



Making Informed Decisions: An Administrator's Guide to Understanding Early Education Research

Mississippi Early Childhood Conference

Natchez, MS

July 21, 2015

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Center on Enhancing Early Learning Outcomes/
National Institute for Early Education Research



Agenda

- How to Identify Good Research
- What the Research Tells Us: Selected Issues
- Turning Research into Action
- Resources for Administrators
- Q & A

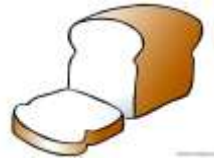


Have you ever heard . . .

- For every dollar spent on early education, the public will save \$7 or more?
- Studies show Head Start doesn't work?
- Retaining children who have difficulty in school will harm them?
- A teaching degree in child development or early education makes no difference?
- Universal preschool does not benefit all children; targeted preschool does?
- Direct instruction of young children is developmentally inappropriate and ineffective?



Research on bread indicates. . .



1. More than 98 percent of convicted felons ate bread as children.
2. Half of all children who grow up in bread-consuming households score below average on standardized tests.
3. More than 90 percent of violent crimes are committed within 24 hours of eating bread.
4. Primitive tribal societies that have no bread exhibit a low incidence of cancer, Alzheimer's, Parkinson's disease, obesity, diabetes, and osteoporosis.
5. Bread is a "gateway" food item, associated with alcohol and drug abuse. 100% of drug abusers ate bread as children and adolescents.
6. Newborn babies can choke on bread.
7. More Americans are killed in automobile accidents while eating bread than talking on cell phones.
8. Most American bread eaters are utterly unable to distinguish between significant scientific fact and meaningless statistical babbling.



Research-based Policies on Bread

In light of research-based evidence, it has been proposed that the following policies be established:

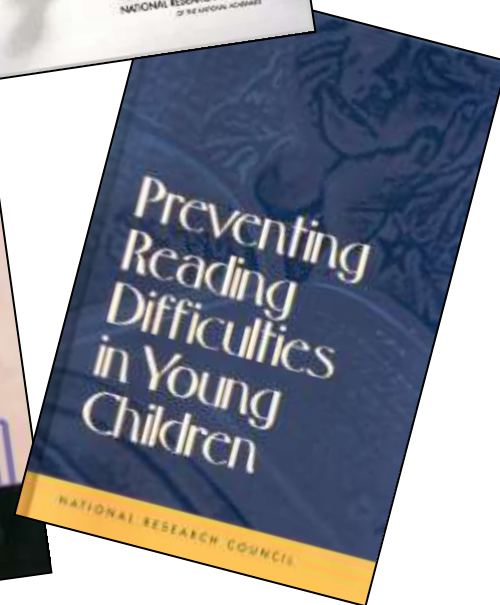
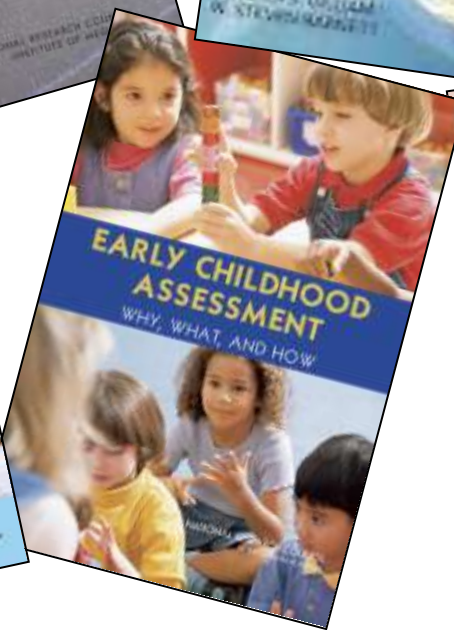
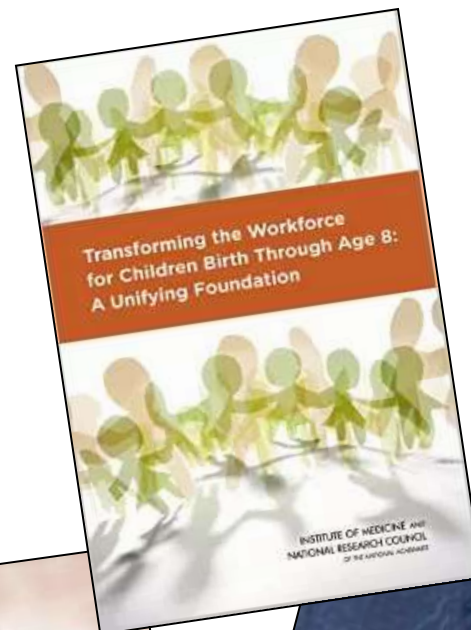
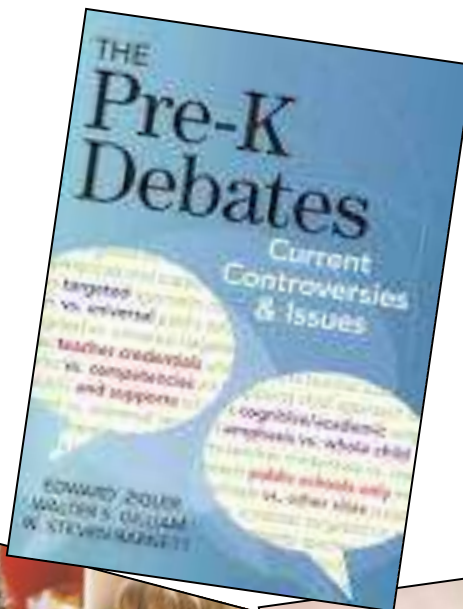
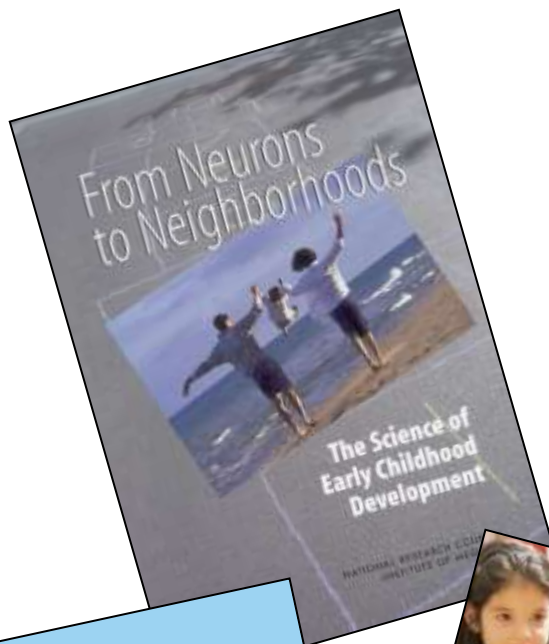
1. No sale of bread to minors.
2. The establishment of "Bread-free" zones around schools.
3. Health insurance policies must cover rehabilitation clinic costs up to 30 days for bread addicts.
4. A 300 percent federal tax be levied on all bread to pay for all societal ills associated with bread.
5. Driving under the influence of bread (DUIB) is punishable by law, including mandatory loss of license for 30 days and community service.
6. Any person convicted of a bread-related offense shall be ineligible to join US armed forces, local law enforcement, or teach in public schools.



“One striking fact is that the complex world of education — unlike defense, health care, or industrial production — does not rest on a strong research base. In no other field are personal experience and ideology so frequently relied on to make policy choices, and in no other field is the research base so inadequate and little used.” (p. 1)

National Research Council. (1999). Improving Student Learning: A Strategic Plan for Education Research and Its Utilization. Washington, DC: Author.





Evidence-Based Understanding



Dee Donatelli, Retrieved from <http://valueanalysismag.com/good-evidence-the-missing-link/>



What questions are you facing about early education?

- Impact of pre-K on cognitive and social/emotional development
- Fade-out
- Achievement gap
- Universal vs. targeted pre-K
- Pre-K or FDK
- Critical periods and developmentally appropriate practice
- Academic “redshirting”
- Attendance, suspension & expulsion
- Retention
- Teacher & administrator qualifications
- Cost benefits
- Others



Early Education and Care



Is There an Early Achievement Gap?

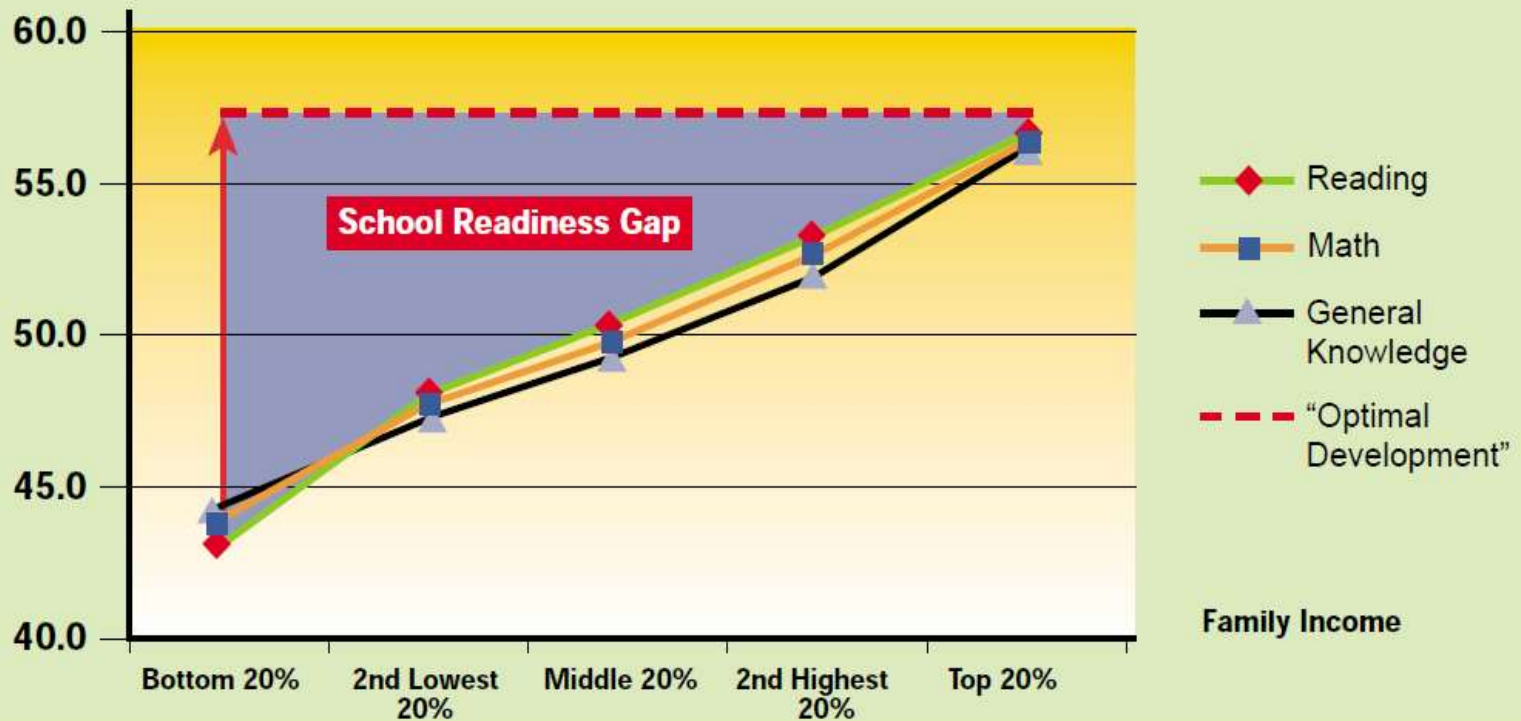
- Who does it affect?
- When does it appear?
- Can the achievement gap be prevented or remediated?



Achievement Gap at Kindergarten

Figure 2. Academic Abilities of Entering Kindergarteners by Family Income

Academic Ability Scores



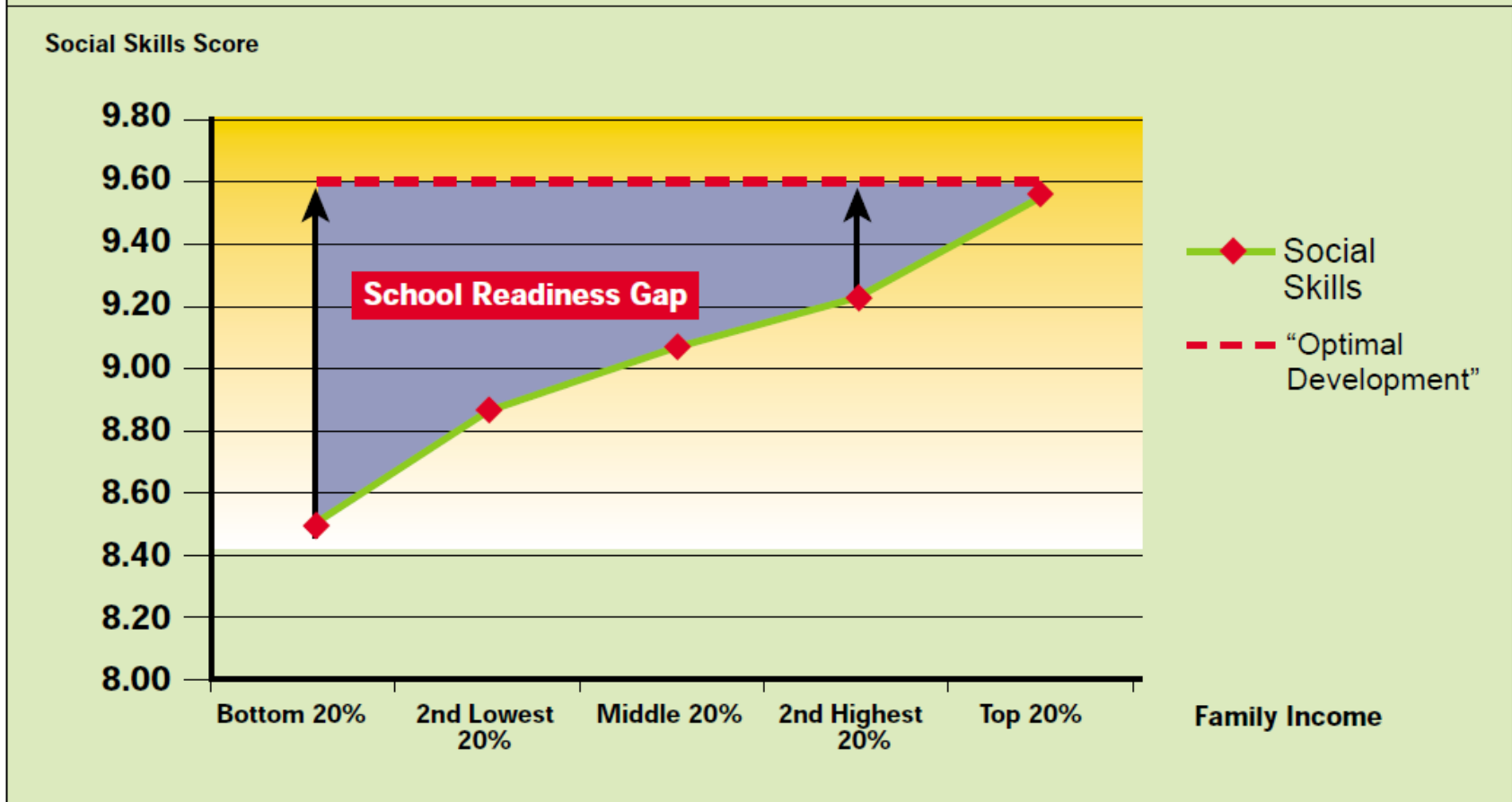
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99, Fall 1998.

Barnett et. al. (2004). The Universal vs. Targeted Debate.



Achievement Gap at Kindergarten

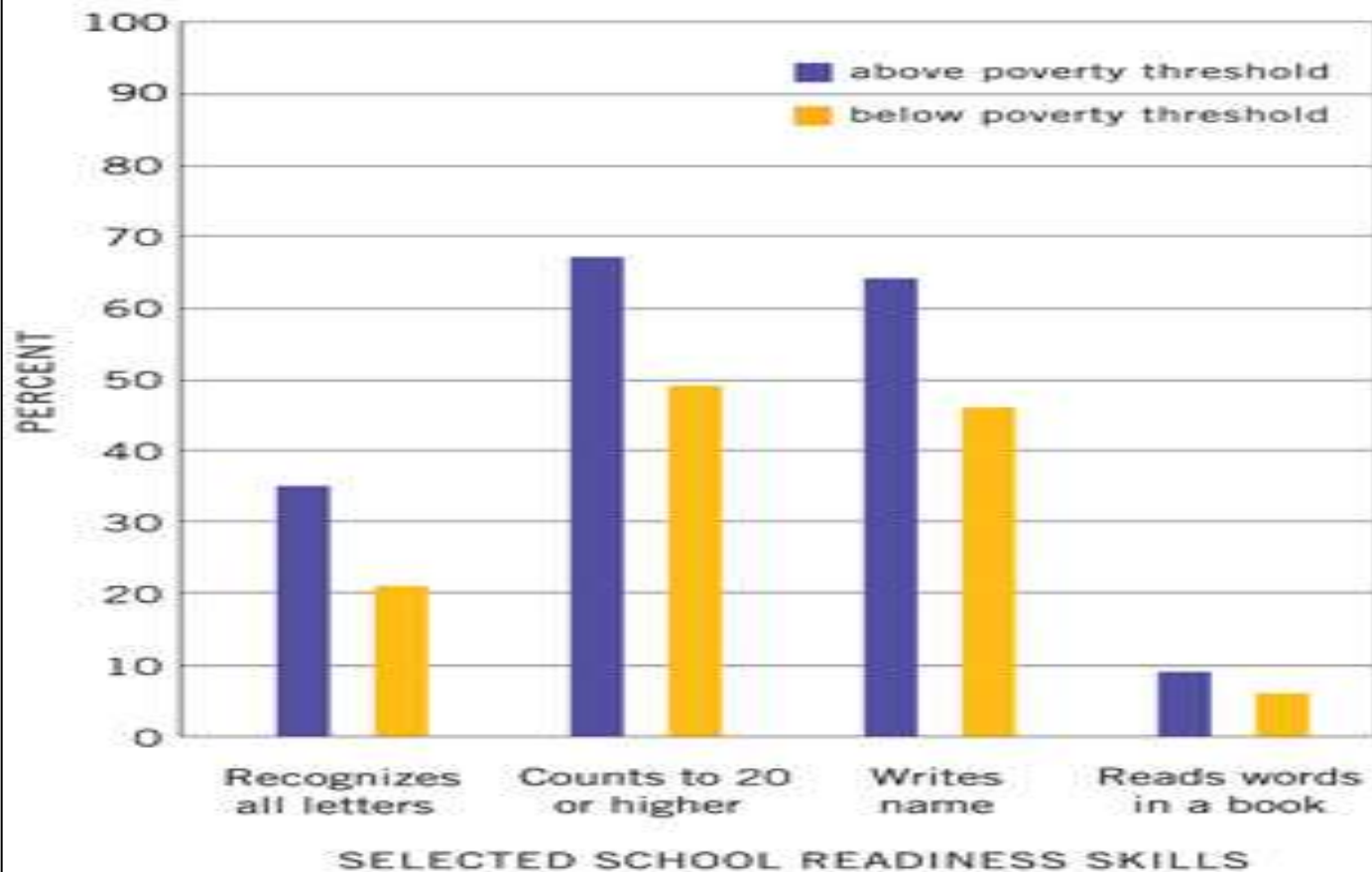
Figure 1. Social Skills of Entering Kindergarteners by Family Income



Barnett et. al.(2004).The Universal vs. Targeted Debate.



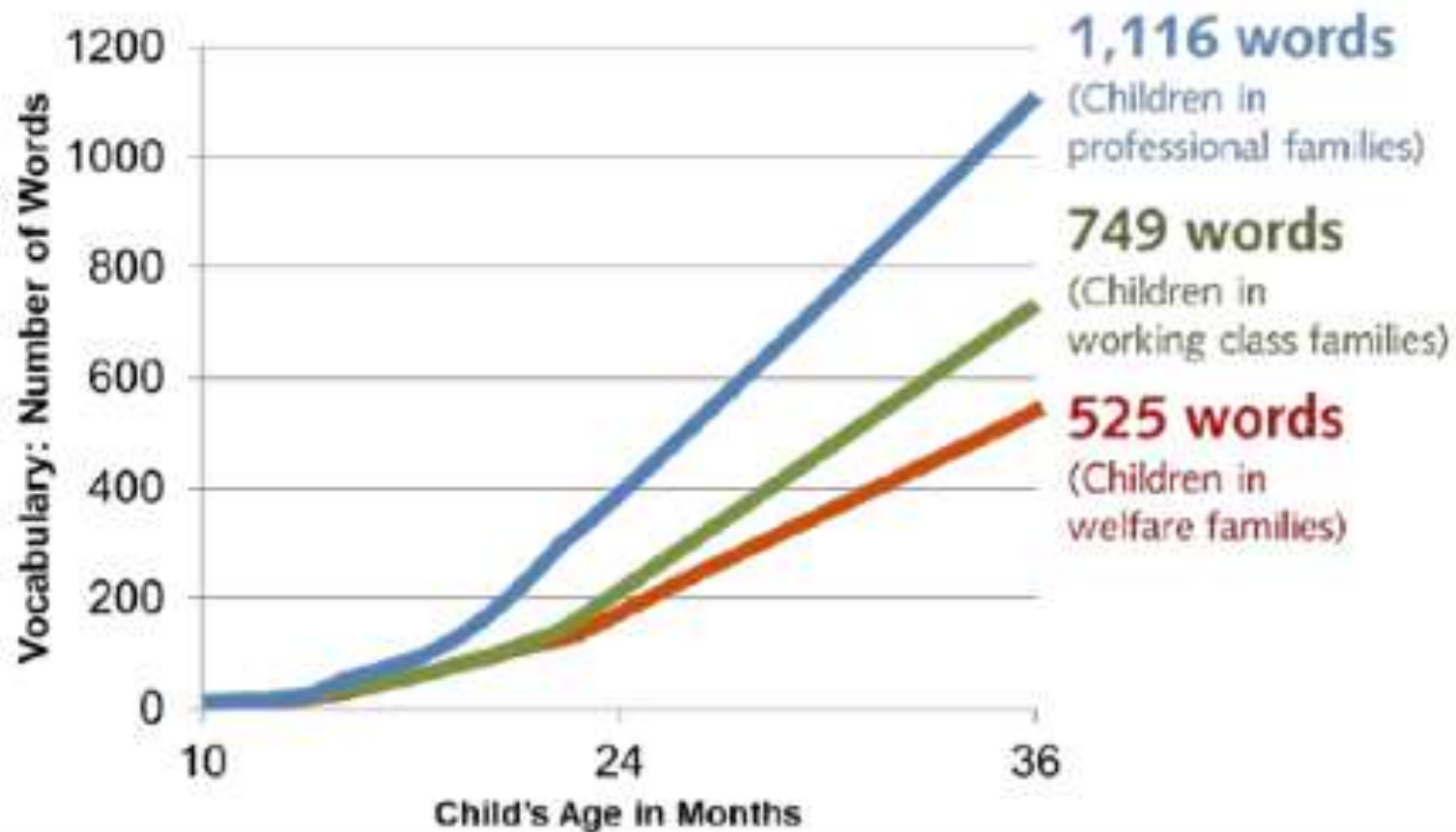
Percentage of Children Ages 3–6 With Selected School Readiness Skills, by Poverty Status



Source: O'Donnell, Kevin. Parents' Reports of the School Readiness of Young Children from the National Household Education Surveys Program of 2007, Table 2. National Center for Education Statistics. August 2008. www.childtrends.databank.org/?q=node/291



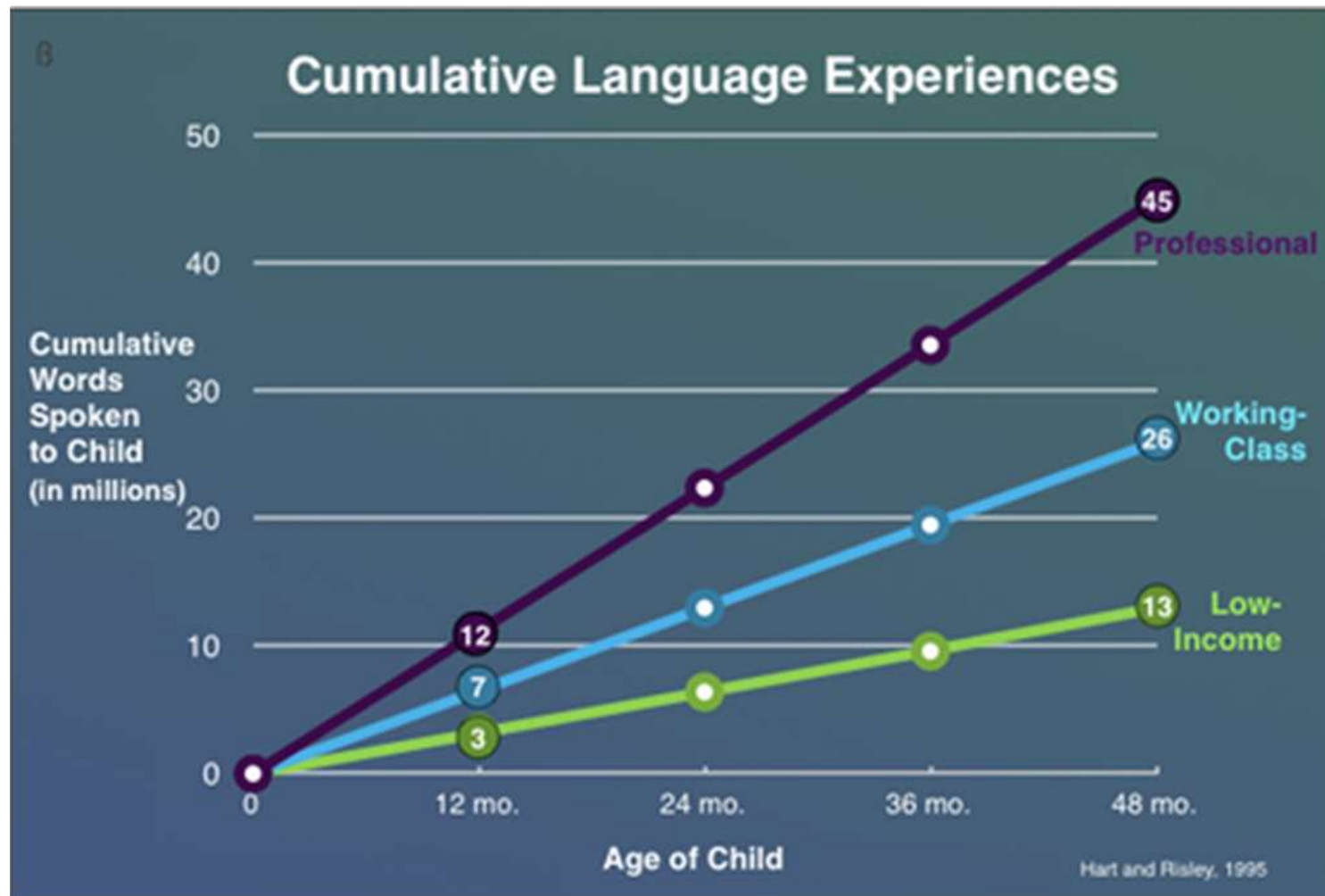
The Achievement Gap Starts Early



Hart, B. & T. Risley. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: Brookes Publishing.

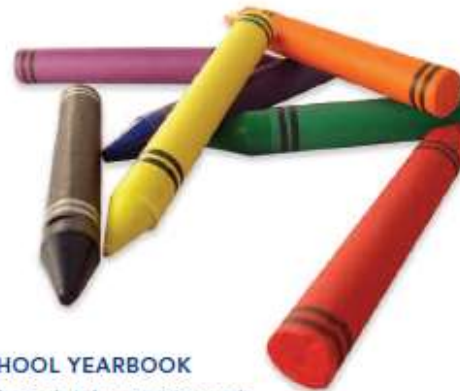


30 Million Word Gap



NIEER

The State of Preschool 2014



STATE PRESCHOOL YEARBOOK
The National Institute for Early Education Research

RUTGERS
Graduate School of Education



Center on Enhancing Early Learning Outcomes | www.ceelo.org

Zip Codes Determine Children's Early Education Opportunities

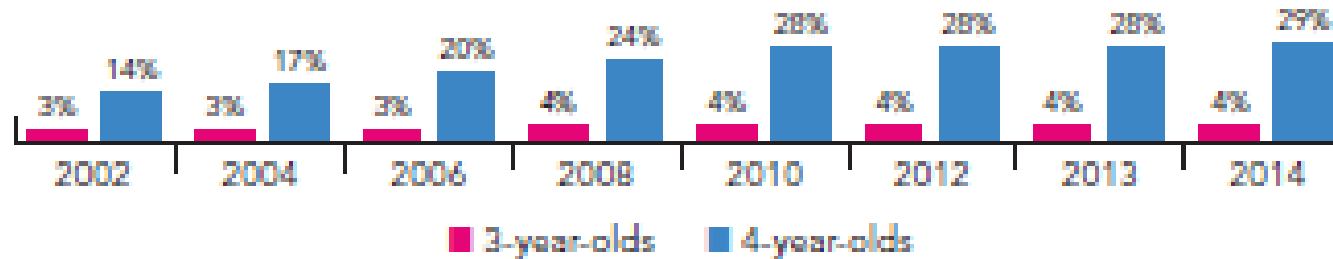
FIGURE 1: PERCENT OF 4-YEAR-OLDS SERVED IN STATE PRE-K



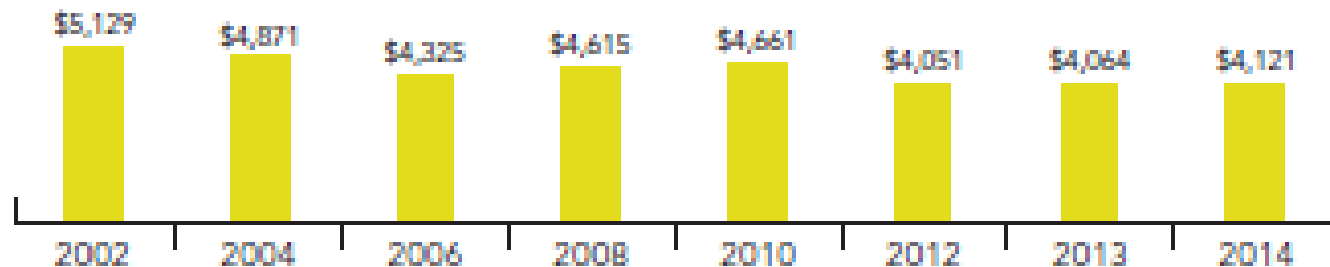
Barnett, W.S., Carolan, M.E., Squires, J.H., Clarke Brown, K., & Horowitz, M. (2015). *The state of preschool 2014: State preschool yearbook*. New Brunswick, NJ: National Institute for Early Education Research.



PERCENT OF NATIONAL POPULATION ENROLLED



AVERAGE STATE SPENDING PER CHILD ENROLLED (2013 DOLLARS)



Does Early Education Work?



Do Benefits of ECE Fade Away?

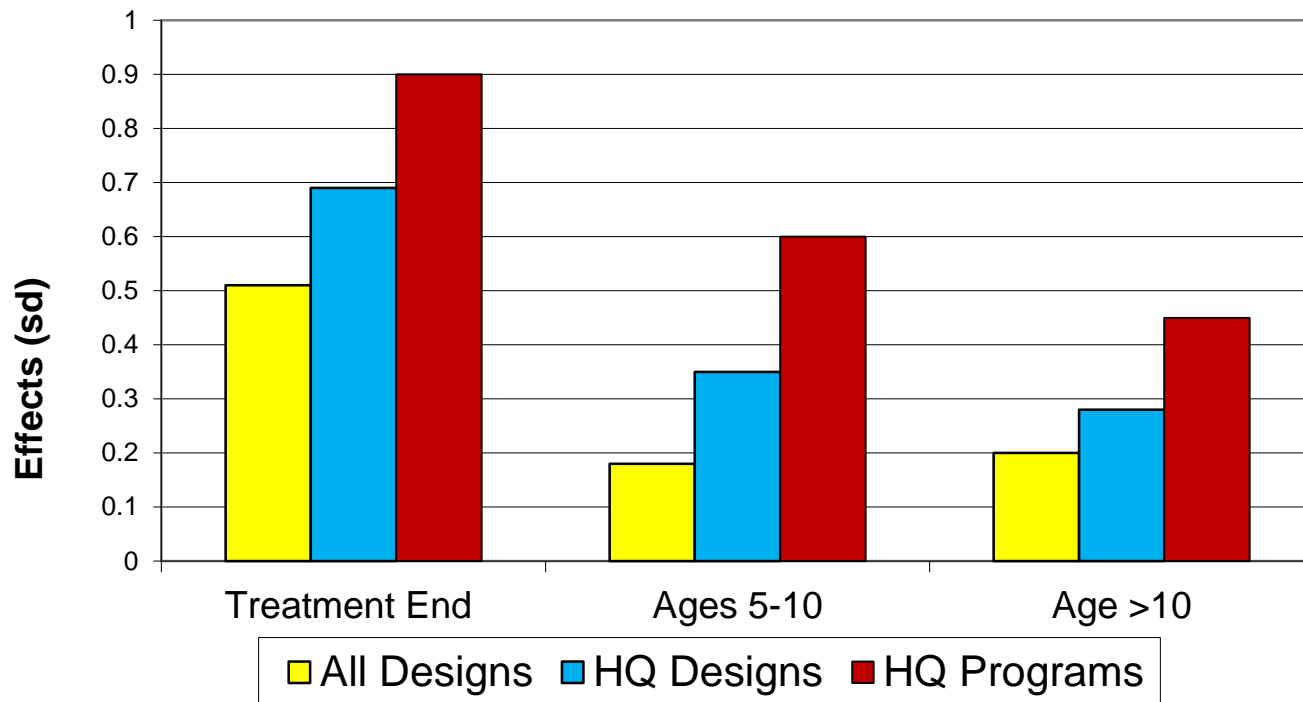


The Research is Compelling

- Improved school performance & behaviors
- Reduced special education interventions
- Higher graduation rates, including college
- Increased earnings
- Lower reliance on public assistance
- Healthier behaviors
- Lower rates of criminal activity
- Taxpayer savings (\$1 spent = \$7.16 saved for Perry Preschool)



Preschool Programs in the US Produce Long-term Gains (123 studies since 1960)



Camilli, G., Vargas, S., Ryan, S. & Barnett, S.. 2010. Meta-Analysis of the Effects of Early Education Interventions on Cognitive and Social Development.

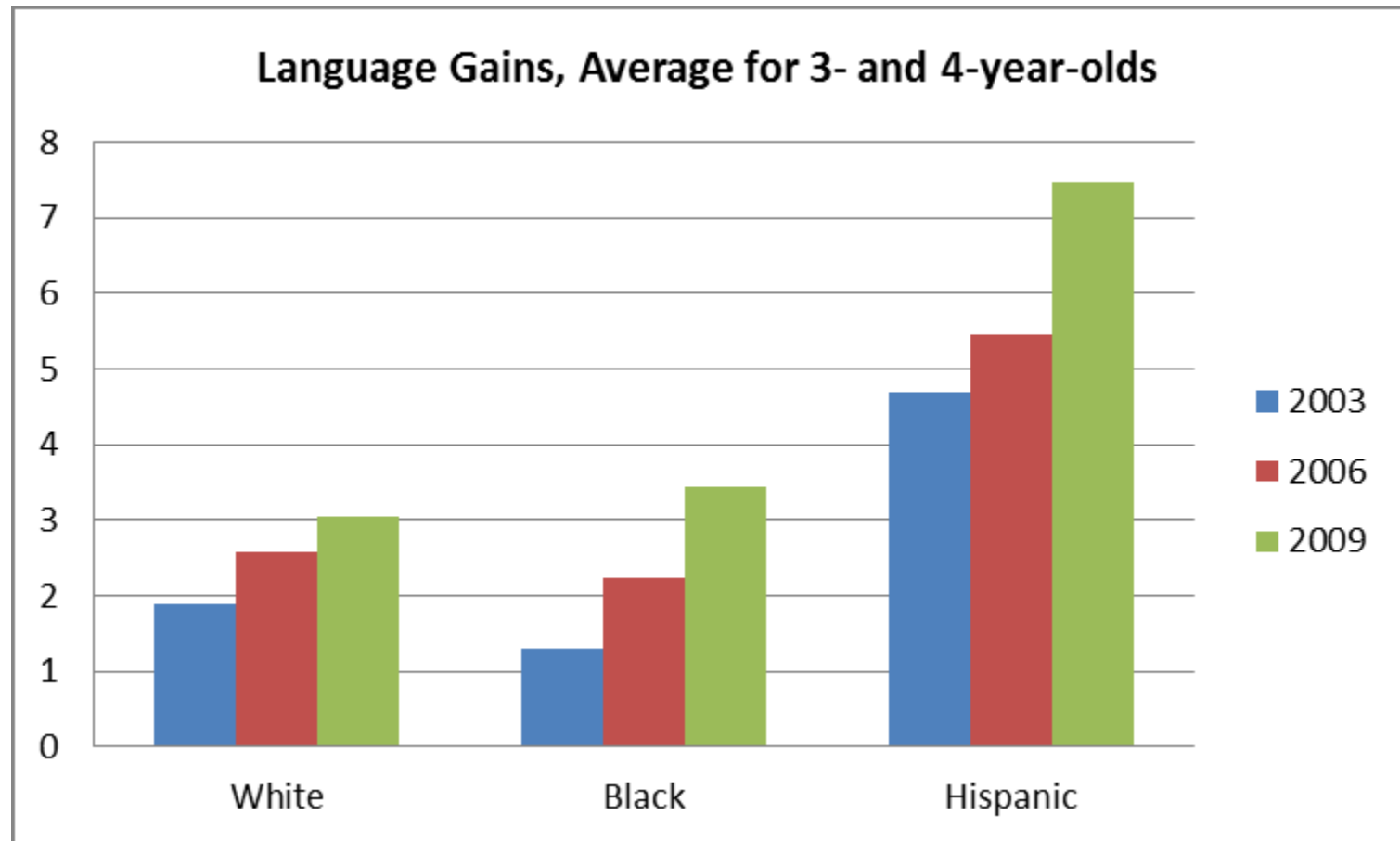


Does Head Start Work?

- National randomized trial in 2002 found modest initial effects and failed to detect lasting impacts
- Since then Head Start has been subject to reform, including a Bush Administration emphasis on improving literacy and more teachers with college degrees.
- Data collected in 2003, 2006 and 2009 show larger increases in the size of Head Start children's language and literacy gains between 2003 and 2009.



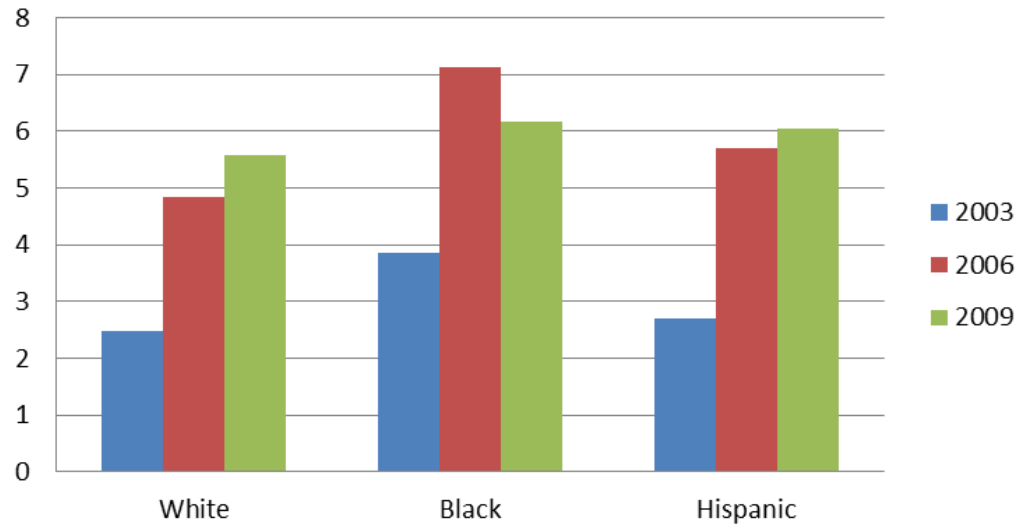
Head Start



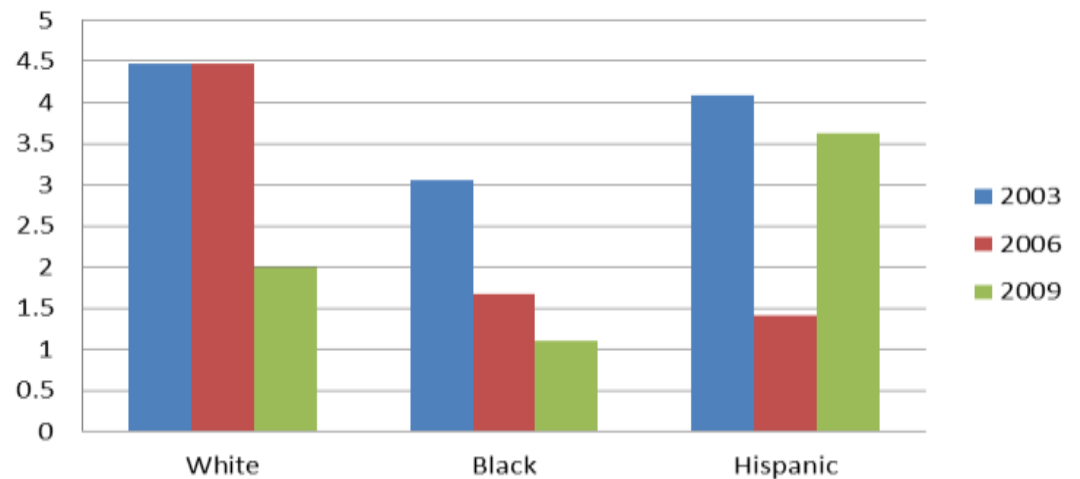
Language Gains in Head Start FACE Studies, Average for 3- and 4-year-olds



Literacy Gains, Average for 3- and 4-year-olds

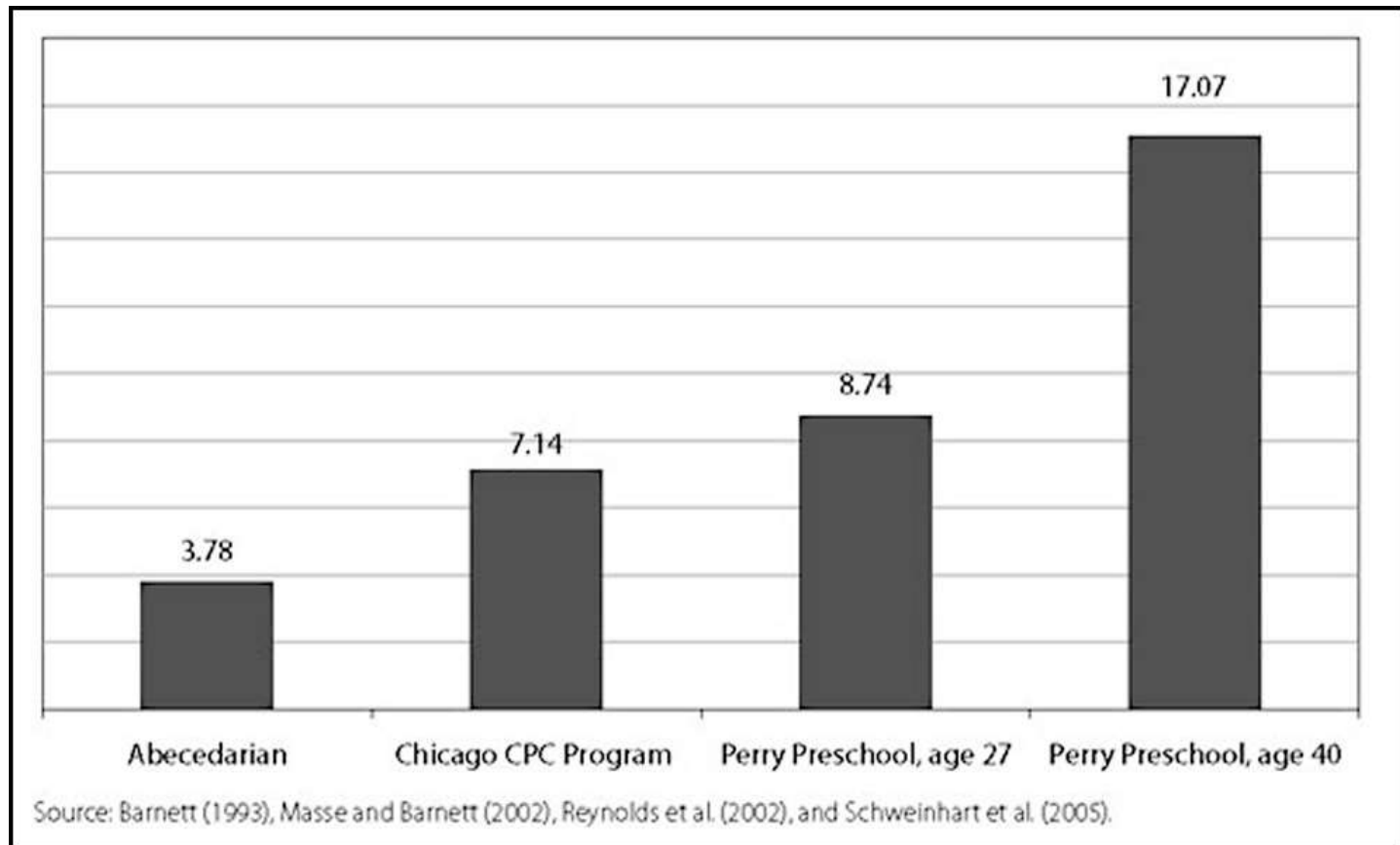


Math Gains, Average for 3- and 4-year-olds



Is Early Education a Smart Investment?

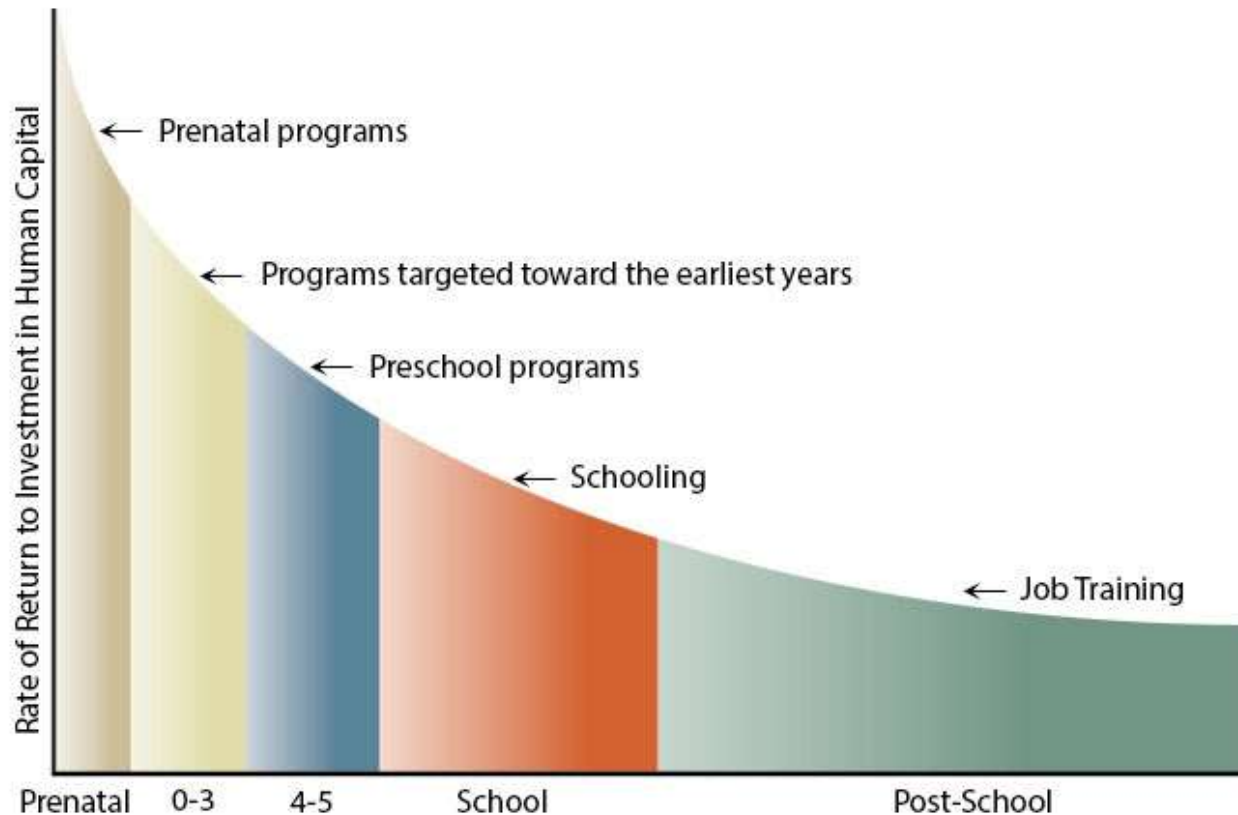
Benefit – Cost Ratio



Lynch, R. (2007). *Enriching children, enriching the nation: Public investment in high-quality prekindergarten*. Washington, DC: Economic Policy Institute



Returns to a Unit Dollar Invested



Source: Heckman (2008)



What Makes An Effective Early Learning Program?

- Staff-child ratios and group size
- Staff qualification level and specialized training
- Staff gender and diversity
- Staff compensation
- Program duration
- Curriculum
- Physical environment

*Organisation for Economic Co-operation and Development (OECD). 2012.
Starting Strong III: A quality toolbox for early childhood education and care.*



Essential Elements of High Quality Pre-K

- Teacher education & compensation
- Class composition
- Learning time
- Consistent adults in room with children
- DLL and SpEd support
- Positive adult-child interactions
- Appropriate learning standards
- Proven curriculum
- Formative assessment
- Data-driven decision-making
- Professional development
- Integrated Systems
- Strong leadership
- Political will



Bill & Melinda Gates Foundation

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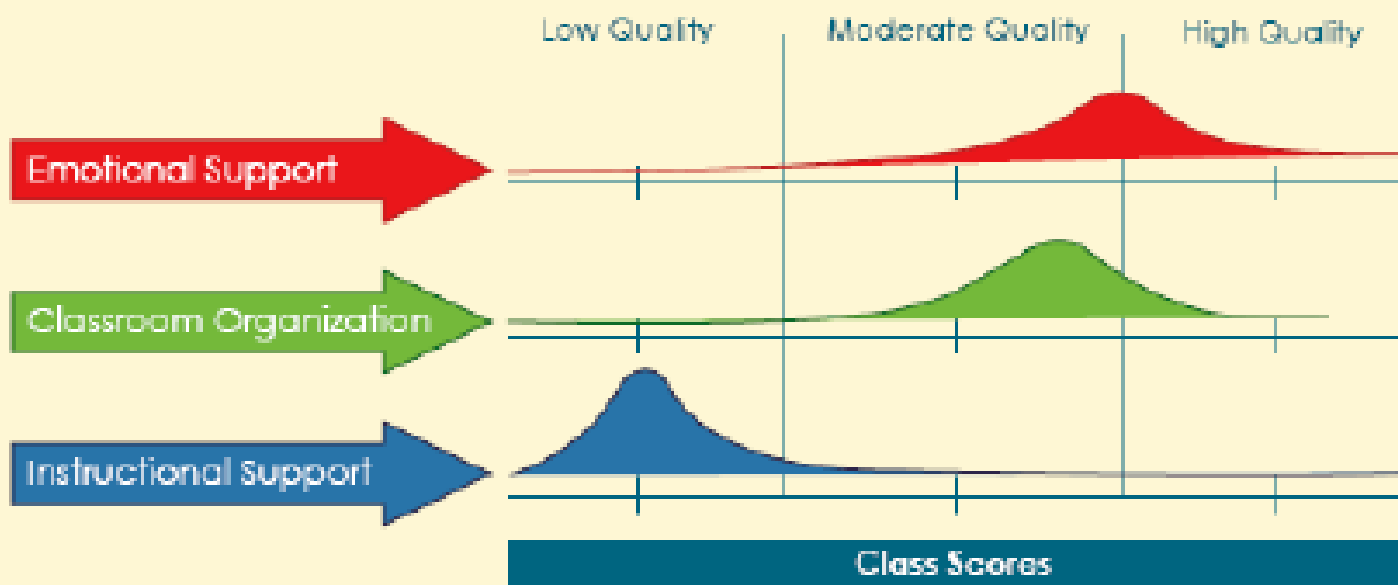
“Consistent evidence obtained by different researchers surveying slightly different but overlapping outcome literatures confirms that preschool programs have statistically significant and practical long-term preventive impact.”

- Direct instruction in preschool programs had an immediate effect on children’s cognitive development. With developmentally appropriate practice becoming the conventional wisdom, there are fewer examples of curricula that used direct instruction as the main pedagogical method in the 1990s and beyond.
- “Individualized” instruction had a positive impact on cognitive and school outcomes.
- Smaller groups and lower staff ratios provide more opportunity for teachers to match content to children’s particular developmental levels so that they are able to learn various academic concepts.



Measuring Quality

Average Ratings of Interactions in Pre-K - 3rd Classrooms

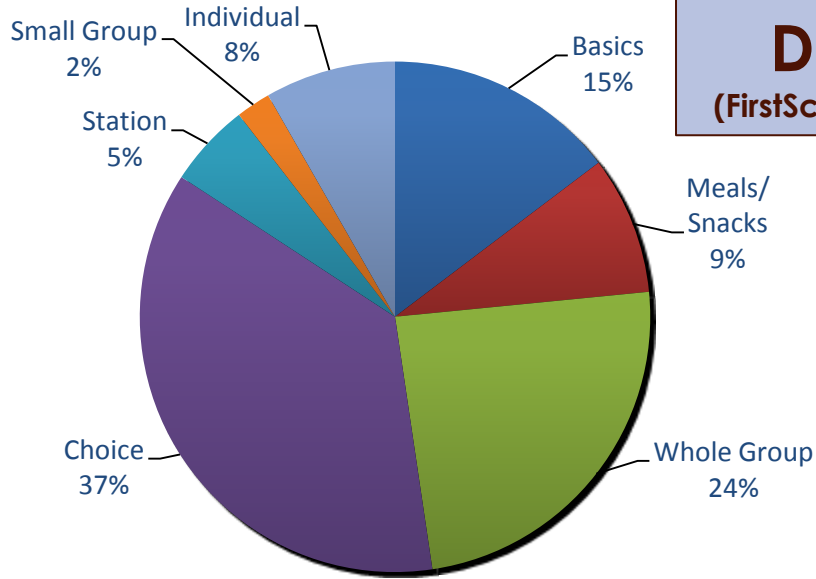


Hamre, B. et al. (2009) Measuring and improving classroom interactions in early childhood settings. Charlottesville, VA: Center on Advancing Student Teaching and Learning/UVA.

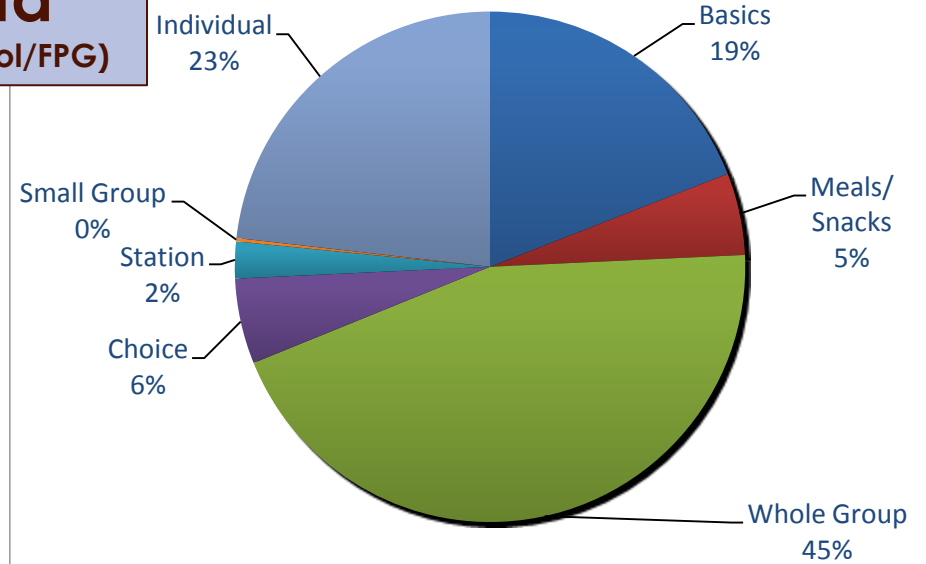


Snapshot Data (FirstSchool/FPG)

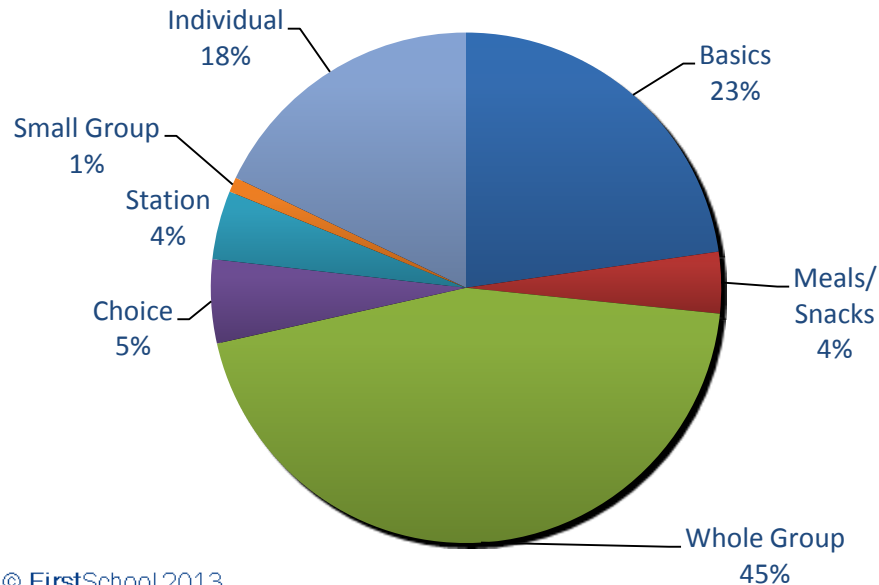
Activity Setting - Pre K



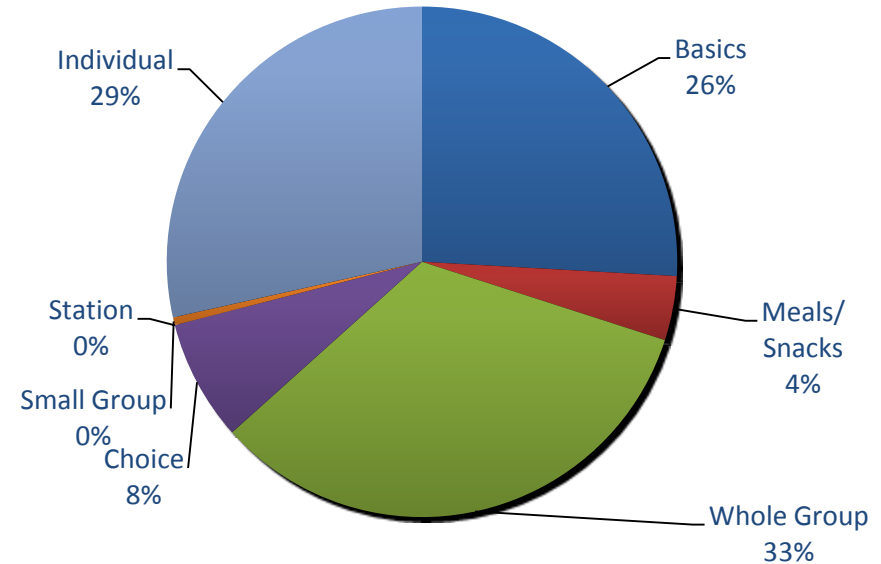
Activity Setting - K



Activity Setting - 1st Grade



Activity Setting - 2nd Grade



Does Retention Help Children Learn?

- Common practice for many decades
- Retention is incorporated into many states' reading performance policies
- Retention as practice and policy is an emotional issue with both proponents and opponents
- Retention is a nuanced issue; not an open-and-shut case
- Research on retention provides information, perhaps conflicting, as to the practice's effectiveness
- Retention is typically part of a systemic approach to support student learning



What does the research say about retention as an effective educational strategy for young children?

- Studies examine retention differently using different methods to test various hypotheses.
 - Short-term versus long-term impact
 - Teacher- versus test-driven retention
 - Academic performance versus social/emotional/behavioral consequences
- Meta-analyses of teacher-based retention provide more comprehensive analysis than individual studies
 - generally conclude little compelling justification for the claim that retention alone has lasting benefits



Does the age or grade when retention occurs make a difference in students' outcomes?

- Retention, if enacted, is better done at the earliest time possible to formatively improve academic performance and minimize emotional or social distress.
- Retention has a positive short-term effect on achievement for third graders but not sixth graders.
- Limited research currently examines the short- or long-impact of students below third grade.
- Multiple retentions increased the probability that students will drop out of school.

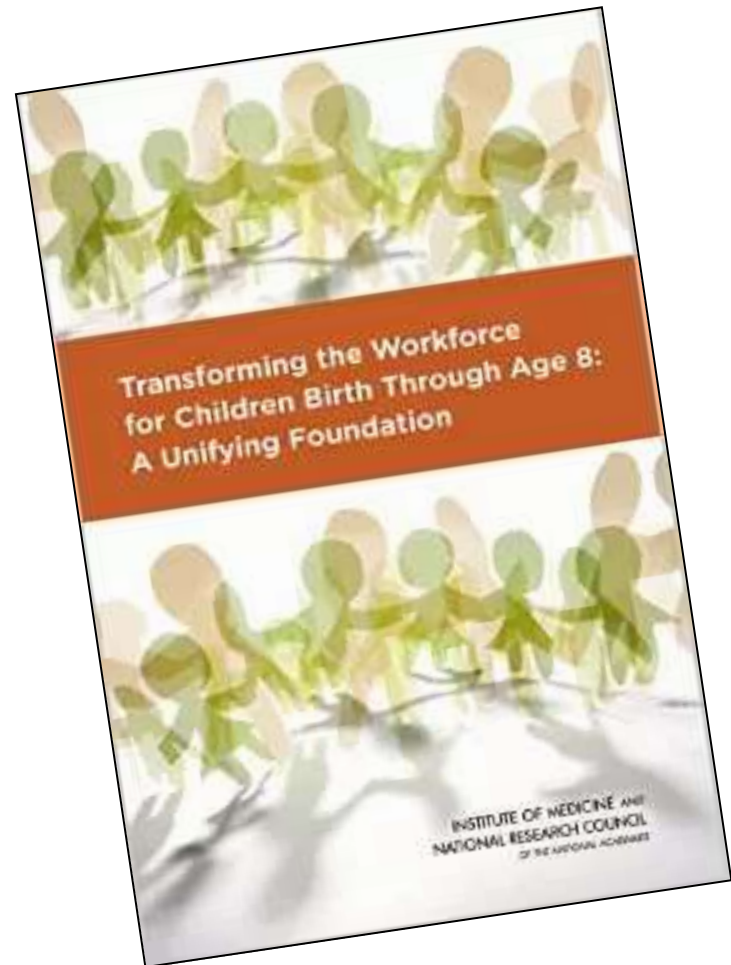


Does retention affect certain groups of students differently?

- African-American, Latino-American, eligible for special education, or low-income are more likely to fail standardized tests and consequently be retained.
- Boys represent 61% of kindergarteners retained.
- Students with disabilities served by IDEA represent 17% of students retained in elementary schools
- Studies examine sub-groups most frequently retained, not the short- and long-term effectiveness of retention on sub-groups



Do Credentials Matter?



Teacher Qualifications

- “Available studies alone are insufficient to enable conclusions as to whether a bachelor’s degree alone improves the quality and effectiveness of educators, whether for early childhood settings or for K-12 schools.”
- “Studies conclude that college education or a specialization in early childhood education alone is not a guarantee of better instruction and improved child outcomes.”
- “The quality of teachers’ prior learning experiences in higher education and the quality of their ongoing professional learning and working environments all play important roles in enabling effective teaching and learning.”



Teacher Qualifications

- “Lower educational expectations for early childhood educators than for elementary school teachers perpetuates the perception—and policies that reflect the perception—that educating children before kindergarten requires less expertise than educating K-3 students.”

“Lead educators who support the development and early learning of children from birth through age 8 should have at a minimum a bachelor’s degree and specialization in the knowledge and competencies needed to serve as a care and education professional.”



Administrator Qualifications

- “The importance of leadership is unequivocal, yet the expectations for leaders in settings for children aged 0-8 do not (align) with the responsibilities of these leaders for fostering early learning and development.”
- “Current expectations and policies for education and certification of elementary school principals are not well aligned with the interests of early elementary teachers and students and the need to understand childhood development research and best practices in instruction in preschool and the primary grades.”
- “Current education and certification requirements and expectations for directors in early childhood settings outside of school systems are inconsistent across states, credentialing is largely voluntary, and do not adequately reflect the knowledge and competencies needed.”



Translating Research into Practice



Community-Based Action Research for School Readiness

<i>Domain</i>	<i>CALEDONIA CENTRAL SU</i>		<i>Statewide Percentage</i>
	<i>Number</i>	<i>Percentage</i>	
Social-Emotional Development	51	84%	76.2%
Approaches to Learning	48	79%	76.0%
Communications	54	89%	82.6%
Cognitive Development	26	43%	65.0%
Wellness	53	87%	85.4%
All Five Domains	22	36%	52.2%



Social-Emotional Development	Beginning	Practicing	Performing Independently	Don't Know
Plays cooperatively with different children	9.8%	36%	54%	0%
Separates easily from parent/caregiver	0%	19.6%	78.6%	1.6%
Uses problem solving skills in social situations	13.1%	59%	27.8%	0%
Appropriately expresses feelings and needs	11.4%	42.6%	45.9%	0%
Adapts to transitions within the school day	3.2%	22.9%	73.7%	0%



Approaches to Learning:	Beginning	Practicing	Performing Independently	Don't Know
Can persist in a self-directed activity for at least 15 minutes	11.4%	19.6%	68.8%	0%
Appears enthusiastic and interested in classroom activities	8.1%	13.1%	78.6%	0%
Uses a variety of learning strategies in the classroom	13.1%	32.7%	54%	0%
Is able to pay attention during teacher-directed group activities for approximately 15 minutes	13.1%	27.8%	59%	0%
Knows when and how to use adults as a resource	6.5%	37.7%	55.7%	0%
Initiates activities in classroom	8.1%	31.1%	60.6%	0%
Shows curiosity (asks questions, probes, tries new things, etc.)	11.4%	19.6%	68.8%	0%
Interacts positively with adults in the classroom	4.9%	14.7%	80.3%	0%



Communications	Beginning	Practicing	Performing Independently	Don't Know
Follows simple classroom rules and instructions with reminders	9.8%	26.2%	63.9%	0%
Communicates needs, wants, or thoughts in his/her primary language	4.9%	9.8%	85.2%	0%
Engages in conversation (e.g. complete sentences, turn-taking etc.)	4.9%	18%	77%	0%
Understands simple directions, requests, and information	3.2%	16.3%	80.3%	0%



Cognitive Development - General Knowledge:	Beginning	Practicing	Performing Independently	Don't Know
Shows awareness of how books are organized and used	4.9%	8.1%	86.8%	0%
Can recall and explain a sequence of events (e.g. can tell about a recent activity, can retell a story)	8.1%	31.1%	60.6%	0%
Recognizes his/her most commonly used name in print	3.2%	3.2%	91.8%	1.6%
Engages in imaginative play	3.2%	13.1%	68.8%	14.7%
Shows ability to discriminate and identify speech sounds	8.1%	2014-201529.5%	62.2%	0%
Recognizes 10 or more letters of the alphabet	6.5%	3.2%	90.1%	0%
Uses scribbles, symbols or letters to write or represent words or ideas	19.6%	21.3%	59%	0%
Shows the ability to count 5 or more objects using one-to-one correspondence	8.1%	6.5%	85.2%	0%
Can identify several basic geometric shapes (e.g. circle, square, rectangle, triangle)	0%	0%	27.8%	72.1%



Physical Health & Development:	Beginning	Practicing	Performing Independently	Don't Know
Demonstrates age appropriate self-help skills (e.g. dressing, toileting, wiping nose, washing hands)	1.6%	6.5%	91.8%	0%
This student's ability to learn appears to be inhibited by:	No	Seldom	Sometimes	Often
Illness	98.3%	0%	1.6%	0%
Fatigue	85.2%	3.2%	8.1%	3.2%
Hunger	91.8%	1.6%	6.5%	0%



What Steps Would You Take?

- As a parent?
- As a kindergarten teacher?
- As a preschool teacher?
- As a principal?
- As a program director?



Synthesis of IES Research on Early Intervention and Early Childhood Education

July 2013

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Purdue University

Laura M. Justice
The Ohio State University

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Carnegie Mellon University

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University of Florida



NCSE 2013-2021
U. S. DEPARTMENT OF EDUCATION

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Research related to early childhood classroom environments and general instructional practices

- Pre-kindergarten classrooms with quality teacher-child interactions and strong curriculum are associated with positive child outcomes.
- Parents' and teachers' support for children's learning contributes to young children's outcomes.
- Children demonstrate great variability in their skills and risk factors; important to consider how early instruction can be differentiated to meet the diverse needs of children.



- Characteristics of the classroom language environment need improvement; children in preschool classrooms are exposed to few exemplars of advanced linguistic content.
- Lack of math- and science-oriented content of early childhood education may limit children's learning.
- The composition of preschool classrooms influences children's learning.
- Participation in higher-quality classroom environments is associated with improved learning outcomes for young children.



Research related to educational practices designed to impact children's academic and social outcomes

- There are specific practices that teachers can use to improve children's language, literacy, mathematics, cognitive (i.e., abstract reasoning), and social skills.
- Developing and testing practices used with special populations of children, such as those at-risk for reading difficulty, those with problem behaviors, and those with sensory disabilities are needed.
- Tiered approaches to supporting education such as RtI may be an appropriate approach for supporting children's early math development.



Research related to measuring young children's skills and learning

- Some measures commonly used in the early childhood community may not provide reliable information about children's skills.
- New tools that can reliably and validly describe children's growth and learning are needed.
- The use of progress monitoring and data-based decision making can improve teachers' instructional practices.



Research related to professional development for early educators

- Classroom instruction can be improved by providing professional development to teachers.
- Professional development impacts are seen not only in what teachers do in their classrooms but also in what children are learning.
- Technology provides a mechanism for helping teachers observe their own practices (via video analysis), for working distally with coaches, and for monitoring children's progress using hand-held digital technologies.



Additional Information is Needed

- What are the crucial features of high quality early childhood education?
- Which instruction is most effective for which children and under what circumstances?
- How do we effectively and efficiently support teachers in improving their instruction?



Reliable, trustworthy sources for information on early education



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Assessment	Special Education
Economics and Finance	State Pre-K Evaluations
English Language Learners	State Programs
Governance and Accountability	Teachers
Outcomes	Universal and Targeted

What's New

- Jul 13 2015
Preschool becoming more important to student success
- Jul 13 2015
Sen. Casey pushing for universal preschool
- Jul 13 2015
Quality preschool is a win for everyone
- [More News & Events](#)

Teaching Math to Young Children



See the New Materials that Summarize the Practice Guide
Recommendations for *Teaching Math to Young Children*

Evidence for What Works in Education

We review the research on the different
programs, products, practices, and policies in
education.

Then, by focusing on the results from *high-
quality research*, we try to answer the question
“What works in education?”

Our goal is to provide educators with the
information they need to make **evidence-
based decisions**.

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-  **Practice guides** help educators
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assessment of recent education
research.

The **studies database** contains all
WWC-reviewed studies.

Or search by topics in education.

Find What Works!



Based on the research evidence, find what
works to...

- improve literacy skills in 3rd graders,
- increase math achievement in
preschoolers,
- reduce dropout rates,
- help students with special needs,
... or address your school's challenge!

WWC Fact Check: Test Your Knowledge...

There are ways to raise concerns about WWC
reviews.

☐ True ☐ False

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WWC Evaluates Study of Hybrid Forms of
Interactive Online Learning
Jul 7

Teacher Training, Evaluation, and
Compensation: See Our Newest Topic Area and
First Report



ECE Consensus Letter for Researchers



As policymakers debate investing in quality early childhood education programs, they should note the widespread agreement among researchers about the value of such programs. An extensive body of research in education, developmental psychology, neuroscience, medicine and economics shows that quality early childhood education programs produce better education, health, economic and social outcomes for children, families, and the nation. As researchers, we urge policymakers to make decisions based on the full body of scientific knowledge about early education and child development.

If you are a scholar or researcher, please click on this [link](#) to add your signature.

Quality early childhood education can reduce the achievement gap. Too many American children start school inadequately prepared to succeed. Gaps in cognitive, linguistic, social, and emotional skills due to unequal opportunities become evident well before children enter kindergarten. The resulting achievement gap widens as children progress through school, despite strong efforts at remediation. The long-term consequences include high rates of school failure, grade repetition, inappropriate special education placements, and dropout; involvement in risky behaviors and crime; and, even higher risk for adult chronic disease including hypertension, heart disease, obesity and diabetes. These problems are not limited to the poor: many children who fail a grade and drop out are from middle-income families. The costs of remediation, social dependency,

Founding Signatories

J. Lawrence Aber

W. Steven Barnett

Daphna Bassok

William Beardslee

David Berliner

Karen Bierman

Clancy Blair

Barbara Bowman

Pia Britto

Jeanne Brooks-Gunn

Laurie Miller Brotman

Margaret Burchinal

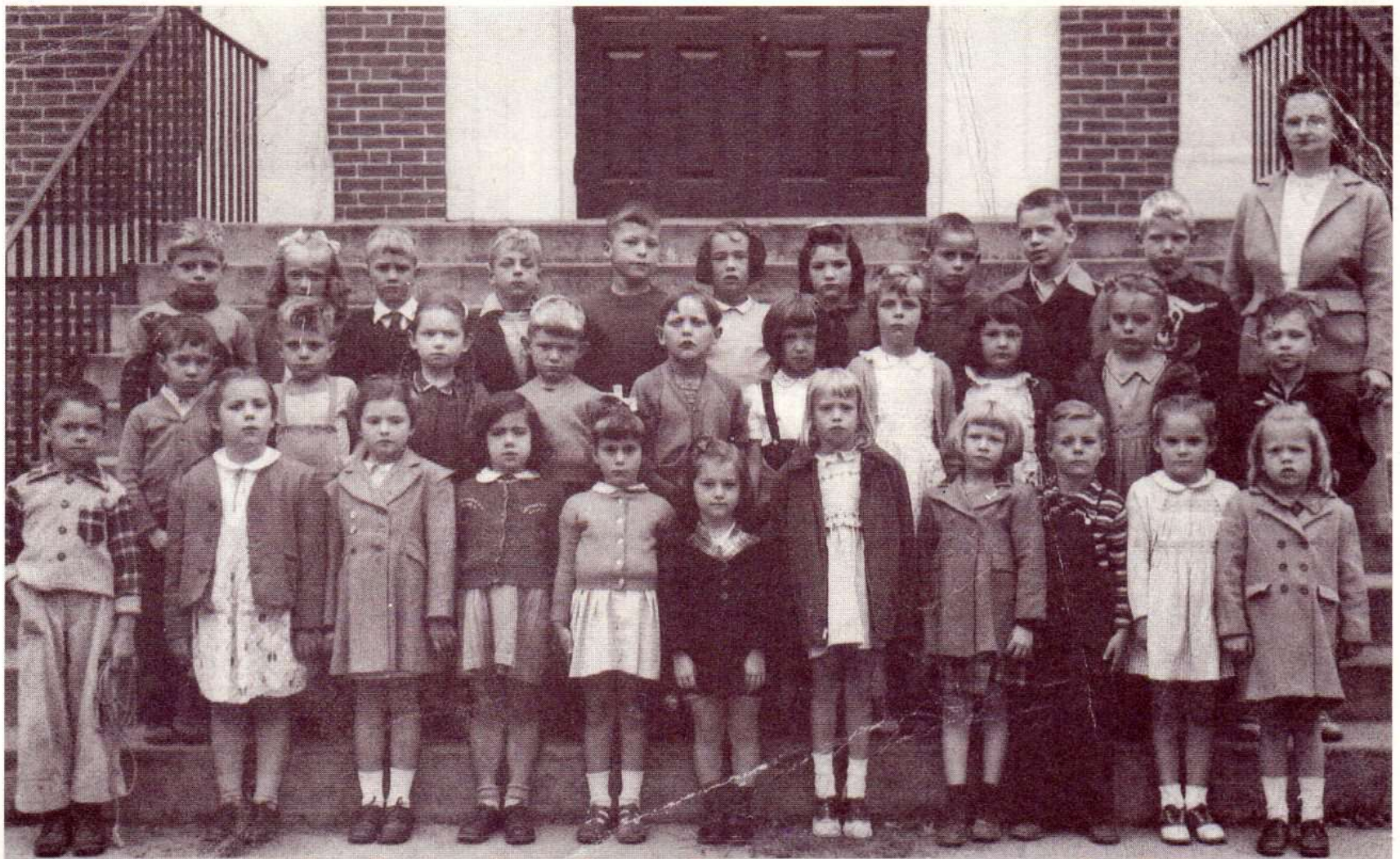
Douglas Clements



ECE Consensus Letter for Researchers

- Quality early childhood education can **reduce the achievement gap**.
- **Access** to quality early childhood education is essential.
- Develop the **whole child** with quality programs.
- Quality programs include **health and home**.
- Quality programs can be **brought to scale**.
- Quality programs produce quality **life outcomes**.
- Quality early childhood education benefits children from **diverse family backgrounds and circumstances**.
- Investing in quality early childhood education **pays off**.
- Critics of greater investment **ignore the full body of evidence**.





Look for the leader in every child!

Norwich Graded School, Norwich, VT (1948 - First grade)



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