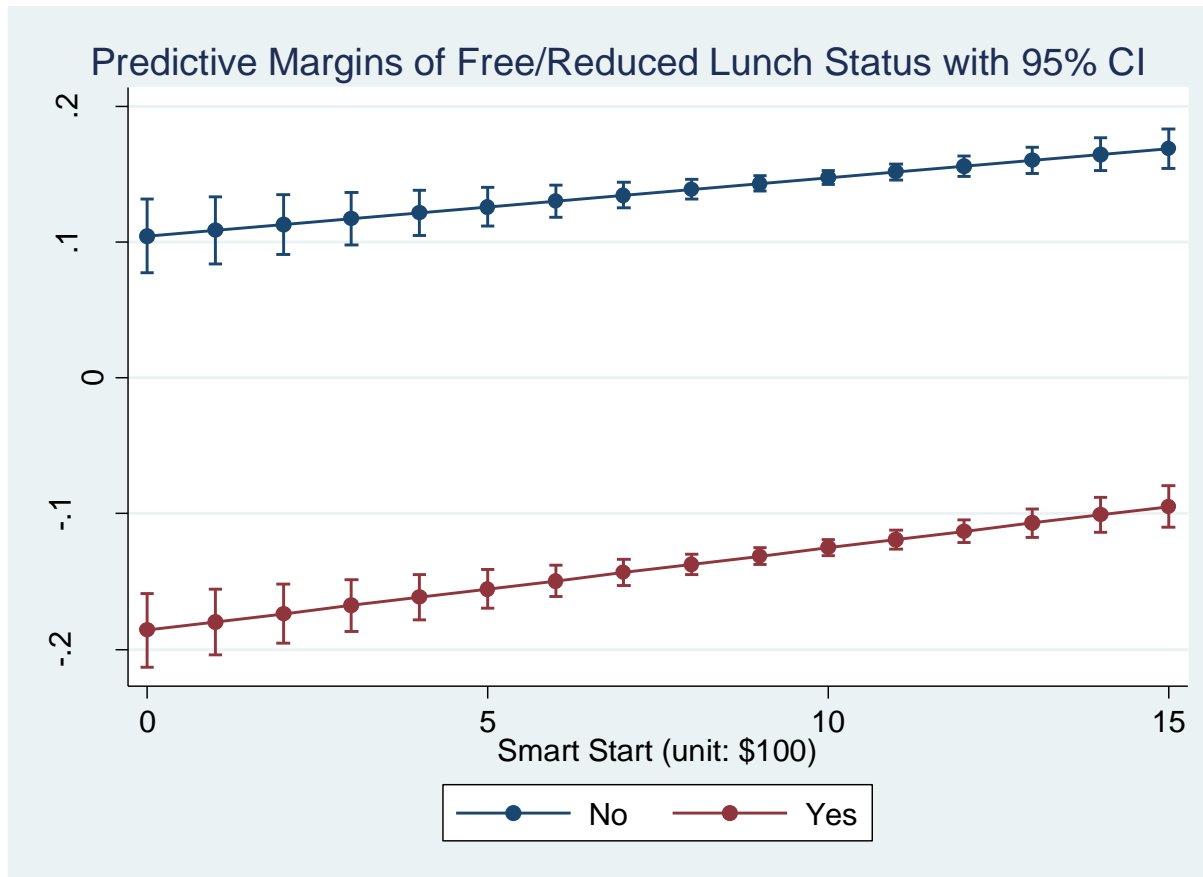
# SMART START: Impact of Average Funding in Added Months of Learning



# SMART START: Impact of Average Funding on Reduction in Odds of Special Education



# SMART START: Impact of Average Funding, Low-Income and Middle-Income Children



Middle-income Children

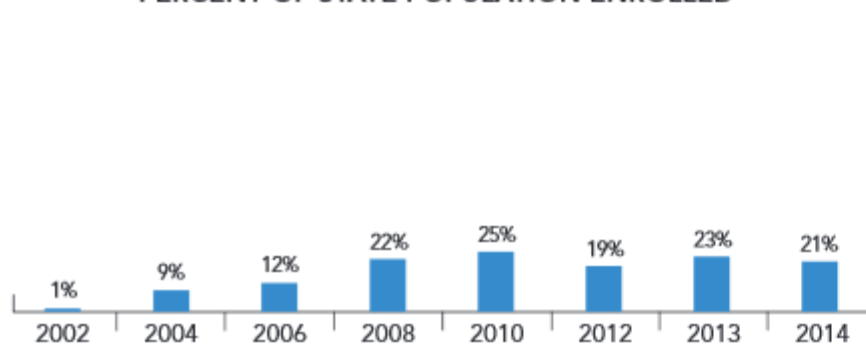
Free/Reduced Lunch Children

# Early Childhood Programs: A National and North Carolina Prospective

- National initiative began in 1960s with Head Start and Early Head Start at federal level
- Federal efforts important but never provide the coverage or scope necessary for the impact desired
- State PreK programs have expanded in NC and nationally

## North Carolina

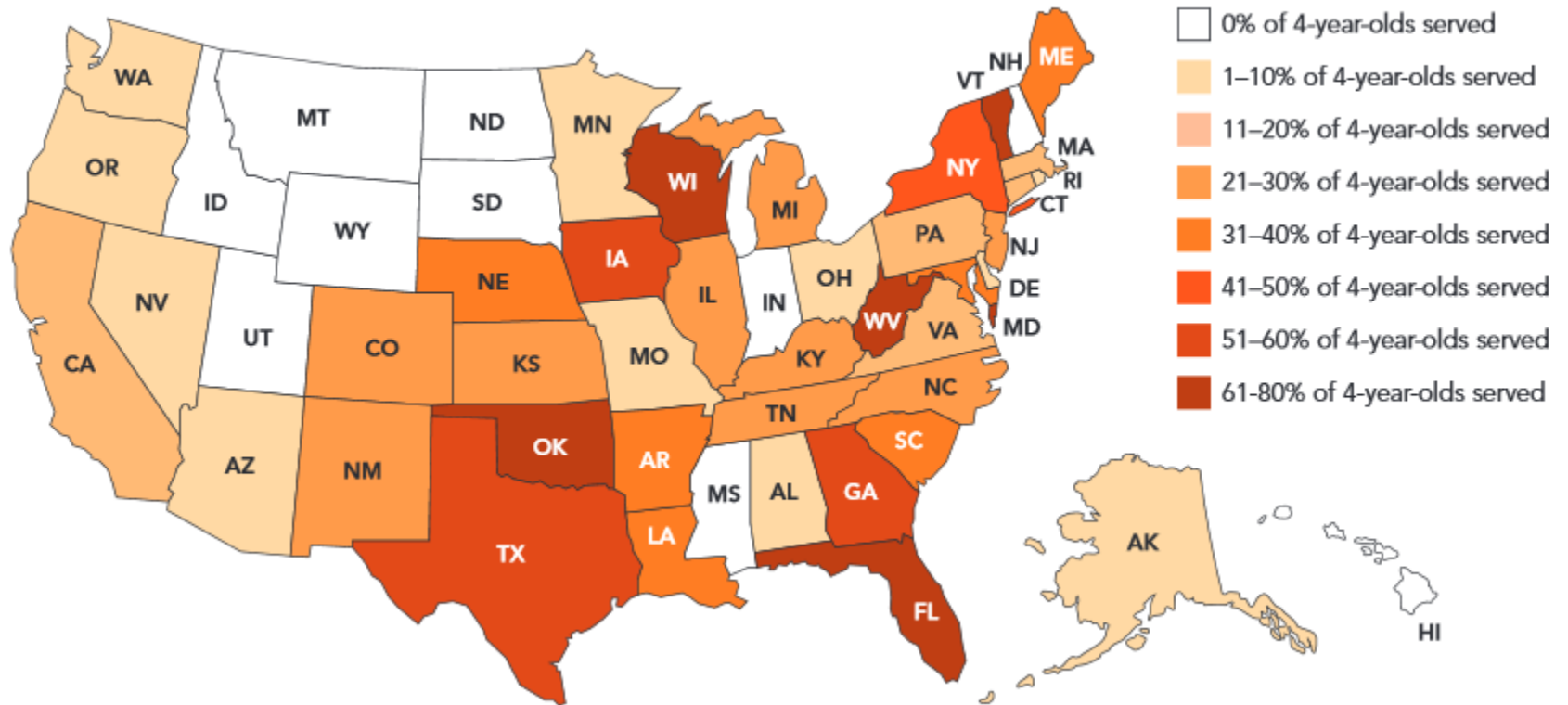
PERCENT OF STATE POPULATION ENROLLED\*



STATE SPENDING PER CHILD ENROLLED\*  
(2014 DOLLARS)



**FIGURE 1: PERCENT OF 4-YEAR-OLDS SERVED IN STATE PRE-K**



(NIEER, 2015)

# NC Pre-K Program Overview

Targeted state-funded pre-k program for 4-year-olds

- Began in 2001-2002
- Serves ~30,000 children in over 2,000 classrooms
- Operated by local school system or SS in variety of site types – public schools, private centers, Head Start
- School day & year model
- Program standards – Class size  $\leq 18$  & 1:9 ratio, B-K licensed teachers, 4-/5-star ratings, Approved curriculum, Ongoing assessment & Developmental screening
- Targets low-income ( $\leq 75\%$  SMI), other risk factors

# NC Pre-K Evaluation

Started at inception of the program in 2002

Multiple studies to address:

- Program characteristics – monthly data reports
- Classroom quality – classroom observations
- Children's outcomes – direct assessments and EOG data

# Longitudinal Studies: Evaluation Questions

- What is the quality of the workforce?
- What is the quality of instruction?
- What were the outcomes for children participating in the program relative to norms?
- What factors affected children's outcomes?





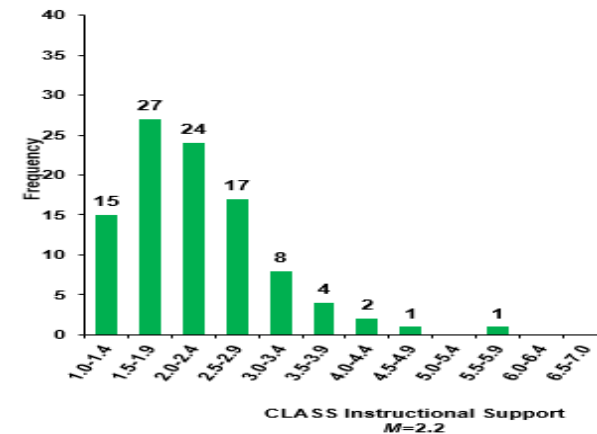
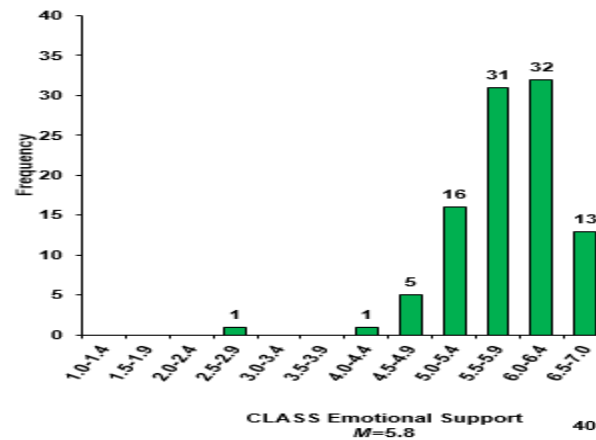
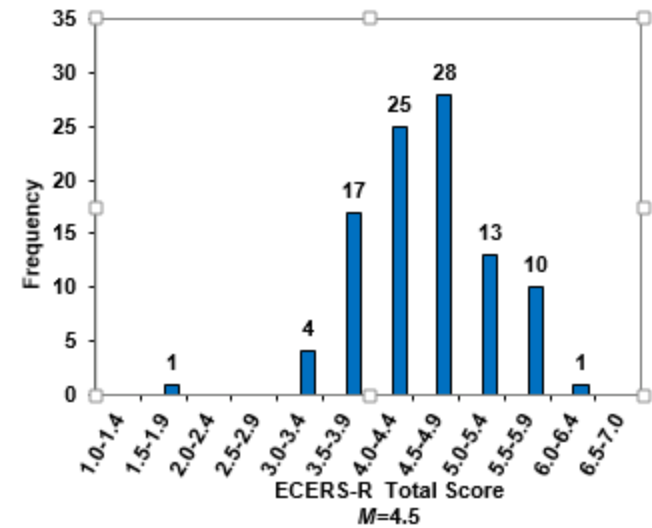
# Teacher Licensure/Credentials

	Total Teachers	B-K	Other Teacher's License	CDA Credential	NCECC	None
<b>Year 3—2003-2004</b>						
Public School	453	68%	18%	0%	1%	13%
Community	536	17%	10%	4%	16%	53%
All	989	40%	14%	2%	9%	34%
<b>Year 14—2014-2015</b>						
Public School	1,149	92%	2%	<1%	<1%	6%
Community	911	75%	6%	1%	4%	15%
All	2,060	84%	4%	<1%	2%	10%

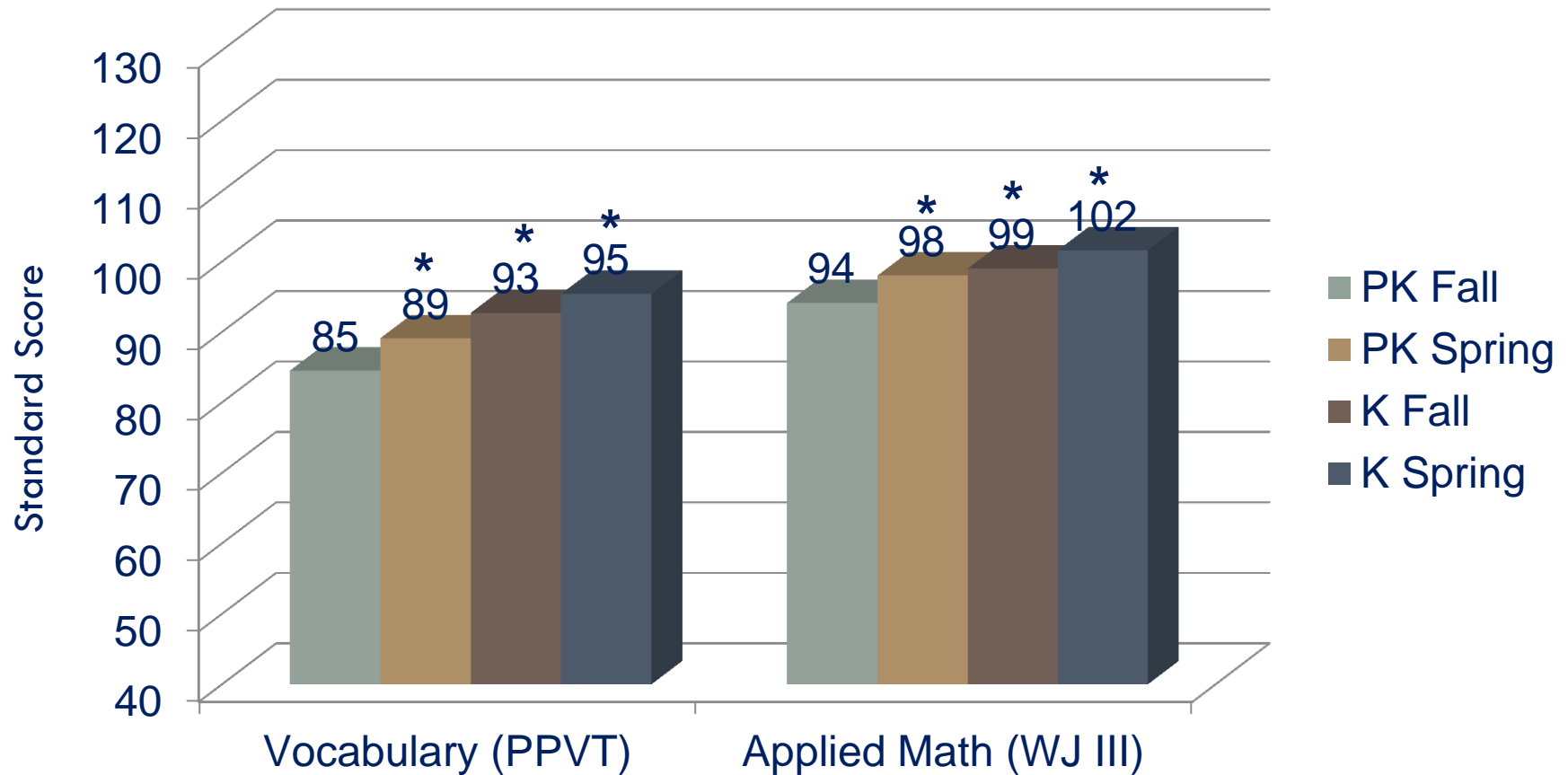
CDA=Child Development Associate; NCECC=NC Early Childhood Credential

# Quality in Pre-K

- General quality of classroom environment in medium to high range
- Teachers emotional support in the high range
- Teachers' instruction interactions in the low range



# Longitudinal Study Child Outcomes Significant for Vocabulary and Math

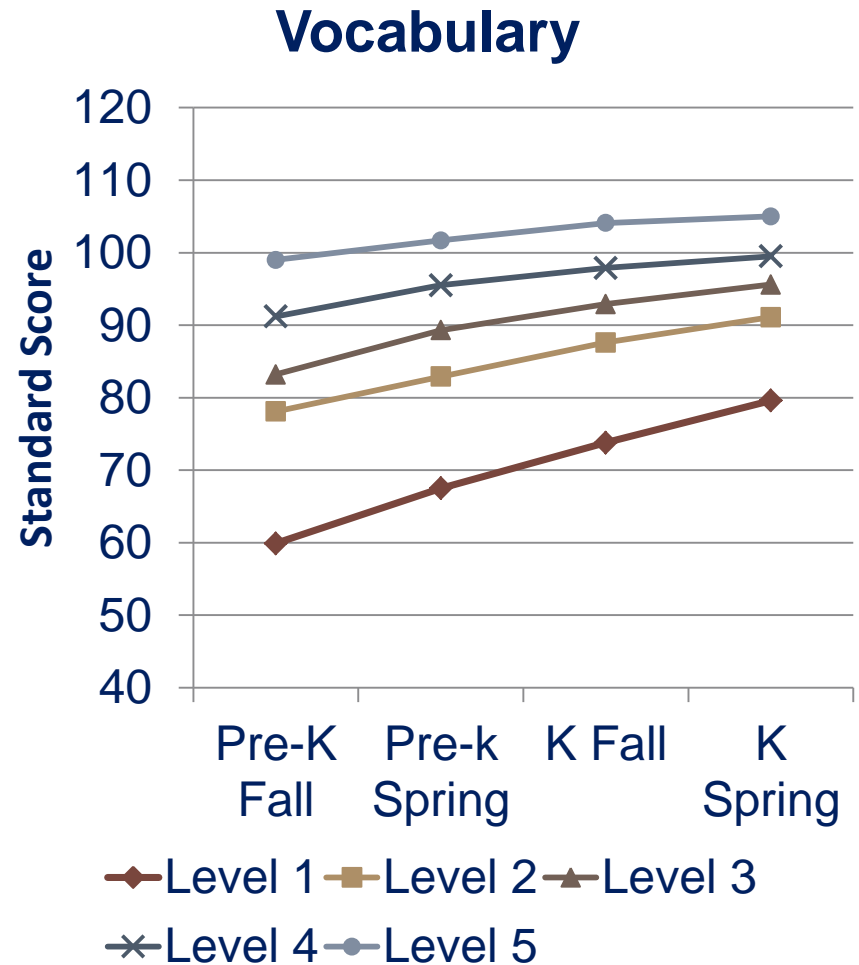


\* Significant increases at each timepoint

N=851-1,257 children

# Strongest Predictor of Child Outcomes: Level of English Proficiency

- Less proficient (level 1) = Faster growth
- Start and end lower, but greater gains



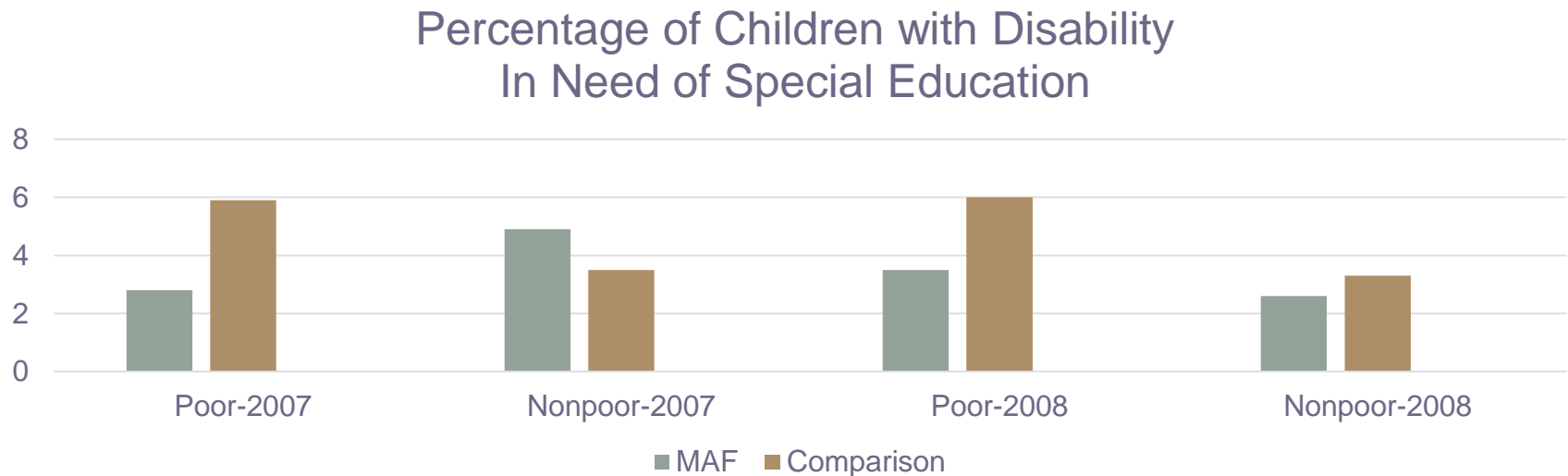
# 3rd Grade Comparison Study: Research Questions

- Are there long-term benefits of participation in the program?

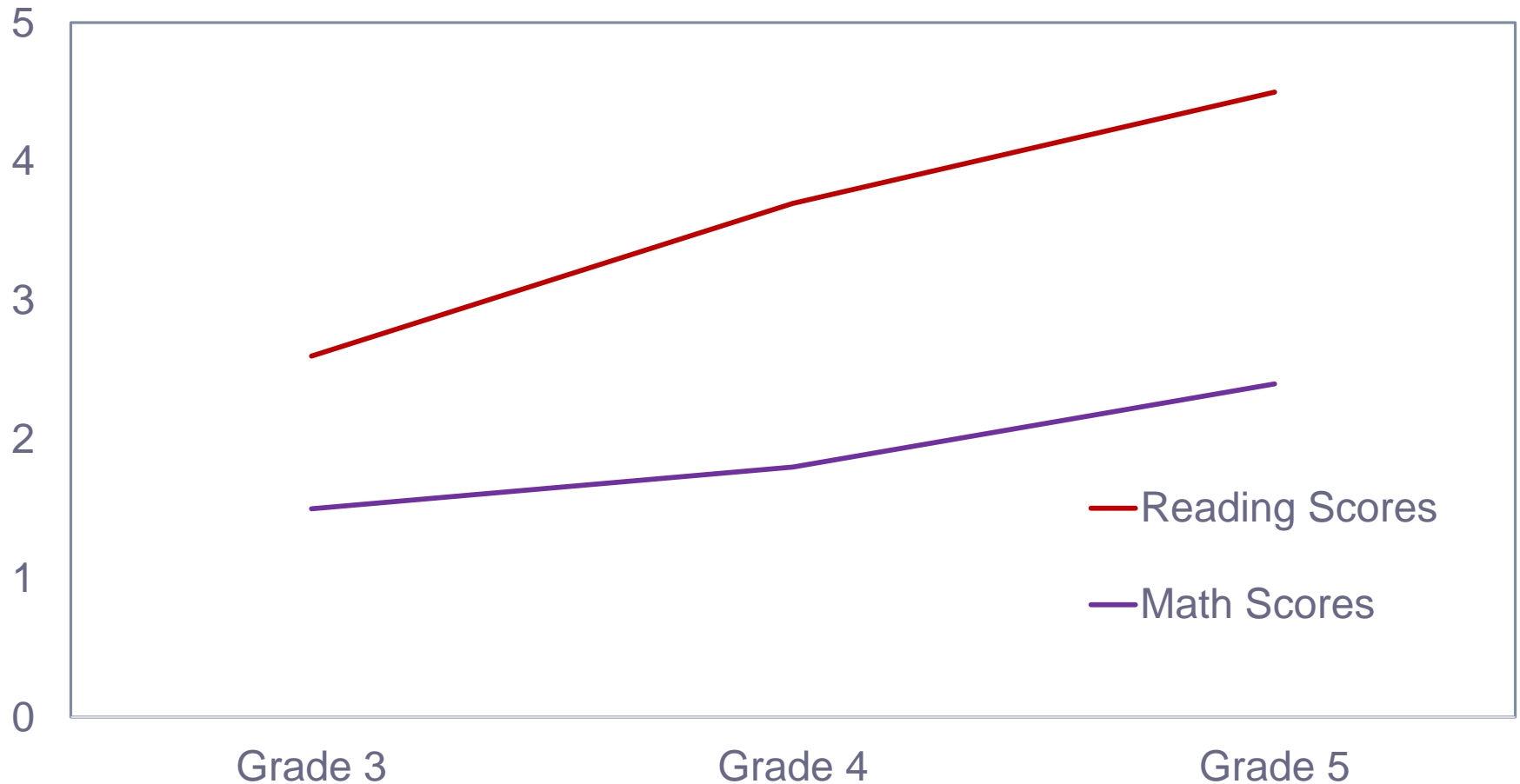


# Analysis of Follow Ups at 3<sup>rd</sup> Grade (2010)

- Compared children who attended NC Pre-K (5,554) and comparison children (200,062)
  - Found modest effects for reading and math end-of-third-grade achievement scores
  - Effect more pronounced for children living in poverty
  - Generally fewer children in need of special education



# NC PRE-K: Impact of Average Funding in Added Months of Learning

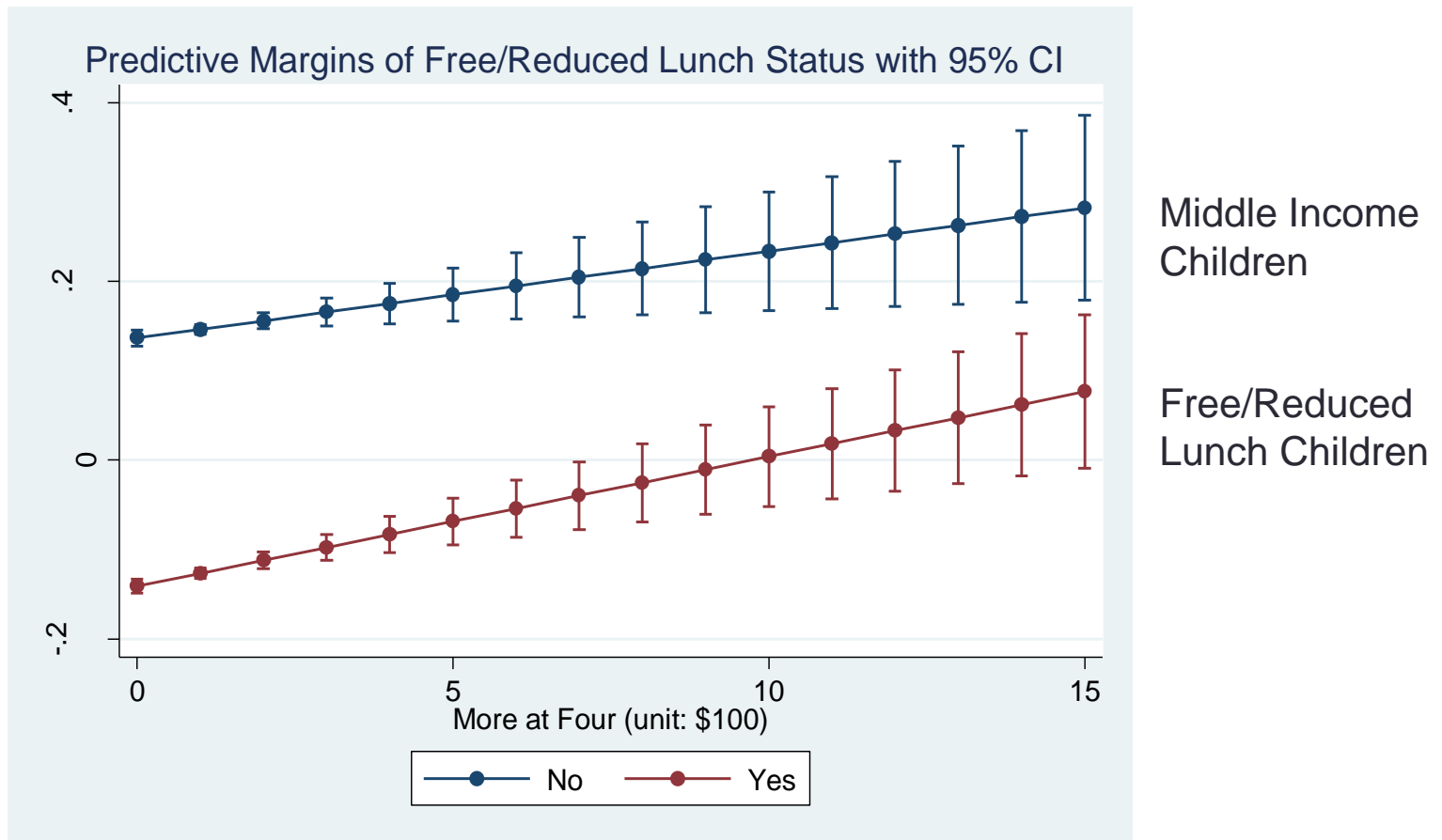


# NC Pre-K: Impact of Average Funding on Reduction in Odds of Special Education





# NC PRE-K: Impact of Average Funding, Low-Income and Middle-Income Children



# Impact of Child Care Subsidies on Child Development

- Research is limited.
- No randomized controlled trials.
- Data are unavailable in NC.
  
- Study of NICHD national daycare panel by Vladi Slanchev at Duke:
  
- Primary benefits are for mothers' ability to work.
- Benefits for child depend on what quality of care child attends.
  
- Subsidies that allow for *any* quality care do not help child.
  - If subsidy is low, mothers tend to choose low-quality care.
  
- Subsidies that require high-quality care have positive effect.
  - Even stronger impact when subsidy is provided at younger age.
  - Especially positive effect for lower income families.

# Conclusions

- Smart Start has positive impact on child's educational development that persists through the end of elementary school.
- NC Pre-K has positive impact on child's educational development that persists through the end of elementary school.
- Child care subsidies have positive impact on child's development only if large enough to enable high-quality care.
- Strong need for research, requiring integration of data across early childhood and K-12 education.

# A Tale of Two States: North Carolina and Tennessee

- Began in 1998; Expanded after 2005
- Serves ~18,000 4-year-olds in over 900 classrooms
- Operated by local school systems in public schools, private centers, Head Start
- Program standards – Class size  $\leq 20$  & 1:10 ratio, Pre-K licensed teachers, Highest licensing rating, Approved curriculum
- Conducted a randomized but quasi-experimental evaluation of the effects of their program at 3<sup>rd</sup> grade

# TN Pre-K Study Results

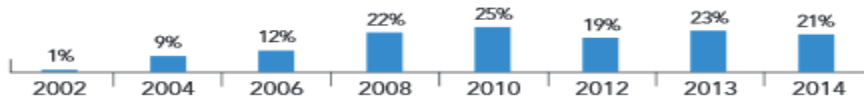
- Pre-K Effects
  - Significant differences between TN PreK and controls on academic achievement measures, teacher ratings of behavior & readiness for K
  - Effects on academic skills stronger for non-native English speakers
- K & 1<sup>st</sup>-grade Effects
  - Little difference on academic achievement
  - No differences in K teacher ratings
- 2<sup>nd</sup>- & 3<sup>rd</sup>-grade Effects
  - Control > VPK – gains on academic skills composite in 2<sup>nd</sup> & some math skills in 2<sup>nd</sup> & 3<sup>rd</sup>; **ns** differences on other skills
  - No differences in teacher ratings

# Why the Differences?

- Investment by state in the two programs
  - NC averaged \$5618 (\$5310 without start up cost in 2002)
  - TN averaged \$5215 (\$4781 without start up cost in 2002)

## North Carolina

PERCENT OF STATE POPULATION ENROLLED\*

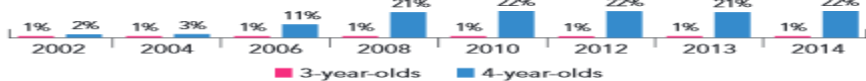


STATE SPENDING PER CHILD ENROLLED\* (2014 DOLLARS)



## Tennessee

PERCENT OF STATE POPULATION ENROLLED\*



STATE SPENDING PER CHILD ENROLLED\* (2014 DOLLARS)



# Why the Differences

- Difference in class size (20 vs. 18)
  - A small change can make a big difference



# Why the Differences

- The North Carolina milieu
  - Support for younger children and families through access to quality child care

ACCESS



BUILDING QUALITY

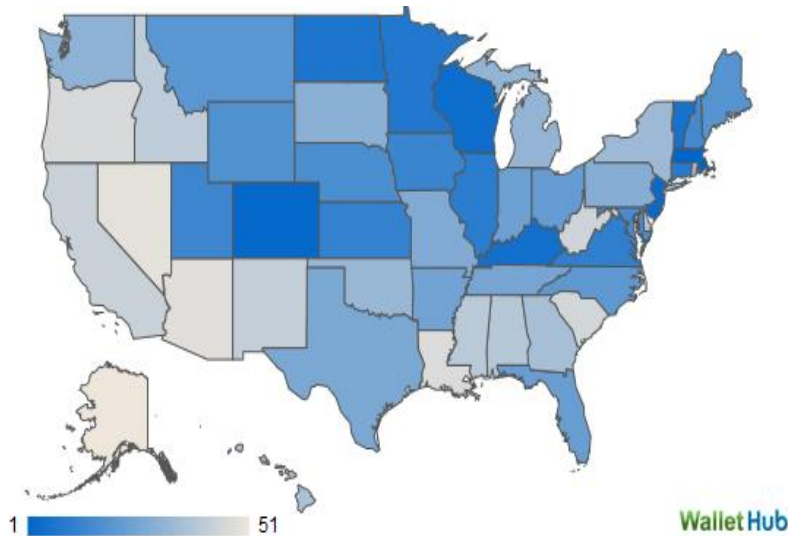




# Why the Differences?

- The quality of the education system into which children move
  - PreK is not a magic bullet

# Quality of Public Education

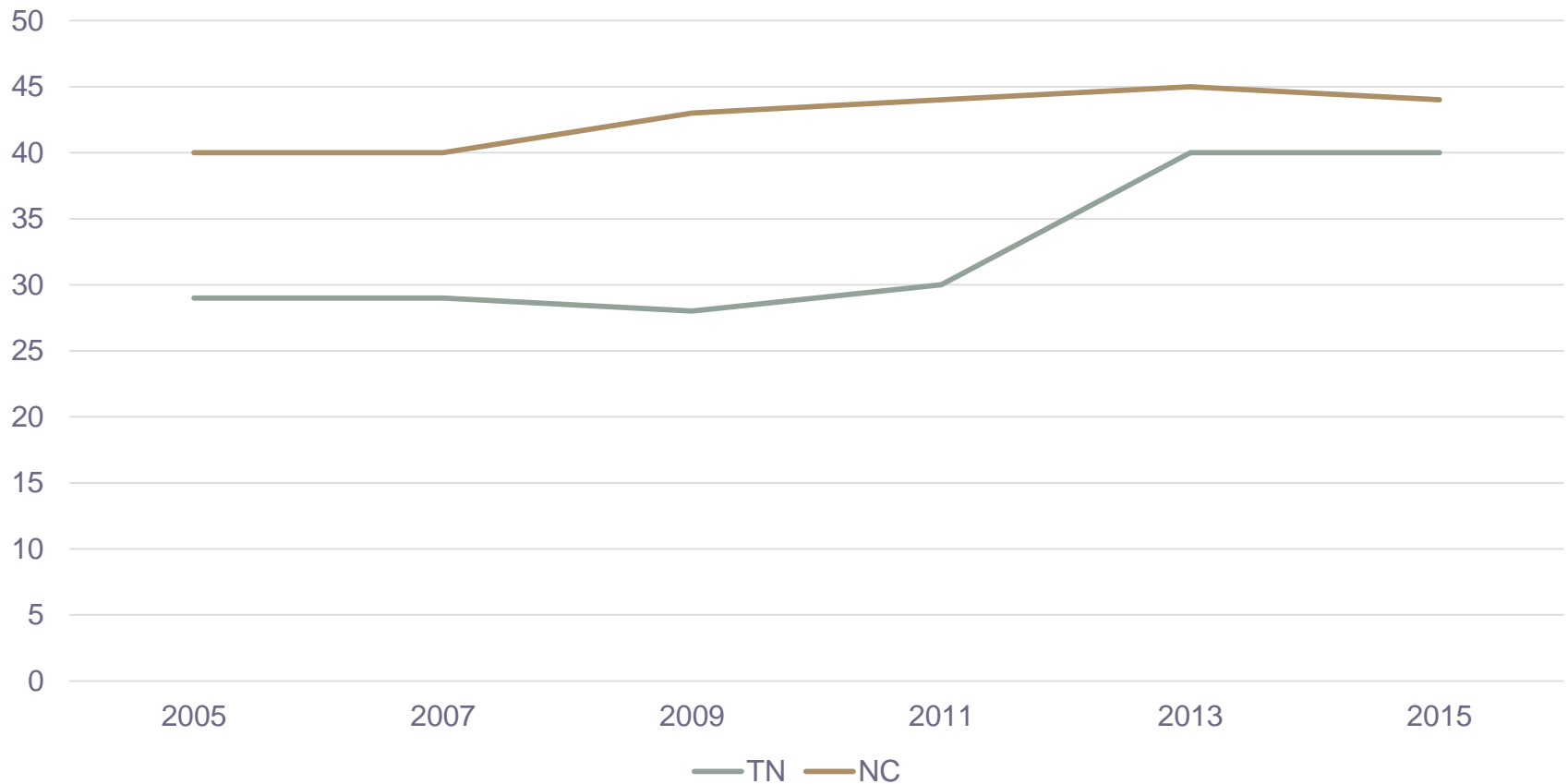


Overall Rank	State	"School-System Quality" Rank	"Safety" Rank
1	Massachusetts	2	1
2	Colorado	1	47
3	New Jersey	5	9
4	Wisconsin	4	14
5	Kentucky	10	4
6	Vermont	6	12
7	North Dakota	3	46
8	Minnesota	9	16
9	Connecticut	7	28
10	Illinois	8	32
11	Virginia	11	14
12	Kansas	14	22
13	Iowa	12	39
14	Utah	16	17
15	New Hampshire	15	29
16	Maryland	19	17
17	Nebraska	17	26
18	Wyoming	13	41
19	Maine	20	13
20	Montana	18	32
21	North Carolina	24	6
22	Ohio	23	29
23	Florida	26	20
24	Indiana	22	50
25	Arkansas	21	42
26	Tennessee	28	29

<https://wallethub.com/edu/states-with-the-best-schools/5335/#main-findings>

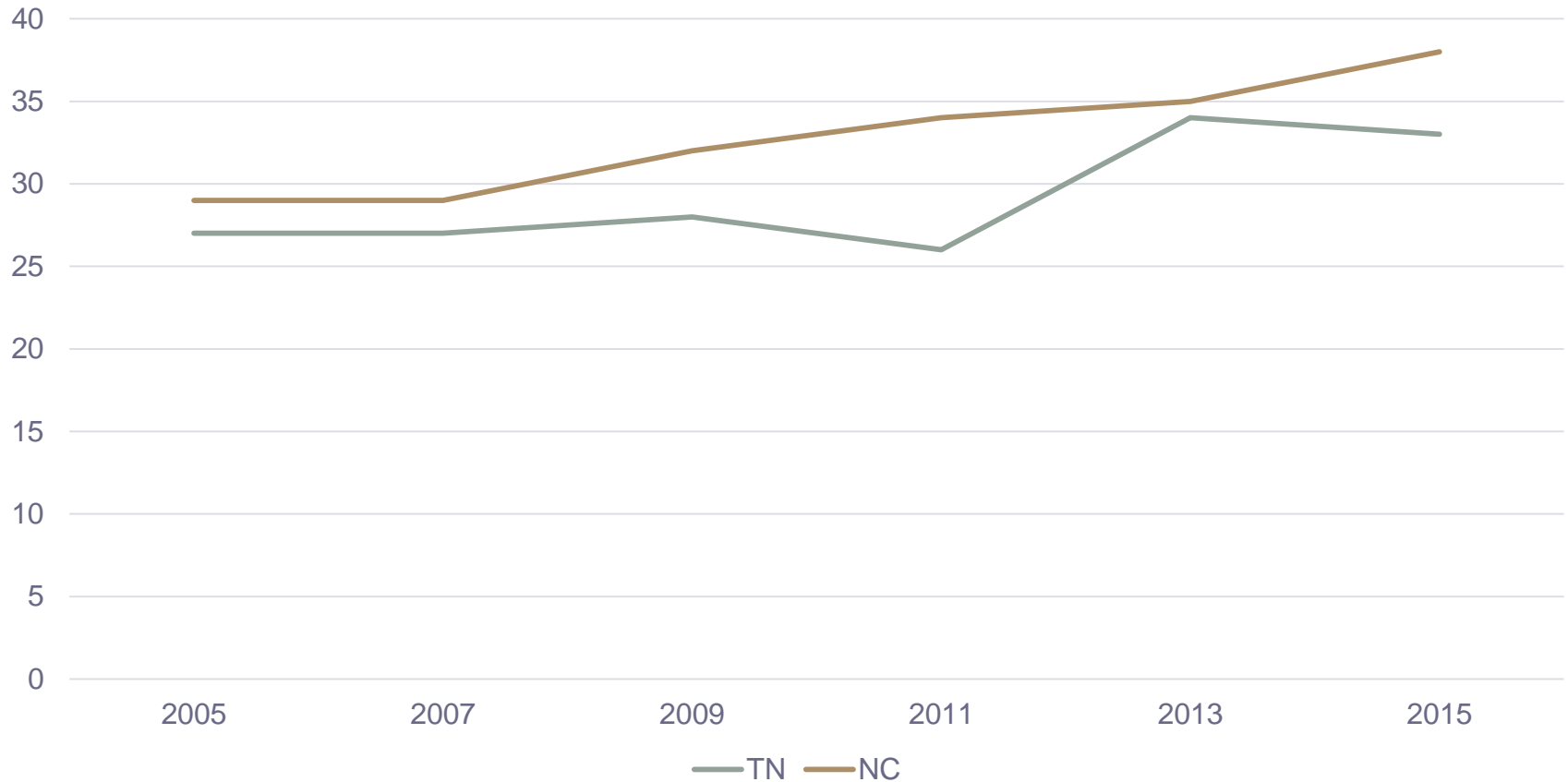
# State Differences on NAEP at 4<sup>th</sup> Grade

Percentage Proficient on National Assessment of Educational Progress in Math at Grade 4



# State Differences on NAEP at 4<sup>th</sup> Grade

Percentage Proficient in Reading on National Assessment of Educational Progress at 4<sup>th</sup> Grade



# Why the Differences

- Need to consider preponderance of evidence
  - Replication of findings in multiple studies and methods in NC
  - Similar conclusions from studies of other programs – GA, Boston, Tulsa, NIEER (AR, CA, MI, NJ, NM, OK, SC, WV) studies