



# What's New in Pre-K Research



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## What's New?

- Brief review of research literature
- Interesting “new” benefits in old studies
- New NIEER study results
- New analyses of 5 state study (RDD)
- New economic benefits/analyses
- NIEER studies in progress



# Impacts of Quality Early Education

## *Increased Educational Success and Adult Productivity*

- Achievement test scores
- Special education and grade repetition
- High school graduation
- Behavior problems, delinquency, and crime
- Employment, earnings, and welfare dependency

## *Decreased Costs to Government*

- Schooling costs
- Social services costs
- Crime costs
- Health care costs (teen pregnancy and smoking)



# Randomized Trials

## ▪ Long Term

- Perry Preschool<sup>1</sup>, IDS<sup>2</sup>, Early Training Project<sup>3</sup>
- Abecedarian<sup>4</sup>, Milwaukee<sup>5</sup>, CARE<sup>6</sup>
- IHDP<sup>7</sup> (not Disadvantaged), Houston PCDC<sup>8</sup>
- Mauritius Preschool Study<sup>9</sup>

## ▪ Short Term

- National Early Head Start<sup>10</sup>
- National Head Start<sup>11</sup>
- Many smaller scale studies



# Quasi-Experimental Studies: Follow-up Into School Years

- **Chicago Child Parent Center Study (12<sup>th</sup> grade)**<sup>12</sup>
- **Michigan School Readiness (4<sup>th</sup> grade)**<sup>13</sup>
- **South Carolina Pre-K (1<sup>st</sup> grade)**<sup>14</sup>
- **New York Pre-K (3<sup>rd</sup> Grade)**<sup>15</sup>
- **Ludwig & Miller Head Start (12<sup>th</sup> grade +)**<sup>16</sup>
- **RAND National study of 4<sup>th</sup> grade NAEP**<sup>17</sup>
- **Cost Quality and Outcomes (3<sup>rd</sup> grade)**<sup>18</sup>
- **Vandell NICHD Early Care and Education**<sup>19</sup>
- **Early Provision of Preschool Education (England)**<sup>20</sup>



## Interesting “New” Benefits

- Reduced abuse and neglect (CPC)
- Less smoking (Perry & ABC)
- Less depression (ABC)
- College attendance (CPC)
- Maternal earnings from employment (CPC)



## **New NIEER Studies**

- **APPLES—NJ RDD and Longitudinal**
- **New Mexico**
- **Arkansas—NJ RDD and Longitudinal**
- **Meta-Analysis**
- **Briefs—**

**Challenging Behaviors**

**Curriculum (play)**

**Mixed Delivery/Systems**

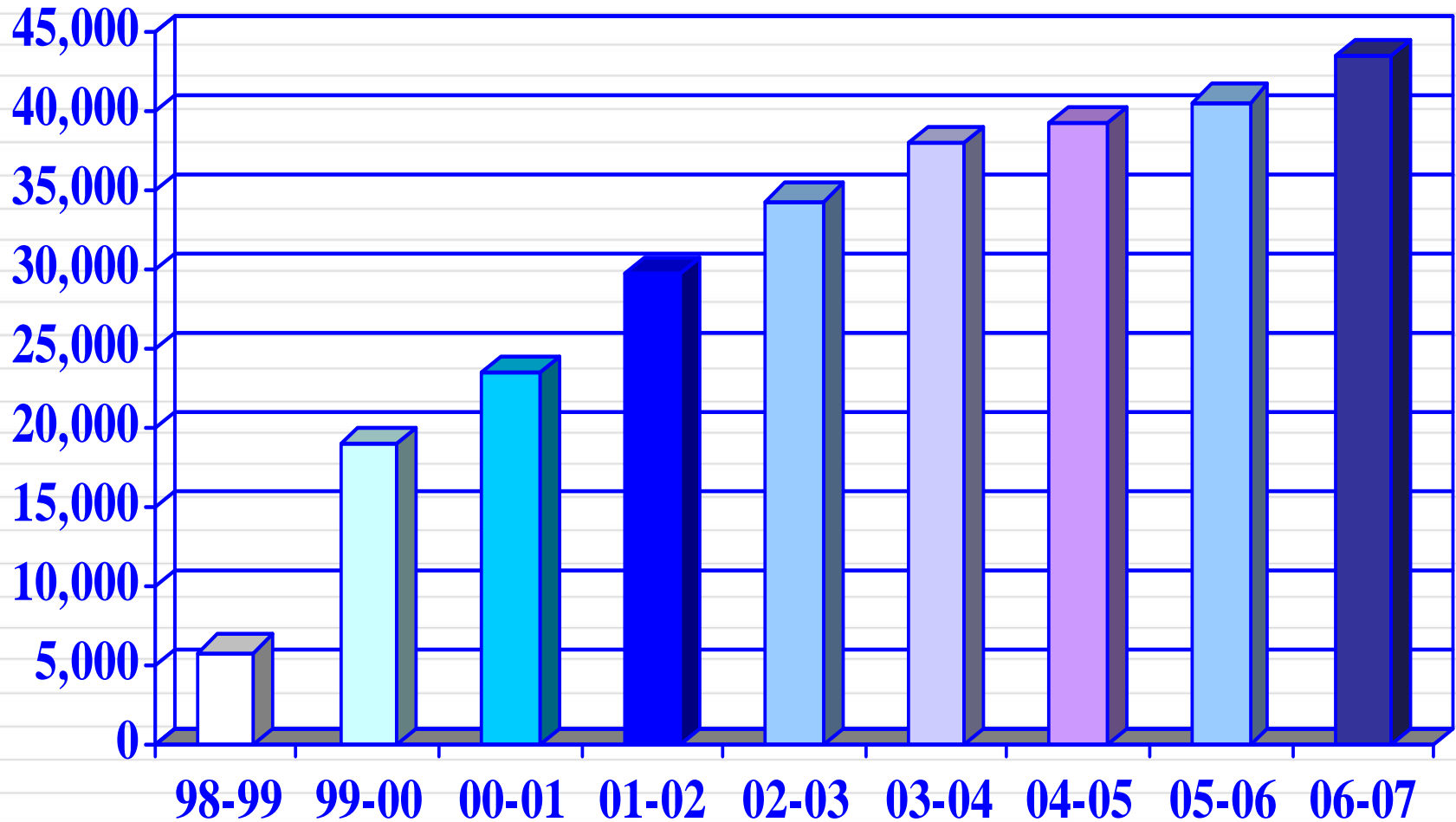
**Birth to 3 system and pre-K**

**Pre-K benefits for Health**

**Long-term effects and economics**

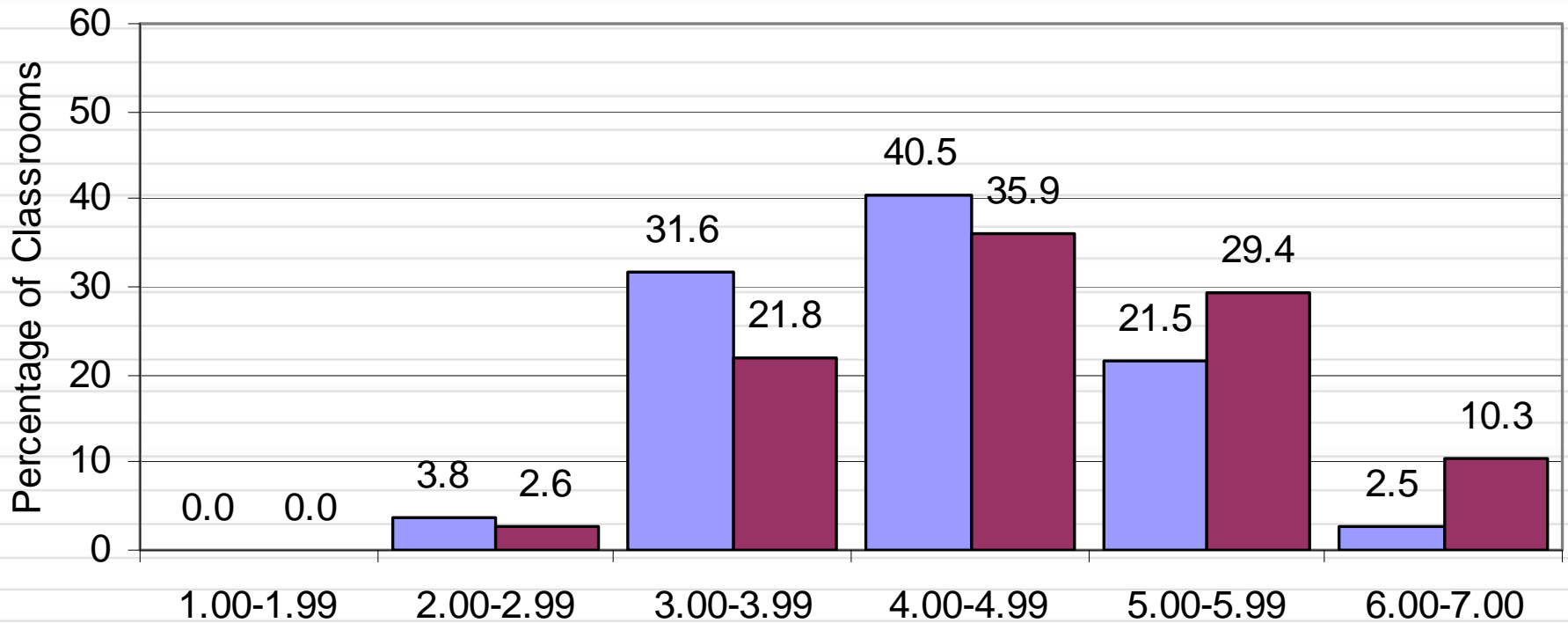


## Abbott Enrollment 1998-2007





## Percentage of Classrooms Scoring 1 - 7 on the ECERS-R Public School 2000 vs 2006



**Figure 4. ECERS-R Score**

■ 00 Public (N = 79) ■ 06 Public (N = 78)



## Percentage of Classrooms Scoring 1 - 7 on the ECERS-R Private Programs 2000 vs 2006

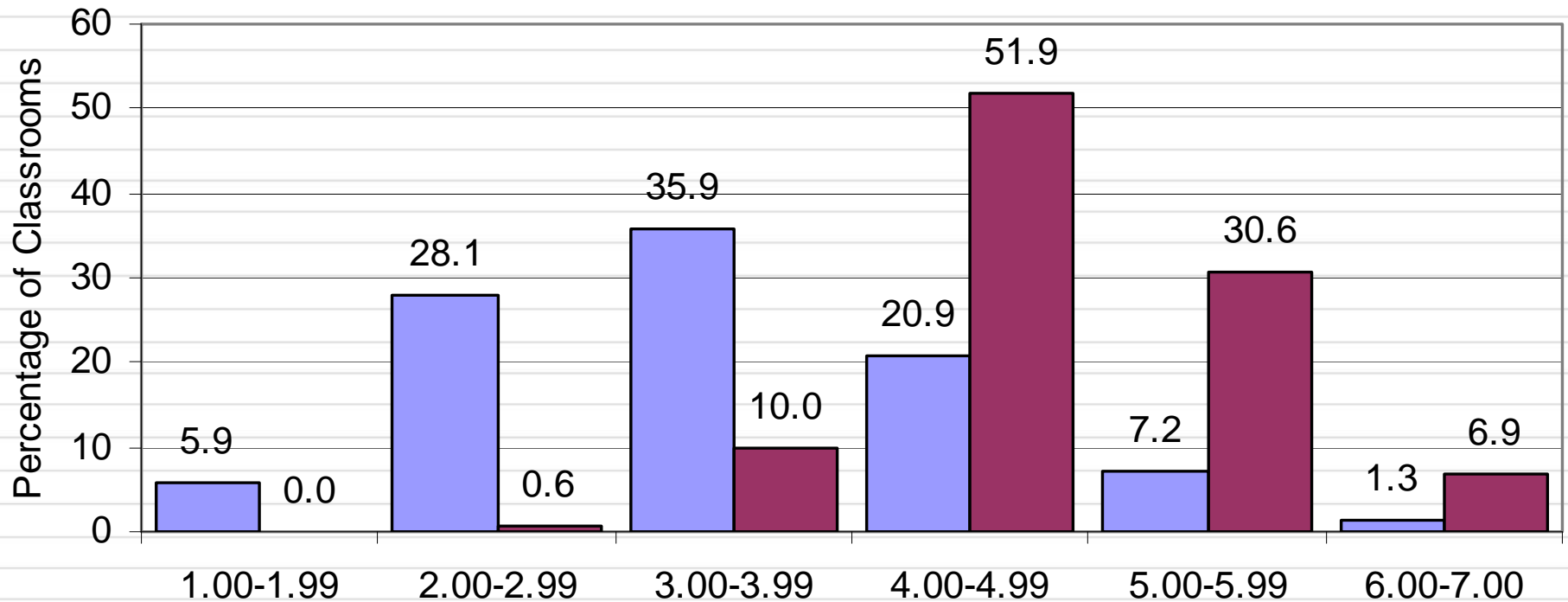


Figure 5. ECERS-R Score

■ 00 Private (N = 153) ■ 06 Private (N = 160)



## THE ABBOTT PRESCHOOL PROGRAM LONGITUDINAL EFFECTS STUDY

Substantial gains from pre-k sustained through kindergarten year:

- The pre-k group closed more than 50% of the achievement gap versus 18% for the no pre-k group.
- Gains from two years of pre-K nearly double for language and 70% larger for math.



## NIEER 5 State Pre-K Study

- Over 5,000 children in 5 States
- OK and WV are for all children
- NJ for all children in 31 low-income districts
- MI, & SC targeted
- Gains from Pre-K in all 5 states
- Gains in language, literacy & math
- In follow-up gains persist through end of K

Source: Barnett, W.S., Jung, K., Wong, V., Cook, T., Lamy, C. (2007). Effects of Five State Prekindergarten Programs on Early Learning. Paper presented at Annual Conference of the Society for Research in Child Development, Boston. NIEER/Rutgers University.



## Effects on Achievement

	<b>5 Pre-K</b>	<b>Head St</b>	<b>Tulsa</b>
<b>Vocabulary</b>	<b>.18</b>	<b>.08</b>	<b>--</b>
<b>Print Awareness</b>	<b>.74</b>	<b>.36</b>	<b>.79</b>
<b>Math</b>	<b>.43</b>	<b>.15</b>	<b>.38</b>

- Effects in standard deviations (sd). Source: Barnett et al. (2007).  
NIEER/Rutgers University



# Economic Returns to Pre-K for Disadvantaged Children

(In 2006 dollars, 3% discount rate)

	<b>Cost</b>	<b>Benefits</b>	<b>B/C</b>
▪ <b>Perry Pre-K</b>	<b>\$17,599</b>	<b>\$284,086</b>	<b>16</b>
▪ <b>Abecedarian</b>	<b>\$70,697</b>	<b>\$176,284</b>	<b>2.5</b>
▪ <b>Chicago</b>	<b>\$ 8,224</b>	<b>\$ 83,511</b>	<b>10</b>

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; Belfield, C., Nores, M., Barnett, W.S., & Schweinhart, L.J. (2006). The High/Scope Perry Preschool Program. *Journal of Human Resources*, 41(1), 162-190; 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.

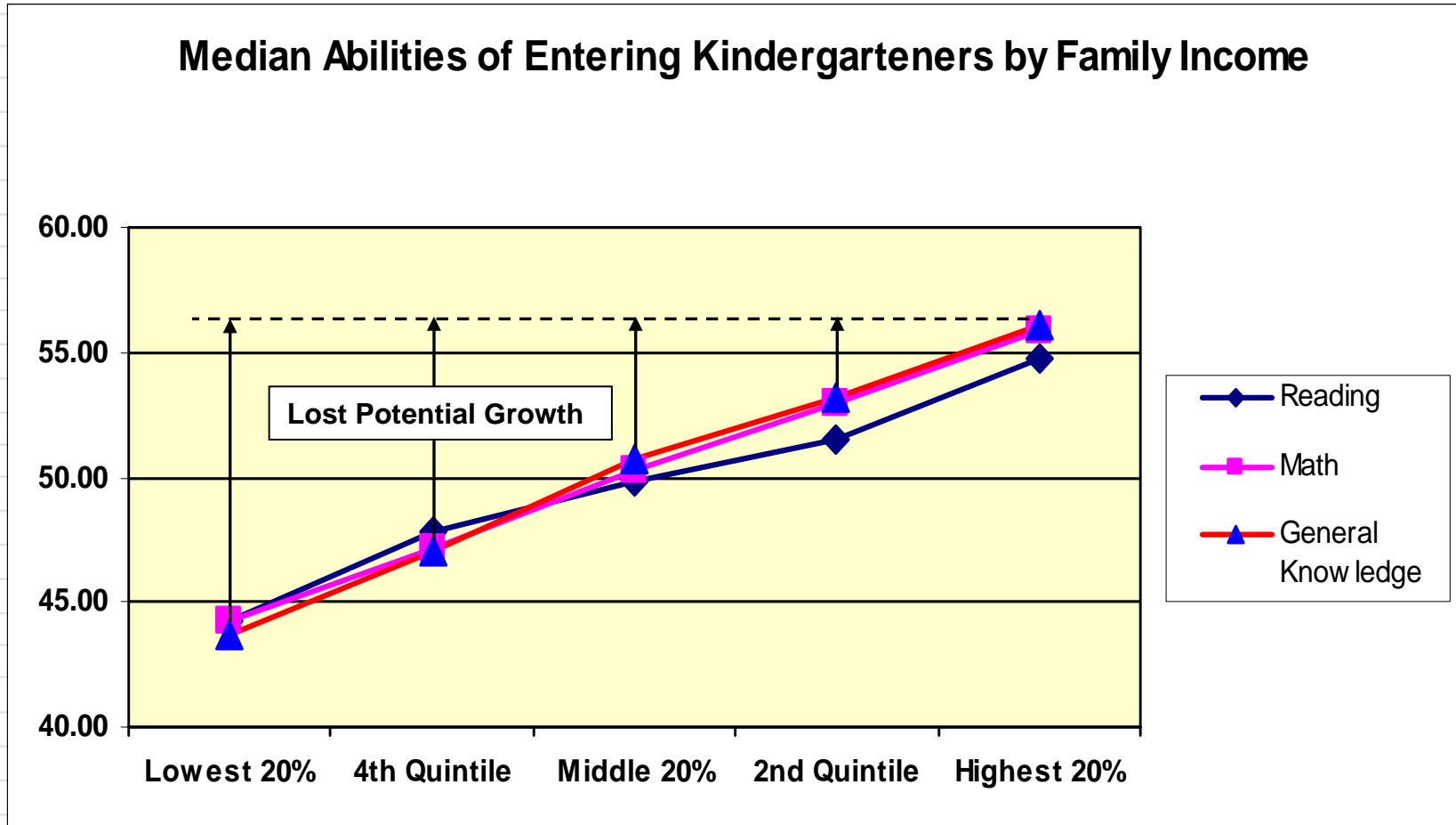


## **Need Does Not Stop at the Poverty Line**

- Undeveloped potential at school entry
- Most school failure above poverty
- Poverty status is impermanent
- Pre-K “works” for all children

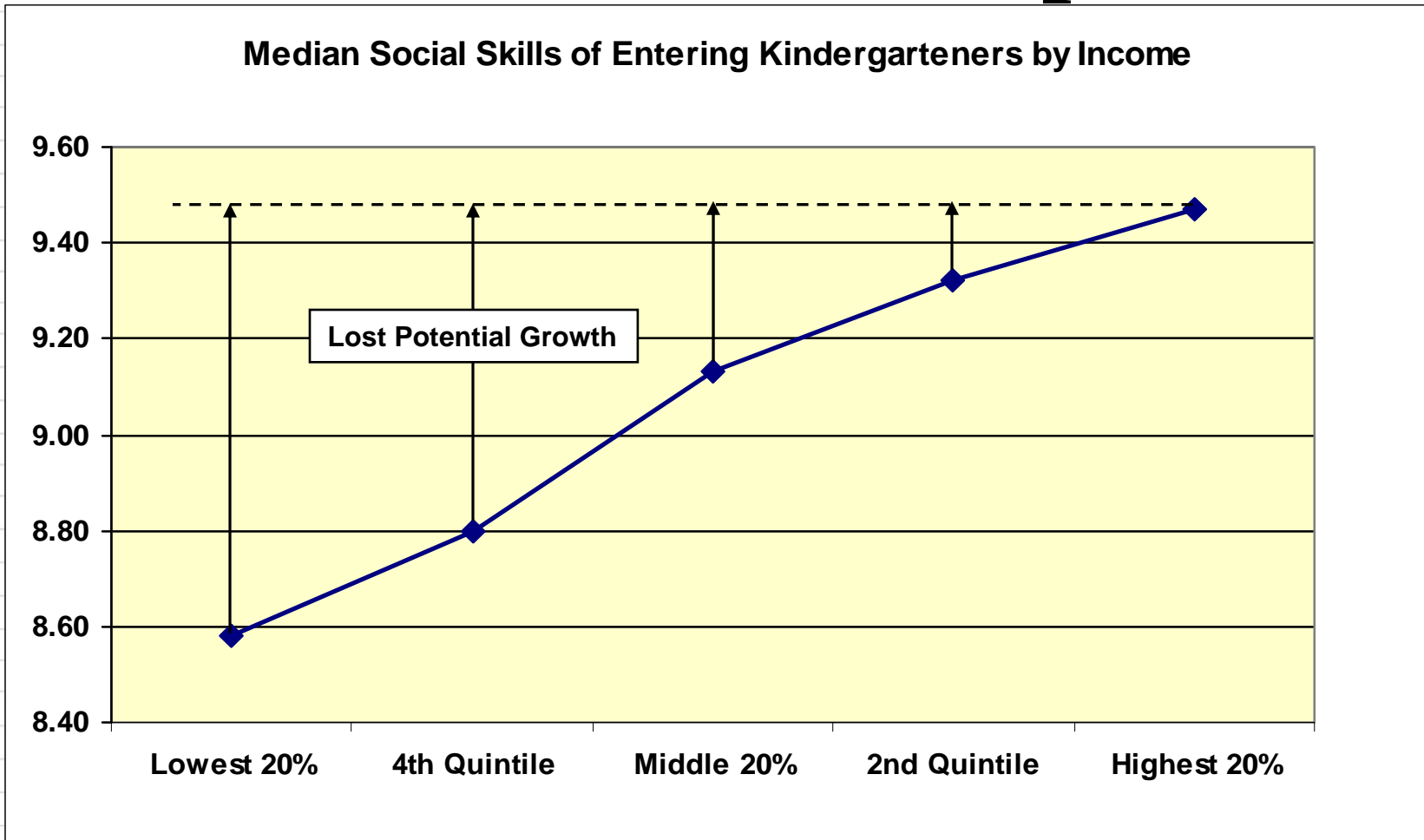


# Cognitive Development Gap





## Social Skills Gap





## School Failure and the Middle Class

**Middle class children have fairly high rates of failure.  
Reducing these problems could generate large benefits.**

<b><u>Income</u></b>	<b><u>Retention</u></b>	<b><u>Dropout</u></b>
<b>Lowest 20%</b>	<b>17%</b>	<b>23%</b>
<b>20-80%</b>	<b>12%</b>	<b>11%</b>
<b>Highest 20%</b>	<b>8%</b>	<b>3%</b>

Source: US Department of Education, NCES (1997). Dropout rates in the United States: 1995. Figures are multi-year averages.



# Pre-K for All

**Can reach all disadvantaged children**

**Produces larger gains for disadvantaged**

**Produces gains for all children**

**Raises everyone and reduces gap**

**More costly, but larger *net* benefit**

Source: Barnett (2004). Maximizing returns from pre-kindergarten education. Federal Reserve Bank of Cleveland Research Conference.



## NIEER Yearbook

- Annual report on state funded pre-k programs and policies
- Data are collected through a web-based survey sent out to state administrators
- Access, resources and quality are documented
- 10 quality benchmarks are examined for each initiative
- Questions focused on quality and monitoring were added to provide additional information about the initiatives and whether they were being followed



## National Overview all ECE

### **Age 4**

26% No Center

22% State Pre-K

11% Head Start

6% Special Ed.

35% Private

### **Age 3**

49% No Center

3% State Pre-K

8% Head Start

4% Special Ed.

36% Private

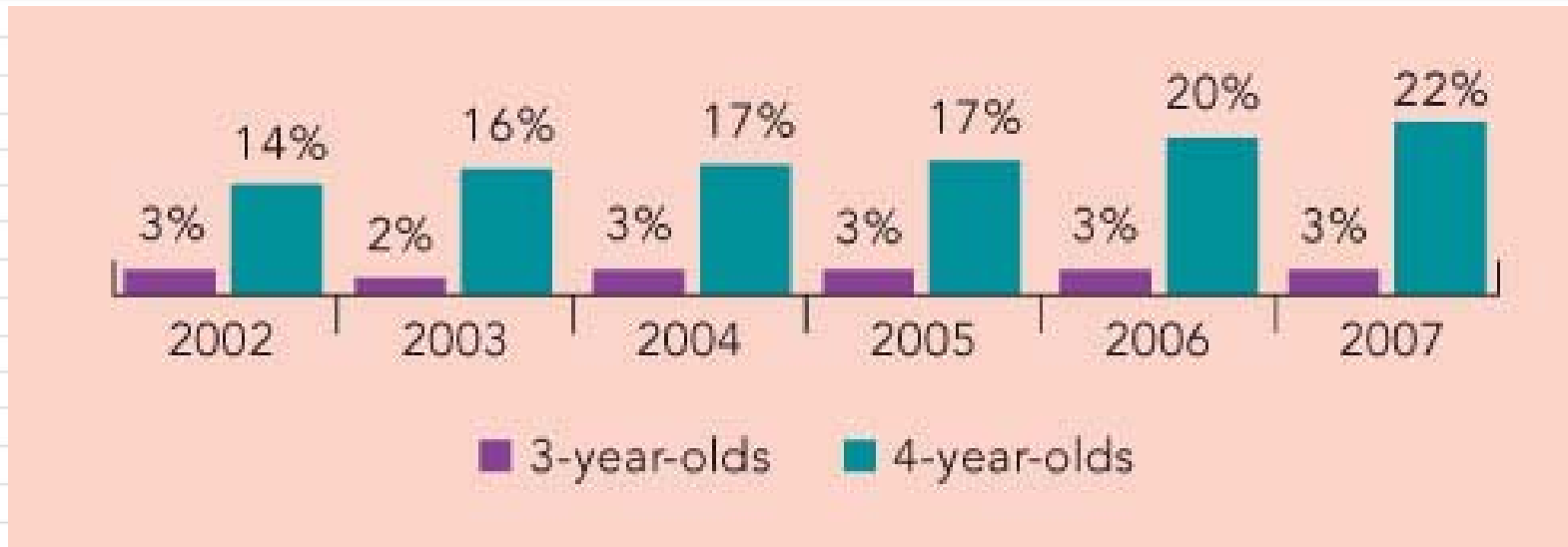


## Findings from the 2007 *Yearbook*

- During the 2006-07 School Year:
  - 38 states funded preschool programs
  - 49 distinct state preschool initiatives
  - 12 states did not fund pre-K
  - 26 only DOE administered, 12 other agencies or joint administration (may be by program)
  - All but KS allowed private, 6 >50%



## Percent of National Population Enrolled



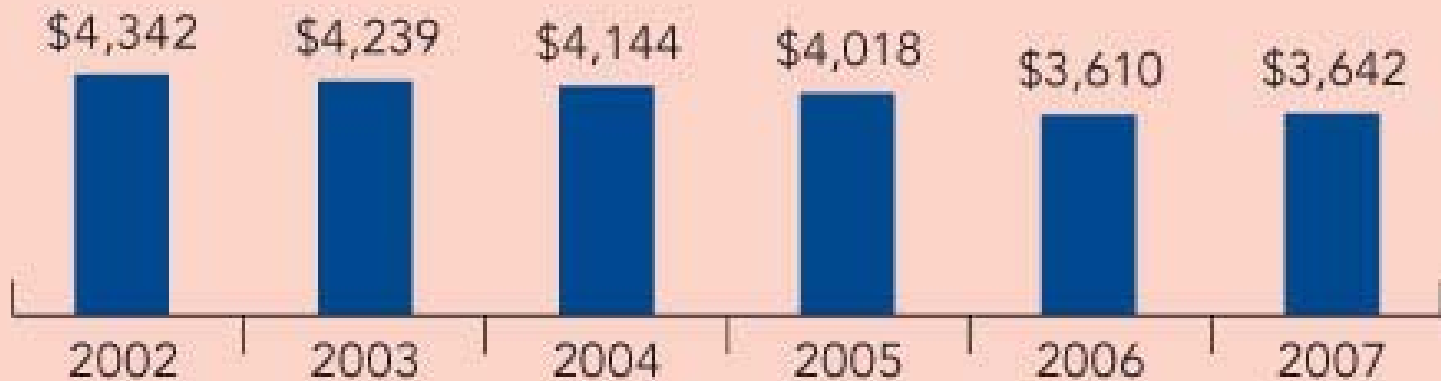


# Results: Access

- Over 1 million children served
- 877,139 age 4 (more than 2x Hd. St.)
- 30 of 38 states increased enrollment
- 3 (OK, FL, GA)  $> \frac{1}{2}$  of 4s (TX, VT, WV = 45%)
- 13 less than 10% of 4s
- 20 states served more than 1% of 3's
- 5 served  $> 10\%$  of 3s
- 7 states committed to UPK at 4 (OK, FL, GA, WV, NY, IL, IA)



## Spending Per Child Enrolled ('07 Dollars)





# Quality Benchmarks

- 10 Research-based minimums for large effects
- All benchmarks not equally important
- Two states (AL & NC) met all 10 benchmarks
- Eight state initiatives each met nine benchmarks
- Eight states improved
- Eight initiatives met  $< \frac{1}{2}$  the 10 benchmarks



# Standards and Accountability

- Nearly all have comprehensive standards
- 21 tie standards to child assessment
- Most assessment performance based in class
- 2 or 3 assess at K-entry, two use tests to evaluate teachers
- Most use structured observations of teachers
- Obs. tied to PD, corrective action, funding



For complete access to all reports in the *Yearbook* series, or to request copies, see <http://nieer.org/yearbook>



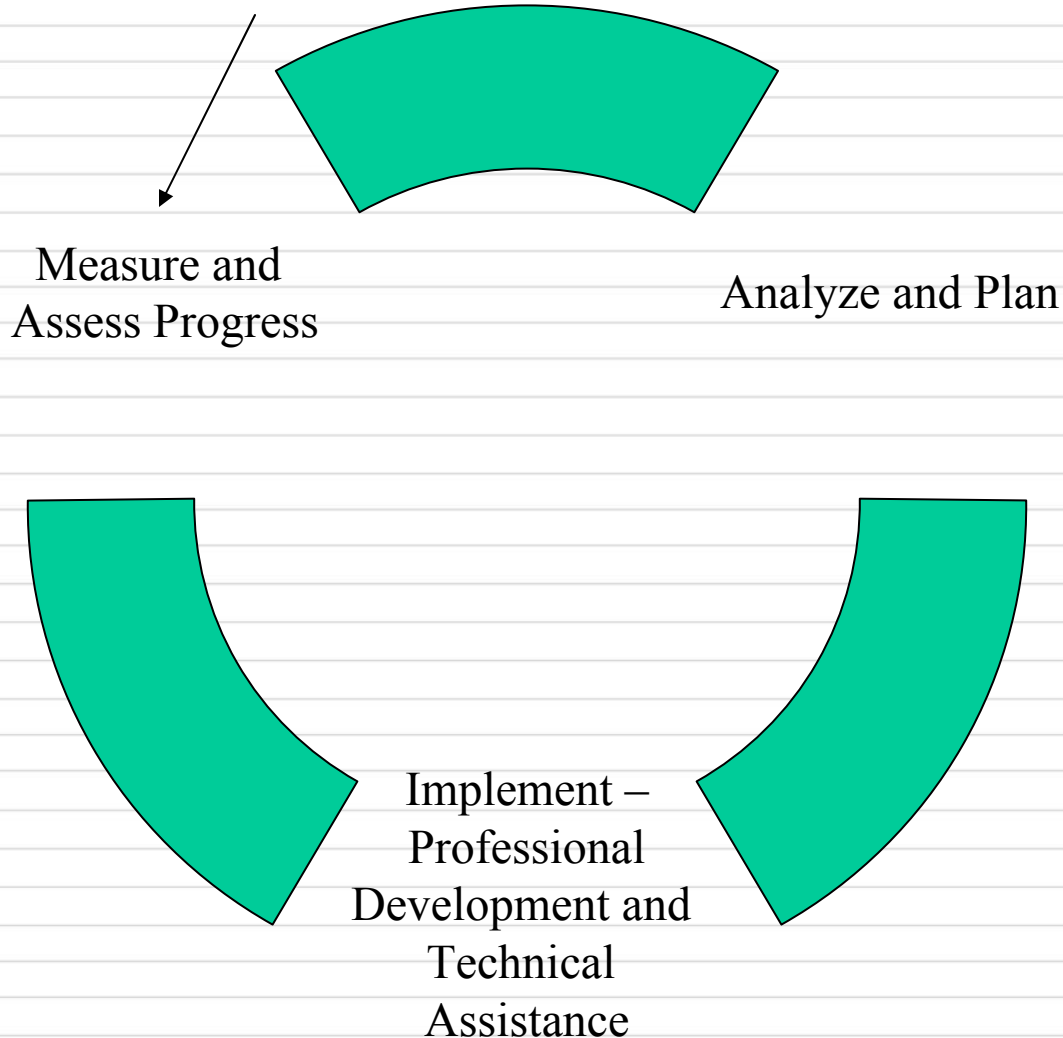
## High Quality Pre-K Requires

- Well-educated, adequately paid teachers
- Good curriculum and professional development
- Small classes and reasonable teacher:child ratios
- Strong supervision, monitoring, and review
- High standards and accountability



## Continuous Improvement Cycle

First Develop Standards



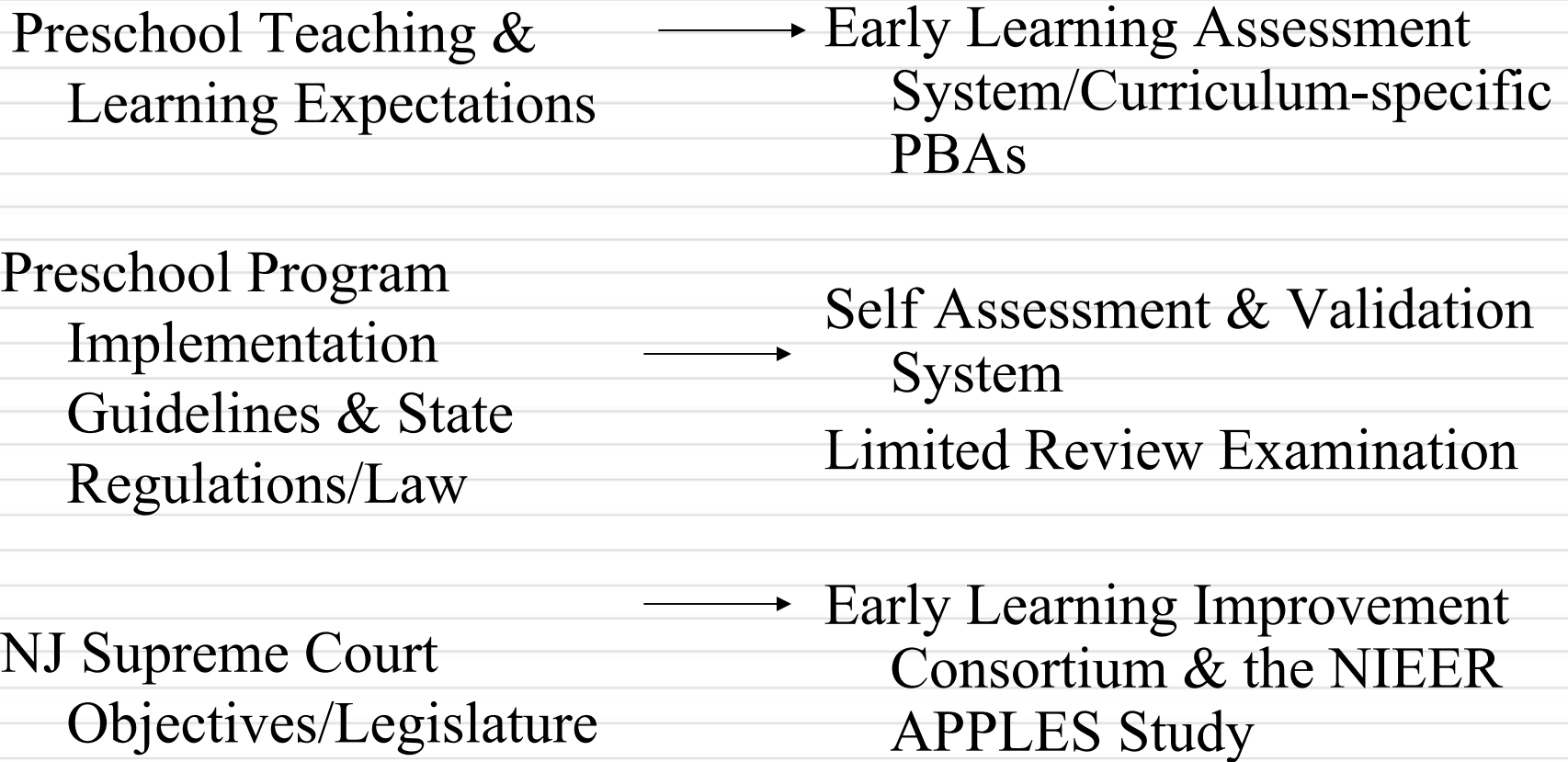


# Monitoring Levels

- Child: teaching, program effectiveness
- Classroom: teaching, program effectiveness
- Program: program effectiveness and efficiency (\$)
- State: program effectiveness and efficiency



## Statewide Monitoring Efforts in NJ





# Multiple Levels of Assessment

- Child progress
- Classroom practices
- Program components –  
administration, parent  
involvement, nutrition, etc



You can't fatten a pig by  
weighing it.

What is your purpose?



## MATCHING PURPOSE AND TYPE OF ASSESSMENT

Purpose	Types of Assessment	
	Formal	Informal
Preparedness to benefit from program	Readiness tests - criterion referenced	Observation Parent report
Identify child who needs diagnostic test	Screening test with follow-up	Error analysis Structured Obs.
Determine sp. ed. classification	Diagnostic/developmental*	
To evaluate child progress	Standards-based achievement tests	Performance-based assessment

Hills, T. in Bredekamp, S., & Rosegrant, T. (Eds.). (1992). *Reaching potentials: Appropriate curriculum and assessment for young children* (Vol. 1). Washington, DC: National Association for the Education of Young Children.



# Why Use Observation-Based Performance Assessment?

- Standardized tests may be misused
- Children are not “reliable” – captures children’s skills and knowledge in real life over time
- Compares children to themselves, is comprehensive and focuses on strengths and interests
- Understandable to parents
- Informs teaching



# Zone of Proximal Development (ZPD)

- Instead of seeing development as a series of milestones or one score on a test of achievement, Vygotsky saw it as a zone or a region.
- The ZPD describes the skills on the edge of emergence, those that will emerge next given appropriate assistance or support.
- There are things that are outside of the ZPD—no matter how much help we provide the child will not yet be able to learn the information/skill.



## PROVIDING SUPPORT WITHIN THE ZPD IS CALLED **SCAFFOLDING**

A variety of techniques that help the child move from assisted to independent performance.

The task is not changed, what the learner does to complete the task is changed.



Without observing and documenting  
it's difficult to know:

- where the child's ZPD is
- how to scaffold learning
- whether the scaffold is effective



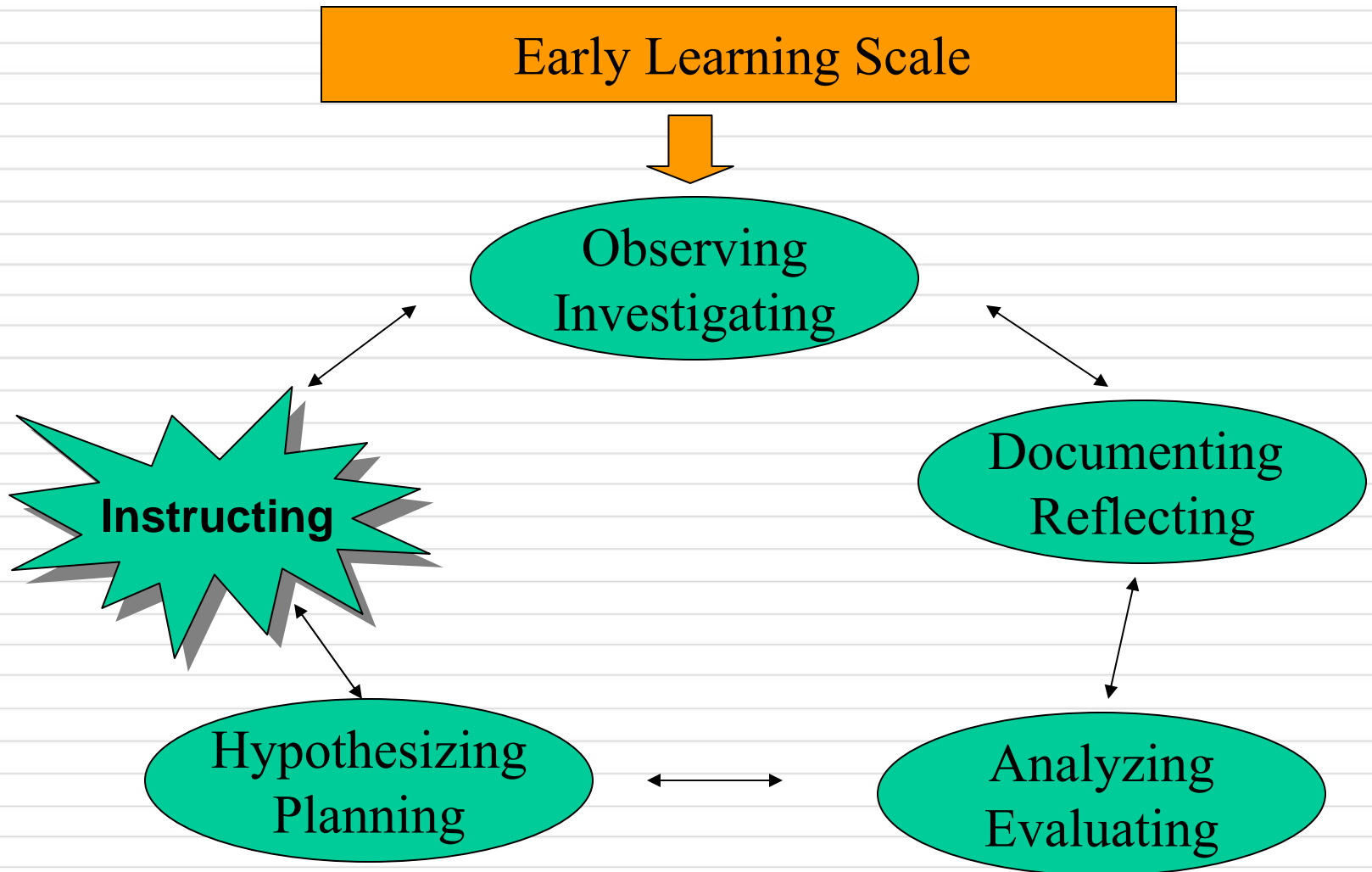
# Why the ELS?

- A pre-emptive strike against state-wide testing of every child
- Need for focused, manageable instrument based on state standards
- Provides benchmarks for documenting the development of learning
- Research derived and validated



# The Early Learning Scale

- Systematic assessment for preschool children
- Performance-based assessment scale
- Comprehensive across domains
- Helps teachers make their knowledge of child learning and development operational
- Informs instruction with data





# What's Included in the ELS

Must be measurable, develop on a continuum, and critical to present and future learning

Domains:

- Math
- Science (Content Vs. Process)
- Social Emotional Development
- Social Studies
- Language Arts Literacy
  - { Creative Arts
  - { Health, Safety, and Physical Education



# Can PBA Replace Standardized Assessments?

Results of 3 studies:

- Inter-rater reliability is accomplished
- Teaching improves with implementation of the system
- Concurrent validity is moderate to good with comprehensive standardized instruments.



## What's Your Purpose?

- “Good enough for government work”
- Not for high stakes decision making but neither are most standardized achievement tests.



# NIEER Studies Recent or in Progress

- Half-day v. Full-day in CPS
- Teacher Qualifications in GA and KY
- Florida and Georgia—access and quality
- NJ Teacher and Director Surveys
- New APPLES cohort
- Replication of CPS study
- Six states' progress toward UPK



## Conclusions

- Many Benefits and Many New Sources
- Your Mileage May Vary
- Focus on the Goals—What is it we want Pre-K to accomplish? What is needed to do that? Keep standards high.
- Many Different Approaches to Economics



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