

## RESEARCH UPDATE

New Haven Public Schools  
New Haven, CT

# *Big Day for PreK* Program Shows Positive Impact on Quality of Language and Literacy Instruction and Children's School Readiness

## PROFILE

**District:** New Haven Public Schools, Head Start  
Preschool Program

**Evaluation Period:** Spring 2011–Spring 2012

**Model:** Full-Day Four-Year-Old Preschool Program

**Assessment:** Early Language and Literacy  
Classroom Observation Pre-K  
(ELLCO Pre-K); Scholastic Early  
Childhood Inventory (SECI);  
In-Classroom Observation Protocol

## DISTRICT CHARACTERISTICS

Situated in New Haven, the third largest city in Connecticut, New Haven Public Schools (NHPS) serve over 20,000 students in more than 45 schools. Over half (55%) of the students in the district are African American, 31% are Hispanic, 11% are Caucasian, and 3% of the students are comprised of other ethnicities. Nearly three-quarters (73%) of the students in the district are eligible for free or reduced-price lunch.

## OVERVIEW

*Big Day for PreK* is a comprehensive, yearlong early learning program that helps children develop social-emotional, emergent literacy, oral language, math, and content-area skills through theme-based learning. *Big Day for PreK* provides a complete curriculum, an extensive collection

of classic and contemporary children's literature, nonfiction text in a variety of formats, intensive language and early literacy development, and 100% equity in English and Spanish. *Big Day for PreK* also includes innovative Web-based technology to strengthen the home-school connection and provide teachers and families with online access to resources and literacy-building activities.

With its strong focus on language and literacy development, *Big Day for PreK* helps teachers understand and integrate effective teaching strategies into their practice. Specifically, these strategies promote oral language and extended discourse skills; vocabulary and sense of storybook language; knowledge about print and awareness of environmental print; letter recognition and emergent writing; and phonological awareness. *Big Day for PreK* also highlights the critical importance of assessment, by providing teachers with guidance in assessing and analyzing children's work.

## Implementation Model

In the fall of 2011, NHPS began implementation of *Big Day for PreK* in 17 classrooms located in two separate Head Start preschool programs. Each classroom was taught by a lead teacher and a teaching assistant. Of the two Head Start

programs, one followed the research-based *Big Day for PreK* model, with three Big Experiences every day and Small Group/Learning Centers time each morning (45 minutes) and afternoon (30 minutes). The other followed a modified implementation, whereby two of the three Big Experiences were conducted for 15 minutes each, instead of 25 minutes each.

### Participants

Across the two Head Start programs, 17 classrooms, serving three- and four-year-old children, implemented the *Big Day for PreK* curriculum. Of the 17 lead teachers, 6 had master's degrees, 9 had bachelor's degrees, and 2 had associate's degrees. Teachers ranged in experience from 1 to 28 years, with an average of 12.2 years of experience. The analytic sample included 16 of the 17 classrooms. A total of 123 four-year-olds were assessed, including approximately 8 students from each of the 16 classrooms. In order to scale the administration of assessments for this research project, the decision was made not to assess three-year-olds.

### Measures

#### **Early Language and Literacy Classroom Observation Pre-K (ELLCO Pre-K)**

The ELLCO Pre-K is a widely used, research-validated measure of early education classroom quality, with emphasis on language and literacy. The ELLCO Pre-K consists of an observation measure and a supplemental teacher interview. The observation includes 19 items organized into five main sections. Items are scored on a 5-point scale, and averaged to obtain two main subscales, in addition to an overall score. The General Classroom Environment (GCE) Subscale includes two sections (7 items): Classroom Structure and Approaches to Curriculum. More emphasis is intentionally placed on the Language and Literacy Environment (LLE) Subscale, which includes three sections (12 items): the Language Environment, Books and Book Reading, and Print and Early Writing. In this study, the ELLCO Pre-K was administered (pre-implementation) in May

and June 2011, and again (post-implementation) in May 2012.

#### **Scholastic Early Childhood Inventory (SECI)**

The SECI, a standardized one-to-one assessment, was used to assess students' academic progress. The SECI consists of four modules in key domains that have been shown to be most predictive of kindergarten readiness: Oral Language Development, Phonological Awareness, Alphabet Knowledge, and Mathematics. Each module consists of 2–4 subtests, on which students receive a score placing them at one of four stages of development: Pre-Emergent, Beginning, Emergent, or Developed. In this study, the SECI was administered in fall 2011 and spring 2012.

#### **In-Classroom Observation Protocol**

An in-classroom observation protocol was used to assess the degree to which implementation matched critical features and components of *Big Day for PreK*. The tool provides a framework to evaluate fidelity of implementation, with a focus on six critical areas: Classroom Environment, Classroom Management, Instructional Materials, Instruction, Family Involvement, and Assessment. Each of the six areas includes numerous indicators, which receive a score ranging from 1 to 4 (1 = Beginning, 2 = Approaching, 3 = Meeting, 4 = Exceeding). The fidelity of implementation observation was conducted in May 2012, after the curriculum had been implemented for at least six months.

#### **Professional Development**

Each participating teacher received the *Big Day for PreK* curriculum and materials prior to the 2011–2012 school year. Initial training on how to use the *Big Day for PreK* curriculum was provided at the beginning of the school year. Follow-up training was provided in September and October. Monthly *Big Day for PreK* professional development was provided for the remainder of the school year. These monthly sessions included afternoon group meetings, in-class modeling, classroom teaching observations and debriefing, as well as occasional individualized coaching.

## RESULTS

### ELLCO Pre-K Results

A total of 16 classrooms were assessed both pre-implementation and post-implementation. Results from the ELLCO Pre-K showed statistically significant positive changes in the quality of language and literacy instruction in classrooms after implementing *Big Day for PreK*.

Across all classrooms, overall ELLCO Pre-K scores were significantly higher by about one half of a scale point ( $t = 2.44, p = .03$ ). Positive improvements were evident in both classroom quality and areas of language and literacy. Specifically, statistically significant increases were observed on both subscales, General Classroom Environment (GCE:  $t = 2.59, p = .02$ ) and Language and Literacy Environment (LLE:  $t = 2.13, p = .05$ ). Gains on the subscale scores appear to have been most influenced by approaches to Curriculum ( $t = 3.10, p = .01$ ), Language Environment ( $t = 2.71, p = .02$ ), Books and Book Reading ( $t = 2.88, p = .01$ ).

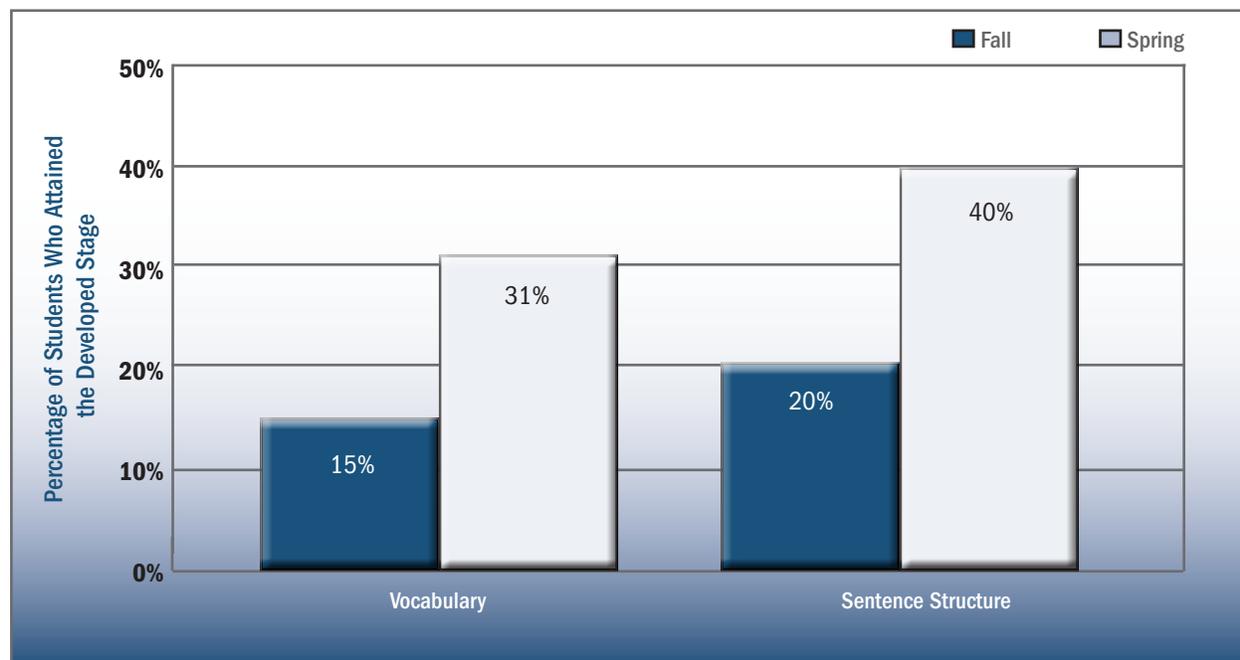
### SECI Results

A total of 123 students were assessed in both fall 2011 and spring 2012. The SECI results indicate that four-year-old students in *Big Day for PreK* classrooms made substantial progress toward kindergarten readiness in every domain (Oral Language Development, Phonological Awareness, Alphabet Knowledge, and Mathematics), including statistically significant gains in all subtests, in every domain.

In the Oral Language module, children in *Big Day for PreK* classrooms made statistically significant improvements in both subtests, with gains in Vocabulary scores ( $t(122) = 6.30, p < .001$ ), and Sentence Structure scores ( $t(122) = 5.45, p < .001$ ). As a result, the percentage of children who attained the Developed stage in Vocabulary increased from 15% to 31%, and children who attained the Developed stage in Sentence Structure increased from 20% to 40%. (Graph 1)

### Graph 1.

New Haven Public Schools Head Start *Big Day for PreK* Students, (N = 123)  
Percentage of Students Who Attained the Developed Stage on the Scholastic Early Childhood Inventory (SECI),  
Oral Language, 2011–2012



Note: All Oral Language Subtests (N = 123)

In the Alphabet Knowledge module, children in *Big Day for PreK* classrooms made statistically significant gains in all subtests. Letter Recognition scores increased across the year ( $t(119) = 13.4$ ,  $p < .001$ ), with the percentage of children who attained the Developed stage increasing from 11% to 56%. Letter Naming Fluency also increased across the year ( $t(43) = 2.70$ ,  $p = .010$ ), although no children attained the Developed stage for this subtest. Finally, Letter Sounds scores also increased significantly ( $t(45) = 3.38$ ,  $p = .001$ ), with the children who attained the Developed stage increasing from 57% to 72%. (Graph 2)

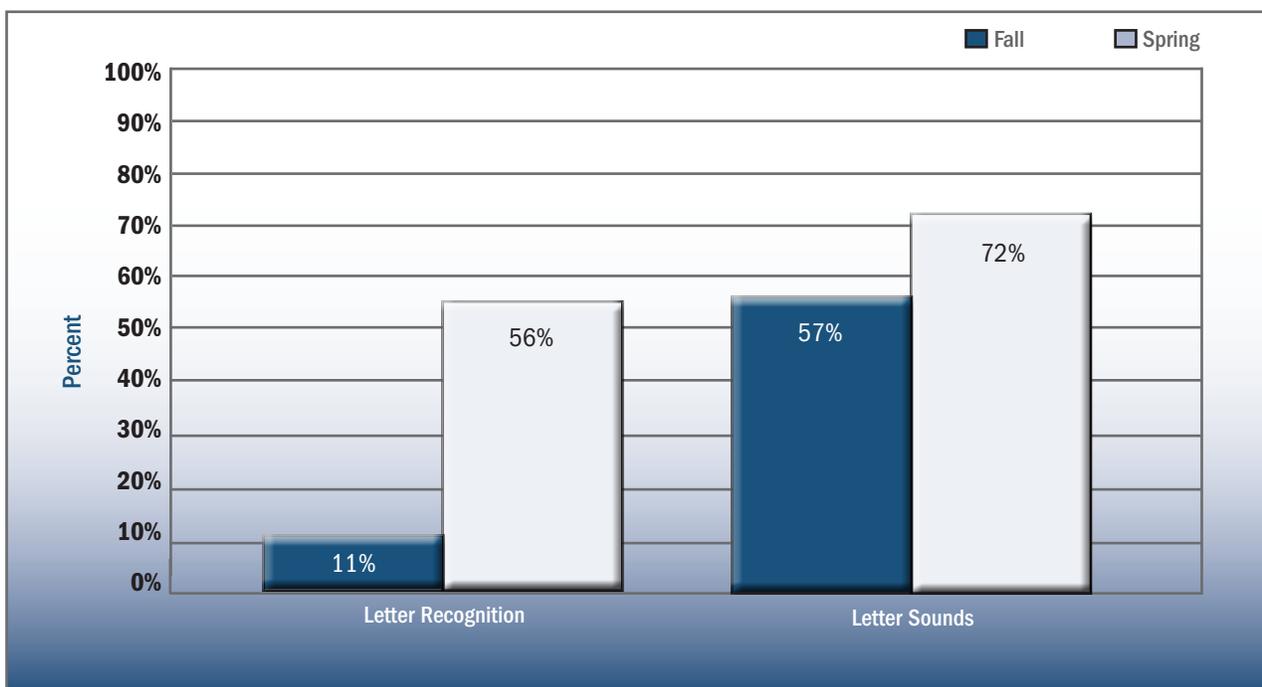
In the Phonological Awareness module, children in *Big Day for PreK* classrooms made statistically significant improvements in all subtests. Rhyme Identification scores increased significantly ( $t(122) = 6.08$ ,  $p < .001$ ), as did Sound Matching scores ( $t(122) = 9.89$ ,  $p < .001$ ), with the percentage of children reaching the Developed stage increasing from 18% to 45% and 24% to 64%, respectively.

Scores on Phonological Segmentation increased significantly ( $t(122) = 5.61$ ,  $p < .001$ ), as did scores on Blending ( $t(121) = 5.79$ ,  $p < .001$ ), with children who reached the Developed stage increasing from 34% to 64% on Phonological Segmentation and from 71% to 98% on Blending. (Graph 3)

In the Mathematics module, children in *Big Day for PreK* classrooms made statistically significant gains in all subtests. Number Sense scores increased significantly ( $t(111) = 4.58$ ,  $p < .001$ ), as did Geometry scores ( $t(111) = 6.93$ ,  $p < .001$ ), with the percentage of children reaching the Developed stage increasing from 27% to 43% and from 45% to 81%, respectively. Scores on Sorting increased significantly ( $t(111) = 8.37$ ,  $p < .001$ ), with the percentage of students reaching the Developed stage increasing from 34% to 78%. Finally, scores on Patterns also increased significantly ( $t(111) = 5.78$ ,  $p < .001$ ), as did the percentage of children who attained the Developed stage, which increased from 48% to 78% ( $t(122) = 9.89$ ,  $p < .001$ ). (Graph 4)

**Graph 2.**

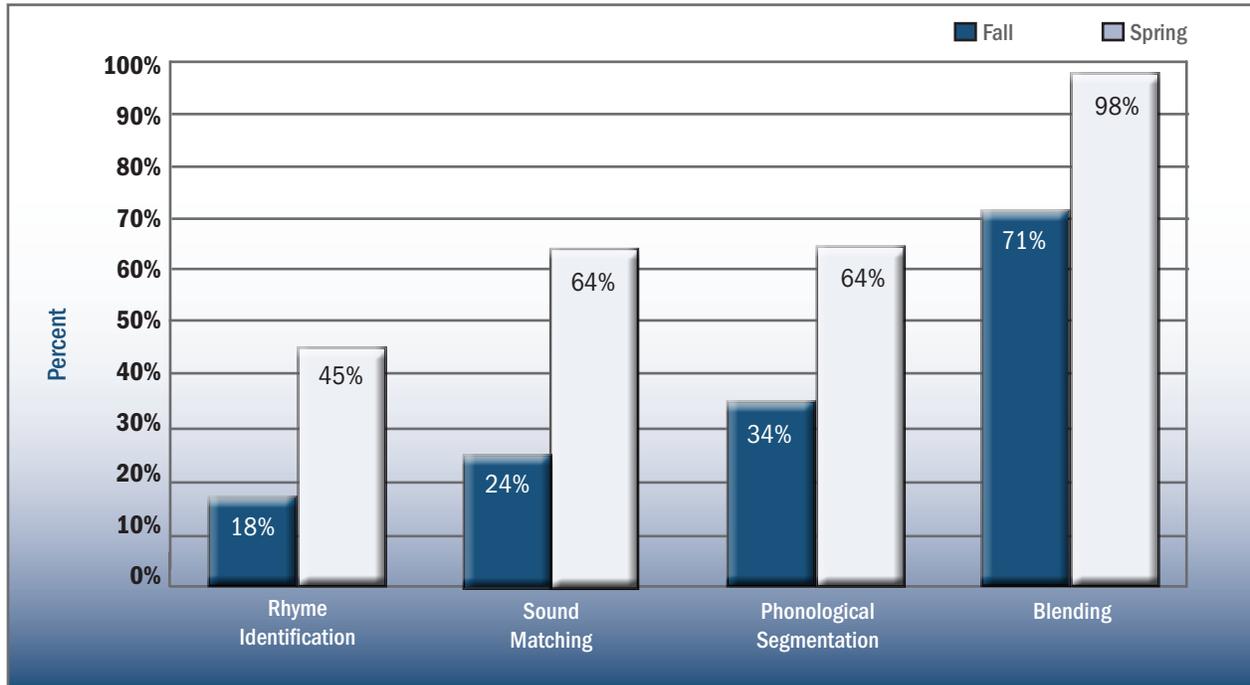
New Haven Public Schools Head Start *Big Day for PreK* Students, (N = 123)  
Percent of Students Who Attained the Developed Stage on the Scholastic Early Childhood Inventory (SECI),  
Alphabet Knowledge, 2011–2012



Note: Letter Recognition (N = 120), Letter Sounds (N = 46). Letter Naming Fluency (N = 44) was not included on this graph as no children attained the Developed stage.

**Graph 3.**

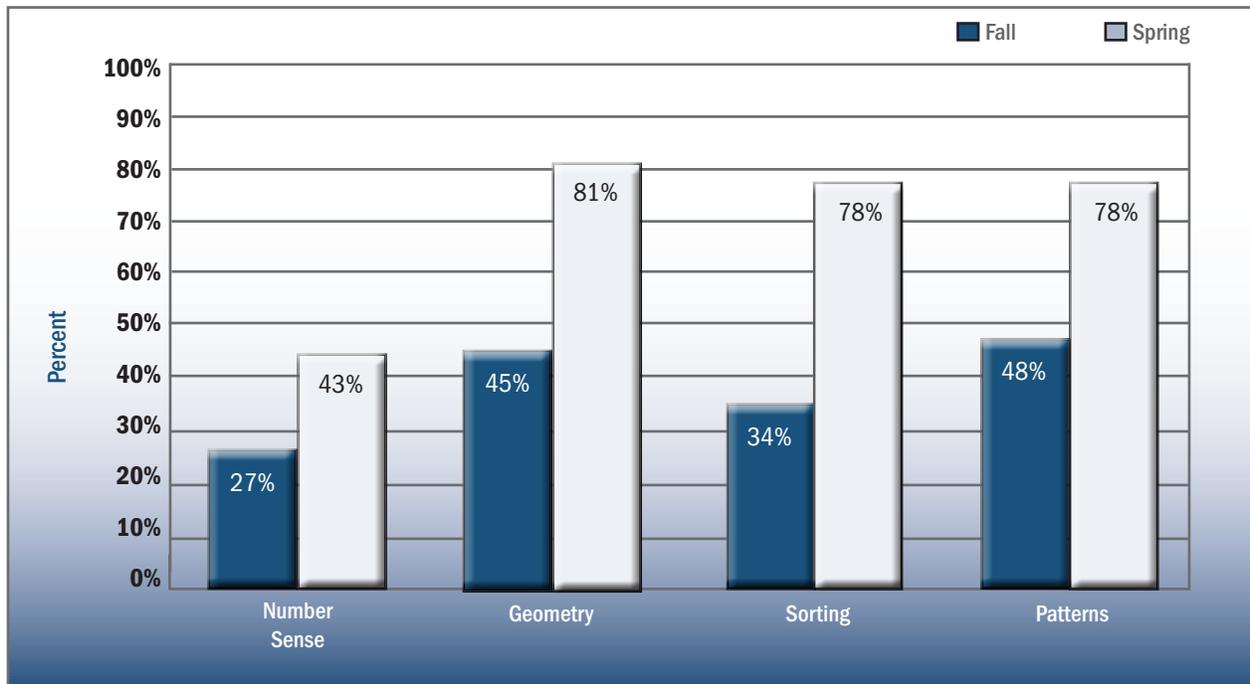
New Haven Public Schools Head Start *Big Day for PreK* Students, (N = 123)  
Percentage of Students Who Attained the Developed Stage on the Scholastic Early Childhood Inventory (SECI),  
Phonological Awareness, 2011–2012



Note: Rhyme Identification (N = 123), Sound Matching (N = 123), Phonological Segmentation (N = 123), Blending (N = 122)

**Graph 4.**

New Haven Public Schools Head Start *Big Day for PreK* Students, (N = 123)  
Percentage of Students Who Attained the Developed Stage on the Scholastic Early Childhood Inventory (SECI),  
Mathematics, 2011–2012



Note: All Mathematics Subtests (N = 112)

### In-Classroom Observation Protocol Results

A total of 17 classrooms were observed after teachers had implemented the *Big Day for PreK* curriculum for at least six months. Results indicate that implementation varied across classrooms, with a number of classrooms exceeding or meeting expectations on a number of the subscale areas.

Overall, classrooms scored the highest on Classroom Environment and Instructional Materials subscales, followed by Classroom Management and Instruction subscales. The Family Involvement and Assessment subscales showed the least fidelity to implementation of the six subscales. Although the average scores across all subscales ranged from 32% to 63%, the majority of classrooms were approaching or meeting expectations on all subscale indicators. (Table 1)

**Table 1.**

New Haven Public Schools Head Start *Big Day for PreK* Classrooms (N = 17)  
In-Classroom Observation Protocol, Fidelity of Implementation Score, Spring 2012

Subscale Area	Average Score	Total Possible	Percentage
Classroom Environment	15.0	24	63%
Instructional Materials	7.0	12	58%
Classroom Management	8.1	16	51%
Instruction	13.7	28	49%
Family Involvement	2.8	8	35%
Assessment	3.8	12	32%
<b>OVERALL</b>	<b>50.4</b>	<b>100</b>	<b>50%</b>

### CONCLUSION

This report summarizes the findings of a mixed-methods evaluation of *Big Day for PreK* conducted during the 2011–2012 school year in New Haven, Connecticut. Results indicate that *Big Day for PreK* classrooms made statistically significant improvements in the quality of language and literacy instruction and children’s progress towards kindergarten school readiness after one year in the program.

Teachers were in their first year of implementing *Big Day for PreK*, and therefore still learning to use the curriculum and adjust their teaching. Although teachers faced challenges, and were concerned with the complexity of implementation and the time required to conduct prescribed activities, as well as other district-mandated instruction and assessment requirements, classrooms and children demonstrated positive growth and improvement. Specifically, results from the ELLCO Pre-K showed substantial improvements in the areas of Curriculum, Language Environment, and Books and Book Reading. Results from the SECI demonstrate children’s growth over the school year in areas of language, literacy, and mathematics, and are suggestive of children’s readiness for kindergarten in multiple areas of the curriculum. Overall, results indicate that *Big Day for PreK* had a positive impact on the quality of teachers’ language and literacy instruction and on children’s school readiness.

# RESEARCH UPDATE



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