

RESEARCH UPDATE

3 Public School Districts Indiana, Massachusetts, Michigan

System 44[®] English Language Learners Demonstrate Significant Improvement in Decoding and Word-Reading Fluency

PROFILE

District: Public school districts in central Indiana, southeastern Michigan, and eastern Massachusetts

Evaluation Period: 2009–2010 School Year

Grades: 3–11

Model: *System 44* Standalone Classrooms

Assessment: *Scholastic Phonics Inventory* (SPI), Woodcock Johnson III (WJ III), and *Scholastic Reading Inventory* (SRI)

DISTRICT CHARACTERISTICS

This study was designed to evaluate the impact of the *System 44* intervention program in three public school districts, situated in central Indiana, southeastern Michigan, and eastern Massachusetts. Total student enrollment in these three districts varied from 12,220 to 16,536 students, including a diverse mix of English language learners. Across the three districts, a total of 331 students participated in *System 44* during the 2009-2010 school year. Approximately 170 of the 331 students were classified as English language learners. In order to better understand the impact of *System 44* for English language learners who have been identified for reading intervention, this Research Update focuses solely on the 170 English language learners. Additional Research Updates will focus on the results for the overall sample of students served in this study.

OVERVIEW

During the 2009-2010 school year, three public school districts in Indiana, Michigan, and Massachusetts piloted *System 44* for their most challenged readers who had not yet mastered basic phonics and decoding skills.

Implementation Model

System 44 was implemented using a standalone model in all three districts. In one district, *System 44* was implemented in a 60-minute classroom period. In this model, a 10-minute whole-group introduction, in which the teacher led a short warm-up activity to engage students and build phonemic awareness and phonics skills, was followed by 25-minute rotations on the instructional software and in small-group instruction. In the other two districts, *System 44* classroom periods ranged from 50 to 90 minutes. In all of these classrooms, students participated in whole-group and small-group instruction and were expected to use the software for at least 25 minutes a day. For the purposes of this analysis all models were analyzed together.

Participants

The sample population in this report is comprised of a total of 170 third- through eleventh-grade English language learners across the three districts in IN, MA, and MI. Students were placed into *System 44* if they performed poorly on an assessment of reading comprehension, the *Scholastic Reading Inventory* (SRI), and then exhibited poor word-reading skills on the *Scholastic Phonics Inventory* (SPI). The ethnic demographics of the sample varied across the three districts (see Table 1). In the Indiana district, which has a growing population of Burmese refugee students, 83% of the sample was Asian/Pacific Islander, and 16% was Hispanic. In the Massachusetts district, many of the English language learners were Spanish-speaking; 87% of the Massachusetts sample was Hispanic, and 13% was identified as Multiracial/Other. The English language learner population in the Michigan district was more diverse, with 58% of the sample classified as Hispanic, 25% as Caucasian, and 8% as African American.

Measures

Scholastic Phonics Inventory (SPI)

The SPI is a computer-based test that is designed to measure fluency for two word-level reading skills: phonological decoding and sight word reading. Phonological decoding fluency is assessed by the speed and accuracy with which pronounceable nonwords are decoded. Sight word fluency is assessed by the speed and accuracy with which high-frequency words are read. An overall accuracy and fluency score reflects the performance for these two skills. The SPI contains three equivalent forms for screening and progress monitoring purposes. The software selects the appropriate form automatically; each time a student logs on to take a test, the software delivers a new form. In this study, the SPI was administered in October/November 2009 and in April/May 2010.

Woodcock-Johnson III (WJ III)

The nationally normed Letter Word Identification and Word Attack subtests from the WJ III were administered in fall 2009 and spring 2010. Letter Word Identification measures word identification skills, starting with the identification of letters and progressing to

increasingly more difficult words. Word Attack measures proficiency in applying phonic and structural analysis skills to the pronunciation of unfamiliar printed words. The Basic Reading Skills cluster score is based on the combined performance from these two subtests. The WJ III was administered in October/November 2009 and in April/May 2010.

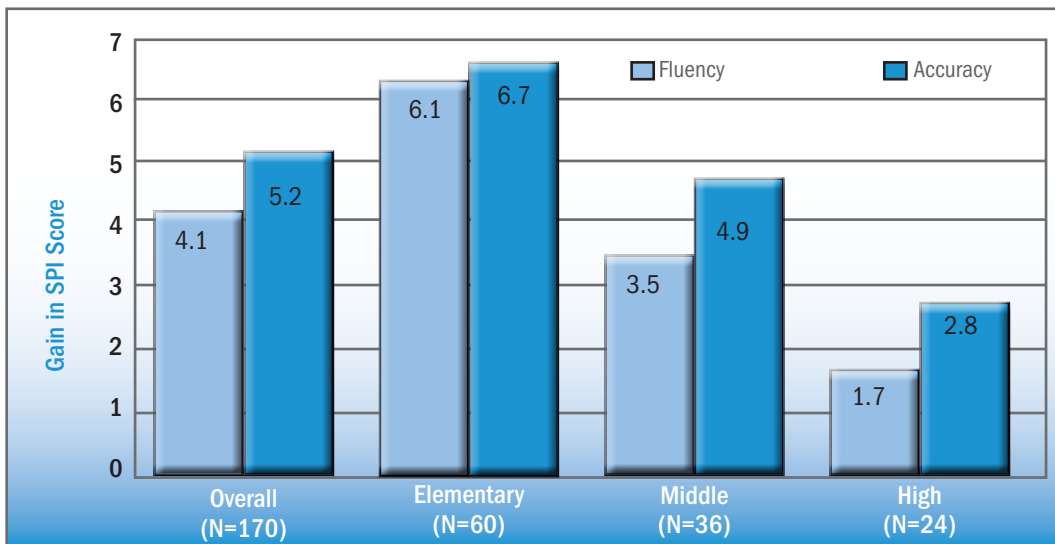
Scholastic Reading Inventory (SRI)

SRI is designed to measure how well readers comprehend literary and expository texts. It focuses on the following skills: identifying details in a passage; recognizing cause-and-effect relationships and sequence of events; drawing conclusions; and making comparisons and generalizations. During test administration, the computer adapts the test continually, according to student responses. Performance on the SRI is reported as a Lexile® (L) scale score. The higher a student's score, the more challenging material that student is likely to be able to read and understand. Scores can range from Beginner Reader (less than 100L) to Graduate-School Readers (1500L). The SRI was administered in October/November 2009 and in April/May 2010.

Table 1
IN, MA, and MI System 44 English Language Learners, Grades 3-11 (N= 170)
Demographic Characteristics of Students in Sample

	Indiana District (N=116)	Massachusetts District (N=30)	Michigan District (N=24)
Caucasian	1%	0%	25%
Hispanic	16%	87%	58%
African American	1%	0%	8%
Asian/Pacific Islander	83%	0%	4%
Multicultural/Other	0%	13%	4%

Graph 1
IN, MI, and MA English Language Learners in System 44, Grades 3-11 (N = 170)
Change in Performance on the SPI by School Level, 2009-2010



Note. Gains were statistically significant for: overall fluency (t = 8.20, p = .00) and accuracy (t = 12.97, p = .00); elementary school fluency (t = 7.19, p = .00) and accuracy (t = 10.64, p = .00); middle school fluency (t = 4.83, p = .00) and accuracy (t = 8.15, p = .00); and high school accuracy (t = 3.49, p = .00).

RESULTS

SPI Results

Overall, *System 44* English language learners revealed significant improvements in performance on the SPI. As shown in Graph 1, *System 44* English language learners across all grades averaged gains of 5.2 points in word-reading accuracy and 4.1 points in word-reading fluency. English language learners at each school level benefited from participation in *System 44* (Graph 1). The elementary school students in the sample averaged a 6.7-point gain in accuracy and a 6.1-point gain in fluency. Middle school English language learners gained 4.9 points in accuracy and 3.5 points in fluency, on average, and high school students averaged a 2.8 point gain in accuracy. The high school students also evidenced an average 1.7 point gain in fluency, though not statistically significant.

WJ III Results

System 44 English language learners also showed significant improvements on the Basic Reading Skills cluster from the WJ III. Overall, *System 44* English language learners' mean score was 7 points higher at posttest than at pretest. *System 44* English language learner students at the elementary, middle, and high school levels averaged significant gains of 4 points, 8 points, and 11 points on the WJ III Basic Reading Skills cluster, respectively (Table 2).

SRI Results

SRI results indicated that *System 44* English language learners evidenced significant gains in reading comprehension during the 2009-2010 school year. On average, *System 44* English language learners improved from a pretest score of 55L to a posttest score of 148L, resulting in a statistically significant gain of 93L. As Graph 2 indicates, on average, elementary school *System 44* English language learners improved 140L over the year, middle school students gained 61L, and high school students improved 52L.

CONCLUSION

This study across three school districts in Indiana, Massachusetts, and Michigan was designed to evaluate the impact of *System 44* on English language learners who attended the program during the 2009-2010 school year. Student performance on two measures of word-reading fluency (*WJ III Basic Reading Skills* and *Scholastic Phonics Inventory*) and one measure of general reading comprehension (*Scholastic Reading Inventory*) revealed statistically significant improvements at all school levels. These results provide preliminary evidence of effectiveness for *System 44* with English language learners in elementary, middle, and high schools.

Table 2

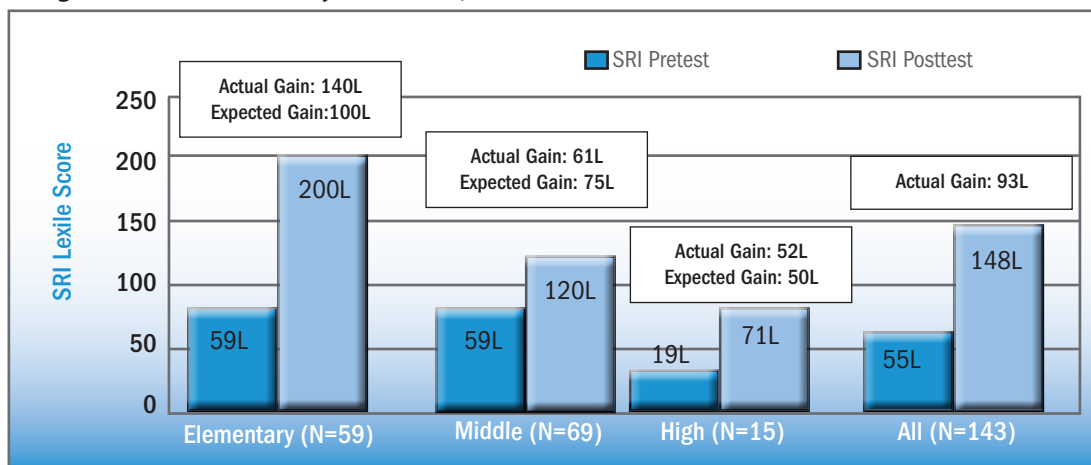
IN, MA, and MI English Language Learners in *System 44*, Grades 3-11 (N = 170)
Performance on the WJ III, Basic Reading Skills Cluster, by School Level, 2009-2010

School Level	N	Fall WJ III Basic Reading Skills Standard Score	Spring WJ III Basic Reading Skills Standard Score	WJ-III BRS Gain
Elementary	60	83	87	4
Middle	86	72	79	8
High	24	54	65	11
Overall	170	73	80	7

Note. WJ III BRS gains were statistically significant for the elementary ($t = 3.50, p = .00$), middle ($t = 5.39, p = .00$), and high ($t = 4.14, p = .00$) school levels, as well as across all grades ($t = 7.41, p = .00$).

Graph 2

IN, MA, and MI English Language Learners in *System 44*, Grades 3-11 (N = 143)
Change in Performance on SRI by School Level, 2009-2010



Note. SRI gains were statistically significant for the elementary, ($t = 8.08, p = .00$), middle ($t = 3.72, p = .00$), and high ($t = 2.35, p = .03$) school levels, as well as across all grades ($t = 8.16, p = .00$).

RESEARCH UPDATE



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