

# Effectiveness Data for the Growing Readers Early Literacy Curriculum

## Pilot Sample

The Growing Readers Early Literacy Curriculum was piloted with 82 preschool teachers and 630 children in 31 classrooms. Ten of the classrooms were in Florida, nine were in Maine, and twelve were in Michigan. (See **Table 1**, Pilot Sample Sizes.) All the lead teachers involved in the pilot held a bachelor's degree or higher, and they were all white women with the exception of the Florida teachers, 25% of whom were African-American women.

The programs represented in the pilot varied by type and geographic location. The Florida program was a state-funded preschool serving an urban and a rural population. Maine's program served a rural population and at the time of the pilot was an Early Reading First grantee. The Michigan site, a Head Start program, served children and families in an urban area.

	Teachers	Children	Classrooms
Florida	37	157	10
Maine	18	134	9
Michigan	27	339	12
Total	82	630	31

% Girls	45.5%
Average age	4.0 years
% Special needs	23.7%
% ESL	2.4%
% Previous preschool	51.9%

Children in the pilot sample were almost all white, with an average age of 4 years old; 45% were girls, 23.7% had special needs, and half (51.9%) had attended preschool in the past. All but 2.4% of the sample used English as a primary language. (See **Table 2**, Characteristics of Children in Pilot Sample.) A comparison of child characteristics across the three programs revealed significant differences in average age, special needs, and previous preschool experience.

Compared to other sites, the Florida program had significantly older children, more children with special needs, and more children who had been in preschool for a longer time. Over 40% of the sample Florida children were identified as having special needs.

## Method: Curriculum Delivery

Pilot teachers were trained to administer the Growing Readers small-group literacy activities in comprehension, phonological awareness, alphabetic principle, and concepts about print during two-day workshops in the summer of 2003. Between November 2003 and April 2004, pilot teachers presented the Growing Readers small-group activities at a rate of approximately three per week. Average group size was 7.6 children per small group.

In early fall 2003, pilot children were given the Early Literacy Skills Assessment, an assessment tool in the form of a storybook designed to show children's development levels (early emergent, emergent, and competent emergent) in the same four literacy content areas as the Growing Readers Curriculum (comprehension, phonological awareness, alphabetic principle, and concepts about print). Growing Readers activities are organized around the same three developmental levels represented in the Early Literacy Skills Assessment. Teachers were then able to select literacy activities to present to their small groups of children based on the children's fall Early Literacy Skills Assessment results and on teachers' ongoing observations of children's literacy skills.

Throughout the pilot year, teachers kept logs of the small-group literacy activities they implemented in their classrooms. The logs included both activity ratings and written comments. Focus groups were held at each pilot site to capture teachers' concerns and observations about the curriculum activities. Finally, all children were given the Early Literacy Skills Assessment again in the spring of 2004, at the end of their program year.

## Results: Curriculum Validation

**Teacher response validates curriculum methods.** Each time teachers engaged children in one of the small-group literacy activities, in their logs they answered three questions:

1. How easy was this activity to do with children?
2. How clear were the instructions on how to do this activity?
3. How interested/involved were the children?

They answered the questions using a rating scale of 1 to 5, with 1 as the low end of the scale, "Not at all," and 5 as the high end of the scale, "Very." Altogether, across the pilot year, teachers rated the comprehension activities, on average, 4.4 for ease of use, 4.5 for clarity, and 4.1 for involvement; the phonological awareness activities, on average, 4.0 for ease of use, 4.1 for clarity, and 3.6 for involvement; the alphabetic principle activities, on average, 4.3 for ease of use, 4.4 for clarity, and 4.0 for involvement; and the concepts about print activities, on average, 4.0 for ease of use, 4.6 for clarity, and 4.0 for involvement. (See **Table 3**, Teacher Ratings of Growing Readers Activities.)

Literacy Content Area	Mean Rating (1-5 Scale)		
	Ease of Use	Clarity	Involvement
Comprehension	4.4	4.5	4.1
Phonological Awareness	4.0	4.1	3.6
Alphabetic Principle	4.3	4.4	4.0
Concepts About Print	4.0	4.6	4.0

The degree to which teachers implemented Growing Readers small-group literacy activities influenced their ratings. Overall, teachers who implemented the most small-group literacy activities rated the children's involvement in the activities significantly higher than the teachers who implemented fewer small-group literacy activities across the pilot year. (See **Table 4**, Overall Ratings For Child Involvement Based on Degree of Curriculum Implementation)

In their logs, teachers tended to comment about activities that went particularly well ("They were all so involved that they all wanted to show me their books at the same time!"), surprising child actions and ideas ("They liked the colors and talked about this book more than I expected they would"), activity adaptations they made to suit their children ("I changed 'Hickory, Dickory Dock' to include their own names, and they loved it!"), and problems they encountered ("The children were not interested and said 'This is a baby book. Where are all the words?'"). Overall, 78% of the comments were positive and 22% were critical. For a representative sample of these comments, see **Table 5**, Comments About Growing Readers Activities From Teacher Logs.

Number of Activities Implemented	Number of Teachers	Mean Child Involvement Rating (1-5) Scale
1-18	19	3.8
19-32	19	3.8
33-48	17	4.2

Further, teachers voiced concerns and shared successes during focus group sessions that were held and recorded at each site. Based on teacher ratings, written comments, and focus group discussions, 27 of the 90 small-group activities were rewritten to improve child involvement and, in some cases, to focus more directly on the given literacy topic.

**Impact on children validates curriculum objectives.** The children in the pilot study who participated in the Growing Readers Early Literacy Curriculum between November 2003 and April 2004 made significant gains in the four curriculum

**Table 5. Comments About Growing Readers Activities From Teacher Logs**

Content Area	Positive Comments	Critical Comments
Comprehension	<ul style="list-style-type: none"> <li>• “When I asked ‘What colors do you see?’ they described the colors in words rather than pointing!”</li> <li>• “The children were very involved in the story this time. They actually were taking turns predicting what was going to happen next to (aid) a visually impaired classmate.”</li> <li>• “The children made wonderful observations about this book.”</li> <li>• “They enjoyed drawing their favorite part (of the story) and telling about what they drew.”</li> </ul>	<ul style="list-style-type: none"> <li>• “This activity seemed redundant, but I realize repetition is good.”</li> </ul>
Phonological Awareness	<ul style="list-style-type: none"> <li>• “They really enjoyed personalizing ‘Hickory, Dickory, Dock!’”</li> <li>• “This activity went well. The children were very excited. When we did ‘See-Saw Margery Daw,’ we alternated going up and down on our pretend seesaw.”</li> <li>• “They really liked this. They loved making up words that rhymed.”</li> <li>• “It took a while for the children to want to change the words to familiar nursery rhymes, but once they caught on they were successful with this activity.”</li> </ul>	<ul style="list-style-type: none"> <li>• “The children had difficulty focusing on the rhyming words.”</li> </ul>
Alphabetic Principle	<ul style="list-style-type: none"> <li>• “While doing this activity, I discovered that one child recognized names without letter-link pictures!”</li> <li>• “The children were very interested in the letter that begins their name. They listened to the story but were still focused on the letters in their name.”</li> <li>• “Lots of remembering details in the story, predicting what letter comes next, and recognizing letters in their own and others’ names.”</li> <li>• “Nice letter-to-picture association.”</li> </ul>	<ul style="list-style-type: none"> <li>• “A bit difficult for the younger children to draw pictures related to the letter.”</li> </ul>
Concepts About Print	<ul style="list-style-type: none"> <li>• “The children love drawing and they think it is awesome to be making books.”</li> <li>• “They were very interested in making their own books. They all came up with their own stories and what to put in their books.”</li> <li>• “The children learned repetitive phrases: <i>Sit under the trees and smell the flowers.</i>”</li> <li>• “They enjoyed the book and loved matching the border patterns to the other objects in the book. They also enjoyed the painting and a few understood the concept of illustrating text.”</li> </ul>	<ul style="list-style-type: none"> <li>• “The children did well on naming the book parts but had a hard time manipulating the materials and organizing them into a book.”</li> </ul>

areas around which the scope and sequence of the Growing Readers Curriculum is structured: comprehension, phonological awareness, alphabetic principle, and concepts about print. The significant change in their scores on the Early Literacy Skills Assessment from fall to spring illustrates the effectiveness of the Growing Readers Curriculum as an early literacy intervention. (See **Table 6**, Early Literacy Scores from Fall to Spring, by Age.)

Moreover, when hierarchical linear modeling (HLM) analysis was used to examine whether the number of small-group times delivered and the number of teachers per classroom delivering them influenced children’s gains on the Early Literacy Skills Assessment, the results were positive. With a sample of 460 children in 30 classrooms controlled for differences

in children's age, gender, ethnicity, special need status, and initial literacy level, and for differences in teachers' education levels and class composition based on the above student characteristics, the analysis found that the number of small-group literacy activities children received is significantly associated with children's gains on the Early Literacy Skills Assessment in comprehension, phonological awareness, and alphabetic principle, and the number of teacher per classroom involved in implementing the literacy activities is significantly related to children's gains in comprehension and concepts about print. (See **Table 7**, Early Literacy Skills Assessment Gains Based on Degree of Curriculum Implementation.)

**Table 6. Early Literacy Scores from Fall to Spring, by Age**

Age Group	Scale	Mean		Statistical Significance
		Fall	Spring	
Age 3	Comprehension	1.07	1.20	$p < .001$
	Phonological Awareness	2.36	5.93	$p < .001$
	Alphabetic Principle	1.20	1.54	$p < .001$
	Concepts About Print	1.20	1.54	$p < .001$
Age 4	Comprehension	1.14	1.42	$p < .001$
	Phonological Awareness	5.65	10.29	$p < .001$
	Alphabetic Principle	1.49	1.99	$p < .001$
	Concepts About Print	1.46	1.99	$p < .001$

*Note.* Based on paired *t* tests, mean for phonological awareness is the number of items correct out of the maximum of 19. *N* of pairs varied from 118 to 138 for the age 3 group, and 269 to 300 for the age 4 group. Age 3 = 36–47 months old, and age 4 = 48–59 months old at the beginning of the 2003–2004 school year.

*In summary, the Growing Readers Curriculum comprises a set of early literacy small-group activities that actively engage young children at various levels of development, are clear and easy for teachers to use, and significantly impact children's literacy knowledge and understanding.*

**Table 7. Early Literacy Assessment Gains Based on Degree of Curriculum Implementation**

Influencing Factor	Content Area in Which Children Made Gains	Mean Gain (1-3 Scale)	Statistical Significance
Number of Comprehension Activities Implemented	Comprehension	.19 (a)	4.1
Number of Teachers Implementing Activities per Classroom	Comprehension	.16 (b)	3.6
Number of Phonological Awareness Activities Implemented	Phonological Awareness	.22 (a)	4.0
Number of Concept About Print Activities Implemented	Alphabetic Principle	.36 (a)	4.0
Number of Teachers Implementing Activities per Classroom	Concepts About Print	.12 (b)	4.0

(a) Mean gain shown for an increase of every 10 activities implemented.

(b) Mean gain shown for an increase of every 1 teacher implementing activities.

