

# **Learning Connections: An Experimental Validation of a Preschool Emergent Literacy and Mathematics Curriculum**

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Supported by grants from the:

- U. S. Dept. of Health and Human Services—Head Start-University Research Partnership and Innovations& Improvement Planning awards
  - U. S. Department of Education—Early Reading First

# Challenges for Preschool Educators in the Era of NCLB

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- Meet performance standards and enhance school readiness without overlooking the “whole child” or “pushing down” the K curriculum
- Equip teachers with varying preparation to provide high-quality instruction
- Pressure for experimental validation of systems change within short time frame

# Curriculum Overview

- Enrichment curriculum for emergent literacy and math
- Evidence-based & theoretically grounded
- Developmentally appropriate & challenging
- Individualized, small-group instruction
- Staff development & mentoring
- Parent involvement & support



# Learning Domains

- Oral Language
- Phonological & Phonemic Awareness
- Alphabet Knowledge & Print Awareness
- Emergent Writing



- Numbers & Operations
- Geometry & Spatial Sense
- Measurement
- Data Analysis
- Mathematical Conversation

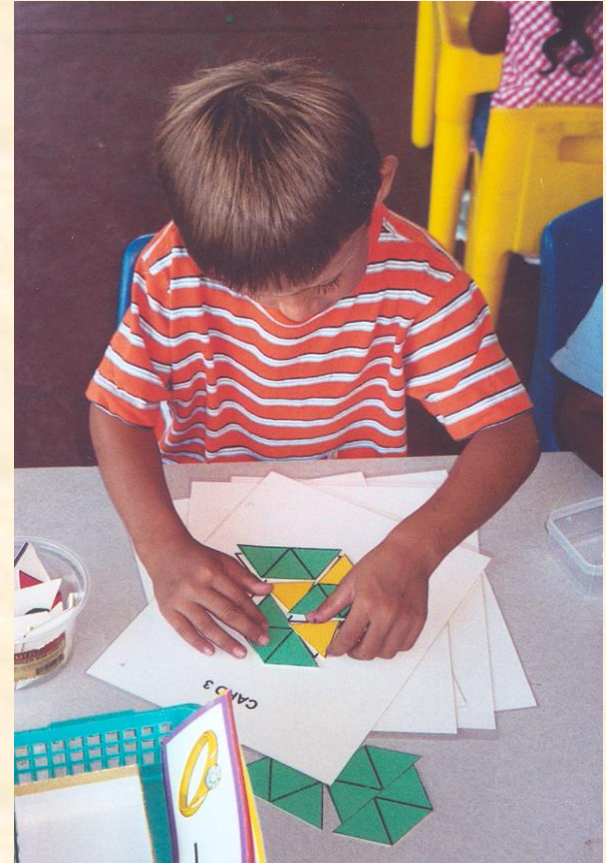
# Goals: PA

- Segment & blend syllables
- Recognize & generate rhymes
- Recognize & generate words with same first, middle, final sounds
- Segment & blend phonemes



# Goals: Numbers & Operations

- Forward 1:1 correspondence
- Quantities and numerals 1-10
- Alternative counting units
- Adding/removing objects increases/decreases total number
- Addition concept via composite units
- Manipulatives to indirectly perform multiplication, division



# Dialogic Reading



# Measuring



# Shapes That Make a Shape

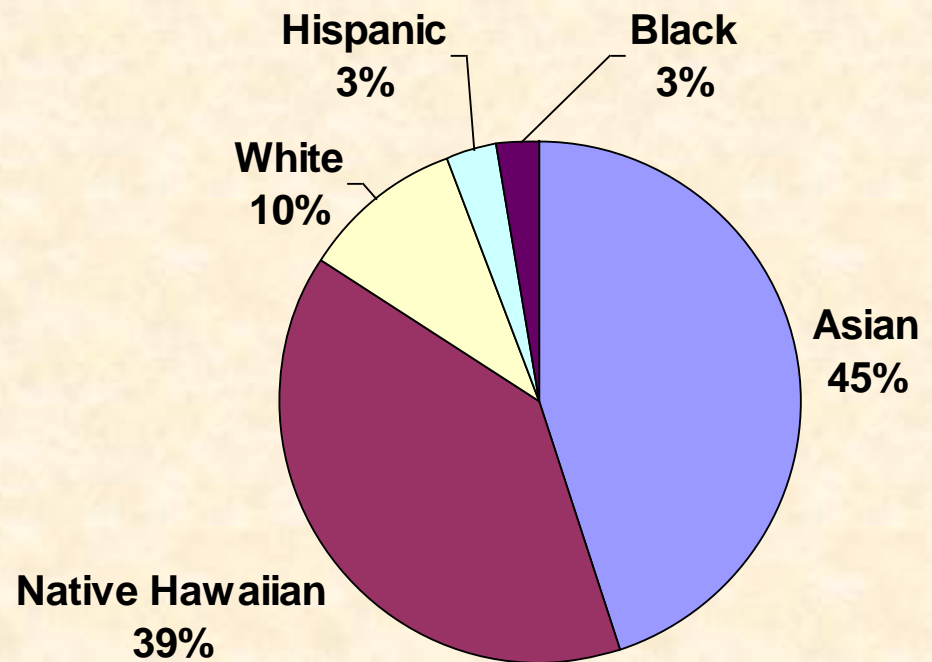


# Journals



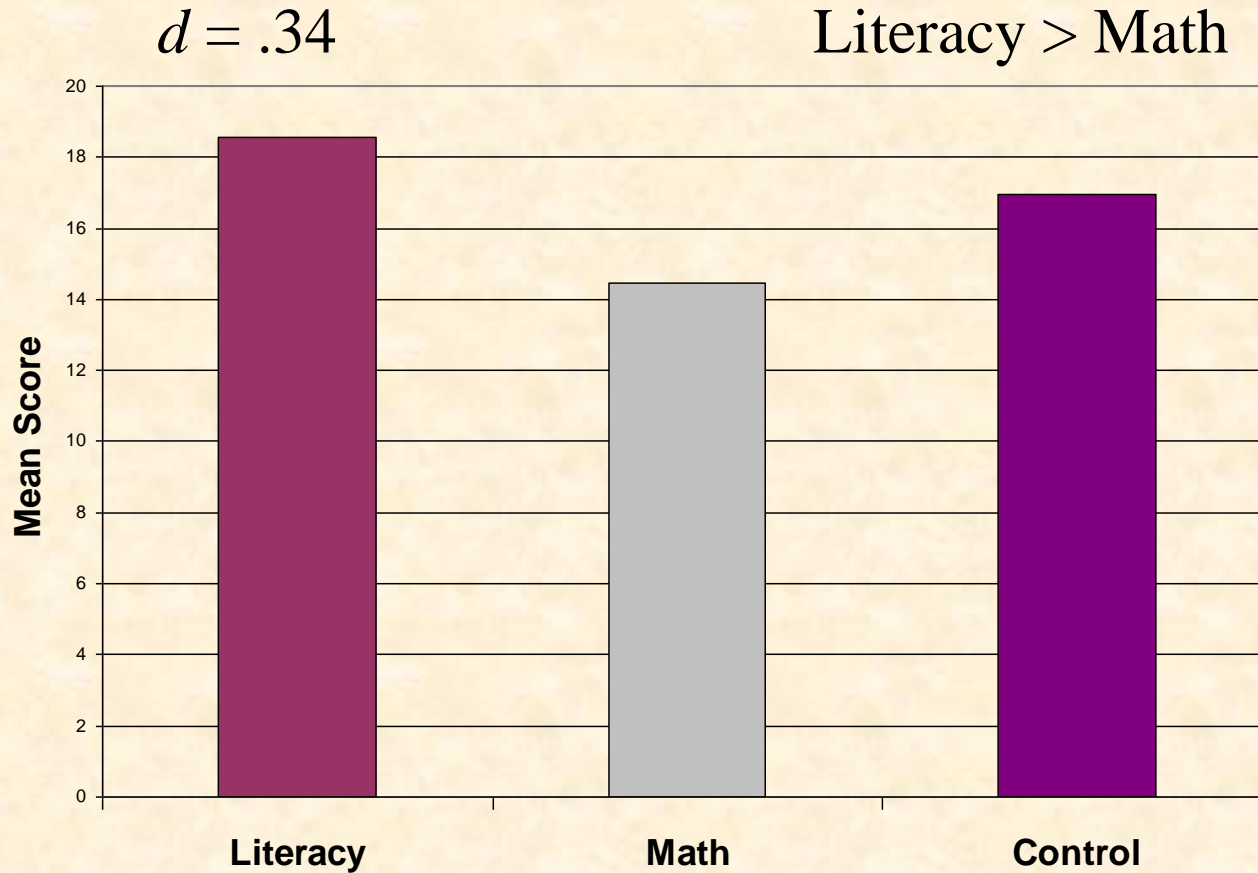
# Phase 1: Pilot

- 126 children
  - 9% ELL
  - 6% special needs
- Randomized block pre-post
- 11 Head Start classrooms
  - LC literacy
  - LC math
  - Control





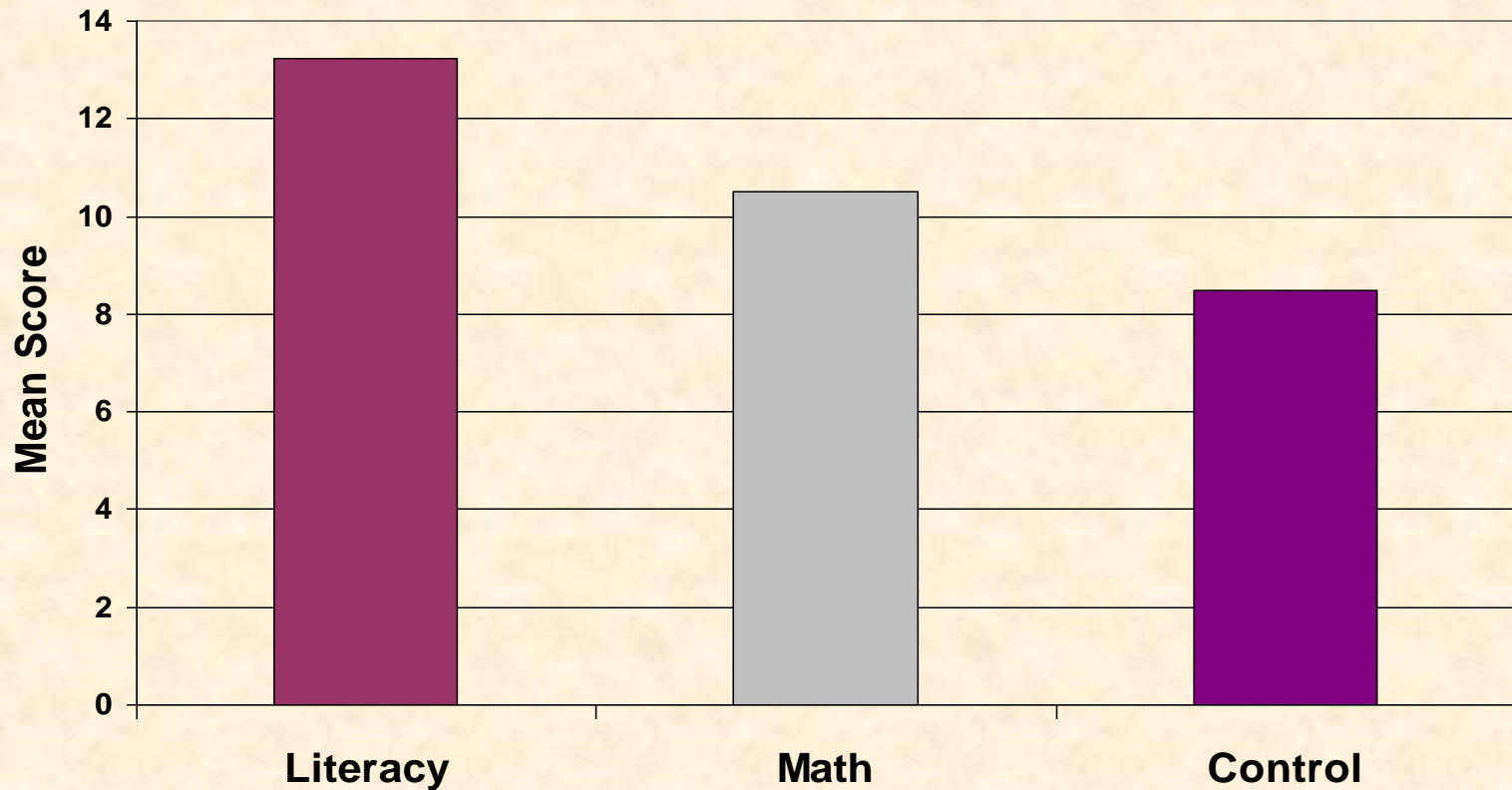
# Adjusted Reading Scores (TERA)



# Adjusted Phonemic Awareness Scores (Pre-CTOPP)

$d = .50 - .60$

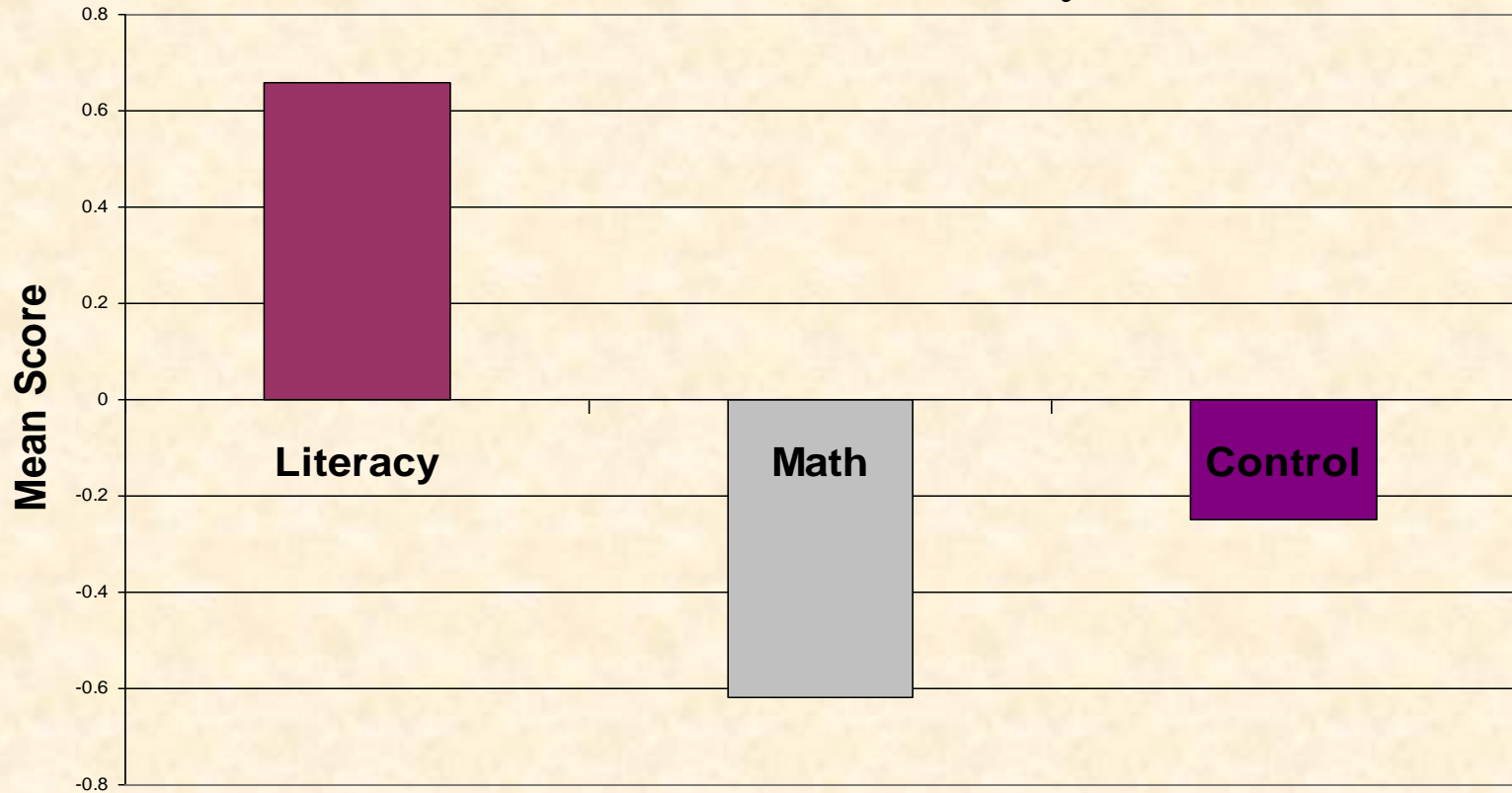
Literacy > Math, Control



# Adjusted Writing Scores

$d = .31 - .47$

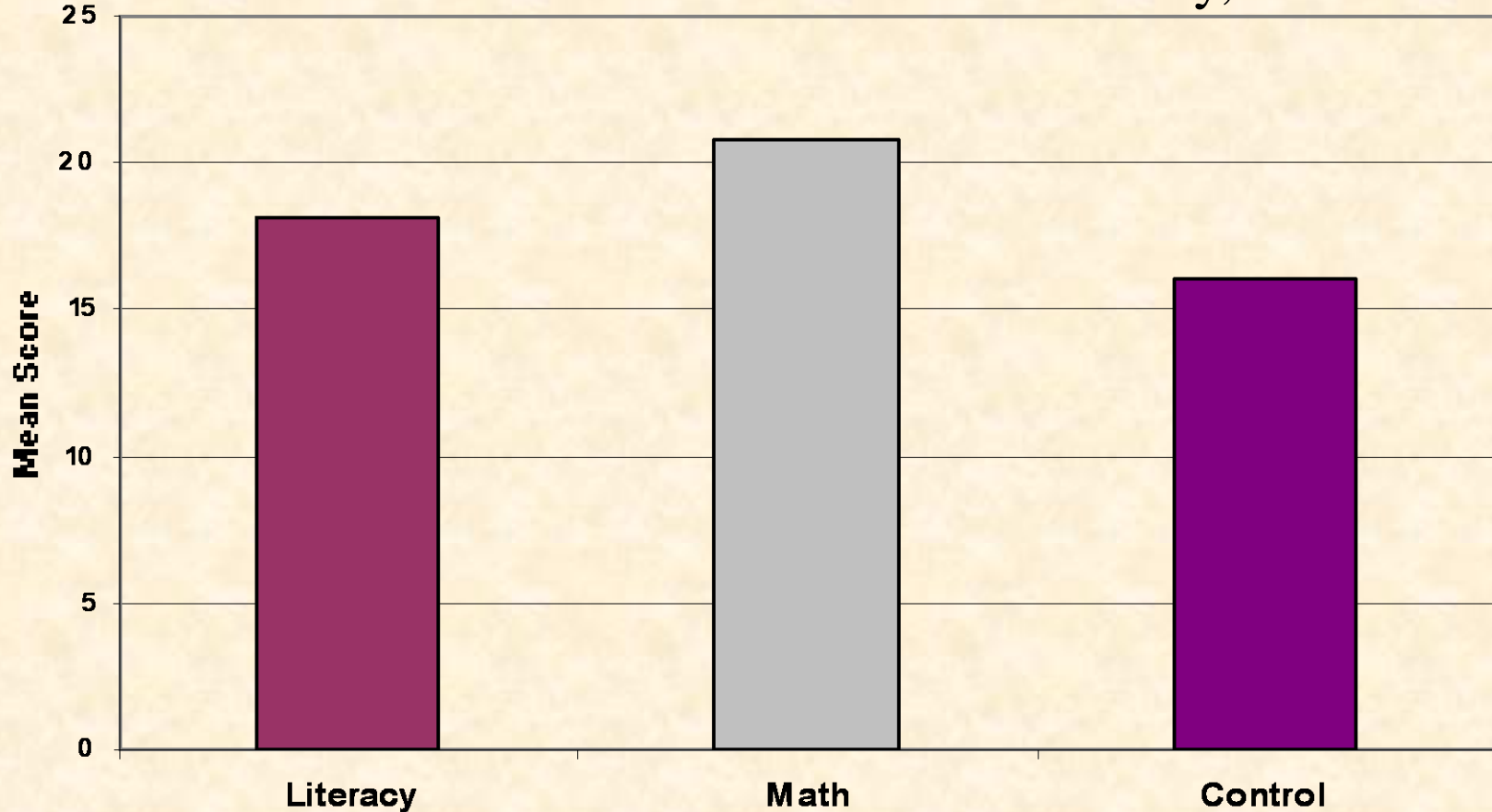
Literacy > Control, Math



# Adjusted Math Scores (DSC)

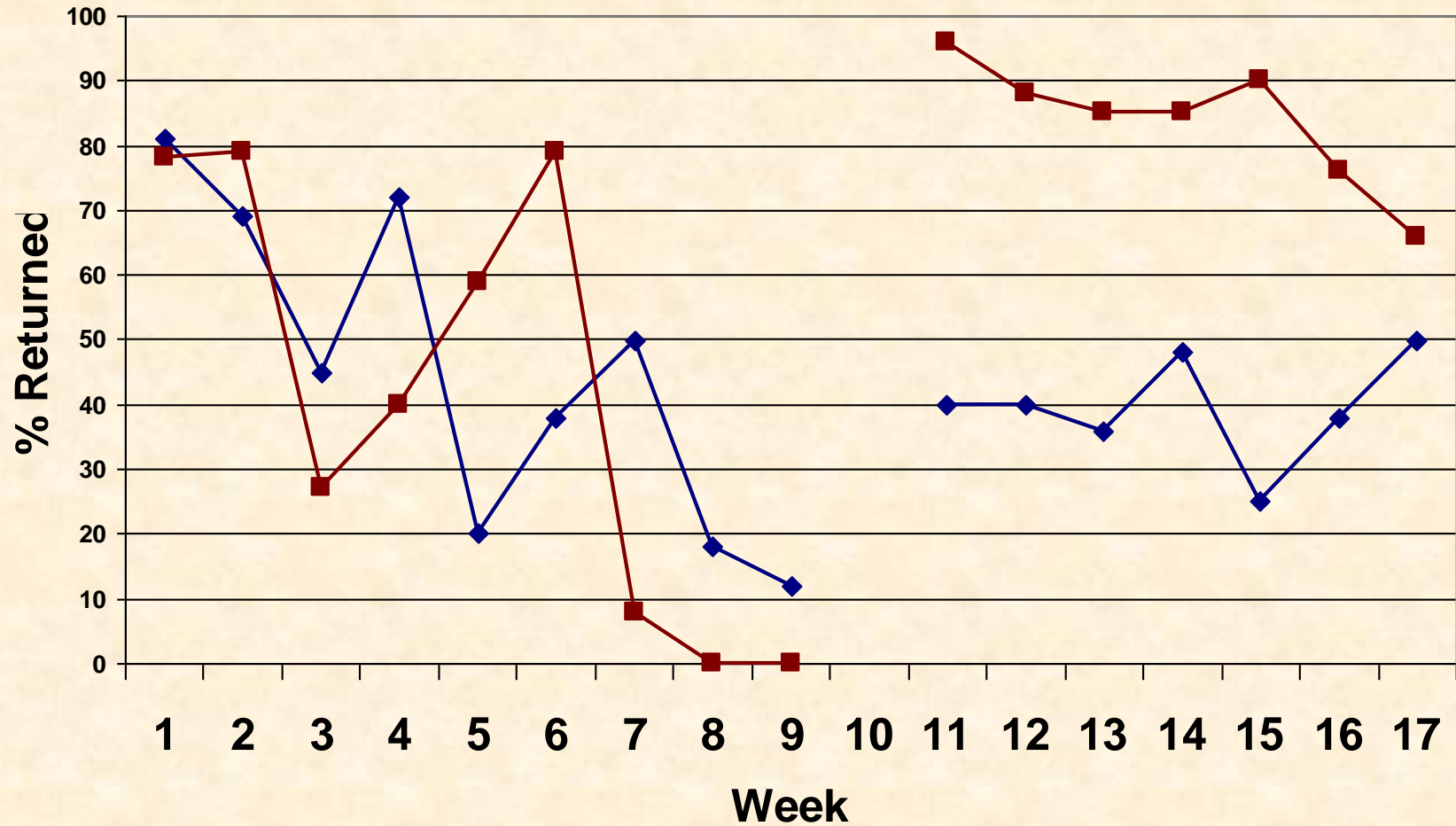
$d = .35 - .62$

Math > Literacy, Control



# Home Activity Return Rates

◆ Literacy ■ Math



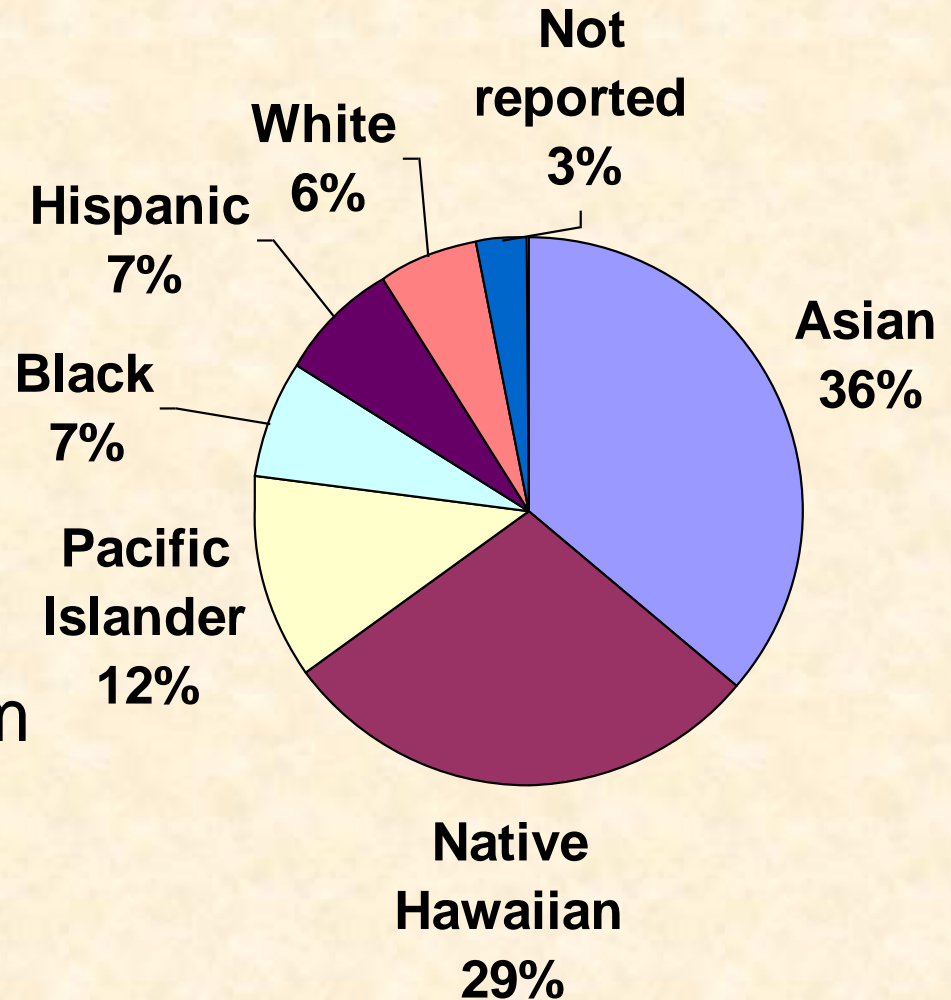
# Pilot: Summary & Issues

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- Moderately effective, greatest gains in areas not covered well in most preK classrooms
- Parents > satisfied than teachers
- Teachers appreciated materials, coach and felt children learned
- Challenges included
  - Small groups
  - 6 month learning curve
  - Perceived competition with other content
  - Philosophical differences

# Phase 2: Full Field Trial

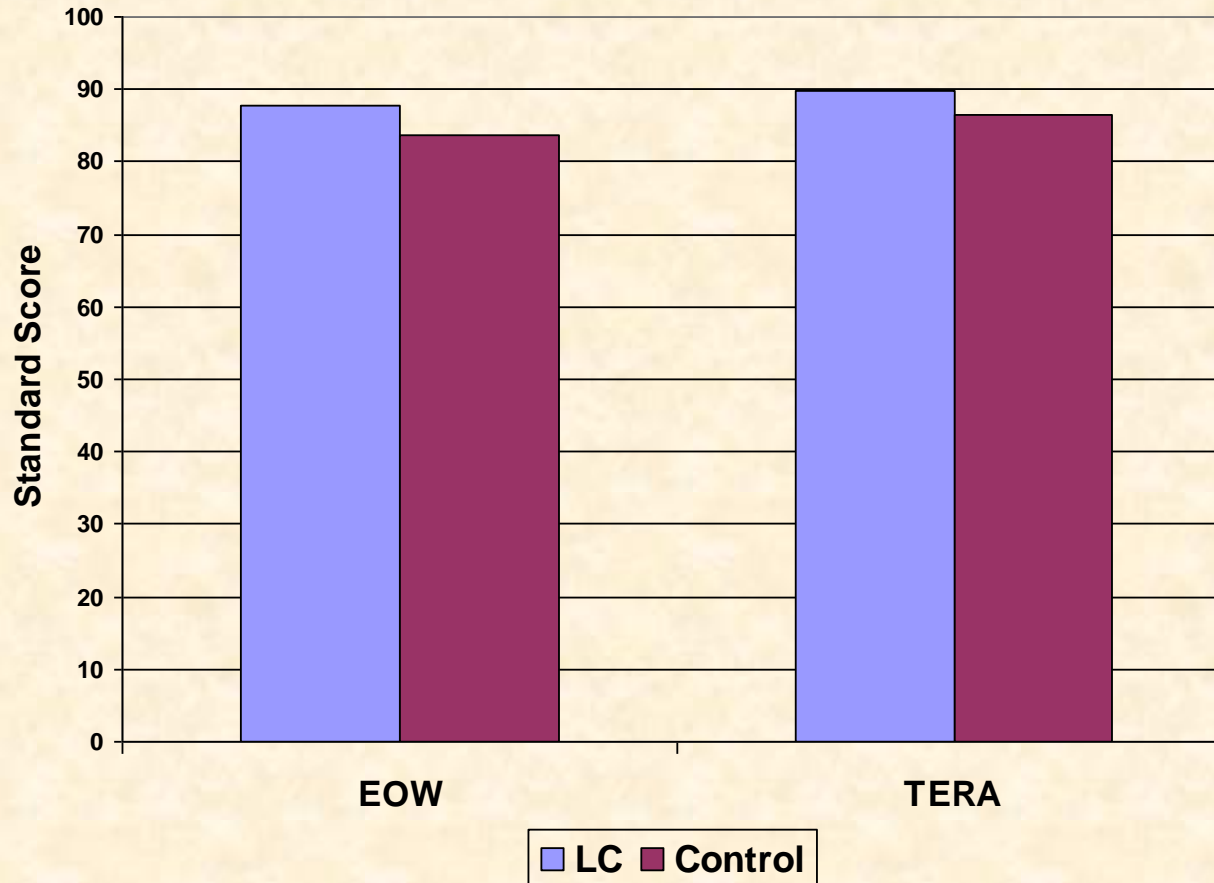
- 169 children
  - 23% ELL
  - 5% special needs
- 11 classrooms
  - 6 full LC (from pilot)
  - 5 Creative Curriculum



# Adjusted Vocabulary & Reading Scores

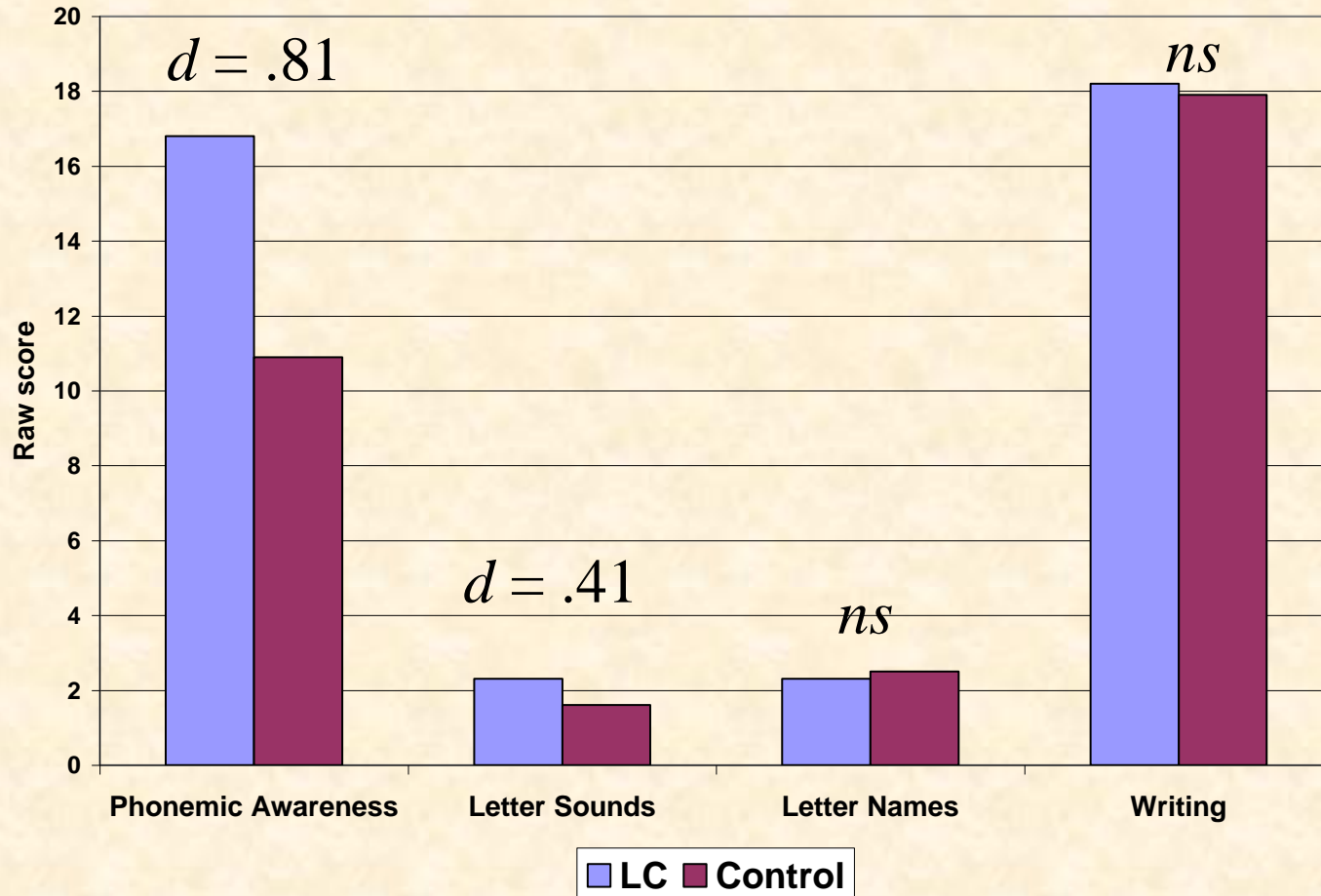
*ns*

*d = .26*

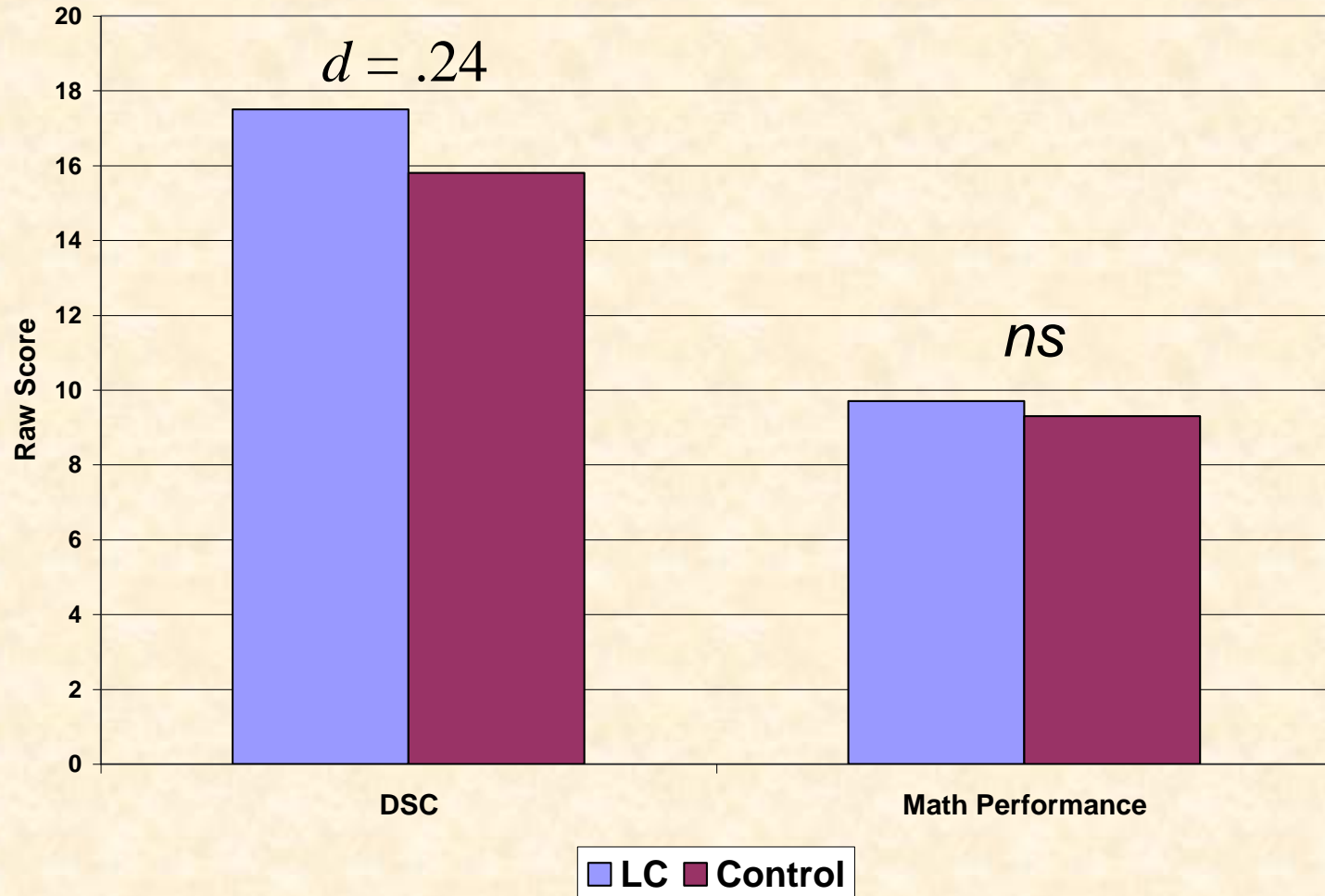




# Adjusted Literacy Scores



# Adjusted Math Scores



# Other Outcomes

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## **LC literacy gains greatest for:**

- ELL children
- High attendance
- Stable teachers/learning groups

## **Adult reactions:**

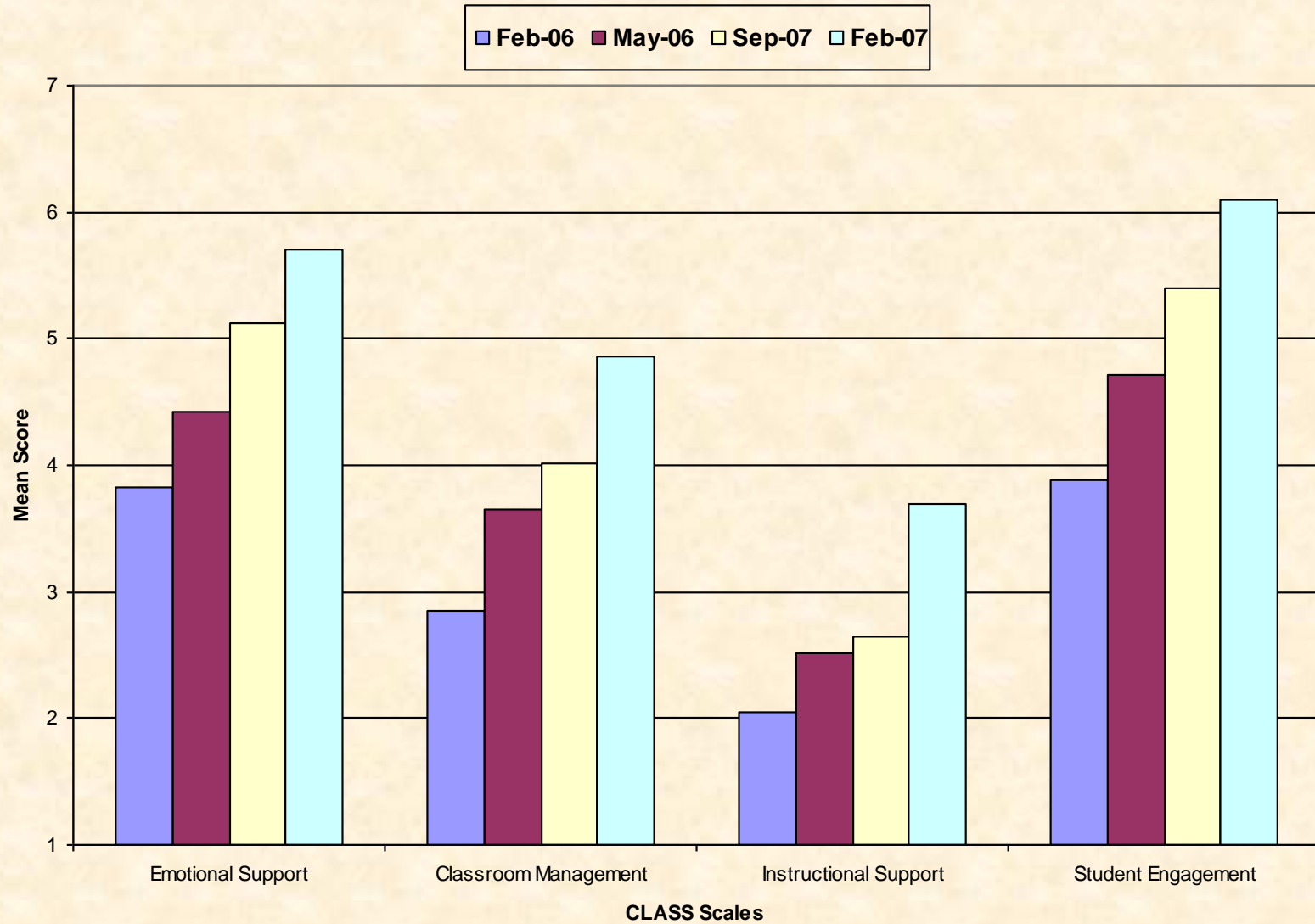
- High consumer satisfaction
- Increased expectations for children
- Better understanding of each child's level
- Parents enjoyed quality shared time

# Phase 3: Professional Development

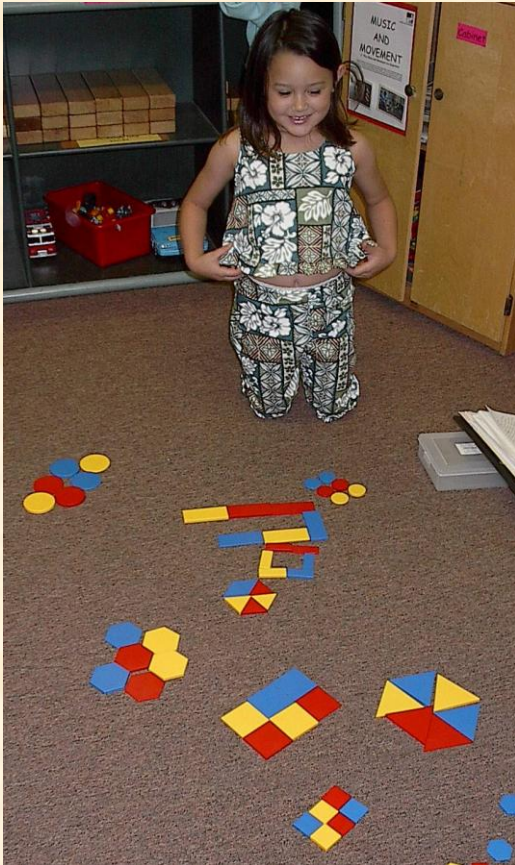
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- Early Reading First program grant
- 5 full-day, 5 part-day classrooms
- Three years
- Focus on curriculum, environment, K transition
- Enhanced professional development:
  - In-class coaching 3 days/month
  - TA meetings 2/month (curriculum & content)
  - Quarterly workshops
  - 2 college courses

# Classroom Interaction (CLASS PreK)



# Other Year 1 Outcomes



- 5-month period, significant gains on vocabulary, alphabet, PA, math, writing math  $d = .22 - .73$
- Emergent reading, print concept gains significant for ELL only
- Growth in parent read-aloud beliefs and home support for learning  $d = .32 - .79$
- Very high satisfaction

# Issues

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- **Consequences of Focused, Intentional Instruction**
  - Can be effective w/o detriment to socio-emotional development
  - Frequent, planned learning experiences
  - Specific activities for teachers
  - Small group format
- **Lessons Learned**
  - Resistance (philosophical, pragmatic)
  - Learning curve
  - Teacher understanding of goals, sequencing
  - Teachers need help individualizing, integrating, extending
  - In-class coaching essential
- **Implications for Systems Change**
  - Change takes time
  - Pros & cons of prescriptive vs. open-ended curricula
  - Urgent need for research on effective coaching, PD
  - Cost effectiveness, sustainability, replication

**Questions?**

