

Head Start Language & Literacy Kit Efficacy Study

Charlotte, NC
2005–2006



ABSTRACT

Over the course of six months using the Head Start Language & Literacy Kit from LeapFrog SchoolHouse, preschool students at St. John's Head Start in Charlotte, North Carolina, made dramatic gains in the key early literacy skills of letter identification, phonological processing, and print awareness. Children at this site demonstrated considerably more growth than children who did not use LeapFrog SchoolHouse materials.

These findings suggest that the explicit, multisensory instruction delivered through the Head Start Language & Literacy Kit plays an essential role in building a foundation for reading in young children attending Head Start programs.

INTRODUCTION

Congress's 1998 reauthorization of the Head Start Act reflected growing concern about the program's effectiveness in preparing young, at-risk children for school. The legislation revised the program's statement

of purpose to emphasize school readiness; required the development of new education performance standards; and mandated a Head Start Impact Study to examine, among other factors, the program's effectiveness in developing kindergarten-ready learners.¹ As Congress considers reauthorization in 2007, the legislative agenda again highlights the importance of promoting children's cognitive, as well as social and emotional, development.

Concern about the school readiness of Head Start children responds to research demonstrating the importance of engaging young children in literacy-rich activities (Gambrell & Mazzoni, 2001). Learning to read is a process that starts long before formal reading instruction occurs. It begins with oral language development and interaction with print in the environment and relies upon mastery of specific prereading skills such as phonemic awareness, concepts of print, and the alphabetic principle. Understanding of the conventions and functions of print provides the foundation for graphophonemic knowledge and word reading (Gunn, Simmons, & Kameenui,

¹ Initial findings suggested small to moderate positive impacts on Head Start children in several cognitive domains, including prereading, prewriting, and vocabulary; however, phonological awareness was among the cognitive domains that appeared not to be positively impacted by participation in Head Start.



1995). Knowledge of letter names has been identified as a strong predictor of kindergarten reading achievement (Share, Jorm, Maclean, & Matthews, 1984), and letter-sound knowledge is recognized as critical to developing alphabetic understanding (Foulin, 2005). Furthermore, students' ability to manipulate phonemes through tasks such as rhyming, blending, and segmentation has been clearly tied to successful reading acquisition (Adams, 1990; Bradley & Bryant, 1983; Gough & Tunmer, 1986; Snider, 1997). Explicit instruction and repetitive practice in these skills are particularly important for at-risk children, as research suggests they are less likely than their more advantaged peers to be exposed regularly to the kinds of literary experiences that build these skills (Cunningham & Stanovich, 1990; Foorman, Francis, Fletcher, Mehta, & Schatschneider, 1998).

LeapFrog SchoolHouse's Head Start Language & Literacy Kit was developed specifically to support early literacy development in students attending Head Start programs. The program uses interactive, technology-based components to teach prereading skills, including concepts of print, phonemic awareness, and letter names and sounds. Included with the materials are easy-to-use teaching strategy cards aligned to Head Start outcomes, which outline activities for teachers and assistants to implement using specific components.

As part of a larger study of LeapFrog SchoolHouse materials in Head Start programs, this six-month study investigated the effectiveness of the Head Start Language & Literacy Kit with children in four classrooms at one Head Start center in Charlotte, North Carolina, comparing their language and literacy development with that of children not using the materials at a similar center nearby.

METHOD

Sample

Located near downtown Charlotte, North Carolina, St. John's Baptist Church Head Start is one of 13 Head Start sites run by Bethlehem Center of Charlotte, a social services agency affiliated with the United Methodist Church. Language and literacy data were collected from St. John's and from a second Head Start center in order to compare the progress of children using LeapFrog SchoolHouse materials with that of similar children who were not exposed to the materials. The comparison site, which is also part of the Bethlehem Center network, is less than five miles away from St. John's.

Spring observation data were collected on a total of 127 preschool children at the two sites.² Seventy-one three- and four-year-olds within the four classrooms at St. John's worked with the LeapFrog SchoolHouse materials. Approximately three-quarters of these children were African-American, but the site also served children of Hispanic origin, as well as a number of children from Somalia and other African countries. At the nearby comparison site, there were 56 three- and four-year-olds across three classrooms; the vast majority of these children were African-American, with a smaller number of children of Hispanic origin. Without exception, children at both centers came from low-income backgrounds, qualifying

² Both centers started in August with fewer students than were ultimately enrolled by spring. At St. John's, the number of students assessed in the fall was 60, growing to 71 by spring; at the comparison site, the number of students assessed in the fall was 53, growing to 56 by spring. At St. John's, the four classrooms consisted of two rooms with three-year-olds, one room with four-year-olds, and one room containing a mix of three- and four-year-olds. The comparison site housed two rooms of three-year-olds and one room of four-year-olds. The ratio of three-year-olds to four-year-olds was similar across the two sites. At both sites, several of the children turned five years old over the course of the school year.

for Head Start by virtue of family incomes that fell at or below the federal poverty line.

Treatment

The teachers at St. John's participated in two days of professional development, one in mid-October and another in early November.³ These sessions were led by a member of the LeapFrog SchoolHouse professional development team who also provided a day of coaching in early spring 2006.

Both the St. John's site and the comparison center used Teaching Strategies, Inc.'s Creative Curriculum, the basal framework for learning adopted in all of Bethlehem Center's Head Start programs. In addition, teachers in the four St. John's classrooms used components included in the Head Start Language & Literacy Kit for a minimum of 15 minutes per day, five days per week, from November 2005 through May 2006. In all four classrooms, children interacted with the components through a combination of structured, teacher-led activities and free play. Tools such as the *Fridge Phonics*[™] magnetic letter set, plush interactive learning aids, and *My First LeapPad*[®] interactive books were first introduced to the group at circle time and then made available at centers or stations. Platforms such as the *LeapMat*[™] learning surface and the *LeapPad* personal learning tool (PLT) were used one-on-one or in small groups led by a teacher. Teachers integrated LeapFrog SchoolHouse materials into routine moments throughout the day, introducing a *Fridge Phonics* letter at transition time or playing the Little Ears phonemic awareness music CD in the background during center activity playtime. In addition, beginning in January 2006, students took home materials such as the *Fridge Phonics* magnetic letter set and the *Letter Factory*[™] video through a rotating family involvement program designed to engage parents and siblings in the learning experience.

During observation periods in fall 2005 and spring 2006, children at both the St. John's site and the comparison center were evaluated

by their teachers on 71 specific language and literacy skills included in the Galileo Preschool assessment, a tool that is closely aligned to key indicators within the Head Start Framework. Each skill falls into one of 13 broader categories (Appendix A). For each of the 71 skills, individual children were placed within one of four categories along a readiness continuum: "Learned," "Ready Now," "Ready Soon," or "Ready Later."⁴

RESULTS

Children at the St. John's Head Start center evidenced dramatic learning between the fall and spring observation periods, growing more than their peers at the comparison site in nearly every capability related to print awareness, phonological processing, knowledge of the alphabet, and other early reading skills.

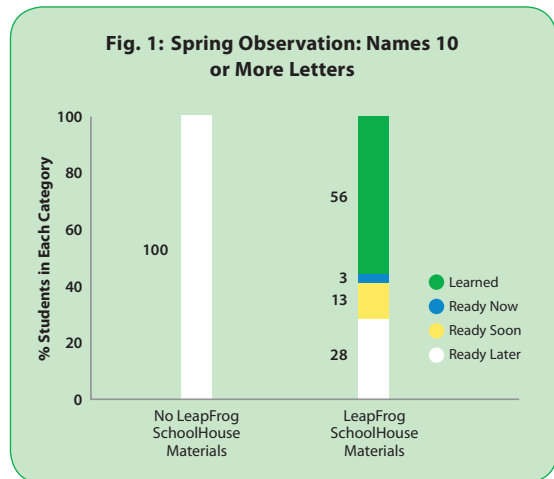
This report examines the children's growth in five skills tied to early reading readiness: one skill each from the Galileo assessment categories of phonological awareness, print awareness, and alphabet knowledge, as well as two skills from the category of early reading. Skills in other areas, such as the categories of early writing or speaking and communicating, are not included in the analysis because growth in those skills is unlikely to be uniquely tied to use of LeapFrog SchoolHouse materials. In most of the skill areas analyzed, 100% of the children at both sites were categorized as "Ready Later" during the fall observation period. Therefore, the following graphs depict the spring observation period only, highlighting the difference between the two groups with respect to their progress along the readiness continuum.

In the fall, only 7% of the St. John's children could name ten or more letters of the alphabet. After using the materials, more than 56% of them fell into the category of "Learned" with

³ Throughout this report, "teacher" is used to describe both lead teachers and assistant teachers at St. John's. Three of the four classrooms had one lead teacher and an assistant; the fourth classroom had two co-teachers.

⁴ All data were provided by Bethlehem Center Head Start and have not been independently verified by LeapFrog SchoolHouse.

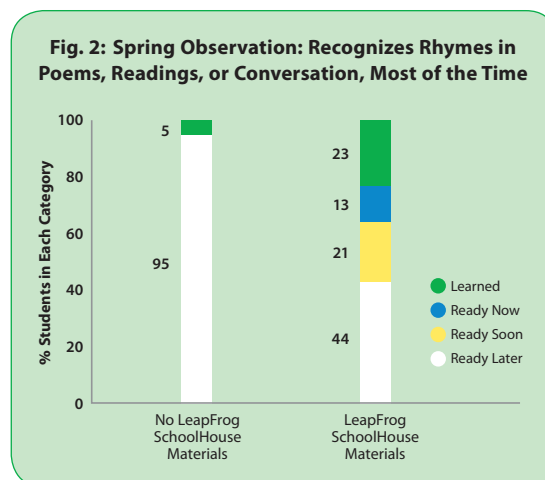
respect to this capability, with an additional 16% viewed as being “Ready Now” or “Ready Soon,” illustrating a trend of steady growth on the part of the St. John’s children. By contrast, none of the children at the comparison site had progressed beyond the “Ready Later” stage during either the fall or spring observation period (Figure 1).⁵



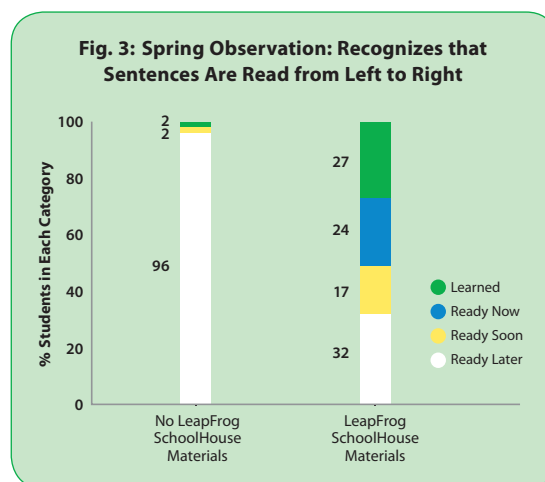
St. John’s children also benefited from practice with the key phonological awareness skill of rhyming. In the fall, none of the St. John’s students or their comparison counterparts qualified as having “Learned” to recognize rhymes in poems, readings, or conversations. By the spring, more than 23% of students exposed to LeapFrog SchoolHouse fell into the “Learned” category as compared with 5% of children at the site without the materials. An additional third of the St. John’s students had moved into the “Ready Now” and “Ready Soon” categories, whereas the remainder of the comparison group (95%) was still characterized as “Ready Later” (Figure 2).

In addition, children exposed to the LeapFrog SchoolHouse materials showed noteworthy growth in print awareness. In the fall, no students in either group demonstrated an understanding that sentences are read from left to right. By the spring, 27% of the children at St. John’s fell into the “Learned” category

⁵ Due to rounding, percentages may not add up to 100%.

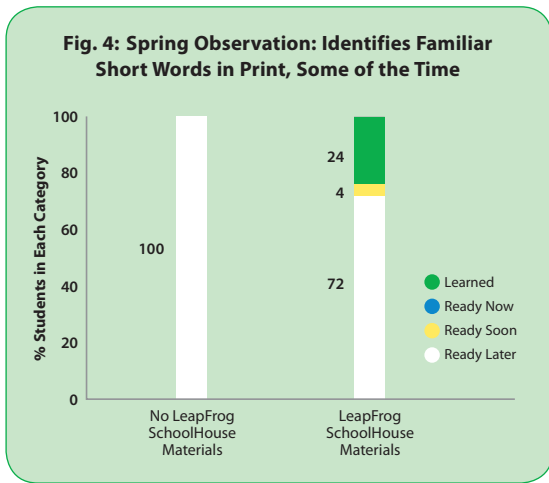


with respect to this skill, with another 41% of the children being categorized as either “Ready Now” or “Ready Soon.” By contrast, 96% of children at the comparison center still fell into the “Ready Later” category (Figure 3).

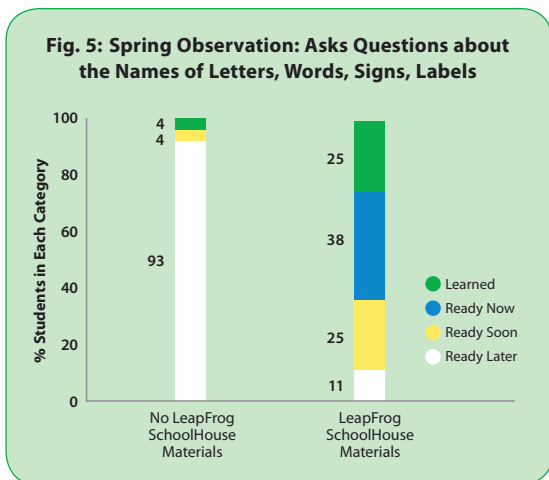


Furthermore, the children who used LeapFrog SchoolHouse’s Head Start Language & Literacy Kit exhibited a growing ability to recognize sight words in books and in the environment, a skill that none of the children in either group had mastered in the fall. This development was captured in the Galileo assessment results, which showed that by year end, 24% of the students at the St. John’s site fell into the “Learned” category with respect to their ability to identify familiar short words in print some of the time, whereas

all of the children at the comparison site were still considered “Ready Later” to master this skill (Figure 4).



The children’s emerging print recognition was complemented by their growing curiosity about print. One St. John’s teacher remarked on the children’s excitement as “[they] were able to recognize all of their letters and point to and identify the print in our classroom.” Students began to ask questions about the names of letters, words, signs, and labels around them. According to the Galileo assessment of this skill, a quarter of the St. John’s students were considered to have “Learned” this kind of questioning by the spring, compared with only 4% of their peers at the site without the materials. An additional 63% of the children



at St. John’s were also considered either “Ready Now” or “Ready Soon” to master this type of questioning, whereas 93% of the children at the comparison site still fell into the category of “Ready Later” (Figure 5).

A pattern can be seen with respect to these five measures, as well as others in the Galileo language and literacy summary: students at the St. John’s site moving at an accelerated pace toward the “Learned” end of the readiness spectrum as compared with peers who did not use the LeapFrog SchoolHouse materials.

Teacher and Family Responses

Feedback from the St. John’s teachers echoes the story told by the Galileo language and literacy data. Teachers remarked on the high degree of attention that the children gave to the “child-friendly, colorful” LeapFrog SchoolHouse components. In the words of one teacher, “the materials kept the interest of the children even though they were being constantly used on a daily basis.”

The four St. John’s teachers who responded to a year-end survey all felt that the program was “very effective” in teaching letter identification.⁶ All four believed the program was also “very effective” or “effective” in teaching letter-sound correspondence and in encouraging focus and concentration in the children. Three of the four thought the materials were “effective” or “very effective” in developing phonological awareness in the children.⁷

Impact on English Language Learners

All four teachers were impressed by the efficacy of the program not only with the children overall, but especially with respect to individual children or groups of children in their classrooms. In particular, they felt that the materials, which included several components

⁶ Survey respondents were asked to rank the effectiveness of the materials on a four-point scale, ranging from 1 (“not effective at all”) to 4 (“very effective”).

⁷ The fourth teacher identified the LeapFrog SchoolHouse materials as being “moderately effective” in developing phonological awareness in the children.

with Spanish-language audio support, helped their English language learners with language acquisition. These children, who face the challenge of mastering separate languages both at home and at school, benefited from the explicit instruction and repetition embedded in the LeapFrog SchoolHouse materials. One teacher remarked:

The biggest improvement was with our non-English-speaking children. [They] enjoyed [Hug and Learn™ Leap] the most, calling him “Mr. Leap.” We had Spanish-speaking “Mr. Leaps,” and the first time our Hispanic children played with him, their faces and smiles beamed.

This same teacher described the exciting developments among a group of three Bantu children from Somalia:

All three would gravitate toward the *Fridge Phonics™* upon morning arrival, [and] I definitely think it helped them develop their English skills. One of these children also would play with “Mr. Leap.” He would sit with a Hispanic child and pass “Mr. Leap” between them. It appeared the two [children] had developed their own language when doing this activity.

A different teacher illustrated the power of the materials with a story about one boy in particular:

There was a three-year-old boy in my class who spoke absolutely no English. For a while we thought he had a possible delay, until we introduced the LeapFrog material. I went on maternity leave at the end of November and came back after the new year, and to my surprise he was able to point out and say all the letters in the alphabet in and out of sequence, and he knew his colors in English. He was also able to communicate verbally using some basic English phrases. That was a wonderful thing!

All the teachers appreciated the flexible nature of the materials, which could be used in whole groups, in small groups, or by individual students during free play. They were able to seamlessly integrate components into existing centers such as Housekeeping (plush interactive learning aids), Writing Table (*Fridge Phonics* magnetic letter set, which the children used to learn how to spell their names), and Listening Center (*Leap Pad®* PLTs with interactive books). One teacher also reported regularly using the teaching strategy cards included with the program to “help me get creative with the language and literacy part of my lesson plan.”

Family Involvement

Feedback from the children’s families was equally positive regarding the impact of the Head Start Family Involvement Kit, which supplied backpacks containing *Fridge Phonics* magnetic letter sets and *Letter Factory™* videos for students to take home on a regular basis. Ninety-three percent of parents who responded to a survey conducted by St. John’s agreed or strongly agreed that “after using LeapFrog, my child learned new letters and the sounds of letters.” All the surveyed parents indicated that they would continue to use the LeapFrog materials at home to enhance their children’s literacy development.

Teachers described very positive input from parents who praised the family involvement materials. One teacher in the combined three- and four-year-old classroom explained that “the parents of our children and their siblings took an active part in learning together with the LeapFrog SchoolHouse home connection program.” Parents themselves remarked on this trend, with one mother observing:

It wasn’t only my four-year-old son who enjoyed [the materials]. It was the whole family. With this experience, my son has now mastered the alphabet, and his young brothers, three and one, learned a lot. Thank you very much for your help to prepare my children to learn.

DISCUSSION

As illustrated throughout the Galileo assessment data, feedback from teachers, and comments from parents, children at St. John's benefited dramatically from interacting with materials in LeapFrog SchoolHouse's Head Start Language & Literacy Kit. Compared with peers at a nearby center who did not use the program, St. John's children showed greater growth in prereading skills related to phonological awareness, concepts of print, and the alphabetic principle. Furthermore, children at the St. John's site outpaced their peers with respect to their curiosity and questioning about print in the environment.

Building the foundation for reading is a critical element of any preschool program. Head Start has long focused on a comprehensive approach to promoting the health, welfare, and learning of low-income children and their families. Recently, a great number of Head Start programs are paying more explicit attention to developing children's school readiness, particularly with respect to early literacy. As demonstrated by the results of this study, the Head Start Language & Literacy Kit is an effective, engaging tool that can be used to deliver explicit, multisensory instruction in prereading skills. Through use of the program, these children are making important progress toward the goal of academic readiness for kindergarten. In the words of one teacher, "The children learned so many different things with LeapFrog...it was a joy to be a part of this program."

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APPENDIX A

Galileo Preschool Assessment: Language and Literacy Categories

*Listening and Understanding—
Stories, Songs, Poems, and Directions (5 skills)*

*Book Knowledge and Appreciation—
Story Telling (3 skills)*

*Listening and Understanding—
Receptive Vocabulary (7 skills)*

*Book Knowledge and Appreciation—
Story Reasoning (3 skills)*

*Speaking and Communicating—
Self-Expression (3 skills)*

*Book Knowledge and Appreciation—
Interest in Books (6 skills)*

*Speaking and Communicating—
Conversation (4 skills)*

Print Awareness and Concepts (5 skills)

*Speaking and Communicating—
Expressive Vocabulary (8 skills)*

Early Reading (8 skills)

Early Writing (6 skills)

*Phonological Awareness—
Sound Recognition (9 skills)*

Alphabet Knowledge (4 skills)

ABOUT US: LeapFrog SchoolHouse offers research-based programs designed specifically for the classroom. We publish PreK–grade 8 curriculum and assessment content that is correlated to state standards and enhanced by our proprietary technology-based personal learning tools (PLTs).

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