THE ABBOTT PRESCHOOL PROGRAM LONGITUDINAL EFFECTS STUDY (APPLES)

Ellen Frede, PhD

NIEER and The College of New Jersey

Steve Barnett, PhD, NIEER, Rutgers U

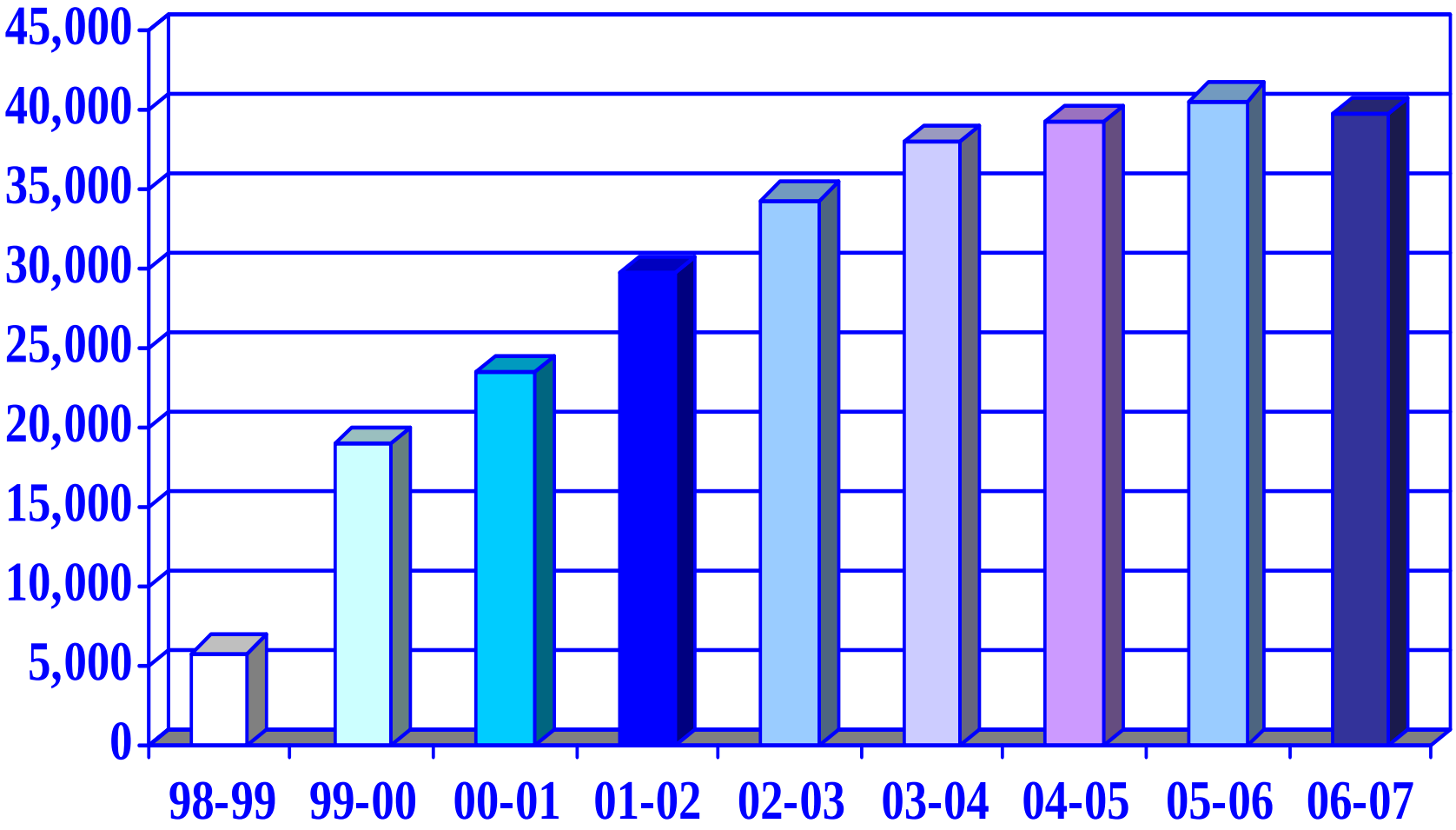
HISTORY

- 1996 Legislature funds ½ day pre-k for 4s in 132 Early Childhood Program Aid (**ECPA**) districts
- 1998 NJ Supreme Court orders at least ½ day pre-k for 3s and 4s in 30 ECPA districts (**Abbott**) and authorizes mixed delivery
- 2000 DOE requires full-day, full-year in Abbott districts and Court sets standards for high quality
- 2002-2003 DOE fully funds Abbott pre-k

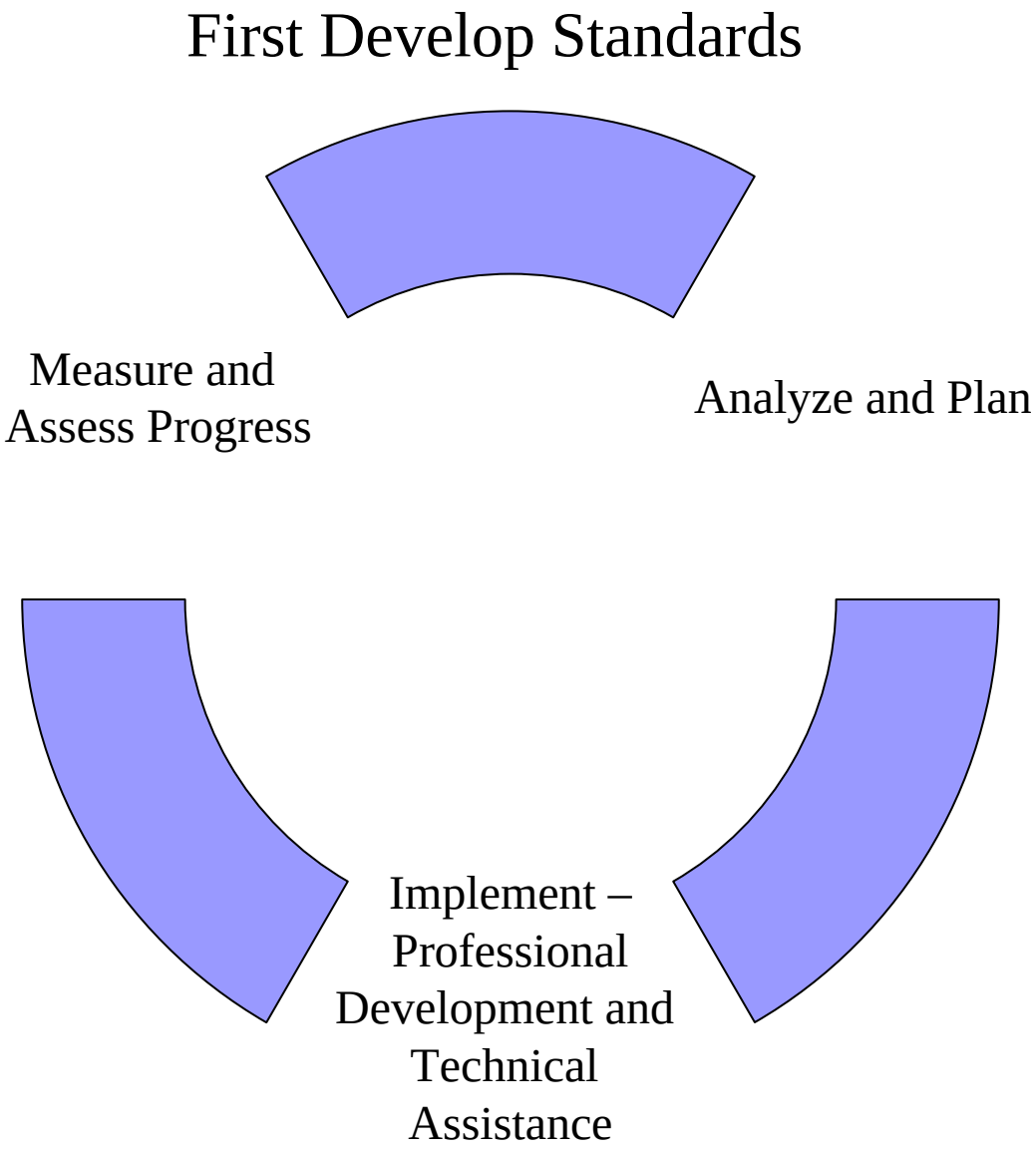
ABBOTT PREK PROGRAM DESCRIPTION

- Class size 15
- Hours 6+4
- Ratio 1 certified teacher and 1 assistant
- Teaching and Learning Standards
- Program Standards
- Collaborate with child care and Head Start

Preschool Children Served in Abbott Districts: 1998-2007



Continuous Improvement Cycle



Statewide Evaluation Efforts

Preschool Program Implementation Guidelines	→	Self Assessment & Validation System
Preschool Teaching & Learning Expectations	→	Early Learning Assessment System
NJ Supreme Court Objectives	→	Early Learning Improvement Consortium & the NIEER APPLES Study

APPLES: 3 Interconnected Studies

- CEER and ELIC annual statewide observations of classroom quality
- NIEER Regression Discontinuity Study
- NIEER Longitudinal Effects Study

Classroom Observations

- General DAP – ECERS-R
- Language and Literacy – SELA
- Mathematics – PCMI

318 classrooms statewide

Teacher Demographics

	Total (n = 308)	School (n=104)	Child Care (n=169)
Years of Experience	6.54	6.67	5.97
Spanish Speaking	24 %	15%	28%*
MA	19 %	29%	10%*

* p< .05

	Total (inc.HS) (N = 316)	Public School (n = 104)	Private Program (n = 176)
	M (*SD*)	*M* (*SD*)	*M* (*SD*)
ECERS-R	4.81 (.75)	4.84 (.83)	4.87 (.69)
SELA	3.46 (.63)	3.55 (.66)	3.41 (.59)
PCMI	2.29 (.58)	2.37 (.60)	2.29 (.57)

Percentage of Classrooms Scoring 1 - 7 on the ECERS-R
2005 - 2006

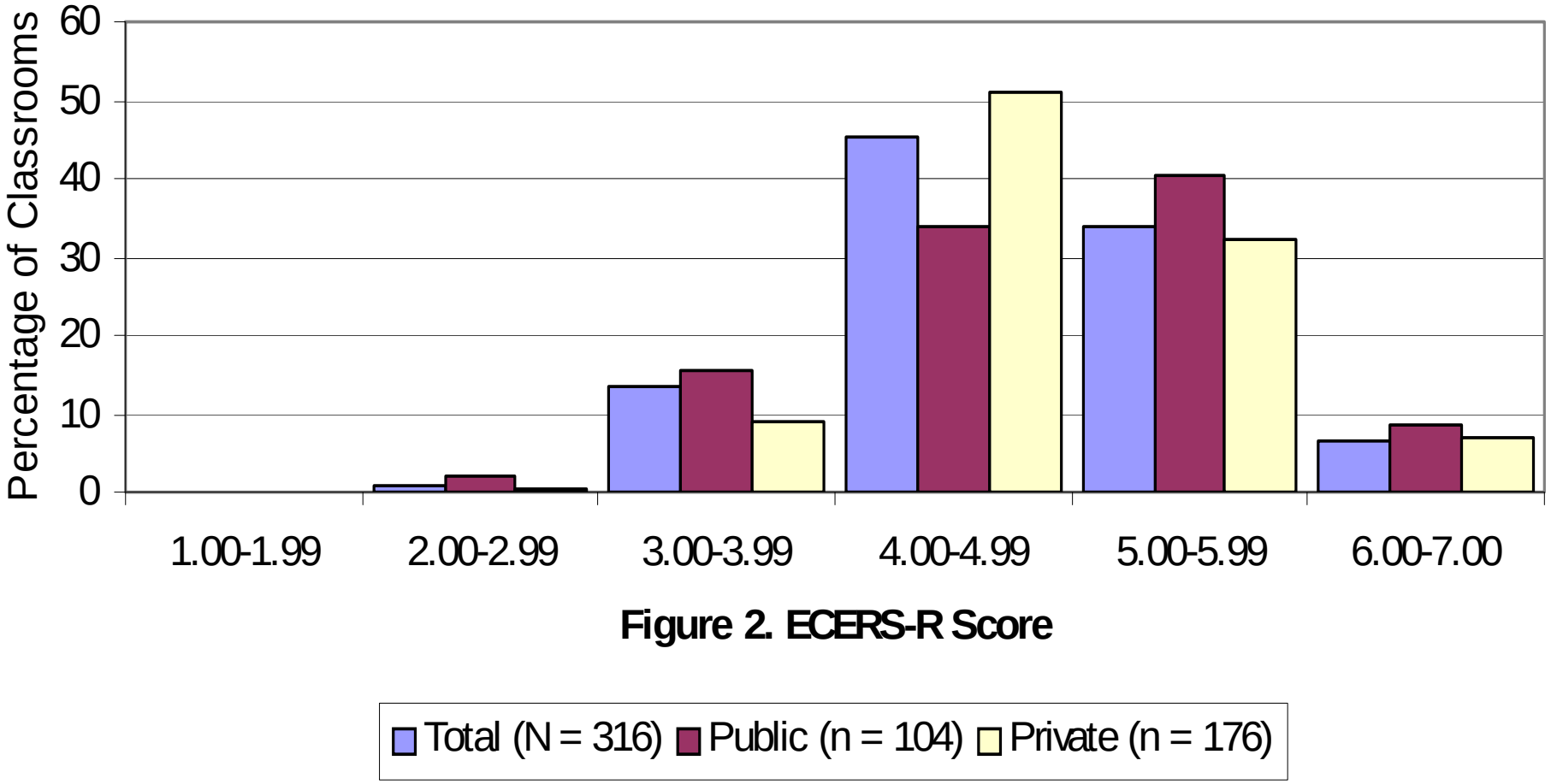


Figure 2. ECERS-R Score

Percentage of Classrooms Scoring 1 - 7 on the ECERS-R

1999-2000 vs 2005-2006 in 19 districts

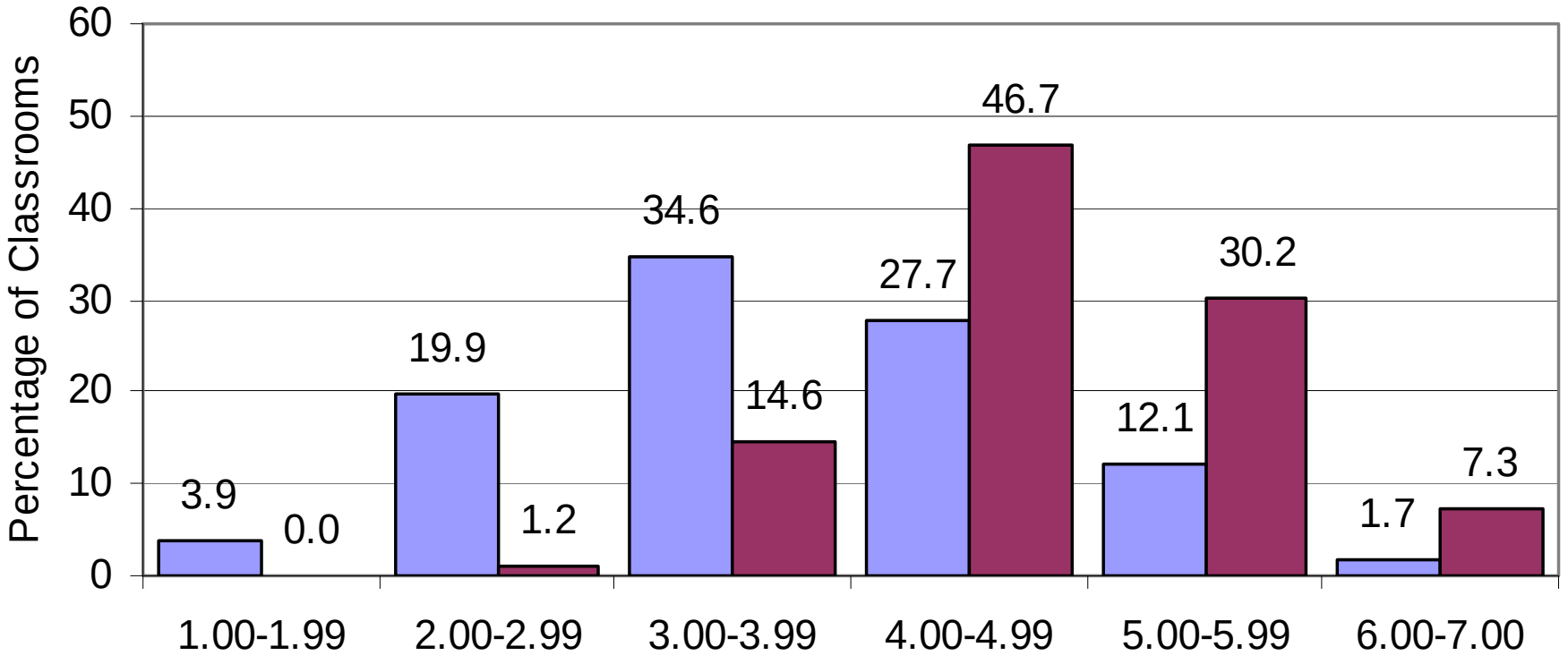


Figure 3. ECERS-R Score

Percentage of Classrooms Scoring 1 - 5 on the SELA By Auspice 2005 - 2006

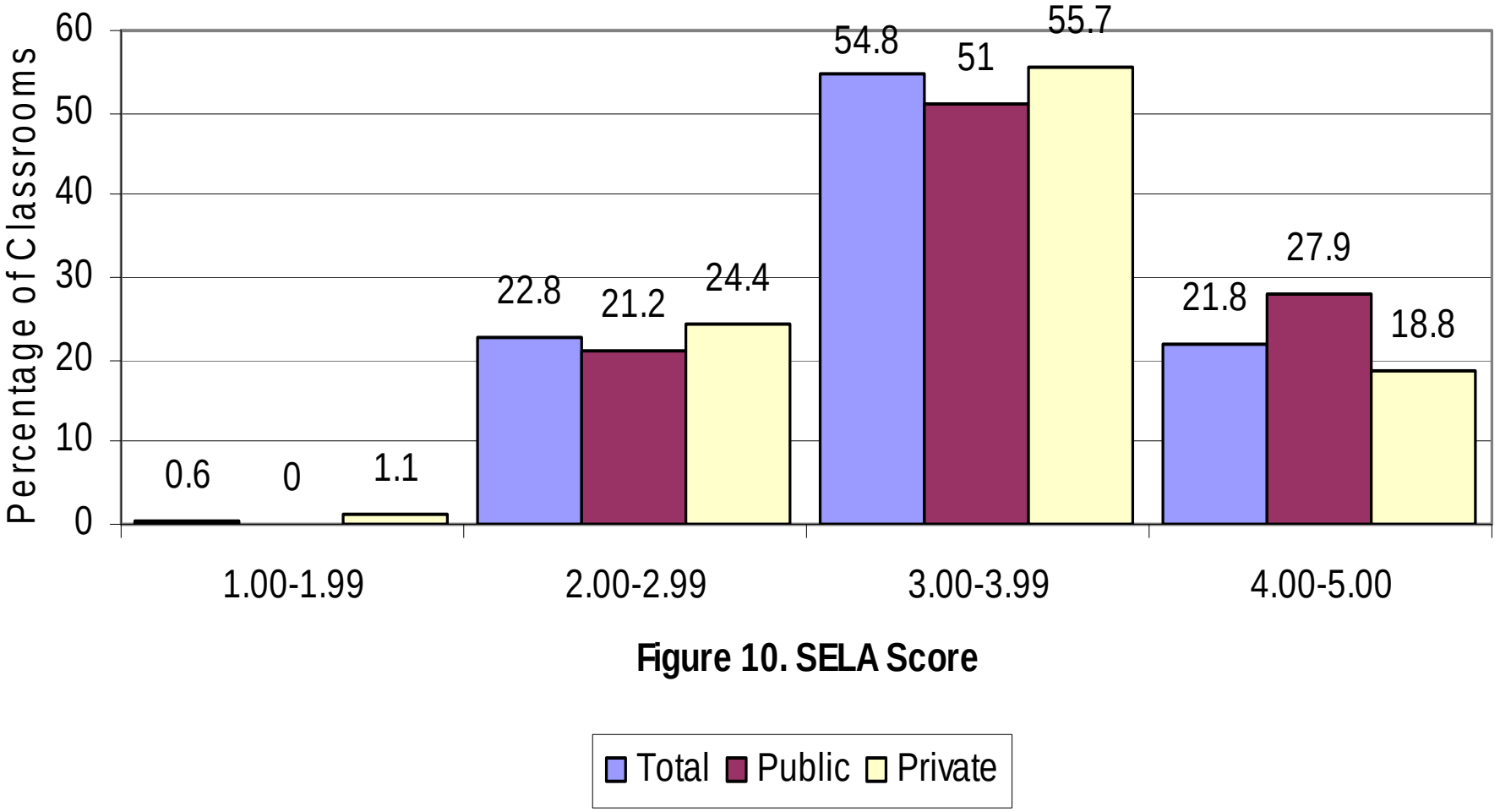


Figure 10. SELA Score

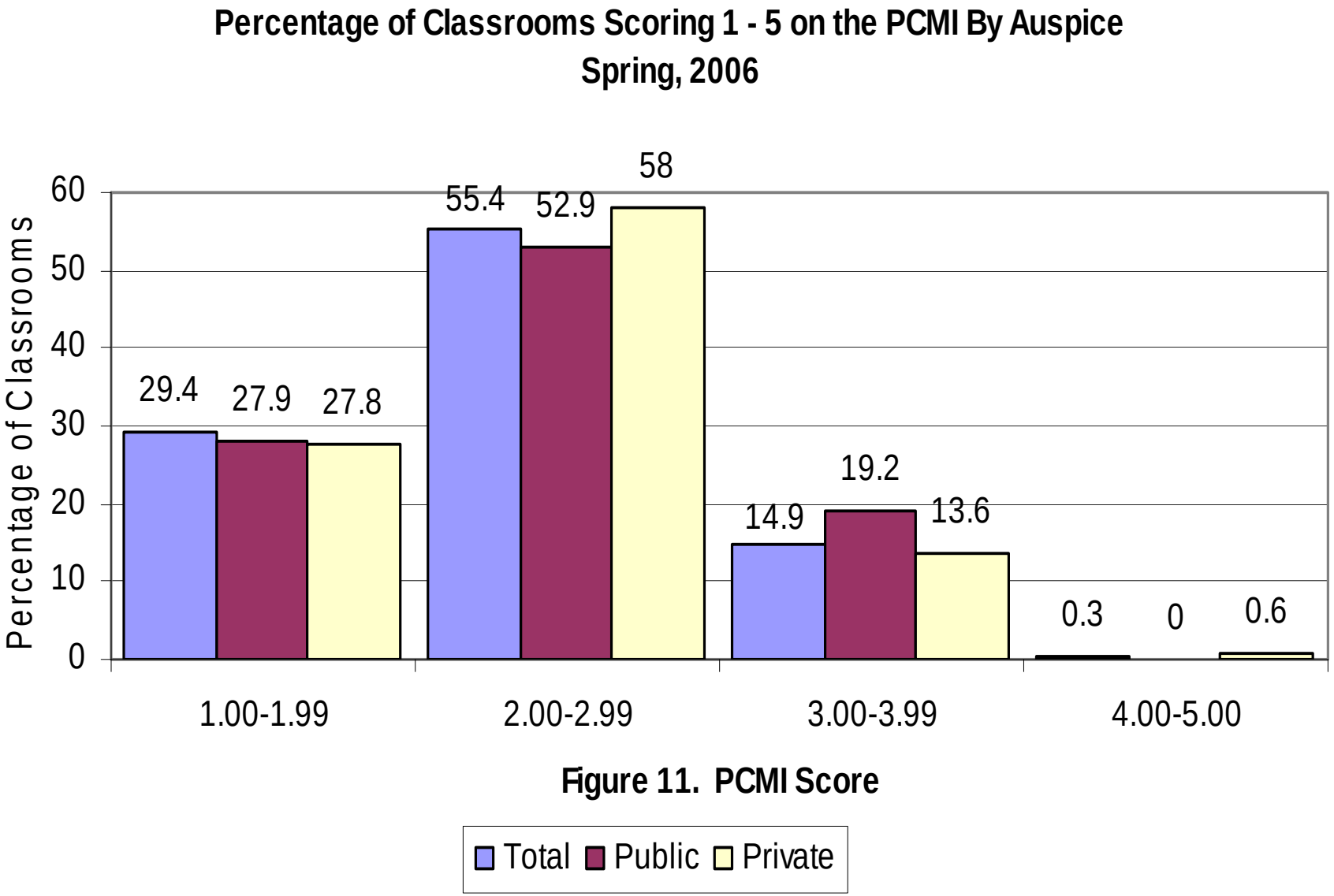


Figure 11. PCMI Score

RD Design - How it works

- Comparisons are made between kindergartners who attended (E) and preschoolers who are now attending (C)
- Dependent on the fairly stringent use of a kindergarten enrollment cut-off date around which children's ages are measured (days +/- the cut-off)
- Estimate various functional forms, different data ranges, parametric and nonparametric, with and without "fuzzy" cases

Longitudinal Design – How It Works

- In kindergarten sample compare children with Abbott preschool to those without at K entry controlling for school district, age, gender, ethnicity (more covariates later)
- Compare with RDD results
- Follow kindergarten sample through third grade with testing every Spring

Sample

- Total sample is 2356 children
  - **Kindergarten Children *n* = 1071**
    - **Attended Abbott pre-K at 4 *n* = 766**
      - **1 year = 461, 2 years = 305**
    - **Did not attend Abbott pre-K at 4 *n* = 305**
  - **Entering Pre-K at 4 *n* = 778**

- Classrooms randomly selected from 15 largest districts

- 4 children from each classroom are then randomly selected (all analyses account for clustering)

Measures for Children

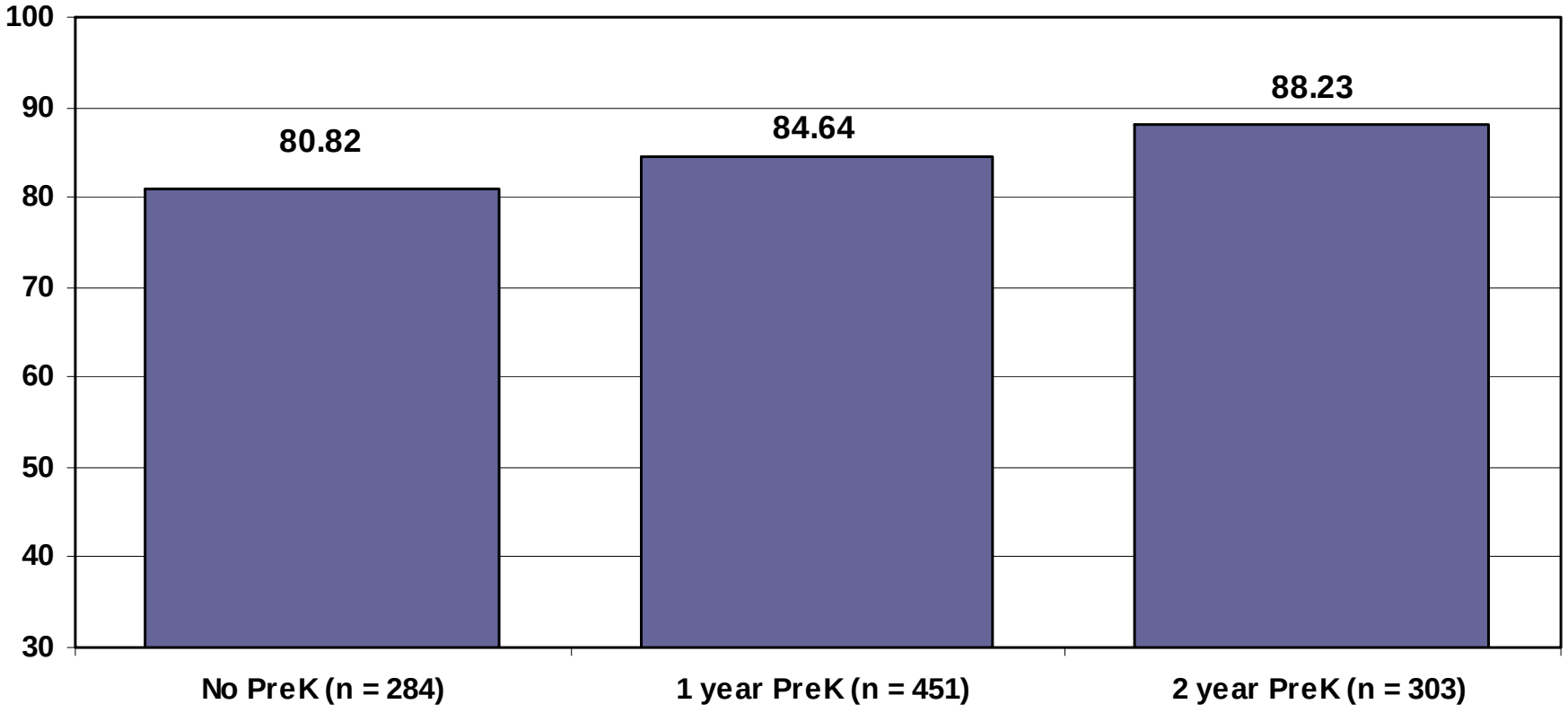
- Demographics and prek status
- PPVT/TVIP
- Pre-CTOPPP
- W-J Applied Problems

RDD: Estimated Effects

	Est.	*ES*
Vocabulary (PPVT)	**4.57**	**.28**
Print Awareness	**13.97%**	**.56**
Math (Applied Prob.)	**1.36**	**.36**

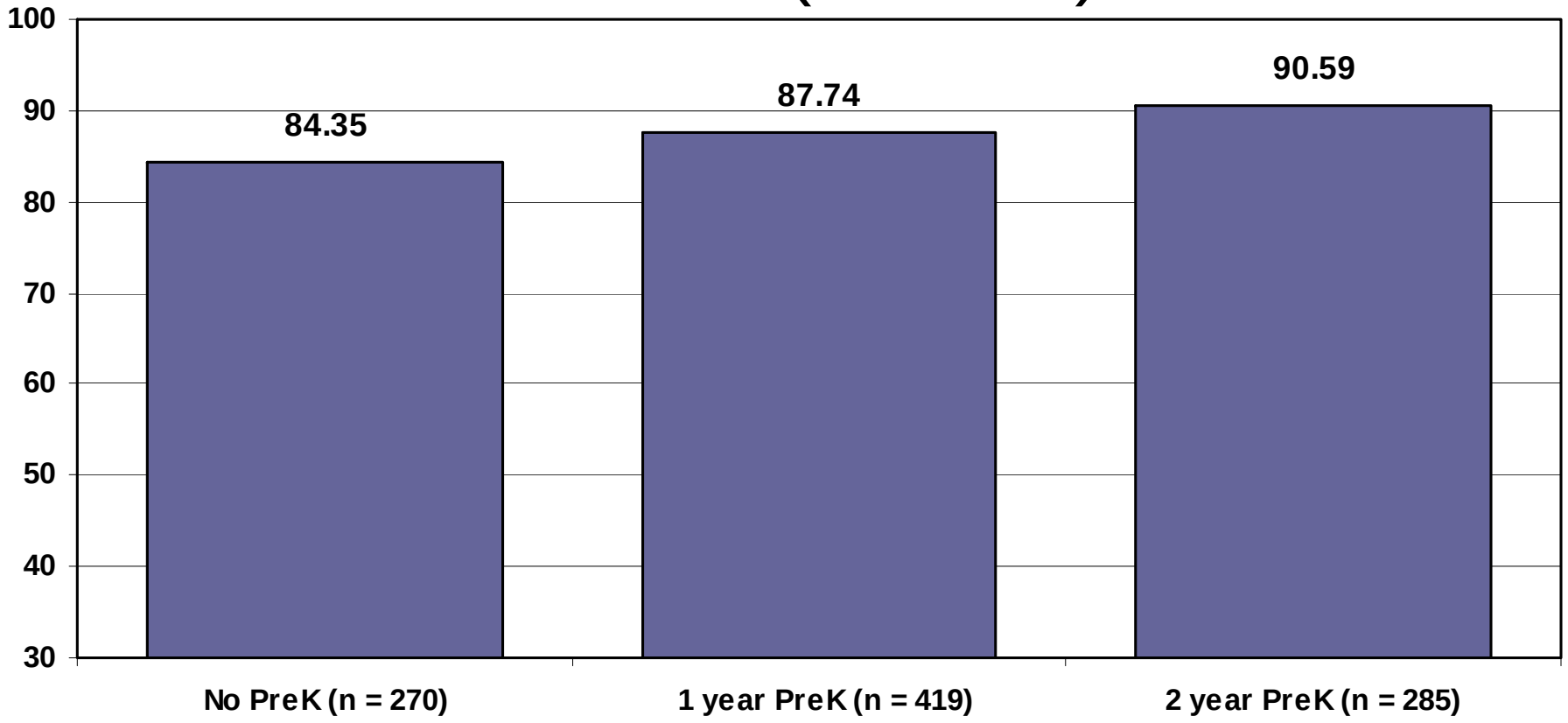
Results: Longitudinal Sample

Receptive Vocabulary at Kindergarten Entry by Years of Attendance (*N* = 1038)

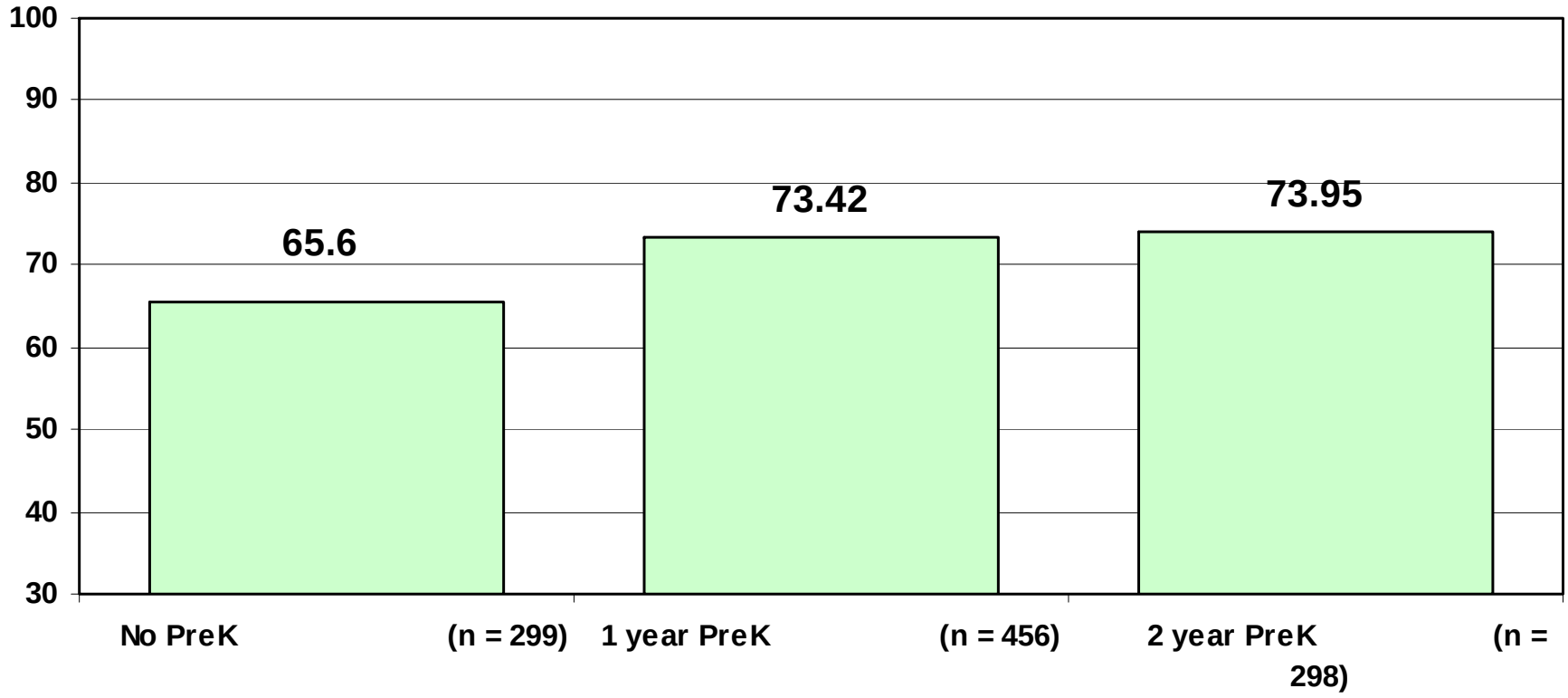


Results: Longitudinal Sample

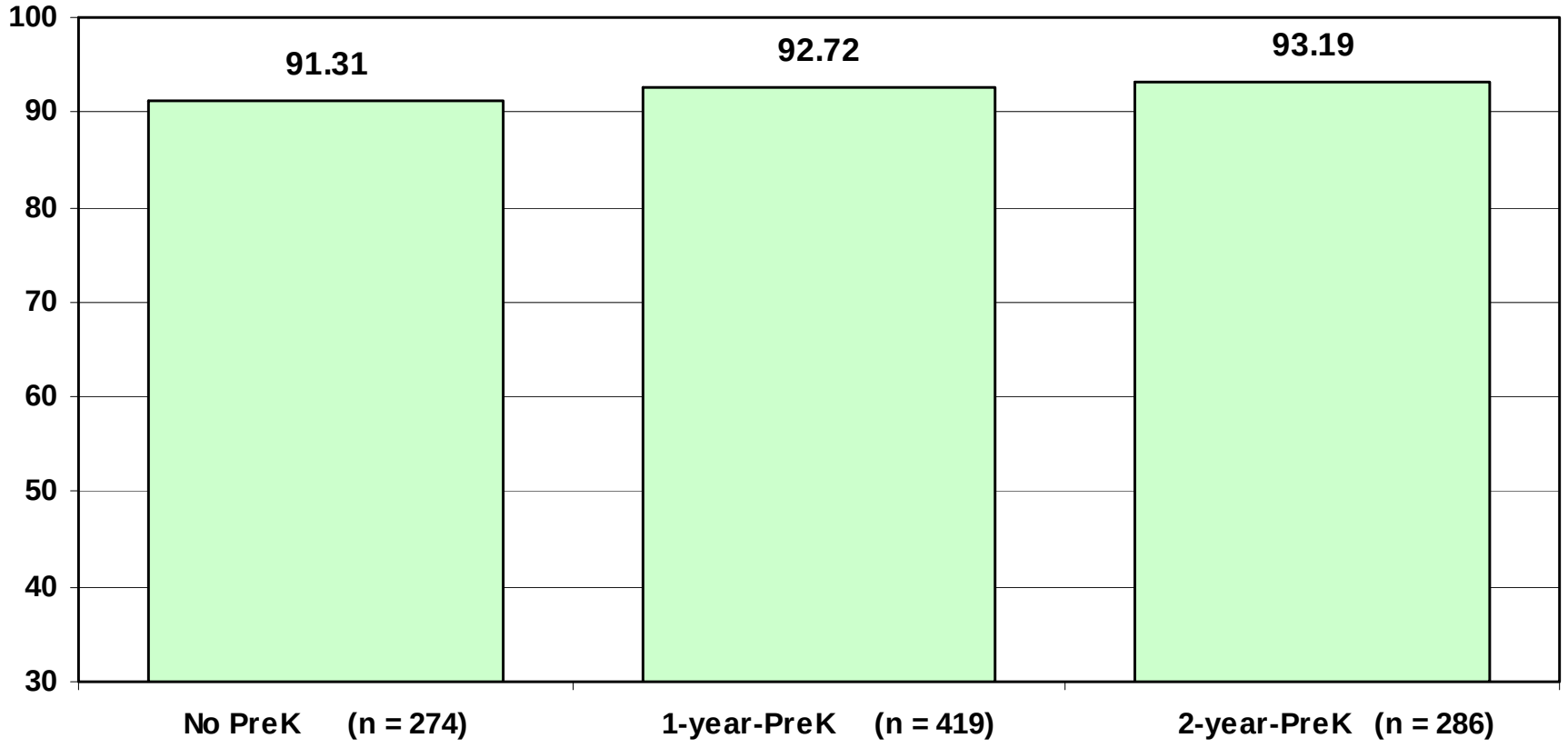
Receptive Vocabulary at End of K by Years of Attendance (*N* = 974)



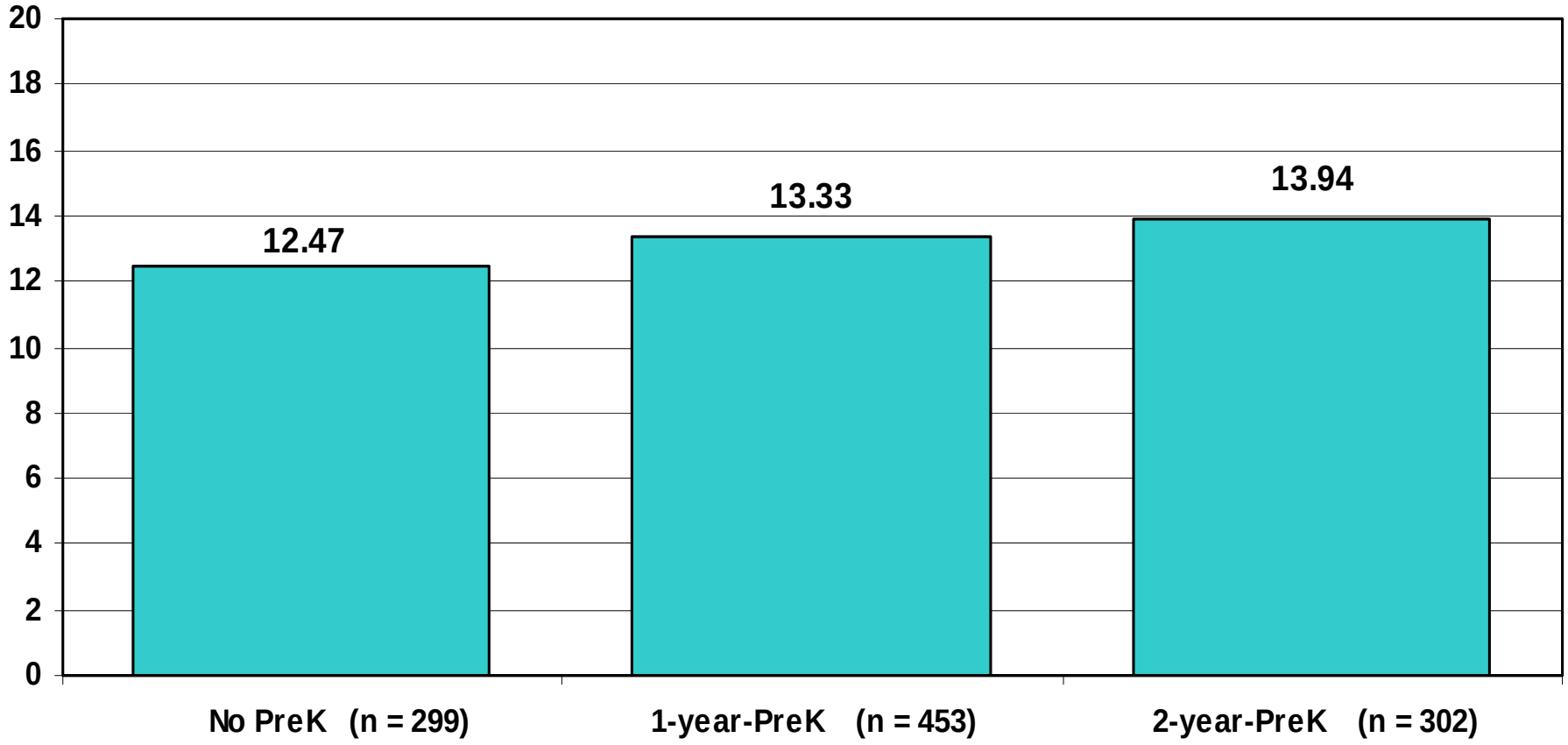
Print Awareness Scores at the Kindergarten Entry by Years of Attendance (% correct) (*N* =1053)



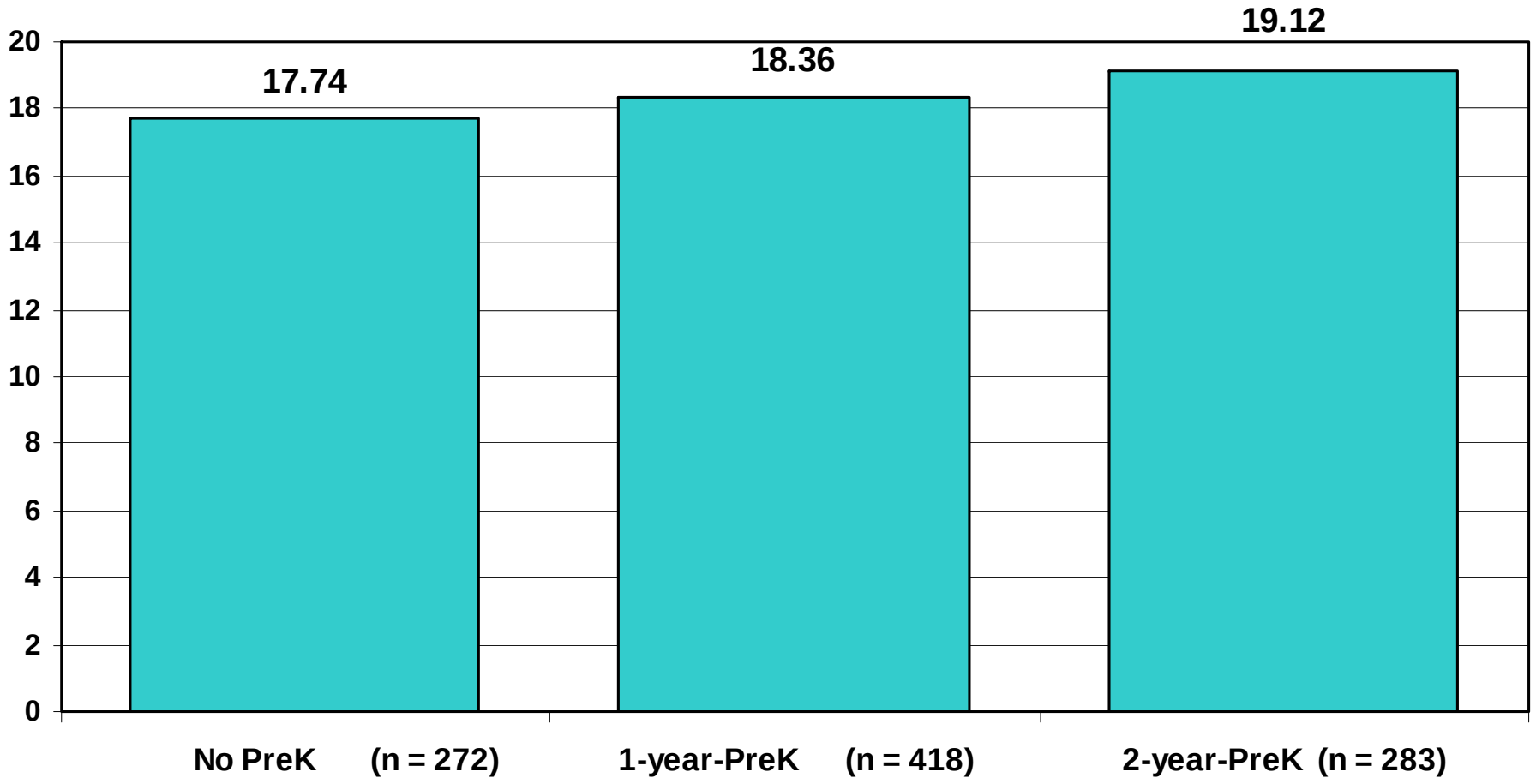
Print Awareness Scores at the End of Kindergarten Years of Attendance (% correct) (*N* =1053)



Math Scores at K Entry (*N* = 1054)



Math Scores at the End of Kindergarten by Years of Attendance (*N* = 973)



Longitudinal Study Effect Sizes

	K Entry		K Exit	
	1yr	2yr	1yr	2yr
Vocabulary	.21	.42	.22	.41
Print Aware	.29	.31	ns	.14
Math	.20	.34	.13	.29

Comparison of Longitudinal Study and RDD Estimates

	RDD	LS	LS/RDD
Vocabulary	4.57	3.82	84%
Print Aware	13.97	7.80	56%
Math	1.36	.86	63%

Conclusions

- Takes time to build quality
- Abbott quality is consistent across auspice
- Substantial effects on vocabulary, math, and literacy skills.
- Key effects persist at least to end of K
- Two years of pre-k produce larger gains
- RDD produces larger estimates