COMPENDIUM OF
System 44® Research

EVIDENCE &
EFFICACY

2008

2009

2010

2011

2012

2013

2014
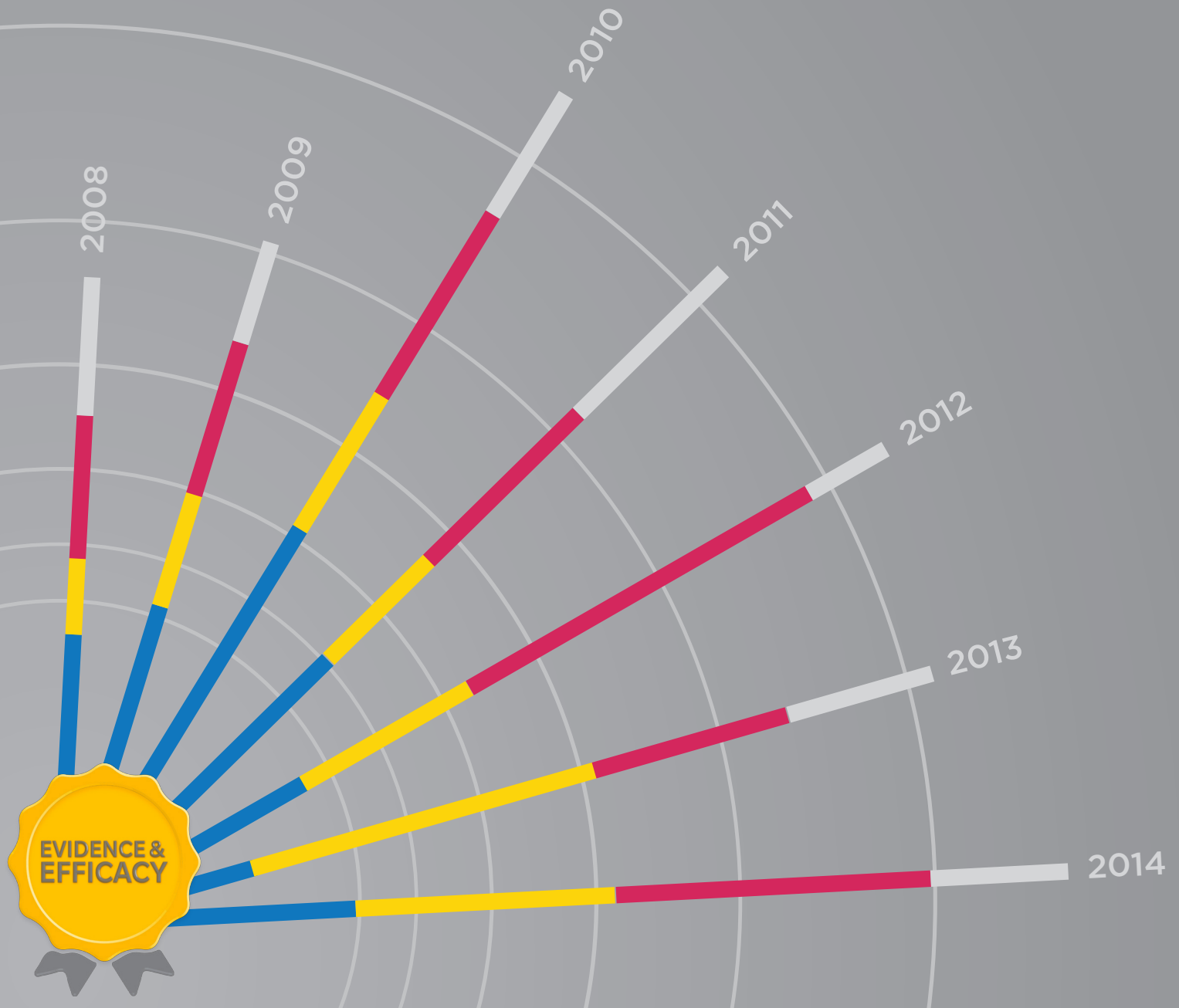
Dear Educators,

A major impetus of the national push for more rigorous state standards is the continuing decline in the performance of college-bound high school students on college entrance exams. Because this decline has been tied to a progressive simplification of school reading materials over the years, a central goal of rigorous standards initiatives has resulted in increasing the levels of text complexity that students must read. For too many students, however, the ability to comprehend texts to the level of complexity recommended by the new standards is currently out of reach.

There is a great need for all students to develop the capacity to read, comprehend, and respond to more complex texts—the sorts of texts they will face in college, the workplace, and their day-to-day responsibilities and opportunities beyond high school. Their lives depend on it. By raising the bar, rigorous standards force us to reexamine expectations and lessons to which we have become accustomed. They force us to ask what else we can and should do to better assist our students. This is the challenge before us, and it is a critical one.

Toward meeting this challenge, it has been my great pleasure to work with the Intervention Solutions Group in bringing the findings of seminal theory and empirical research to the aid of struggling students as we have revised and expanded *System 44*. *System 44* Next Generation, launched in 2013, focuses on providing explicit instruction in phonics, reading comprehension, and writing for the most challenged readers. It is designed to help these students acquire decoding automaticity alongside the linguistic strengths and metacognitive skills on which their literacy growth depends.

To date, *System 44* has been implemented in thousands of schools across the United States. The profiles in this book are part of a larger body of evidence indicating that *System 44* can improve the learning trajectories of even our most challenged readers. Moving forward, we will continue to build off this positive momentum toward ensuring that the literacy levels of all students are ready for college, career, and life upon high school graduation.

Sincerely,

Dr. Marilyn Jager Adams

![Houghton Mifflin Harcourt]

System 44 WORKS

NUMBER OF STUDIES BY STUDENT GROUP*

● Elementary   ● Middle School   ● High School

Economically Disadvantaged   **English Language Learners**   **Ethnicity**   **Students With Disabilities**

GOLD STANDARD STUDIES

In two gold standard studies, *System 44* students show significantly greater gains **over the control** group on numerous standardized reading assessments.

10% More Reach Proficiency

CST ELA California Standards Test of English Language Arts

6 Points More Percentile Gain

TOWRE Sight Word Efficiency

11 Points More Percentile Gain

CTOPP Elision Phonemic Sensitivity

13 Points More Percentile Gain

The Reading Inventory Reading Comprehension

TWENTY-SEVEN STUDIES

75% Include Elementary School Students

82% Include Middle School Students

50% Include High School Students

RETURN ON INVESTMENT STUDY

of Expulsions

$342,000
$224,000 $241,900
$153,400

Expulsion Costs

2006   2010   2011   2012

$360,000
$300,000
$260,000
$200,000
$160,000
$100,000
$60,000

# of Suspensions Days

$146,430
$99,120
$62,580

Suspensions Costs

2010   2011   2012

$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
50

System 44 and *Read 180* provide a solid return on investment for Napa Valley Unified School District, CA.

*The infographics on this page only represent the studies included in this compendium. More results can be found online at hmhco.com/System44.

TABLE OF CONTENTS

WESTERN UNITED STATES

Please see the Index for a comprehensive listing of all studies by more categories, including type of assessment, results disaggregated by student group, and research design.

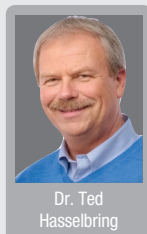For more resources, visit **hmhco.com/System44**.

A HISTORY OF RESEARCH: *System 44*

1985–1996
EARLY RESEARCH

1985–1996

Partially funded by a grant from the **U.S. Department of Education's Office of Special Education programs**, research by Dr. Ted Hasselbring of Peabody College, Vanderbilt University, leads to a breakthrough prototype for software that uses individual student performance data to differentiate reading instruction.

Dr. Ted Hasselbring

1994–1996

Dr. Hasselbring joins forces with **Dr. Janet Allen of the University of Central Florida** and Florida's Orange County public school system to create the Orange County Literacy Project for its lowest-performing students. The project's instructional model, rooted in research-proven literacy practices, becomes the basis of the *READ 180* Instructional Model.

1997–1999
FIELD TESTING

1997

Intervention Solutions Group enters into collaboration with Vanderbilt University to replicate the best practices of their research in a published program. *READ 180* **adopts the Lexile Framework® for Reading developed by Dr. Jack Stenner of MetaMetrics, Inc.**, as its leveling system. The framework provides a common metric for measuring text difficulty and student reading level.

LEXILE®

1998–1999

Council of the Great City Schools pilots *READ 180* in some of its largest urban schools and enters into a research partnership to study the efficacy of the program.

Council of the Great City Schools

Intervention Solutions Group publishes *READ 180*, which is immediately implemented in hundreds of schools nationwide.

2003–2006
VALIDATION AND IMPLEMENTATION

2003

Dr. Sally Shaywitz came out with the breakthrough book **Overcoming Dyslexia**, where she states that the most successful programs for students with dyslexia emphasize the same core elements: practice manipulating phonemes, building vocabulary, increasing comprehension, and improving the fluency of reading, and cites *READ 180* as a suitable intervention.

2004–2005

READ 180 aligns with all 15 structural and instructional recommendations contained in the report **Reading Next: A Vision for Action and Research in Middle and High School Literacy** (Biancarosa & Snow, 2004).

Dr. Kevin Feldman

Through continued collaboration with **Dr. Ted Hasselbring** and a new partnership with **Dr. Kevin Feldman** and **Dr. Kate Kinsella**, *READ 180* Enterprise Edition is launched.

ENTERPRISE EDITION

- Structured engagement routines are added to ensure full participation by ALL learners, including English learners.

- **In addition to Spanish**, second language support in four new languages is added: **Vietnamese, Hmong, Cantonese, and Haitian Creole**.

- The SAM is introduced.

System 44 is reviewed by the Center for Applied Special Technologies (CAST) to ensure maximum access to an inclusive and effective learning environment for all learners, including students with disabilities.

CAST
Universal Design for Learning

2006

The Alliance for Excellent Education and the Carnegie Corporation publish **Writing Next**, outlining best practices in writing for older, struggling readers. *READ 180* writing instruction aligns with all recommendations.

WRITING NEXT

Dr. Bill Daggett and the **International Center for Leadership in Education** (ICLE) champion *READ 180* as the reading intervention program that most closely aligns with the center's recommendations on secondary school reform.
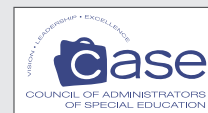
2006–2014
CONTINUED AND SUSTAINED IMPROVEMENT BASED ON BEST PRACTICES

2006–2007

The **Florida Center for Reading Research** (FCRR) completes an independent and thorough review of *READ 180* Enterprise Edition at the request of Florida districts and documents **multiple strengths and no weaknesses**.

The **Council of Administrators of Special Education** (CASE) endorses *READ 180* for use with special education students. *READ 180* was endorsed again in 2012.

CASE
COUNCIL OF ADMINISTRATORS OF SPECIAL EDUCATION

2007–2008

Dr. Marilyn Jager Adams, author of *Learning to Read*, leads the development of **System 44**, a breakthrough foundational system combining the very best thinking on **research-based phonemic awareness and phonics instruction** for older students with the power of state-of-the-art adaptive technology.

Dr. Marilyn Jager Adams

Dr. Kate Kinsella, co-author of the *READ 180* rBook, creates the **LBook**. Tested in classrooms throughout California by Dr. Kinsella, **the LBook provides explicit**

Dr. Kate Kinsella

LBook

Timeline

systematic instruction for **English learners** who may be at differing levels of English proficiency.

READ 180 is evaluated in the July–September 2008 issue of **Reading Research Quarterly** in an article titled "Effective Reading Programs for Middle and High Schools: A Best Evidence Synthesis," by Slavin, Cheung, Groff, and Lake (2008) of the Center for Data-Driven Reform at Johns Hopkins University. **The meta-analysis provides a positive assessment of *READ 180*, showing more evidence of effectiveness than the other 121 programs considered in the review.** These results are also summarized on the **Best Evidence Encyclopedia** website (www.bestevidence.org) where *READ 180* is cited as **Top Rated Program** for Middle/High School having Moderate Evidence of Effectiveness.

Dr. Julie Washington, a leading authority on **articulation and standard classroom English**, builds instructional support for students who speak a community dialect and struggle with academic English.

Dr. Julie Washington

2008

System 44 is launched and implemented in almost 2,800 classrooms within the first six months as a Tier III solution.

2009

The *Journal of Research on Educational Effectiveness* publishes a gold standard (randomized controlled trial) study of adolescent reading interventions done by the Florida Center for Reading Research (FCRR) and Florida State University that reveals significant gains with *READ 180* (Lang, Torgesen, Vogel, Chanter, Lefsky, & Petscher, 2009).

A review by the federal **What Works Clearinghouse (WWC)** concludes that the extent of evidence for *READ 180* is "medium to large for comprehension and medium to large for general literacy achievement."

The Phonics Inventory, the universal screener aligned with *System 44*, meets the stringent criteria for review by the **National Center on Response to Intervention (RTI)**.

2009–2010

HMH Research & Development continues to develop new *READ 180* components to add more rigorous reading and to prepare students for college and career including *READ 180* Stretch, Xtra Advance, and the Real Jobs Library.

2010

The Council of the Great City Schools and the American Institutes for Research release *Implementation Matters: Systems for Success* (Salinger, Moorthy, Toplitz, Jones, & Rosenthal, 2010). *Implementation Matters* outlines district-wide conditions that sustain on-model implementation of *READ 180* in urban school districts.

2011

US DOE-funded Striving Readers program results show that *READ 180* significantly increased reading achievement for struggling students in several school districts across the country.

A US DOE-funded evaluation of *READ 180* published in **Educational Evaluation and Policy Analysis** found that students who used *READ 180* after school outperformed the control group on measures of reading comprehension and vocabulary (Kim, Capotosto, Hartry, & Fitzgerald, 2011).

READ 180 Next Generation is launched, providing teachers and leadership more visibility into implementation and performance metrics.
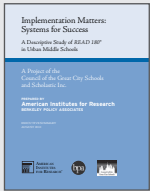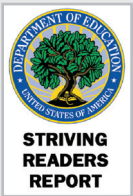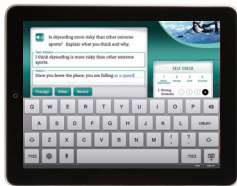
The Council of Administrators of Special Education (CASE) endorses *System 44* and re-endorses *READ 180* for use with special education students.

2012

A review by the **National Center on Intensive Intervention** (NCII) concluded that the extent of evidence ranged from "partially convincing to convincing," demonstrating that *READ 180* is effective as an RTI model.

2013

A gold standard study out of Saginaw, MI, reveals that *System 44* has significant effects for students with learning disabilities. **A review of the study by NCII rated its validity highly**, thus establishing that the findings convincingly add to the body of evidence on the efficacy of *System 44* as a literacy intervention for the most challenged readers.

Intervention Solutions Group launches *READ 180*, on the iPad®. *READ 180* was built to meet new heightened standards and includes more rigor throughout, new grade-level text, new text-dependent questions, more nonfiction, new performance-based assessments, and a new Writing Zone.

System 44 **Next Generation, the proven foundational reading program designed to get the most struggling readers on the path to meeting rigorous new standards, is launched.** To better support students, *System 44* now includes explicit instruction in reading complex text and evidence-based writing.

Students are currently learning to read and write in a time of rapid societal change and continuous education reform as all states push for more rigorous educational standards.

In response, heightened standards have been created in states across the nation in recognition that we need to do more to advance the reading achievement of our students. Many of the new standards clearly communicate expectations for all students in English Language Arts & Literacy (ELA) and Mathematics at each grade level from kindergarten through 12th grade—with the goal of preparing all students for college and career.

With *System 44* Next Generation, our most challenged readers and their teachers have everything they need to prepare for more rigorous state standards. The goal of *System 44* Next Generation is to ensure that each student masters the system of 44 sounds and 26 letters that constitute the English language, allowing them to become fluent and confident readers. Two of the most authoritative and comprehensive reading research summaries—the National Reading Panel report (NRP, 2000) and *Preventing Reading Difficulties in Young Children* (Committee on the Prevention of Reading Difficulties in Young Children, 1998)—both found convincing and substantial evidence that explicit instruction in the foundational literacy skills of phonemic awareness, phonics, vocabulary, fluency, and comprehension is consistently more effective than instruction that does not contain these components (Torgesen, 2002). In addition, *System 44* Next Generation provides students with access to increasingly more complex texts with supports for comprehension, practice with responding to rigorous text-dependent questions, and multiple opportunities for evidence-based writing. These instructional elements help prepare students for the level of academic rigor that the heightened standards require.
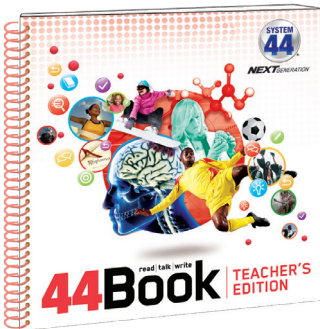
Comprehensive Instruction in *System 44* Next Generation builds on the successful, research-driven practices of Enterprise Edition, blending daily opportunities for teacher-facilitated instruction, personalized technology, and independent reading, while new components outlined below have been designed explicitly to help educators meet the rising demands of rigorous state standards.

The *System 44* **Next Generation Student software** has been enhanced to deliver an even more comprehensive personalized learning path, with new features including:

- A new Dictation activity that provides students with the opportunity to apply decoding skills while building writing fluency

- A new Context activity in Success that allows students to demonstrate comprehension of nonfiction text with independence

- A new Writing Strand that provides students with scaffolded practice in writing summaries tied to content in the software, helping students build comprehension and writing fluency

- An enhanced Student Dashboard that allows students to explore and celebrate individual progress through the program

The NEW *44Book Teacher's Edition* provides a clear path for daily, explicit instruction in phonics, reading, comprehension, and writing skills. The *44Book* includes:

- Readings of increasing text complexity that cover a broad range of content-area topics, supporting the development of academic vocabulary and knowledge

- Text-based questioning to build comprehension

- Stretch Texts designed for read-alouds that expose students to complex, grade-level text

- Instructional routines such as summarizing and collaborative discussions that accompany each lesson

- Evidence-based writing instruction that focuses on the skills required by rigorous new state standards—informative and argument—and is scaffolded to move students toward independence

- Performance-based assessments in the form of short research projects that ask students to synthesize and present their learning, preparing them for assessments

- A *44Book* for use with *READ 180* designed for a seamless integration into a *READ 180* class

The *System 44* Next Generation Student Library provides students with daily opportunities for modeled and independent reading of high-quality literary and informational text. Each library includes a range of leveled, age-appropriate titles ranging from 100 Lexile measures (L) to 450L, targeting decoding skills and strategies to promote comprehension and build vocabulary and content-area knowledge. The *System 44* Next Generation Library is available in three formats designed to support anytime/ anywhere reading: Paperbacks, Audiobooks, and new eBooks. The *System 44* Next Generation library includes resources that provide scaffolded supports, including Comprehension QuickWrites, Discussion Questions, and *Reading Counts!* quizzes for each title.
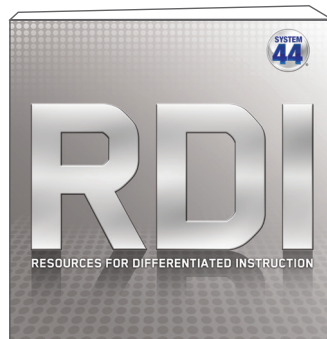
The new Teacher Dashboard increases the capacity of effective teachers. The Teacher Dashboard provides teachers with comprehensive supports for effective teaching and data-driven instruction, including:

- Data snapshots that provide at-a-glance views of implementation and performance data and allow teachers to drive differentiated instruction

- The Groupinator,® which aggregates student performance data and applies it to a proprietary algorithm, generating groups that are data-driven and 100 percent automated

- Embedded Professional Development resources such as on-demand video

- Access to the Interactive Teaching System (ITS)

- The new Individual Learning Plan (ILP), which gives teachers a snapshot of how students are meeting their academic and behavioral goals

- Support for implementing *System 44* Next Generation in a *READ 180* classroom

The *Resources for Differentiated Instruction (RDI)* book is a comprehensive guide that includes a wide array of resources to deliver differentiated instruction. The *RDI* includes a collection of targeted phonics and word analysis lessons, plus instructional routines, aligned to the scope and sequence of phonics instruction. Additionally, the *RDI* book presents research, instructional best practices, and tools for the successful implementation of Multi-Tiered System of Supports (MTSS), including a Positive Behavior Intervention System (PBIS) and Response to Intervention (RTI).

The new Leadership Dashboard provides school and district leaders with transparent visibility into *System 44* implementation metrics, and includes the following:

- Data snapshots to view school- or district-wide performance

- Data drill-down into individual school-, class-, and student-level data

The bilingual *System 44* Next Generation Family Portal, available in English and Spanish, supports the diversity of family members and caregivers invested in the success of *System 44* students. The Family Portal includes a wide variety of information and resources to support phonics instruction at home for all families, including students with disabilities and English language learners.

System 44 Next Generation combines the very best thinking on research-based phonics instruction for older students with the power of state-of-the-art adaptive technology and age-appropriate, supportive fiction and nonfiction text. The program is brought to life when the student, teacher, technology, and text engage around the highly motivating, instructional content.

OVERVIEW *The Reading Inventory* and *The Phonics Inventory*

The Reading Inventory[1] is a comprehension measure based on the Lexile Framework® for Reading developed by MetaMetrics and now in wide use by schools with students at all levels of proficiency. *The Reading Inventory* Lexile score is often the first indication that a student is a candidate for *System 44*. Intervention Solutions Group recommends that students who score below 400L on *The Reading Inventory* in elementary school or 600L at the secondary level be administered **The Phonics Inventory**[2], which provides a more nuanced assessment of the root cause of reading difficulty and a corresponding prescription for appropriate reading intervention.

The Phonics Inventory was 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.

While *The Phonics Inventory* measures both fluency (i.e., speed and accuracy) and accuracy for sight words and nonwords, fluency is the more critical measure because it frees the reader to attend to comprehension. A fluent response must be accurate as well as sufficiently fast. To get credit for a fluent response to an item, the response has to be accurate and the total response time (latency) cannot exceed the threshold time. Having a score—fluency—that combines accuracy and speed of responding is better than one that is based only on speed or accuracy. With fluency scores, each item contributes to the differentiation of students who have decoding problems from those with adequate decoding. Fluency scores can be reported as raw scores, as well as by percentile rankings.

In the fall of 2010, the screener version of *The Phonics Inventory* was upgraded to incorporate three alternate forms for screening and progress monitoring purposes. Each form of *The Phonics Inventory* is administered individually via a personal computer in approximately 10 minutes.

The Phonics Inventory has undergone extensive testing, which provides evidence that *The Phonics Inventory* Fluency Scores are reliable and valid. Two types of reliability were measured for *The Phonics Inventory*: 1) internal consistency reliability refers to the degree to which all items in a test measure the same thing; and 2) alternate form reliability refers to the degree to which the different *Phonics Inventory* tests are equivalent. In both cases, the magnitude of these results supports both the internal consistency of *The Phonics Inventory* and the equivalence of the three test forms. The validity analyses indicate that all classification statistics meet the highest standard of acceptability. Content-description (content) validity refers to the examination of the content of the test to determine whether it is a representative sample of the behavior domain that is being assessed.

For further information about criterion-prediction and construct identification validity research, please see *The Phonics Inventory Technical Manual*, available online at hmhco.com/system44.

Table 1: The Phonics Inventory Decoding Status and Placement Recommendations

Levels	Results	Placements Should Include
PRE-DECODER	Student shows no mastery of the alphabetic principle.	**Tier III:** Foundational reading intervention including alphabetic principle and phonemic awareness.
BEGINNING DECODER	Student shows mastery of basic letter recognition, usually consonants.	**Tier III:** Explicit phonics instruction starting with simple consonant-vowel-consonant (CVC) patterns.
DEVELOPING DECODER	Student shows emerging word-building skills with mastery of basic word structures.	**Tier III:** Explicit phonics instruction starting with consonant blends.
ADVANCING DECODER	Student shows adequate mastery of decoding skills.	**Tier II:** Text-based reading with direct support in building vocabulary, reading comprehension, and fluency with connected texts.

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[1] Prior to 2015, *The Reading Inventory* was known as the Scholastic Reading Inventory (**SRI**).
[2] Prior to 2015, *The Phonics Inventory* was known as the Scholastic Phonics Inventory (**SPI**).

CENTRAL INDIANA SCHOOL DISTRICT, IN

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 3–12

Assessment: Test of Word Reading Efficiency (TOWRE), Woodcock-Johnson III (WJ III), Scholastic Reading Inventory (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=159

Implementation: 50 to 120 minutes daily (Stand-Alone)

▶ **Significant improvements in decoding and reading comprehension occur for students with disabilities and English language learners.**

OVERVIEW

System 44 was piloted during the 2009–2010 school year in a Central Indiana School District that serves approximately 12,000 students at 13 elementary schools, 10 middle schools, and 8 high schools. The district's student population is 71% Caucasian, 10% Hispanic, 9% African American, 5% Asian/Pacific Islander, and 5% multiracial. Thirteen percent are students with disabilities and 11% are limited-English proficient (LEP). Over half (55%) qualify for free or reduced-price lunch.

The district used *System 44* with 159 students in one elementary school, one sixth-grade academy, one middle school (Grades 7–8), and one high school. *System 44* was implemented in the district using a stand-alone model, for 50 to 120 minutes each day. Students were selected to participate in the intervention program if they scored below 400 Lexile (L) measures on SRI and exhibited poor word-reading skills on SPI.

During several years prior, the school district experienced an influx of Burmese refugees. Over half of the struggling readers placed in *System 44* were identified as Pacific Islander, another 18% were Caucasian, 12% were Hispanic, and 8% were African American. Nearly three-quarters (73%) of the *System 44* sample was classified as LEP, 96% were eligible for free or reduced-price lunch, and 57% were male. Approximately one-third (31%) of the *System 44* students were students with disabilities, with the most common classification being specific learning disability.

RESULTS

SPI, SRI, the Test of Word Reading Efficiency (TOWRE), and the Woodcock-Johnson III (WJ III) were administered to all *System 44* students in the fall of 2009 and spring of 2010. Results demonstrated that the central Indiana *System 44* students improved in word-reading skills, as measured by SPI. In spring 2010, after participation in *System 44*, over two-thirds (69%) of students scored at the Developing Decoder performance level or above as compared to 45% in fall 2009 (Graph 1). Improvement in SPI word-reading Fluency was evident at all school levels with elementary school students achieving the largest average gains in Total Fluency (Graph 2).
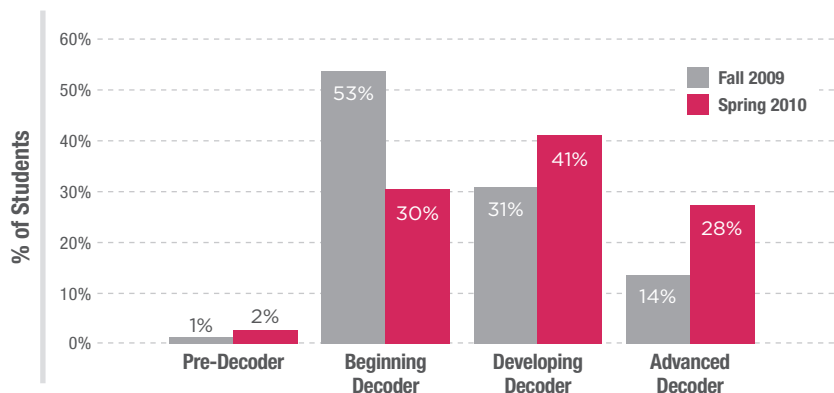
System 44 students also exhibited improvement in reading comprehension skills, as measured by SRI. Overall, the sample of students improved from an average of 112L to 220L over the year, a statistically significant gain of 107L (t=9.79, p=.00). Disaggregated results showed that LEP students and students with disabilities demonstrated significant growth on SRI from fall to spring, averaging gains of 112L (t=9.11, p=.00) and 94L (t=4.41, p=.00), respectively.

Results from the WJ III revealed significant improvements in foundational reading skills. On average, *System 44* students exhibited a statistically significant gain of 5 points (t=6.06, p=.00) on the WJ III. Furthermore, students with disabilities averaged a statistically significant gain of three points on the WJ III Basic Reading Skills (BRS), and LEP students averaged a significant gain of six points (Table 1).

On the TOWRE, *System 44* students averaged a significant overall gain of two points in Total Word Reading Efficiency (t=2.06, p=.00). High school students evidenced a significant average gain of four points on the same measure (t=4.05, p=.00). Elementary school, middle school, students with disabilities, and LEP students also demonstrated gains on the TOWRE, though not statistically significant.

GRAPH 1

Central Indiana School District *System 44* **Students, Grades 3–12 (N=159)**

Performance on SPI by Decoding Status, 2009–2010

Note. The increase in the percentage of students performing at the Developing Decoder or Advanced Decoder level was statistically significant (t=5.67, p=.00).
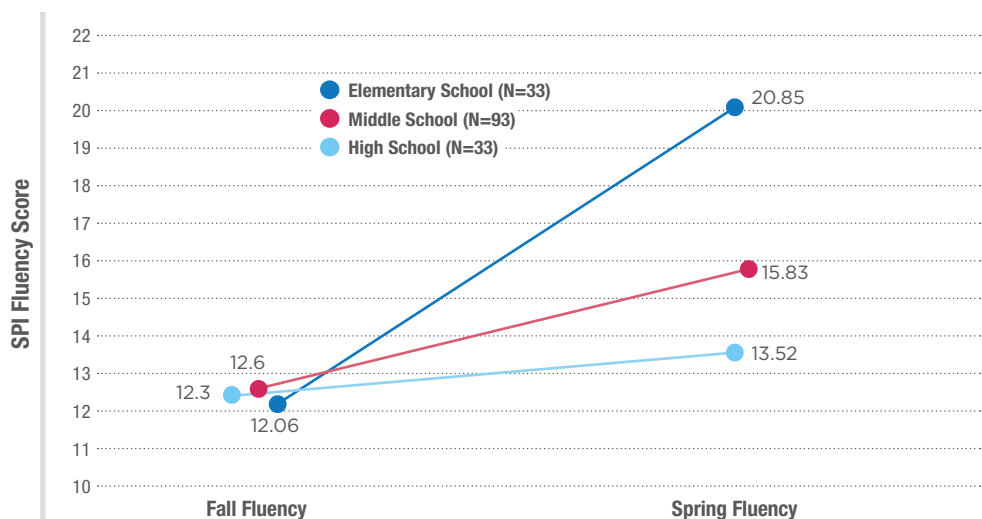
Northern United States

TABLE 1

Central Indiana School District *System 44* **Students, Grades 3–12 (N=159)**

Performance on WJ III by Student Group, 2009–2010

Student Group	N	WJ III Basic Reading Skills Cluster		
		Mean Fall Standard Score (percentile)	Mean Spring Standard Score (percentile)	Mean Change in Standard Score
Limited-English Proficient	116	74 (4th)	80 (9th)	6
Students With Disabilities	49	64 (1st)	68 (2nd)	3

Note. WJ III Basic Reading Skills Cluster gains were statistically significant for limited-English proficient students (t=5.35, p=.00) and students with disabilities (t=3.62, p=.01).

GRAPH 2

Central Indiana School District *System 44* **Students, Grades 3–12 (N=159)**

SPI Total Fluency Growth by School Level, 2009–2010

Note. The gains in Fluency score were significant for elementary (t=7.31, p=.00) and middle (t=5.07, p=.00) school students.

LAWRENCE PUBLIC SCHOOLS, MA

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 5–10

Assessment: Woodcock-Johnson III (WJ III), Test of Word Reading Efficiency (TOWRE), Scholastic Phonics Inventory (SPI)

Participants: N=52

Implementation: 50 to 60 minutes daily (Stand-Alone)

▶ **Native Spanish-speaking students improve word-reading skills on multiple measures.**

OVERVIEW

Located in northeastern Massachusetts, Lawrence Public Schools (LPS) serves approximately 12,000 students at 13 elementary schools, 10 middle schools, and 8 high schools. The district's student population is predominantly Hispanic (89%), with smaller percentages of Caucasian (6%), Asian (2%), African American (2%), and multiethnic students (1%). Eighty-seven percent of students are from low-income backgrounds and 80% speak Spanish as a first language. Twenty-two percent of students are English language learners (ELL) and 20% are students with disabilities.

In the fall of 2009, LPS piloted *System 44* with 52 students in two middle schools and two high schools. Students were selected to participate based on a number of criteria, including performing poorly on the Massachusetts Comprehensive Assessment System (MCAS), scoring below 400 Lexile (L) measures on SRI*,* and exhibiting difficulty with word-reading skills on SPI. Of these 52 *System 44* students, 90% were Hispanic, 96% spoke Spanish as a first language, and more than half (58%) were classified as limited-English proficient (LEP). The majority (73%) were male, just under half (48%) were students with disabilities, and 92% received free or reduced-price lunch.

A 60-minute stand-alone version of *System 44* was implemented across schools five days a week, with the exception of one high school classroom that implemented the program for 50 minutes every day.

RESULTS

SPI, the Test of Word Reading Efficiency (TOWRE), and Woodcock-Johnson III (WJ III) were administered to all *System 44* students in the fall of 2009 and spring of 2010. Results demonstrated that these students made significant
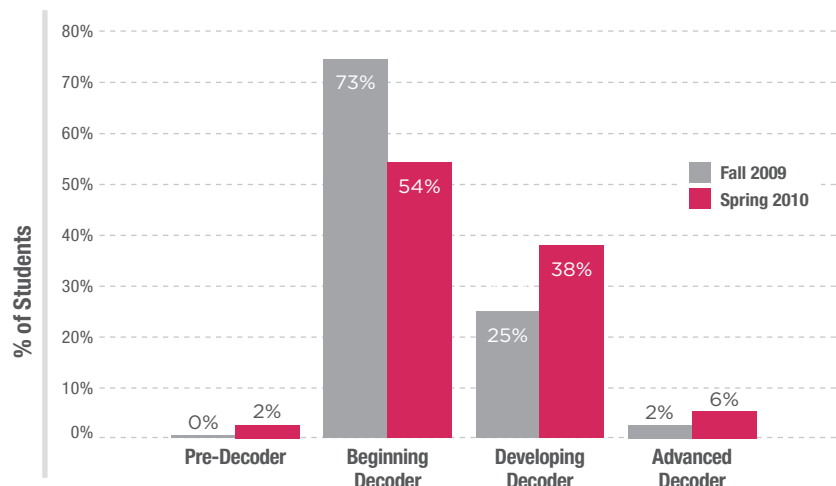
improvements in word-reading skills, as measured by SPI. In fall 2009, prior to the implementation of *System 44*, only 27% of LPS *System 44* students placed at the Developing Decoder or Advanced Decoder performance levels on SPI (the highest two levels). By the spring 2010 SPI administration, 44% of students did so, resulting in a significant increase. Conversely, the percentage of students scoring in the Pre-Decoder or Beginning Decoder performance levels (the lowest two levels) decreased from 73% in fall 2009 to 56% in spring 2010 (Graph 1).

LPS *System 44* students also exhibited improvements in their word-reading skills as measured by the TOWRE. As Table 1 shows, these students demonstrated statistically significant gains, improving by an average three standard score points on Total Word Reading Efficiency, three standard score points on Sight Word Efficiency (the subtest which requires students to recognize familiar words), and two standard score points on Phonetic Decoding Efficiency (the subtest which measures students' ability to sound out nonwords). *System 44* students demonstrated similarly positive growth on the WJ III (Table 1). On average, students exhibited statistically significant gains of nine standard score points on Word Attack (subtest measuring proficiency in applying phonics and structural analysis skills to the pronunciation of unfamiliar printed words), 10 standard score points on Letter-Word Identification (subtest measuring letter- and word-identification skills), and 10 standard score points overall in Basic Reading Skills (BRS).

Results also indicated that students spending more time on the *System 44* software exhibited greater improvement on the word-reading measures. On SPI, the percentage of students improving at least one decoding level was nearly twice as high among students who spent 20 or more hours on the software than among students who spent less than 20 hours on the software (32% versus 17%, respectively). Similarly, students completing 20 or more hours on the software averaged significantly greater gains on the Letter-Word Identification subtest of the WJ III (gains of 15 points versus seven points, respectively) and the Total Word Reading Efficiency subtest of the TOWRE (five points versus two points, respectively).

GRAPH 1

Lawrence Public Schools *System 44* Students, Grades 5–10 (N=52)

Performance on SPI by Decoding Status, 2009–2010

Note. The increase in the percentage of students performing at the Developing Decoder or Advanced Decoder level was statistically significant (t=2.63, p=.00).

TABLE 1

Lawrence Public Schools *System 44* Students, Grades 5–10 (N=52)

Performance on WJ III and TOWRE, 2009–2010

Test	Mean Fall Standard Score (percentile)	Mean Spring Standard Score (percentile)	Mean Change in Standard Score
TOWRE Total Word Reading Efficiency	65 (1st)	68 (2nd)	3
TOWRE Sight Word Efficiency	69 (2nd)	71 (3rd)	3
TOWRE Phonetic Decoding Efficiency	73 (4th)	75 (5th)	2
WJ III Word Attack	74 (4th)	83 (13th)	9
WJ III Letter-Word ID	61 (<1)	71 (3rd)	10
WJ III Basic Reading Skills Cluster	64 (1st)	74 (5th)	10

Note. The fall-to-spring gains were statistically significant for TOWRE Total Reading Efficiency (t=4.04, p=.00); TOWRE Sight Word Efficiency (t=3.40, p=.00); TOWRE Phonetic Decoding Efficiency (t=3.24, p=.00); WJ lll Word Attack (t=7.25, p=.00); WJ lll Letter-Word Identification (t=6.06, p=.00); WJ lll Basic Reading Skills (t=7.50, p=.00). All numbers in the table are rounded to the nearest integer.

TABLE 2

Lawrence Public Schools *System 44* Students, Grades 5–10 (N=52)

Performance on WJ III and TOWRE by Software Usage, 2009–2010

Measure	Less Than 20 Hours on the software (n=30)	20 Hours or More on the software (n=30)
WJ III Letter-Word ID Gain	7	15
TOWRE Total Reading Efficiency Gain	2	5

Note. Measures for which there is a statistically significant relationship between gains and software time: WJ lll Letter-Word Identification (t=4.87, p=.03) and TOWRE Total Reading Efficiency (t=5.16, p=.03).

Northern
United States

BIDDEFORD SCHOOL DEPARTMENT, ME

STUDY PROFILE

Evaluation Period: 2009–2010
Grades: 4–8
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=36
Implementation: 45 to 90 minutes daily (Stand-Alone)

▶**System 44** boosts reading achievement for students with disabilities.

OVERVIEW

Located in southeastern Maine, Biddeford School Department (BSD) enrolls approximately 2,700 students in Grades PreK–12. The district's student body is predominantly Caucasian (93%), with the remainder of the student population identified as 2% African American, 2% Hispanic, and 2% Asian/Pacific Islander. Just under half (43%) of all students qualify to receive free or reduced-price lunch.

Long interested in improving academic outcomes for their most struggling readers, BSD piloted *System 44* during the 2009–2010 school year with students in the district's Intermediate School (Grades 4 and 5) and Middle School (Grades 6, 7, and 8). Students were placed into *System 44* based on low performance on the New England Common Assessment Program (NECAP), SRI, and SPI. Most *System 44* students were students with disabilities, with the majority classified as having a specific learning disability, autism, or an emotional disability. All classrooms implemented a *System 44* stand-alone model during a 45- or 90-minute daily classroom period.
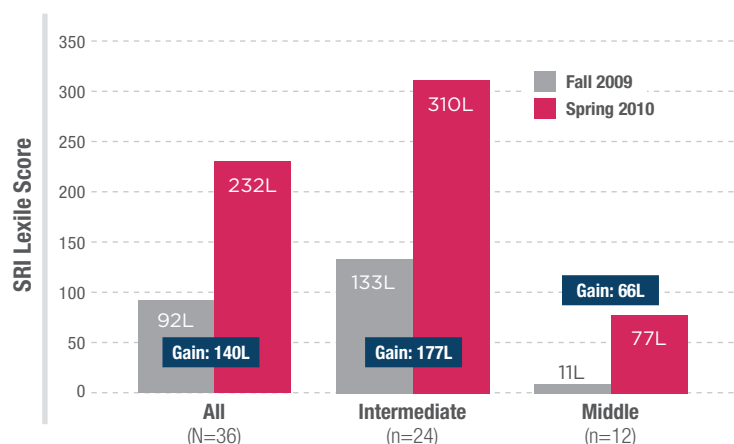
RESULTS

Fall 2009 and spring 2010 SRI Lexile (L) data were analyzed for 36 students in Grades 4–8 who participated in the program during the 2009–2010 school year. Findings indicate that, overall, *System 44* students made significant gains in reading comprehension. As Graph 1 shows, on average, *System 44* students improved their SRI performance from 92L at pretest to 232L at posttest, averaging a significant gain of 140L. Disaggregation of results by school level revealed that intermediate and middle school students demonstrated average gains of 177L and 66L, respectively.

GRAPH 1

Biddeford School Department *System 44* Students, Grades 4–8 (N=36) Performance on SRI by School Level, 2009–2010

Note. The gain in Lexile was statistically significant for all students (t=4.94, p=.00).

BAY CITY PUBLIC SCHOOLS, MI

STUDY PROFILE

Evaluation Period: 2009–2010
Grades: 3–8
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=129
Implementation: 45 to 90 minutes daily (Stand-Alone)

Northern United States

▶**Strong literacy achievement for students with disabilities and at-risk youth.**

OVERVIEW

Bay City Public Schools (BCPS) serves approximately 9,000 students in Grades K–12. The student population is composed of the following ethnicities: 86% Caucasian, 6% Hispanic, 4% African American, 1% American Indian/Alaskan Native, less than 1% Asian/Pacific Islander, and 2% unspecified. Nearly half (47%) of all students are eligible for free or reduced-price lunch.

BCPS adopted *System 44* to improve the foundational reading skills of elementary, middle, and high school students performing poorly on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), SRI, the Michigan Education Assessment Program (MEAP), and oral reading fluency and district benchmark data. BCPS prioritized placing students with disabilities and students who were receiving Title I funds, or who were otherwise designated as being at risk. During the 2009–2010 school year, *System 44* was implemented at seven elementary schools, one middle school, and one high school. The stand-alone implementation model varied by classroom, and was 45 to 90 minutes per day.

RESULTS

During the 2009–2010 school year, SRI data was collected from 129 students in Grades 3–8. Dependent t-tests revealed that, overall, students demonstrated significant improvement on SRI in Lexile (L) score. On average, students enrolled in *System 44* advanced from 117L in fall 2009 to 306L in spring 2010. The average 189L gain was statistically significant. These improvements were evidenced for both elementary and middle school students. Elementary students in Grades 3–5 gained an average of 217L, and middle school students in Grades 6–8 gained an average of 138L (Graph 1). Due to the success of the program, BCPS expanded the program to an additional middle and high school during the 2010–2011 school year.

GRAPH 1

Bay City Public Schools *System 44* Students, Grades 3–8 (N=129) Performance on SRI by School Level, 2009–2010

Note. The gains in Lexile were statistically significant for all students (t=12.03, p=.00), elementary students (t=10.90, p=.00), and middle school students (t=5.74, p=.00).

ANN ARBOR PUBLIC SCHOOLS, MI

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 3–8

Assessment: Test of Word Reading Efficiency (TOWRE), Scholastic Reading Inventory (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=118

Implementation: 60 to 90 minutes daily (Stand-Alone)

▶**Students demonstrate significant improvement in word reading and comprehension.**

OVERVIEW

Ann Arbor Public Schools (AAPS) serves approximately 16,000 students at 20 elementary schools, five middle schools, six high schools, and one K–8 school. The majority of these students are Caucasian (56%), followed by Asian/Pacific Islander (15%), African American (5%), and Hispanic (5%) with 8% unspecified and less than 1% American Indian or Alaskan Native. Approximately 20% of all students are eligible for free or reduced-price lunch.

During the 2009–2010 school year, AAPS piloted *System 44* in seven elementary schools and three middle schools. Students were selected to participate in *System 44* if they performed poorly on the Michigan Educational Assessment Program (MEAP), scored below 400 Lexile (L) measures on SRI, and exhibited difficulty with word-reading skills on SPI. Of these participants, 64% were designated as students with disabilities and 20% were English language learners (ELL). In addition, 40% of these participants were African American, 25% were Caucasian, 19% were Hispanic, 12% were multiracial, 2% were Asian, and 4% were not identified.
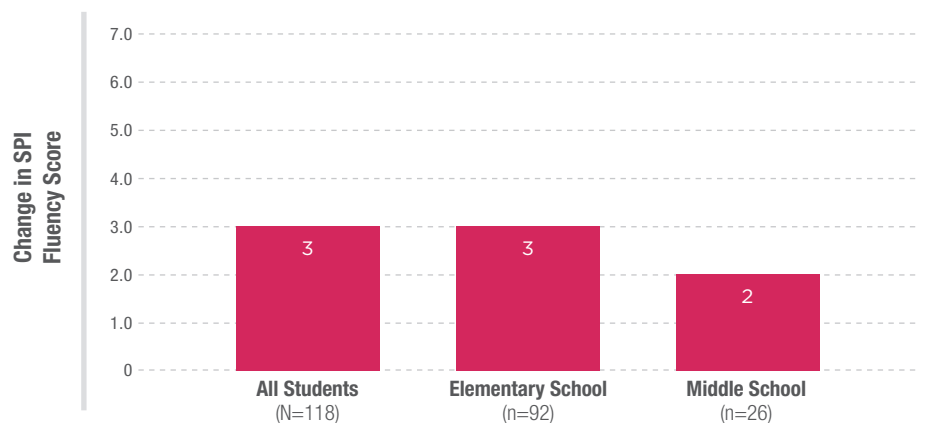
All classrooms implemented a stand-alone model of *System 44*, with the classroom period varying from 60 to 90 minutes based on school schedule. All classrooms followed a rotational model, including a whole-group introduction in which the teacher led a short warm-up activity to engage students and build phonemic awareness and phonics skills, followed by 20- to 25-minute rotations on the instructional software and in small-group instruction.

RESULTS

SPI, the Test of Word Reading Efficiency (TOWRE), and SRI were administered to all *System 44* students in the fall of 2009 and spring of 2010. As shown in Graph 1, AAPS *System 44* students in Grades 3–8 averaged a significant gain of three points in Total Fluency on SPI. On average, the elementary school *System 44* students gained three points in Fluency, while the middle school *System 44* students averaged gains of two points in Fluency. Consistent with SPI results, *System 44* students evidenced significant gains in word-reading skills on the TOWRE Total Word Reading Efficiency from pretest to posttest. On average, students improved from a standard score of 77 to 81, which corresponds to moving from the 6th to the 10th percentile. Caucasian, Hispanic, African American, and multiracial students averaged significant gains, as well (Table 1). SRI data was also analyzed for the 108 AAPS *System 44* students who had valid pretest and posttest scores. Results demonstrated significant gains in reading comprehension over the 2009–2010 school year. On average, AAPS *System 44* students improved from a pretest score of 84L to a posttest score of 207L, resulting in a statistically significant gain of 123L. Caucasian, Hispanic, African American, and multiracial students averaged significant gains of 153L, 70L, 126L, and 164L, respectively (Graph 2).

GRAPH 1

Ann Arbor Public Schools *System 44* **Students, Grades 3–8 (N=118)**

SPI Total Fluency by School Level, 2009–2010

Note. Fluency SPI gains were significant for the elementary school sample (Fluency: t=6.32, p=.00), middle school sample (Fluency: t=2.62, p=.01), and overall sample (Fluency: t=6.83, p=.00).
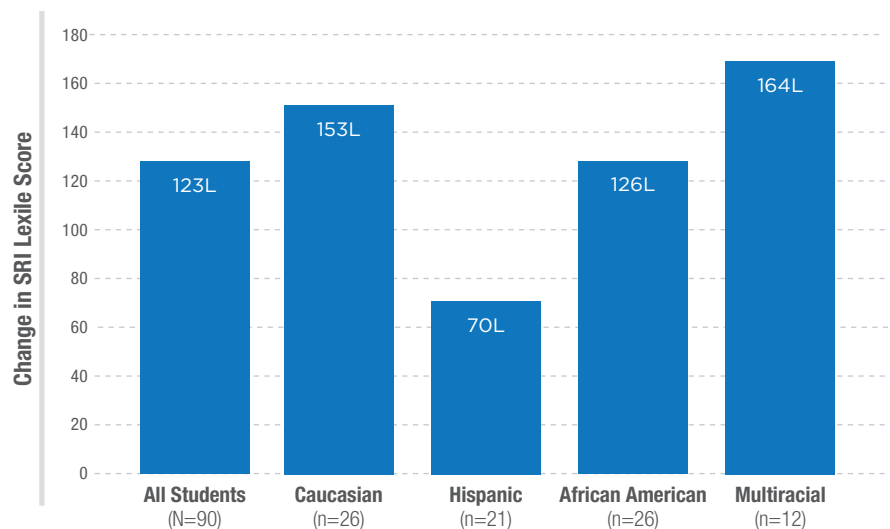
Northern United States

TABLE 1

Ann Arbor Public Schools *System 44* **Students, Grades 3–8 (N=113)**

Performance on TOWRE by Ethnicity, 2009–2010

Subgroup	N	Mean Fall Standard Score (Percentile)	Mean Spring Standard Score (Percentile)	TOWRE Gain
Caucasian	30	76 (5th)	79 (8th)	3
Hispanic	22	82 (12th)	85 (16th)	3
African American	47	75 (5th)	79 (8th)	4
Multiracial	14	75 (5th)	80 (9th)	5
All	**113**	**77** (6th)	**81** (10th)	**4**

Note. TOWRE Total Word Reading Efficiency gains were statistically significant overall (t=6.26, p=.00), for Caucasians (t=2.56, p=.02), Hispanics (t=3.55, p=.00), African Americans (t=3.99, p=.00), and for multiracial students (t=2.17, p=.05). Values in table are rounded to the nearest integer.

GRAPH 2

Ann Arbor Public Schools *System 44* **Students, Grades 3–8 (N=90)**

Performance on SRI by Ethnicity, 2009–2010

Note. Asian students (n=2) and Other Race students (n=3) were not included in the above graph. SRI Lexile gains were significant overall (t=8.02, p=.00), for Caucasians (t=4.42, p=.00), Hispanics (t=3.71, p=.00), African Americans (t=5.18, p=.00), and for multiracial students (t=2.56, p=.00).

SAGINAW PUBLIC SCHOOLS, MI

STUDY PROFILE

Evaluation Period: 2011–2012

Grades: 4–8

Assessment: Comprehensive Test of Phonological Processing (CTOPP) Elision subtest, Test of Word Reading Efficiency (TOWRE) Sight Word Efficiency and Phonetic Decoding Efficiency subtests, Test of Silent Reading Efficiency and Comprehension (TOSREC), *Scholastic Reading Inventory* (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=317

Implementation: 60 minutes daily (Stand-Alone)

OVERVIEW

Saginaw Public Schools (SPS) enrolls approximately 9,000 students in Grades PreK through 12. The majority of students in SPS are African American (65%), 20% are Caucasian, 13% are Hispanic, 1% are Asian/Pacific Islander, and less than 1% are American Indian/Alaskan Native. Eighty-one percent of students are eligible for free or reduced-price lunch.

During the 2011–2012 school year, students from 12 elementary schools and four middle and K–8 schools in SPS were selected to participate in a randomized controlled trial study led by a third-party research firm, RMC Research. In order to be eligible to participate, students had to meet the following three criteria: 1) perform below the 50th percentile on the Michigan Educational Assessment Program (MEAP); 2) score below 600 Lexile (L) measures on SRI; and 3) demonstrate foundational reading deficiencies (Beginning or Developing Decoder) on SPI. Eligible students who were placed into the *System 44* classrooms at SPS during the 2011–2012 school year were expected to receive 60 minutes of *System 44* instruction daily.

RESULTS

Implementation Results

Overall, teachers expected *System 44* to be more effective than their prior year's program in the five foundational literacy skills listed above (phonemic awareness, phonics, vocabulary, fluency, and comprehension). These expectations were realized in phonemic awareness, phonics, vocabulary, and fluency according to Spring 2012 ratings of *System 44* effectiveness. The differences between the perceived effectiveness of the prior program and the *System 44* program, with respect to teaching phonemic awareness and phonics, were statistically significant.

▶ Gold standard study reveals *System 44* students outperform comparison group students on measures of word reading fluency and comprehension.

Impact Results Overall

System 44 students performed significantly better than control group students on two of the individual standardized tests of word-level reading: CTOPP Elision (effect size of .27) and TOWRE Sight Word Efficiency (effect size of .16). This represents percentile gains of 11 points and six points, respectively. SPI and SRI outcomes also showed positive gains for the *System 44* students over the control group students. The impact was significant on SRI (effect size of .32). This represents a percentile gain of 13 points (Graph 1).

Impact Results for Students With Disabilities

Main effects for disability were revealed. The positive impact for students with disabilities was significantly larger than for the students overall on the CTOPP Elision (effect size of .36) and TOWRE Sight Word Efficiency (effect size of .24). This represents percentile gains of 14 points and nine points, respectively. The positive impact was also significantly larger on SPI Sight Word Fluency (effect size of .28). This represents a percentile gain of 11 points. In addition, the impact was significant on SRI (effect size of .34). This represents a percentile gain of 13 points (Graph 1).
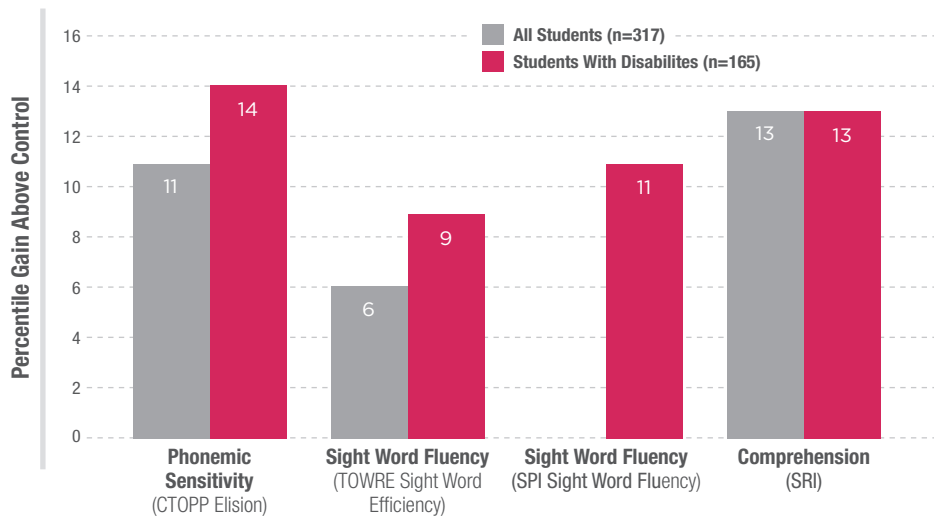
Impact Results for Middle School Students

The *System 44* middle school students performed significantly better than the control group students on three of the individual standardized tests of word-level reading: CTOPP Elision (effect size of .30), TOWRE Sight Word Efficiency (effect size of .24), and TOSREC (effect size of .20). This represents percentile gains of 12 points, nine points, and eight points, respectively. When disaggregated by students with disabilities, the significance held for the CTOPP Elision (effect size of .12) (Graph 2). The impact was significantly greater for the *System 44* middle school students than the control group middle school students on SRI (effect size of .49). This represents percentile gains of 18 points, 22 points, and 19 points, respectively. When disaggregated by students with disabilities, the significance held for SRI (effect size of .31) and SPI Sight Word Fluency (effect size of .28). This represents percentile gains of 12 points and 11 points, respectively.

GRAPH 1

Saginaw Public Schools *System 44* **Students, Grades 4–8 (N=317)**
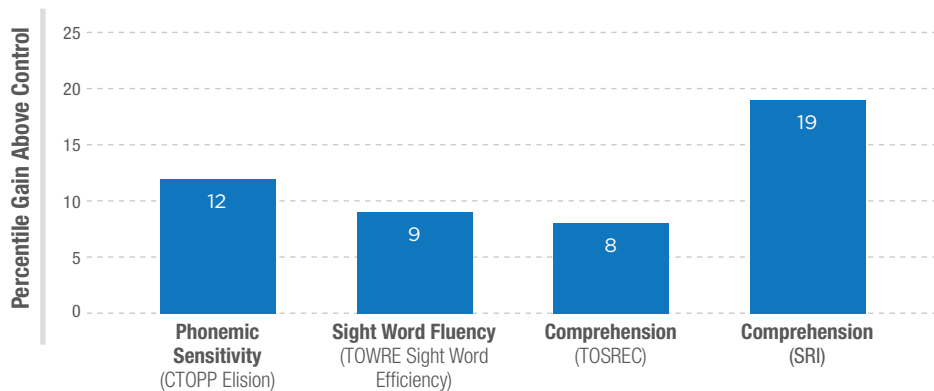
Performance on Reading Measures, 2011–2012

Legend:
- All Students (n=317)
- Students With Disabilites (n=165)

Y-axis: **Percentile Gain Above Control**

Data:
- Phonemic Sensitivity (CTOPP Elision): All Students 11, Students With Disabilities 14
- Sight Word Fluency (TOWRE Sight Word Efficiency): All Students 6, Students With Disabilities 9
- Sight Word Fluency (SPI Sight Word Fluency): Students With Disabilities 11
- Comprehension (SRI): All Students 13, Students With Disabilities 13

Note. Results shown for measures where significant effects were found.

Northern United States

GRAPH 2

Saginaw Public Schools *System 44* **Students, Grades 6–8 (N=145)**

Performance on Reading Measures, 2011–2012

Y-axis: **Percentile Gain Above Control**

Data:
- Phonemic Sensitivity (CTOPP Elision): 12
- Sight Word Fluency (TOWRE Sight Word Efficiency): 9
- Comprehension (TOSREC): 8
- Comprehension (SRI): 19

Note. Results shown for measures where significant effects were found.

ATLANTIC CITY SCHOOL, NJ

STUDY PROFILE

Evaluation Period: 2009–2010
Grades: 3–7
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=36
Implementation: 45 to 60 minutes daily (Stand-Alone)

OVERVIEW

Located in southern New Jersey, the Atlantic City School District (ACSD) enrolls approximately 6,300 students at 11 schools. The district's student population is 40% African American, 37% Hispanic, 13% Asian/Pacific Islander, 9% Caucasian, and less than 1% American Indian/Alaskan Native. Nearly three-quarters (73%) of all students are eligible for free or reduced-price meals.

During the 2009–2010 school year, *System 44* was piloted with students in Grades 3–7 at Sovereign Avenue School. The school principal sought to implement a Tier III intervention program that would provide more phonics instruction for students who were lacking a strong foundation in reading. Students were placed in *System 44* based on a variety of criteria, including scoring in the lowest 30–40% of the New Jersey Assessment of Skills and Knowledge (NJASK), performing poorly on SRI, and exhibiting difficulty with word-reading skills on SPI. *System 44* was implemented for 45 to 60 minutes daily as a pull-out program for all students.

RESULTS

Fall 2009 and spring 2010 SRI Lexile (L) data were collected from 36 *System 44* participants in Grades 3–7. As Graph 1 shows, after one semester of intervention, these students advanced from a pretest score of 112L to a posttest score of 209L, averaging a statistically significant gain of 97L and surpassing annual grade-level growth expectations for middle school. Further analysis showed that students who completed more than 40 topics on the software averaged higher gains than those who completed fewer topics on the SRI (169L vs. 62L) (Graph 2).

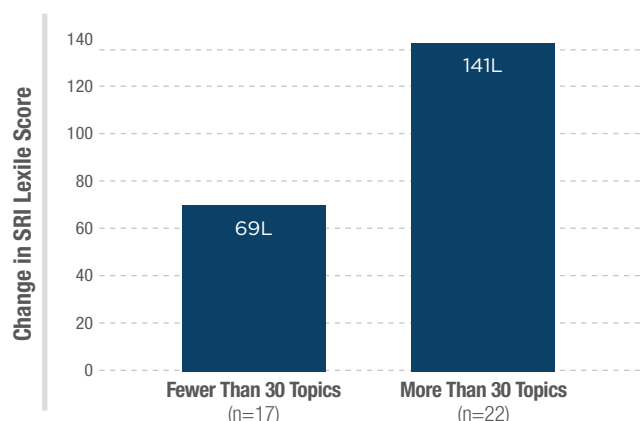▶ **Students show significant growth on SRI after one semester of *System 44*.**

GRAPH 1

Atlantic City School District *System 44* Students, Grades 3–7 (N=36)
Performance on SRI 2009–2010

Note. The gain in Lexile was statistically significant (t=5.26, p=.00).

GRAPH 2

Atlantic City School District *System 44* Students, Grades 3–7 (N=36)
Change in SRI Lexile Score as a Function of Software Usage, 2009–2010

Note. The gain in Lexile was significantly higher for students who completed more than 40 topics on the *System 44* software (t=9.27, p=.00).

JULIA A. STARK SCHOOL, STAMFORD PUBLIC SCHOOLS, CT

STUDY PROFILE

Evaluation Period: Winter to Spring 2010
Grades: 4–5
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=39
Implementation: 45 to 60 minutes daily
    (Stand-Alone or Integrated With *READ 180*)

▶**Accelerated reading growth on SRI after one semester of *System 44*.**

Northern United States

OVERVIEW

Julia A. Stark School, in the Stamford Public Schools (SPS) district, is situated in southeastern Connecticut. SPS enrolls approximately 15,500 students in Grades PreK–12. The district's student body is predominantly Caucasian (40%), while most of the remaining students are Hispanic (32%), African American (21%), Asian/Pacific Islander (7%), and American Indian/Alaskan Native (less than 1%). Approximately 43% of all SPS students are eligible for free or reduced-price lunch.

From February to June 2010, 39 SPS students in Grades 4 and 5 at Julia A. Stark School were identified for placement into *System 44*. Students were selected for inclusion in the program based on low performance on SRI and SPI. *System 44* was implemented during a 45- or 60-minute reading block. During that time, *System 44* was used as a stand-alone program or integrated into an existing *READ 180* program. In all classrooms, students were expected to use the *System 44* software for 20 minutes each day. For the purposes of this study, both models were analyzed together due to sample size constraints.

RESULTS

In winter and spring 2010, SRI data were collected for the *System 44* students. After one semester of instruction, findings indicated that, overall, these students made significant gains in reading comprehension. On average, *System 44* students improved their SRI performance from 119 Lexile (L) measures at pretest to 229L at posttest, resulting in a significant gain of 110L (Graph 1). Further analysis revealed that students who completed more than 30 topics on the software averaged higher gains on SRI than those who had completed fewer than 30 topics on the software (141L vs. 69L) (Graph 2).

GRAPH 1

Julia A. Stark School *System 44* Students, Grades 4–5 (N=39) Performance on SRI, 2010

Note. The gain in Lexile was statistically significant (t=5.81, p=.00).

GRAPH 2

Julia A. Stark School *System 44* Students, Grades 4–5 (N=39) Change in SRI Lexile Score as a Function of Software Usage, 2010

Note. The gain in Lexile was significantly higher for students who completed more than 30 topics on the *System 44* software (t=3.88, p=.06).

KIPP NYC (KNOWLEDGE IS POWER PROGRAM) NEW YORK CITY, NY

STUDY PROFILE

Evaluation Period: 2012–2013

Grades: 5–6

Assessment: Northwest Evaluation Association Measures of Academic Progress (NWEA MAP), Scholastic Reading Inventory (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=56

Implementation: 45 to 90 minutes daily (Stand-Alone and Integrated With *READ 180*)

▶ **Middle school children at an urban charter school demonstrate improvements in decoding, fluency, and reading comprehension.**

OVERVIEW

Knowledge Is Power Program (KIPP) is a national network of free, open-enrollment, college-preparatory public charter schools with a track record of preparing students in underserved communities for success in college and in life. KIPP NYC, a part of the national network, consists of 10 schools enrolling approximately 3,600 students in Grades K–12. There are four elementary schools, five middle schools, and one high school in KIPP NYC. The majority of the student body is African American (48%) or Hispanic (49%) and receives free or reduced-price lunch (88%). Fifteen percent are students with disabilities, and 8% are English language learners (ELL). The student attendance rate is 95.4%, and the annual student mobility rate is 5%. KIPP NYC's mission is "to teach our students to develop the character and academic skills necessary to succeed in high school and college, to be self-sufficient, successful, and happy in the competitive world, and to build a better tomorrow for themselves and us all."

During the 2012–2013 school year, 56 fifth- and sixth-grade students in three of KIPP NYC's middle schools (Academy, Infinity, and Washington Heights) were selected to participate in a study of *System 44's* effectiveness. Students were eligible to participate in *System 44* if they first scored below 600L on the SRI, and then scored as Pre-Decoder, Beginning Decoder, or Developing Decoder on SPI. Of the students in the study sample, 96% received free or reduced-price lunch, 31% were African American and 69% were Hispanic. Forty-five percent were students with disabilities, and 35% were ELL.

Students who were placed into *System 44* classrooms at KIPP NYC were expected to receive 45 to 90 minutes of instruction five times per week. The model varied across the schools with some classrooms using a stand-alone *System 44* implementation and some classrooms using an integrated *System 44/READ 180* model.

RESULTS

SPI, SRI, and NWEA MAP data were collected and analyzed for students who used the program during the 2012–2013 school year. Results demonstrated that the KIPP NYC *System 44* students improved in word-reading skills, as measured by SPI, and in reading comprehension, as measured by SRI and NWEA MAP.

Analysis of SPI Decoding Status showed that the percentage of *System 44* students identified as Advancing Decoder increased from the first SPI assessment to the last; whereas, the percentage of students identified as Pre-Decoder or Beginning Decoder decreased (Graph 1). There was a remarkable increase from only 2% of students (1 student) performing at the Advancing Decoder level at the beginning of the year to 30% of students (17 students) performing at the Advancing Decoder level by the end of the year. Of these students, nine graduated out of the program before the end of the year.

Overall, *System 44* students also made significant gains in SPI Total Fluency (7.5 points) from the first SPI assessment to the last. When disaggregated by grade, the gains in SPI Total Fluency made by fifth and sixth graders were significant, with fifth graders moving from the 10th percentile at the beginning of the year to the 24th percentile by the end of the year, and sixth graders moving from the 12th percentile at the beginning of the year to the 28th percentile by the end of the year (Table 1). These significant findings held for students with disabilities and ELLs, who made significant gains of 7.7 points and 7.5 points, respectively.

On SRI, *System 44* students demonstrated significant gains in their Lexile (L) scores from pretest to posttest (301L), with an average of three-quarters of students (75%) exceeding their individual yearly growth expectations. These significant findings held for students with disabilities and ELLs, who made gains of 321L and 308L, respectively (Graph 2). On NWEA MAP, students in the fifth and sixth grades demonstrated gains in their reading scores from pretest to posttest with the fifth-grade students demonstrating significant gains (13.5 points and 2.9 points, respectively).

GRAPH 1

KIPP NYC *System 44* Students, Grades 5–6 (N=56)

Performance on SPI by Decoding Status, 2012–2013

Legend: ▪ Pretest SPI (gray) ▪ Posttest SPI (pink)

% of Students (y-axis: 0% to 60%)

- Pre-Decoder: 4% / 2%
- Beginning Decoder: 52% / 32%
- Developing Decoder: 43% / 36%
- Advancing Decoder: 2% / 30%

Northern United States

Note. The pretest window for SPI was June 2012 to September 2012. All posttest scores were collected in May–June 2013.

TABLE 1

KIPP NYC *System 44* Students, Grades 5–6 (N=56)

Performance on SPI Total Fluency, 2012–2013

Grade	N	First Fluency Raw Score	First Fluency Percentile Rank*	Final Fluency Raw Score	Final Fluency Percentile Rank*	Average Fluency Gain
5th	41	8	10th percentile	16	24th percentile	8
6th	15	14	12th percentile	22	28th percentile	8
Total	**56**	**9.8**		**17.3**		**7.5***

*Gain significant at p < .05.

Note. SPI Form 1 was used for the first fluency percentile rank, and SPI Form 3 was used for the final fluency percentile rank.

GRAPH 2

KIPP NYC *System 44* Students, Grades 5–6 (N=56)

Performance on SRI, 2012–2013

Legend: ▪ Pretest SRI (gray) ▪ Posttest SRI (pink)

SRI Lexile Score (y-axis: 0 to 800)

- All Students (N=56): 326L / 627L — Gain: 301L
- ELL Students (n=18): 211L / 519L — Gain: 308L
- Students With Disabilities (n=23): 261L / 582L — Gain: 321L

Note. The pretest window for SRI was June 2012 to September 2012. All posttest scores were collected in May–June 2013.

PATCHOGUE-MEDFORD SCHOOL DISTRICT, NY

STUDY PROFILE

Evaluation Period: 2011–2012

Grade: 3

Assessment: Scholastic Reading Inventory (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=229

Implementation: 40 to 80 minutes daily (Stand-Alone)

▶ **With *System 44* instruction, third-grade students make significant gains in decoding and fluency.**

OVERVIEW

Patchogue-Medford School District enrolls approximately 8,700 students in Grades PreK–12. The majority of students are Caucasian (64%), 28% are Hispanic, 5% are African American, 2% are Asian, and 1% are Other. Twenty-six percent of students are eligible for free or reduced-price meals. In Grade 4 English, 53% of students are meeting standards, and in Grade 8 English, 44% of students are meeting standards.

During the 2011–2012 school year, 229 third-grade students in Patchogue-Medford School District were selected to participate in a study of *System 44*'s effectiveness. Students who were placed into the *System 44* classrooms at Patchogue-Medford were expected to receive 40–80 minutes of instruction daily.
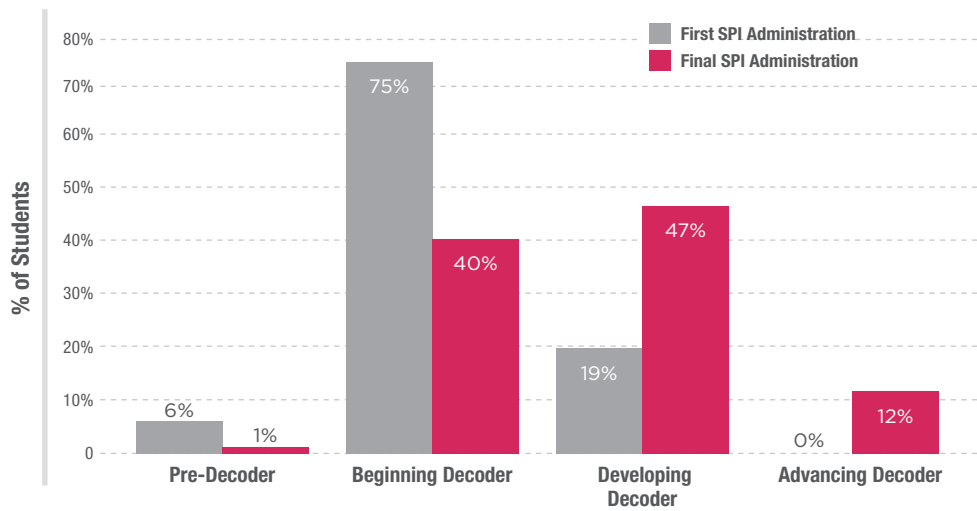
RESULTS

SPI and SRI data were collected and analyzed for students who used the program during the 2011–2012 school year. SPI and SRI outcomes showed positive gains for the *System 44* students on measures of decoding and fluency. Analysis of SPI Decoding Status showed that the percentage of *System 44* students identified as Developing Decoder or Advancing Decoder increased from the first SPI assessment to the last; whereas, the percentage of students identified as Pre-Decoder or Beginning Decoder decreased (Graph 1). *System 44* students also made significant gains in SPI Total Fluency moving from the 26th percentile on the first SPI assessment to the 45th percentile on the last. On SRI, *System 44* students demonstrated significant gains in their Lexile (L) scores from pretest to posttest (184L), with an average of nearly one-third of students exceeding their individual growth targets.

When both SPI and SRI outcomes were considered as a function of *System 44* software progress, students who completed more topics demonstrated greater gains. For SPI Fluency, students completing more software topics demonstrated higher initial fluency scores, as well as significantly greater gains in fluency across the school year (Graph 2). For SRI, students completing 50+ software topics demonstrated significantly greater Lexile gains across the school year than students completing fewer than 50 software topics (Graph 3).

GRAPH 1

Patchogue-Medford School District *System 44* **Students, Grade 3 (N=229)**

Performance on SPI by Decoding Status, 2011–2012

First SPI Administration
Final SPI Administration

% of Students

70%
60%
50%
40%
30%
20%
10%
0

Pre-Decoder
10%
2%

Beginning Decoder
66%
42%

Developing Decoder
24%
47%

Advancing Decoder
0%
9%

Northern United States

GRAPH 2

Patchogue-Medford School District *System 44* **Students, Grade 3 (N=229)**

Performance on SPI Total Fluency as a Function of *System 44* **Software Usage, 2011–2012**

SPI Fluency Score

Fewer than 50 topics completed (n=75)
50–79 topics completed (n=77)
80 or more topics completed (n=77)

20

15

10

5

0

Fall 2011
9.2
7.1
6.2

Gain: 8.2
Gain: 4.5
Gain: 1.6

Spring 2012
17.4
11.6
7.8

GRAPH 3

Patchogue-Medford School District *System 44* **Students, Grade 3 (N=229)**

Performance on SRI as a Function of *System 44* **Software Usage, 2011–2012**

SRI Lexile Score

Fewer than 50 topics completed (n=75)
50–79 topics completed (n=77)
80 or more topics completed (n=77)

500
450
400
350
300
250
200
150
100
50
0

Fall 2011
164L
102L
72L

Gain: 230L
Gain: 193L
Gain: 127L

Spring 2012
394L
295L
199L

BETHLEHEM AREA SCHOOL DISTRICT, PA

STUDY PROFILE

Evaluation Period: 2011–2012

Grades: 3–5

Assessment: Scholastic Reading Inventory (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=68

Implementation: 60 to 90 minutes three to five days per week (Stand-Alone and Integrated With *READ 180*)

▶ **Elementary students demonstrate significant gains on decoding and fluency after using *System 44*.**

OVERVIEW

Bethlehem Area School District enrolls approximately 15,000 students in Grades K–12 in 16 elementary schools, 4 middle schools, and 2 high schools. The majority of students in Bethlehem are Caucasian (55%), 9.5% are African American, 32.3% are Hispanic, 3.1% are Asian, and 0.2% are American Indian.

During the 2011–2012 school year, 68 elementary school students in Grades 3 through 5 in Bethlehem Area School District were selected to participate in a study of *System 44's* effectiveness. *System 44* was first implemented in the district during the 2009–2010 school year, making it the third year that the program had been implemented in the elementary schools. Six elementary schools participated in the study, each of which was a Title 1 school. While the eligibility criteria varied from school to school, the schools were directed to use the following data points: Pennsylvania System of School Assessment (PSSA), Dynamic Indicators of Basic Early Literacy Skills (DIBELS), Study Island, and Developmental Reading Assessment (DRA) for third graders. Reading Specialists then targeted kids based on these data points, as well as on SPI and SRI scores. Generally, students who were at the low end of Basic and the high end of Below Basic on SRI for their grade levels were eligible for *System 44*. Teacher recommendations were also considered. Students who were placed into *System 44* classrooms at Bethlehem were expected to receive 60 to 90 minutes of instruction, three to five times per week. The model varied across the district with some schools using a stand-alone *System 44* model and some schools using an integrated *System 44/READ 180* model.

RESULTS

SPI and SRI data were collected and analyzed for students who used the program during the 2011–2012 school year. SPI and SRI outcomes showed positive gains for the *System 44* students on measures of decoding and fluency. Analysis of SPI Decoding Status showed that the percentage of *System 44* students identified as Developing Decoder or Advancing Decoder increased from the first SPI assessment to the last, whereas the percentage of students identified as Pre-Decoder or Beginning Decoder decreased (Graph 1). *System 44* students also made significant gains in SPI Total Fluency (6.6 points) from the first SPI assessment to the last. On SRI, *System 44* students demonstrated significant gains in their Lexile (L) scores from pretest to posttest (215L), with an average of nearly one-third of students exceeding their individual growth targets.

When both SPI and SRI outcomes were considered as a function of *System 44* software progress, students who completed more topics demonstrated greater gains. For SPI Fluency, students completing more software topics demonstrated higher initial fluency scores, as well as significantly greater gains in fluency across the school year (Graph 2). For SRI, students completing 60+ software topics demonstrated significantly greater Lexile gains across the school year than students completing fewer than 60 software topics (Graph 3).

GRAPH 1

Bethlehem *System 44* Students, Grades 3–5 (N=68)
Performance on SPI by Decoding Status, 2011–2012

Legend:
- First SPI Administration
- Final SPI Administration

Y-axis: % of Students (0 to 80%)

Decoding Status	First SPI	Final SPI
Pre-Decoder	6%	1%
Beginning Decoder	75%	40%
Developing Decoder	19%	47%
Advancing Decoder	0%	12%

Northern United States

GRAPH 2

Bethlehem *System 44* Students, Grades 3–5 (N=68)
Performance on SPI Total Fluency as a Function of *System 44* Software Usage, 2011–2012

Y-axis: SPI Fluency Score (0 to 20)

Legend:
- Fewer than 60 topics completed (n=41)
- 60 or more topics completed (n=27)

- 60 or more topics: Fall 2011 = 8.9, Spring 2012 = 17.7, Gain: 8.8
- Fewer than 60 topics: Fall 2011 = 5.8, Spring 2012 = 10.9, Gain: 5.1

GRAPH 3

Bethlehem *System 44* Students, Grades 3–5 (N=68)
Performance on SRI as a Function of *System 44* Software Usage, 2011–2012

Y-axis: SRI Lexile Score (0 to 450)

Legend:
- Fewer than 60 topics completed (n=41)
- 60 or more topics completed (n=27)

- 60 or more topics: Fall 2011 = 92L, Spring 2012 = 375L, Gain: 283L
- Fewer than 60 topics: Fall 2011 = 65L, Spring 2012 = 234L, Gain: 169L

NORTHEASTERN FLORIDA PUBLIC SCHOOL DISTRICT

STUDY PROFILE

Evaluation Period: 2008–2009

Grades: 6–8

Assessment: Florida Oral Reading Fluency (FORF), Florida Comprehensive Assessment Test (FCAT), Scholastic Reading Inventory (SRI)

Participants: N=63

Implementation: 90 minutes daily (Stand-Alone or Integrated With *READ 180*)

▶ **Middle school students demonstrate oral reading fluency and comprehension gains on FORF and FCAT.**

OVERVIEW

This profile focuses on the achievement outcomes from a public school district in northeastern Florida that serves approximately 122,000 students in 175 schools. The district's student population is 45% African American, 41% Caucasian, 7% Hispanic, 4% multiracial, 4% Asian/Pacific Islander, and less than 1% American Indian/Alaskan Native. Fifty-five percent of all students are eligible to receive free or reduced-price lunch and 14% are students with disabilities.

During the 2008–2009 school year, a public school district in northeastern Florida piloted *System 44* with 63 middle school students in nine classes. Students were placed into *System 44* if they performed poorly on SRI and exhibited poor word-reading skills on SPI. Of the 63 middle school students participating in *System 44*, 76% were African American, 16% were Caucasian, and 8% were Hispanic. Eighty-one percent qualified for free or reduced-price lunch and 71% were students with disabilities who were classified as having either learning, intellectual, or emotional disability. Teachers integrated *System 44* into a 90-minute reading block. In three of the nine classrooms, a stand-alone version of *System 44* was implemented. In six classrooms, *System 44* was incorporated into an existing *READ 180* program. In all classrooms, students were expected to use the software for 15–20 minutes per day. For the purposes of this report, both models were analyzed together.

RESULTS

In order to measure changes in oral reading fluency, data from the Florida Oral Reading Fluency (FORF) assessment was obtained from 48 *System 44* students with fall 2008 and spring 2009 scores. Dependent t-tests revealed that these students improved, on average, from a fall pretest score of 62 words correct per minute (WCPM) to a posttest score of 73 WCPM, resulting in a statistically significant gain of 11 WCPM (Graph 1). *System 44* students also exhibited improvements in their reading comprehension as measured by performance on SRI. Results indicate that the 52 students who had pretest and posttest SRI data averaged a statistically significant gain of 147 Lexile (L) measures over the course of the 2008–2009 school year (Graph 2).

Consistent with these findings, *System 44* students demonstrated gains on the Florida Comprehensive Assessment Test (FCAT) Reading test. Overall, the 59 students who had spring 2008 and spring 2009 FCAT Developmental Scale Scores (DSS) achieved an average pretest score of 1051 and an average posttest score of 1182, resulting in a statistically significant gain of 131 DSS points (Graph 3).

GRAPH 1

Northeastern Florida Public School District *System 44* **Students, Grades 6–8 (N=48)**
Performance on FORF WCPM, 2008–2009

FORF WCPM

80	
75	
70	● 73 WCPM
65	Gain: 11 WCPM
60	62 WCPM
55	
50	

Fall 2008   Spring 2009

Note. The gain in words correct per minute (WCPM) was statistically significant (t=3.27, p=.00).

GRAPH 2

Northeastern Florida Public School District *System 44* **Students, Grades 6–8 (N=52)**
Performance on SRI, 2008–2009

SRI Lexile Score

400
350
300   333L
250   Gain: 147L
200
150   186L
100

Fall 2008   Spring 2009

Note. The gain in Lexile was statistically significant (t=6.37, p=.00).

GRAPH 3

Northeastern Florida Public School District *System 44* **Students, Grades 6–8 (N=59)**
Performance on FCAT, 2008–2009

FCAT DSS

1200
1180   1182
1160
1140
1120
1100   Gain: 131
1080
1060
1040   1051
1020
1000

Spring 2008   Spring 2009

Note. The gain in DSS scores was statistically significant (t=3.61, p=.00).

FAYETTEVILLE PUBLIC SCHOOLS, AR

STUDY PROFILE

Evaluation Period: 2010–2011

Grades: 3–11

Assessment: Scholastic Reading Inventory (SRI)

Participants: N=152

Implementation: 90 minutes daily (Stand-Alone or Integrated With *READ 180*)

OVERVIEW

Nestled in the Ozark Mountains, Fayetteville Public Schools (FPS) enrolls 8,400 students, including both children of employees of the University of Arkansas and immigrant families who work in the city's burgeoning poultry industry. Seventy-three percent of students are Caucasian, 11% are African American, 9% are Hispanic, 4% are Asian/Pacific Islander, 1% are American Indian/Alaskan Native, and 2% are multiracial. Currently, more than 43 languages are spoken by district students.

During the 2010–2011 school year, FPS piloted *System 44* with general education students, English language learners (ELL), and students with disabilities in Grades 3–11 in eight elementary schools, one K–7 school, two middle schools, two junior high schools, and one high school. Placement criteria included results from the Augmented Benchmark Examinations, Northwest Evaluation Association Measures of Academic Progress (MAP), SRI, SPI, and teacher recommendations. *System 44* was implemented during a 90-minute reading block. During that time, *System 44* was used as a stand-alone program or integrated into an existing *READ 180* program.

RESULTS

SRI Lexile (L) data was analyzed for 152 *System 44* students in Grades 3–11 who had both fall 2010 and winter 2011 scores. Results demonstrated that *System 44* students improved, on average, from a pretest score of 113L to a midyear score of 218L, resulting in a statistically significant gain of 105L. Moreover, significant Lexile growth was evidenced at all school levels (Graph 1). Further analysis showed that students who completed a greater number of *System 44* software topics averaged greater Lexile gains than those students who completed fewer topics (Graph 2). Students completing 60 or more topics averaged a gain of 124L, nearly twice the gain of students completing fewer than 40 topics (gain of 69L).

▶ Improved reading skills on SRI after one semester of *System 44*.

GRAPH 1

Fayetteville Public Schools *System 44* Students, Grades 3–11 (N=152) Performance on SRI, 2010–2011

Note. The 2010–2011 gains were statistically significant for all students (t=8.81, p=.00), the elementary students (t=7.48, p=.00), the middle school students (t=4.13, p=.99), and the junior high/high school students (t=2.30, p=.04).

GRAPH 2

Fayetteville Public Schools *System 44* Students, Grades 3–11 (N=152)

Change in SRI Lexile Score as a Function of *System 44* Software Usage, 2010–2011

RECOVERY SCHOOL DISTRICT, LA

STUDY PROFILE

Evaluation Period: 2009–2010
Grade: 4
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=29
Implementation: 90 minutes daily (Stand-Alone)

▶ **Fourth-grade students with severe behavioral problems enrolled in *System 44* achieve significant Lexile gains.**

Southern United States

OVERVIEW

The Recovery School District (RSD) in New Orleans, Louisiana, enrolls nearly 25,000 students in Grades K–12 in both traditional and charter schools. Created by legislation passed in 2003, RSD is designed to take underperforming schools and transform them into successful places for children to learn. Since 2005, RSD has had the added challenge of addressing the needs of children who experienced the traumatic events of Hurricane Katrina. RSD students are predominantly African American (98%). Thirteen percent are students with disabilities and 88% are eligible for free or reduced-price lunch.

In 2009, RSD piloted *System 44* in one fourth-grade classroom at Reed Elementary School. Students were selected to participate based on a number of criteria, including performing poorly on the Integrated Louisiana Education Assessment Program (iLEAP) and/or Louisiana Education Assessment Program (LEAP), scoring below 200L on SRI, and exhibiting difficulty with word-reading skills on SPI. Most students demonstrated severe behavioral problems and were reading two to three years behind grade level. Reed Elementary School implemented *System 44* as a stand-alone program for 90-minutes daily, five days a week in one fourth-grade classroom. The classroom followed a rotational model, including a whole-group introduction in which the teacher led a short warm-up activity to engage students and build phonemic awareness and phonics skills, followed by two 20–25-minute rotations on the instructional software and in small-group instruction.

RESULTS

Fall 2009 and spring 2010 SRI data were collected for 29 fourth-grade participants. Overall, findings indicate that *System 44* fourth-grade students demonstrated significant improvements in reading comprehension on SRI. On average, students' Lexile (L) scores improved from 35L at pretest to 232L at posttest, a significant gain of 197L. The fourth-grade teacher reported observing a surge in student confidence and a decrease in behavior problems as students developed the ability to successfully access grade-level texts.

GRAPH 1

Recovery School District *System 44* Students, Grade 4 (N=29) Performance on SRI, 2009–2010

Note. The gain in Lexile score was statistically significant for students in fourth grade (t=6.20, p=.00).

JEFFERSON PARISH PUBLIC SCHOOL SYSTEM, LA

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 6–9

Assessment: Louisiana Education Assessment Program (LEAP), Integrated Louisiana Education Assessment Program (iLEAP), Scholastic Reading Inventory (SRI)

Participants: N=124

Implementation: 60 to 90 minutes daily (Stand-Alone or Integrated With *READ 180*)

▶ **Limited-English proficient students and students with disabilities demonstrate significant improvements on the LEAP/iLEAP.**

OVERVIEW

Jefferson Parish Public School System (JPPSS) is located nine miles east of New Orleans. Its 89 schools enroll 44,000 students in Grades PreK–12. The district's student population is 50% African American, 32% Caucasian, 13% Hispanic, 5% Asian/Pacific Islander, and less than 1% American Indian/ Alaskan Native. Seventy-five percent of all students qualify for free or reduced-price lunch.

At the beginning of the 2009–2010 school year, JPPSS's superintendent decided to allocate newly available federal stimulus funds for a reading program that would help the district meet the needs of its most struggling students. Students were enrolled in *System 44* based on several criteria, including performing at the Unsatisfactory or Approaching Basic levels on the Louisiana Education Assessment Program (LEAP) and Integrated Louisiana Education Assessment Program (iLEAP) English Language Arts (ELA) assessments, performing poorly on SRI, and demonstrating difficulty with word-reading skills on SPI.

A total of 124 students were selected to participate in *System 44*. Of these students, 60% were African American, 24% were Caucasian, 10% were Hispanic, and 2% were Asian. Thirty-two percent were designated as students with disabilities, and 12% were limited-English proficient (LEP).

JPPSS piloted *System 44* at 16 middle schools, seven high schools, and one alternative school with students who had not yet mastered basic phonics and decoding skills. *System 44* was either implemented as a 60-minute stand-alone program or embedded into existing *READ 180* classrooms for 90 minutes daily. Regardless of the model, all students used the software for at least 20–25 minutes a day.

RESULTS

In 2009 and 2010, SRI and LEAP or iLEAP data were gathered from 124 students. Overall, *System 44* students demonstrated a significant improvement in reading comprehension on SRI. On average, students' Lexile (L) scores advanced from 181L at pretest to 348L at posttest, an average gain of 167L. These statistically significant gains continued when results were disaggregated by student group. On average, LEP students and students with disabilities gained 97L and 124L, respectively (Graph 1).

Results demonstrated that *System 44* students as a whole made improvements in reading ability, as measured by the LEAP/iLEAP (Graph 2). In spring 2009, prior to the implementation of *System 44*, only 2% of these students achieved the Basic Performance Level. However, Graph 2 shows that by the spring 2010 LEAP/iLEAP administration, the percentage of students scoring in the Basic Performance Level increased to 9%. Conversely, the percentage of students scoring in the Unsatisfactory Level decreased from 68% in spring 2009 to 60% in spring 2010.

Further analysis revealed that among the 74 students who scored in the Unsatisfactory Level on the 2009 LEAP/iLEAP, 34% (30% +4%) of students moved up one or more Performance Levels on the 2010 LEAP/iLEAP. Similarly, of the 37 students who scored in the Approaching Basic Performance Level, 19% moved to the Basic Performance Level on the LEAP/iLEAP (Table 1).

These positive trends continued when the results were analyzed by student group. *System 44* LEP students and students with disabilities made substantial gains in terms of the percentage of students scoring in the Basic range from 2009 to 2010. The percentage of *System 44* LEP students achieving Basic on the LEAP/iLEAP increased from 0% to 13% and the percentage of students with disabilities scoring in the Basic category increased from 3% to 8%.

GRAPH 1

Jefferson Parish Public School System *System 44* **Students, Grades 6–9 (N=124)**

Performance on SRI by Student Group, 2009–2010

- Fall 2009
- Spring 2010

SRI Lexile Score

All Students (N=124)	LEP Students (n=15)	Students With Disabilities (n=47)
181L / 348L — Gain: 167L	139L / 236L — Gain: 97L	184L / 308L — Gain: 124L

Note. The gains in Lexile were significant overall (t=9.83, p=.00), for students who were limited-English proficient (t=2.64, p=.02), and for students with disabilities (t=3.92, p=.00).

GRAPH 2

Jefferson Parish Public School System *System 44* **Students, Grades 6–9 (N=124)**

Performance Levels on LEAP/iLEAP, 2009–2010

% of Students

- Spring 2009
- Spring 2010

Unsatisfactory	Approaching Basic	Basic
68% / 60%	30% / 31%	2% / 9%

TABLE 1

Jefferson Parish Public School System *System 44* **Students, Grades 6–9 (N=124)**

Performance Levels on LEAP/iLEAP, 2009–2010

		2010 Leap/iLeap Performance Levels			2009 Total Count
		Unsatisfactory	Approaching Basic	Basic	
2009 Leap/iLeap Performance Levels	Unsatisfactory	67%	30%	4%	84
	Approaching Basic	46%	35%	19%	37
	Basic	33%	33%	33%	3
2010 Total Count		74	39	11	124

Note. Of the 74 students who performed in the Unsatisfactory Performance Level on the Leap/iLeap, 67% remained in this level, 30% moved to the Approaching Basic Level, and 4% moved to the Basic Level.

ST. JAMES PARISH SCHOOL DISTRICT, LA

STUDY PROFILE

Evaluation Period: 2012–2013

Grades: 2–8

Assessment: Scholastic Reading Inventory (SRI), Scholastic Phonics Inventory (SPI)

Participants: N=112

Implementation: 60 to 90 minutes daily (Stand-Alone and Integrated With *READ 180*)

▶ **Elementary and middle school students improve on decoding and fluency after using *System 44*.**

OVERVIEW

St. James Parish School District (SJPSD) enrolls approximately 4,200 students in Grades PreK–12 in 11 schools. The majority of students in St. James Parish are African American (66%), 33% are Caucasion, and 1% are Hispanic. Twelve percent are students with disabilities.

During the 2012–2013 school year, SJPSD implemented *System 44* across eight schools throughout the district. A total of 112 elementary and middle school students in Grades 2 through 8 were selected to participate in a study of *System 44*'s effectiveness. Students who were placed into *System 44* classrooms at SJPSD were expected to receive 60 to 90 minutes of instruction five times per week. The model varied across the district with some schools using a stand-alone *System 44* implementation and some schools using an integrated *System 44/READ 180* model.

RESULTS

SPI and SRI data were collected and analyzed for students who used the program during the 2012–2013 school year. SPI and SRI outcomes showed positive gains for the *System 44* students on measures of decoding, fluency, and comprehension. Analysis of SPI Decoding Status showed that the percentage of *System 44* students identified as Developing Decoder or Advancing Decoder increased from the first SPI assessment to the last, whereas the percentage of students identified as Pre-Decoder or Beginning Decoder decreased (Graph 1). *System 44* students also made gains in SPI Total Fluency from the first SPI assessment to the last, with over half of students (54%) demonstrating a four point increase in fluency. On SRI, *System 44* students demonstrated gains in their Lexile (L) scores from pretest to posttest (240L), with 41% of students exceeding individual growth expectations (Graph 2).

GRAPH 1

St. James Parish School District *System 44* Students, Grades 2–8 (N=112)

Performance on SPI by Decoding Status, 2012–2013

Southern United States

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GRAPH 2

St. James Parish School District *System 44* Students, Grades 2–8 (N=112)

Performance on SRI, 2012–2013

CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT, TX

STUDY PROFILE

Evaluation Period: 2009–2010
Grades: 4–12
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=459
Implementation: 60 to 90 minutes daily (Stand-Alone)

▶ **Students with disabilities achieve statistically significant gains after one year of *System 44*.**

OVERVIEW

Located outside of Houston, Texas, the Cypress-Fairbanks Independent School District (CFISD) enrolls more than 105,000 students in 52 elementary schools, 16 middle schools, 11 high schools, and four special program campuses. The district's student population is 42% Hispanic, 31% Caucasian, 16% African American, 8% Asian American, and less than 1% American Indian. Forty-six percent of all students receive free or reduced-price lunch, and 22% of all students are limited-English proficient (LEP).

During the fall of 2009, CFISD implemented *System 44* at 39 campuses—including elementary, middle, and high schools—with over 500 students with disabilities. In addition to their disability classification, 524 students in Grades 4–12 were selected to participate based on a number of criteria, including performing poorly on the Texas Assessment of Knowledge and Skills (TAKS) Reading, scoring below 400L on SRI, and exhibiting difficulty with word-reading skills on SPI. All classrooms implemented a stand-alone model of *System 44*, with the classroom period varying from 60 to 90 minutes based on school schedule. All classrooms followed a rotational model, including a whole-group introduction, followed by 20- to 25-minute rotations in small-group instruction or on the instructional software.

RESULTS

Fall 2009 and spring 2010 SRI data were collected and analyzed from 524 students in Grades 4–12 who used the program during the 2009–2010 school year. Findings revealed that *System 44* students demonstrated gains on SRI during the 2009–2010 school year. *System 44* students improved, on average, from a pretest score of 173L to a posttest score of 256L, resulting in a statistically significant gain of 83L (Graph 1). Elementary students in Grades 4 and 5 demonstrated a significant gain of 41L, middle school students in Grades 6–8 exhibited a significant gain of 103L, and high school students in Grades 9–12 achieved a significant gain of 87L. As Table 1 shows, results were particularly impressive for eighth-grade and ninth-grade students who demonstrated a significant achievement gain of 123L and 121L, respectively.

GRAPH 1

Cypress-Fairbanks Independent School District *System 44* **Students With Disabilities, Grades 4–12 (N=459)**
Performance on SRI, 2009–2010

Note. The gains in Lexile were statistically significant for all students (t=11.46, p=.00), elementary school students (t=4.29, p=.00), middle school students (t=9.18, p=.00), and high school students (t=6.04, p=.00).

Southern United States

TABLE 1

Cypress-Fairbanks Independent School District *System 44* **Students With Disabilities, Grades 4–12 (N=459)**
Performance on SRI, 2009–2010

Grade	N	PRETEST SRI LEXILE	POSTTEST SRI LEXILE	GAIN IN SRI LEXILE
4	90	70L	120L	50L
5	56	147L	170L	23L
6	84	125L	233L	108L
7	71	181L	287L	106L
8	54	250L	373L	123L
9	41	238L	360L	121L
10	38	303L	408L	105L
11	15	280L	320L	39L
12	10	246L	277L	31L
All	**459**	**173L**	**256L**	**83L**

Note. The gains in Lexile were statistically significant for all students in fourth grade (t=3.82, p=.00), sixth grade (t=4.98, p=.00), seventh grade (t=6.44, p=.00), eighth grade (t=5.35, p=.00), ninth grade (t=4.11, p=.00), and tenth grade (t=4.94, p=.00). SRI Lexile gains have been rounded to the nearest integer.

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MIDLAND INDEPENDENT SCHOOL DISTRICT, TX

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 4–9

Assessment: Texas Assessment of Knowledge and Skills (TAKS), Scholastic Reading Inventory (SRI)

Participants: N=346

Implementation: 45 minutes daily (Stand-Alone)

▶**Greater numbers of students with disabilities meet or exceed the standard on the TAKS.**

OVERVIEW

Midland Independent School District (MISD) is located between El Paso and Dallas/Ft. Worth, with an economic base in oil and ranching. Its 38 schools enroll approximately 21,000 students in Grades PreK–12. The district's population is predominantly Hispanic (66%), while most of the remaining students are Caucasian (37%) and African American (10%). Forty-eight percent are eligible for free or reduced-price lunch, and 34% are students with disabilities. Approximately 19% are limited-English proficient (LEP), and 92% of these students speak Spanish as their first language.

Following two years of a successful *READ 180* implementation, the district chose to implement *System 44* as a district-wide curriculum for students who lacked foundational literacy skills. Priority was given to LEP students and students with disabilities.

During the 2009–2010 school year, MISD implemented a stand-alone model of *System 44* in 23 classrooms. Elementary, middle, and high school students were placed into the intervention program if they scored below 400 Lexile (L) measures on SRI and exhibited difficulty with word-reading skills on SPI.

A total of 346 students in Grades 4–9 comprise the sample in this report. Approximately half (52%) were male. Approximately 66% of these students were Hispanic, 14% were Caucasian, 18% were African American, and 2% were not identified. Twenty-three percent were students with disabilities.

RESULTS

Texas Assessment of Knowledge and Skills (TAKS) Reading and SRI data were collected and analyzed for 346 students in Grades 4–9 who used the program during the 2009–2010 school year. Findings indicated that, on average, the percentage of *System 44* students meeting or exceeding the standard on TAKS Reading increased from 2009 to 2010. Overall, the percentage of *System 44* students meeting or exceeding the standard on TAKS Reading improved from 42% in 2009 to 44% in 2010. These improvements in performance were magnified when the data was disaggregated by student group. As Graph 1 illustrates, the percentage of students with disabilities who met or exceeded the standard on TAKS Reading improved from 44% in 2009 to 64% in 2010. SRI results revealed similar trends in reading performance for students in elementary and junior/freshman high. As Table 1 shows, overall, *System 44* students in MISD gained an average of 207L, with elementary students gaining an average of 210L, and junior/freshman high students gaining an average of 197L.

Further, data showed that more time spent on *System 44* software was associated with greater improvement on SRI. Students were divided into groups depending upon the number of software sessions they completed. A one-way ANOVA test and subsequent post-hoc analyses confirmed that Lexile gains were significantly greater for students who completed 80 or more sessions than for students who completed fewer than 80 sessions.

GRAPH 1

Midland Independent School District *System 44* **Students, Grades 4–9 (N=346)**

Performance on TAKS Reading by Education Classification, 2009–2010

% of Students Meeting or Exceeding the Standard

Legend:
- 2009 Pass Rate
- 2010 Pass Rate

All Students (N=346): 42%, 44%
Students With Disabilities (n=116): 44%, 64%

Note. The increase in pass rates was statistically significant for students with disabilities (t=3.36, p=.00).

TABLE 1

Midland Independent School District *System 44* **Students, Grades 4–9 (N=346)**

Performance on SRI by School Level, 2009–2010

School Level	N	Mean Pretest SRI	Mean Posttest SRI	Mean SRI Lexile Gain
Elementary (4th–6th)	291	191L	401L	210L
Junior & Freshman High (7th–9th)	55	155L	352L	197L
All	**346**	**186L**	**393L**	**207L**

Note. The gain in Lexile was statistically significant for elementary students (t=21.87, p=.00), freshman and junior high school students (t=9.10, p=.00), and all students (t=23.71, p=.00).

GRAPH 2

Midland Independent School District *System 44* **Students, Grades 4–9 (N=346)**

Change in SRI Lexile Score as a Function of Software Usage, 2009–2010

Change in SRI Lexile Score

Fewer Than 80 Sessions (n=48): 127L
80–100 Sessions (n=160): 216L
More Than 100 Sessions (n=129): 229L

Note. The gain in Lexile was significantly greater for students who completed 80 or more sessions than for students who completed fewer than 80 sessions (t=7.41, p=.00).

RICHLAND SCHOOL DISTRICT, WA

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 9–12

Assessment: Scholastic Reading Inventory (SRI)

Participants: N=20

Implementation: 50 to 110 minutes daily (Stand-Alone or Integrated With *READ 180*)

▶ **High school students with physical and mental challenges benefit from *System 44*.**

OVERVIEW

Richland School District is a small public school district serving approximately 10,700 students in Washington State. In 2009, the district's student body was largely Caucasian (82%), while most of the remaining students were Hispanic (9%), Asian/Pacific Islander (5%), African American (3%), and American Indian (1%). Nearly a third of students (30%) qualified for free or reduced-price lunch, 12% were students with disabilities, and 2% were classified as Transitional Bilingual.

In the fall of 2009, 20 students in Grades 9–12 were identified for placement into *System 44*. Students were selected for inclusion in the program based on a combination of factors including low performance on the Northwest Evaluation Association Measures of Academic Progress (MAP) assessment, SRI, and SPI. *System 44* was implemented in two high schools. In one high school, it was integrated into an existing *READ 180* program for 100 to 110 minutes each day. In the other high school, *System 44* was used in two Life Skills classrooms serving students with physical and cognitive impairments. In the Life Skills classrooms, a 50- to 55-minute stand-alone version was used. In all classrooms, students were expected to use the *System 44* software for 20 minutes each day. For the purposes of this study, both models were analyzed together.

RESULTS

In order to measure the impact of *System 44* on student achievement, fall 2009 and spring 2010 SRI Lexile (L) data were gathered for the *System 44* students. Findings revealed that, on average, students improved from a pretest score of 204L to a posttest score of 319L, a statistically significant gain of 115L (Graph 1).

GRAPH 1

Richland School District *System 44* Students, Grades 9–12 (N=20) Performance on SRI, 2009–2010

MODESTO CITY SCHOOLS, CA

STUDY PROFILE

Evaluation Period: 2009–2010
Grades: 4–11
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=74
Implementation: 90 minutes daily (Stand-Alone and Integrated With *READ 180*)

▶ **Students with disabilities demonstrate higher performance on SRI.**

Western United States

OVERVIEW

Located in California's central valley, Modesto City Schools (MCS) serves approximately 30,600 students in Grades K–12. Approximately 36% of the student population is Hispanic, 29% Caucasian, 7% Asian/Pacific Islander, 5% African American, 1% American Indian, and 2% include other ethnic origins. One-quarter (26%) of students are English language learners (ELL), and 13% are students with disabilities.

During the 2009–2010 school year, MCS implemented *System 44* with students with disabilities in elementary, middle, and high school Special Day Classes (SDC). These students performed at the Below Basic or Far Below Basic performance level on the California Standards Test of English Language Arts (CST ELA) or scored at performance level 1, 2, or 3 on the California English Language Development Test (CELDT). They evidenced low reading comprehension scores on SRI and difficulty with word-reading skills on SPI.

Teachers integrated *System 44* into a 90-minute reading block. In the majority of classrooms, *System 44* was incorporated into the existing *READ 180* program. A stand-alone version was implemented in the district's Language Academy. In all classrooms, students were expected to use the software for at least 20 minutes each day.

RESULTS

Fall 2009 and spring 2010 SRI Lexile (L) data were collected from 74 MCS *System 44* students in Grades 4–11. SRI results indicated that on average, *System 44* students improved from a pretest score of 143L to a posttest score of 261L, a statistically significant gain of 118L. As Graph 1 shows, over the course of the school year, elementary, middle, and high school *System 44* students achieved average gains of 32L, 97L, and 219L, respectively.

GRAPH 1

Modesto City Schools *System 44* Students, Grades 4–11 (N=74)
Performance on SRI by Grade Level, 2009–2010

Legend: ▇ Fall 2009 ▇ Spring 2010

Group	Fall 2009	Spring 2010	Gain
All (N=74)	143L	261L	Gain: 118L
Elementary School (n=18)	73L	105L	Gain: 32L
Middle School (n=34)	153L	250L	Gain: 97L
High School (n=22)	186L	405L	Gain: 219L

Y-axis: SRI Lexile Score (0–450)

Note. The gains in Lexile were statistically significant for all students ($t=4.73$, $p=.00$), middle school students ($t=2.78$, $p=.01$), and high school students ($t=4.21$, $p=.00$). Gains in Lexile are rounded to the nearest integer.

MURRIETA VALLEY UNIFIED SCHOOL DISTRICT, CA

STUDY PROFILE

Evaluation Period: 2010–2011

Grades: 4–8

Assessment: California Standards Test of English Language Arts (CST ELA), Scholastic Phonics Inventory (SPI)

Participants: N=293

Implementation: 60 minutes daily (Stand-Alone)

▶**System 44 gold standard study reveals significant improvement on word reading fluency and comprehension.**

OVERVIEW

Murrieta Valley Unified School District (MVUSD) is located in Murrieta, California, on the southwestern edge of Riverside County. MVUSD serves approximately 22,000 students across 18 schools from Grades K through 12. The majority of MVUSD students are either Caucasian (48%) or Hispanic (33%). Other ethnicities represented include African American (5%), Asian (4%), and Filipino (4%). Four percent are English language learners (ELL) and 11% are students with disabilities. Approximately one-quarter of all students in the district are eligible for free or reduced-price meals.

During the 2010–2011 school year, students from 11 schools in MVUSD were selected to participate in a randomized controlled trial study based on a two-tiered screening process. Tier 1 consisted of students who performed below the 50th percentile on the California Standards Test of English Language Arts (CST ELA) and who scored below 600 Lexile (L) measures on SRI. Tier 2 consisted of students who met Tier 1 criteria and also demonstrated foundational reading deficiencies (Beginning or Developing Decoder) on SPI. Students who met Tier 2 criteria were placed into *System 44* classrooms where they were expected to receive 60 minutes of *System 44* instruction daily.

RESULTS

SPI and CST ELA data were collected and analyzed for students who used the program during the 2010–2011 school year. SPI results demonstrated that *System 44* students significantly outperformed control group students in reading fluency (Graph 1). Results from the CST ELA showed a significant increase in the percentage of students who achieved proficiency for both the *System 44* and control group students; however, *System 44* students improved from 11% Proficient in 2010 to 41% Proficient in 2011, whereas control group students improved from 12% Proficient to 32% Proficient (Graph 2).

Additional analyses indicated that software dosage was significantly related to reading outcomes (Graph 3). Specifically, students who completed 100 or more topics out of a total of 160 *System 44* topics made significantly higher gains than students who completed fewer than 100 topics on Woodcock-Johnson III (WJ III) Word Identification ($p < .05$), SPI Sight Word Fluency ($p < .001$), SPI Nonword Fluency ($p < .001$), and SPI Total Fluency ($p < .001$).

GRAPH 1

Murrieta Valley USD *System 44* **and Control Group Students, Grades 4–8 (N=293)**
Performance on SPI Total Fluency, 2010–2011

SPI Total Fluency Score

■ *System 44* (n=147)
■ Control Group (n=146)

- 23
- 19
- 14
- 13

Fall 2010   Spring 2011

GRAPH 2

Murrieta Valley USD *System 44* **and Control Group Students, Grades 4–8 (N=287)**
Percentage of Students Scoring Proficient on CST ELA, 2010 and 2011

% of Students

■ *System 44* (n=140)
■ Control Group (n=147)

- 41%
- 32%
- 12%
- 11%

Fall 2010   Spring 2011

Western
United States

GRAPH 3

Murrieta Valley USD *System 44* **Students, Grades 4–8 (N=172)**
SPI Total Fluency Growth as a Function of *System 44* **Software Usage, 2010–2011**

SPI Total Fluency Score

■ Fewer Than 100 Topics
■ Between 100 and 159 Topics
■ All 160 Topics

Fall 2010   Spring 2011

Note. The sample sizes are as follows: Fewer Than 100 Topics Completed (n=43); Between 100 and 159 Topics Completed (n=37); and All 160 Topics Completed (n=92).

NAPA VALLEY UNIFIED SCHOOL DISTRICT, CA

STUDY PROFILE

Evaluation Period: 2011–2012

Grades: 3–11

Assessment: California Standards Test of English Language Arts (CST ELA), California English Language Development Test (CELDT)

Participants: N=517

Implementation: 30 to 120 minutes daily (Stand-Alone and Integrated With *READ 180*)

▶ **Improving outcomes and reducing costs with** *System 44* **and** *READ 180*.

OVERVIEW

Napa Valley Unified School District (NVUSD) is representative of school districts in California and serves 18,078 students in 30 schools. Hispanic students comprise just over half of the student population. Located in a demanding agricultural region, the district also serves a large migrant population.

In the 2011–2012 school year, NVUSD partnered with us and Whiteboard advisors to investigate the use of *System 44* and *READ 180* with its students in Grades 3 through 11. These programs were chosen by the district as they are among the most researched competency-based reading intervention programs available. Additionally, *System 44* and *READ 180* are designed to support positive behavior interventions and supports (PBIS) that identify and sustain effective school-wide academic and behavioral practices that improve student outcomes. The programs do this by incorporating instructional management routines, classroom engagement, clear goal setting, and rewards that may be implemented in parallel with positive behavior interventions. In these ways, *System 44* and *READ 180* are in line with NVUSD's vision for improving student outcomes while reducing costs.

RESULTS

California Standards Test of English Language Arts (CST ELA) and California English Language Development Test (CELDT) scores were collected and analyzed for both *System 44* and *READ 180* students in Grades 3 through 11 who used the program during the 2011–2012 school year. This study reports out on results among students using *System 44* during the 2011–2012 school year, including 517 students with valid CST ELA data and 444 students with valid CELDT data.

Results from the CST ELA and CELDT demonstrated that students significantly improved their reading comprehension skills after one year of *System 44* (Graph 1). From 2011 to 2012, the percentage of *System 44* students in Grades 3 through 11 scoring Proficient and Above on the CST ELA increased from 6% to 16%, including a jump from 4% to 32% for the district's fourth graders. The CELDT corroborated these gains. Students using *System 44* experienced significant improvements from 2011 to 2012. In 2012, 41% of *System 44* students scored Early Advanced and Above on CELDT, up from 12% in the prior year. Similar results were reported for *READ 180* students[1].

In addition, referral rates, expulsion and suspension data, and financial data were collected and analyzed. The district tracked lower referral rates into special education since using *System 44* and *READ 180* (Graph 2). In 2004 the district recorded 1,164 students with specific learning disabilities. In 2011 that count dropped to 695. This trend allowed NVUSD to reduce its special education caseload, reduce its associated costs for students with specific learning disabilities, and better focus its services on its academic and behavioral priorities.

As part of the positive behavioral intervention program implemented at NVUSD, *System 44* and *READ 180* contributed to improved behavioral outcomes and cost savings (Graph 3). In 2009, the district recorded 58 expulsions. That figure dropped to 26 expulsions in 2012, which represented $188,600 captured by the district. Suspensions days dropped from 4,881 to 2,086 from 2010 to 2012, representing $83,850 that the district would have otherwise lost. The captured funds are reinstated back into NVUSD's program and behavioral priorities.

[1]These results can be found in the *READ 180 Compendium* at hmhco.com/READ180.

GRAPH 1

Napa Valley Unified School District *System 44* Students, Grades 3–11 (N=517)
Performance on CST ELA and CELDT, 2011–2012

Legend:
- Spring 2011 (gray)
- Spring 2012 (red)

Y-axis: % of Students (0% to 50%)

- Proficient and Above on CST ELA All Students (N=517): Spring 2011 = 6%, Spring 2012 = 16%
- Proficient and Above on CST ELA Grade 4 (n=142): Spring 2011 = 4%, Spring 2012 = 32%
- Early Advanced and Above on CELDT All Students (N=444): Spring 2011 = 12%, Spring 2012 = 41%

GRAPH 2

Napa Valley Unified School District Students With Disabilities and Specific Learning Disabilities, Grades K–12
Enrollment Trends, 2000–2011

Legend:
- Students With Disabilities (light blue)
- Students With Specific Learning Disabilities (gray)
- District Enrollment (blue)

Left Y-axis: District Enrollment (0K to 20K)
Right Y-axis: Students With Disabilities and Specific Learning Disabilities (600 to 2,200)

District Enrollment starts at 16,414 and ends at 18,078.

Students With Disabilities: 1,760 / 1,839 / 1,913 / 2,017 / 2,119 / 2,126 / 2,095 / 2,084 / 2,047 / 2,020 / 1,971 / 1,910

Students With Specific Learning Disabilities: 907 / 966 / 1,037 / 1,086 / 1,164 / 953 / 828 / 766 / 739 / 728 / 730 / 695

X-axis: 2001, 2003, 2005, 2007, 2009, 2011

GRAPH 3

Napa Valley Unified School District Students, Grades K–12
Expulsion and Suspension Counts and Costs, 2006–2012

Left chart:
- Left Y-axis: # of Expulsions (0 to 50+)
- Right Y-axis: Expulsion Costs ($0 to $360,000)
- $342,000 (2009), $224,000 (2010), $241,900 (2011), $153,400 (2012)
- X-axis: 2009, 2010, 2011, 2012

Right chart:
- Left Y-axis: # of Suspensions Days (0 to 5,000+)
- Right Y-axis: Suspensions Costs ($0 to $160,000)
- $146,430 (2010), $99,120 (2011), $62,580 (2012)
- X-axis: 2010, 2011, 2012

SAN JUAN UNIFIED SCHOOL DISTRICT, CA

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 4–12

Assessment: Scholastic Reading Inventory (SRI)

Participants: N=662

Implementation: 90 minutes daily
(Integrated With *READ 180*)

OVERVIEW

Located in northeastern Sacramento County, San Juan Unified School District (SJUSD) serves more than 40,000 students in 70 schools. The district's student population is largely Hispanic (17%) and Caucasian (66%). The remaining students are African American (8%), American Indian (2%), Asian/Pacific Islander (7%), or represented by other ethnicities (1%). Ten percent of the students are English language learners (ELL), and 36% are eligible for free or reduced-price lunch.

SJUSD introduced *System 44* in the district in 2009 for struggling readers who had not yet mastered foundational reading skills. The district prioritized placement for students with disabilities and ELLs. Students were enrolled if their performance on SRI and SPI indicated that they had difficulty with both reading comprehension and word-reading skills.

During the 2009–2010 school year, *System 44* was incorporated within a 90-minute *READ 180* classroom period. All classes included whole-group and small-group instruction. Students were expected to use the *System 44* instructional software for at least 20 minutes a day.

RESULTS

In order to measure the impact of *System 44* on students' reading achievement, fall 2009 and spring 2010 SRI Lexile (L) measures were collected from 662 *System 44* students in Grades 4–12. Results indicate that *System 44* students' reading comprehension skills improved during the school year. Overall, *System 44* students advanced from 102L in 2009 to 225L in 2010, a statistically significant gain of 123L. Elementary, middle, and high school *System 44* students made gains of 134L, 103L, and 120L, respectively (Graph 1). Further analysis showed that students who completed more topics on the *System 44* instructional software demonstrated greater Lexile gains on SRI (Graph 2).

▶ Students with disabilities and English language learners surpass grade-level expectations on SRI.

GRAPH 1

San Juan Unified School District *System 44* Students, Grades 4–12 (N=662) Performance on SRI by Grade Level, 2009–2010

Note. The gains in Lexile were statistically significant for all students (t=17.11, p=.00), elementary school students (t=15.40, p=.00), and middle school students (t=8.18, p=.00). The high school sample was too small to test for significance.

GRAPH 2

San Juan Unified School District *System 44* Students, Grades 4–12 (N=662) Change in SRI Lexile Score as a Function of Software Usage, 2009–2010

Note. There was a statistically significant difference in Lexile gains between the two groups as determined by a one-way ANOVA (t=35.63, p=.00).

JEFFERSON COUNTY PUBLIC SCHOOLS, CO

STUDY PROFILE

Evaluation Period: 2009–2010
Grades: 7–11
Assessment: Scholastic Reading Inventory (SRI)
Participants: N=57
Implementation: 90 minutes daily
(Integrated With *READ 180*)

OVERVIEW

Jefferson County Public Schools (JEFFCO) is situated in Golden, Colorado, 15 miles west of Denver. It is the largest school district in Colorado, enrolling more than 84,000 students in Grades K–12. The district's student body is 73% Caucasian, 20% Hispanic, 4% Asian/Pacific Islander, 2% African American, and 1% American Indian. Twenty-nine percent of students are eligible for free or reduced-price lunch and 9.3% of students are categorized as English language learners.

In the fall of 2009, JEFFCO piloted *System 44* with a small group of students in Grades 7–11. These 57 students were selected to participate based on a number of criteria, including scoring below 400 Lexile (L) measures on SRI and exhibiting difficulty with word-reading skills on SPI. Teachers integrated *System 44* into a 90-minute existing *READ 180* program. In all classes, students were expected to use the software for 20 minutes per day.

RESULTS

The SRI was administered to 57 *System 44* students in the fall of 2009 and spring of 2010. Findings indicated that these students exhibited improvements in their reading comprehension skills. Overall, *System 44* students advanced from 179L at pretest to 302L at posttest, a statistically significant average gain of 123L (Graph 1). Middle and high school *System 44* students gained 151L and 33L, respectively.

As Graph 2 displays, further analysis showed that students who completed more than 50 topics on the *System 44* software averaged higher gains on SRI than those who completed fewer topics on the software (155L vs. 102L).

▶ **Middle and high school students improve reading skills.**

Western United States

GRAPH 1

Jefferson County Public Schools *System 44* Students, Grades 7–11 (N=57) Performance on SRI by Grade Level, 2009–2010

Note. The gains in Lexile were statistically significant for all students (t=5.40, p=.00) and middle school students (t=6.08, p=.01). The high school sample was too small to test for significance.

GRAPH 2

Jefferson County Public Schools *System 44* Students, Grades 7–11 (N=57) Change in SRI Lexile Score as a Function of Software Usage, 2009–2010

DAVID DOUGLAS SCHOOL DISTRICT, OR

STUDY PROFILE

Evaluation Period: 2012–2013

Grades: 6–12

Assessment: Oregon Assessment of Knowledge and Skills (OAKS), Scholastic Phonics Inventory (SPI)

Participants: N=280

Implementation: 85 minutes daily or every other day (Stand-Alone and Integrated With *READ 180*)

▶ **Middle and high school students demonstrate improved achievement on OAKS.**

OVERVIEW

System 44 was implemented during the 2012–2013 school year in David Douglas School District. The district serves approximately 10,538 students at nine elementary schools, three middle schools, and one high school. The district's student population is 43% Caucasian, 25% Hispanic, 15% Asian, 10% African American, 6% multiracial, 1% Pacific Islander, and <1% American Indian. Fourteen percent of students have disabilities, 20% receive English language learner (ELL) and English language development (ELD) services, and 80% are economically disadvantaged.

The district used *System 44* with 309 students in three middle schools and one high school. *System 44* was primarily implemented in the district using a stand-alone model for 85 minutes each day or every other day. The remaining students used an integrated model with *READ 180* for 85 minutes each day. Of the 309 students enrolled in the program, 280 were included in the analytic sample. Of these students, the majority were Asian (30%) followed by Caucasian (28%), Hispanic (21%), African American (18%), Pacific Islander (2%), and American Indian (1%). Forty-one percent were students with disabilities, and 65% were limited-English proficient (LEP).

RESULTS

SPI and Oregon Assessment of Knowledge and Skills (OAKS) data were collected and analyzed for students who used the program during the 2012–2013 school year. SPI outcomes showed positive gains for the *System 44* students on measures of decoding and fluency. Analysis of SPI Decoding Status showed that the percentage of *System 44* students identified as Developing Decoder or Advancing Decoder increased from the first SPI assessment to the last; whereas, the percentage of students identified as Pre-Decoder or Beginning Decoder decreased (Graph 1). *System 44* students also made gains in SPI Total Fluency from the first SPI assessment to the last, with over half of students (55%) demonstrating a 4+ point increase in fluency.

Results from OAKS also revealed improvements in *System 44* students' mastery of the Oregon reading standards. As Graph 2 displays, the percentage of students whose performance level was Nearly Meets or Meets or Exceeds increased from spring 2012 to spring 2013; whereas, the percentage of students whose performance level was Low or Very Low decreased from spring 2012 to spring 2013. Eighty-two percent of *System 44* students demonstrated RIT growth on OAKS.

GRAPH 1

David Douglas School District *System 44* **Students, Grades 6–12 (N=280)**

Performance on SPI by Decoding Status, 2012–2013

Y-axis: Number of Students

Legend: Fall 2012, Spring 2013

- Pre-Decoder: 4 (Fall 2012), 2 (Spring 2013)
- Beginning Decoder: 128 (Fall 2012), 75 (Spring 2013)
- Developing Decoder: 113 (Fall 2012), 114 (Spring 2013)
- Advancing Decoder: 15 (Fall 2012), 69 (Spring 2013)

GRAPH 2

David Douglas School District *System 44* **Students, Grades 6–12 (N=176)**

Performance on OAKS, 2012–2013

Y-axis: % of Students

Legend: Spring 2012, Spring 2013

- Very Low: 11% (Spring 2012), 6% (Spring 2013)
- Low: 82% (Spring 2012), 74% (Spring 2013)
- Nearly Meets: 7% (Spring 2012), 18% (Spring 2013)
- Meets or Exceeds: 0% (Spring 2012), 1% (Spring 2013)

THREE PUBLIC SCHOOL DISTRICTS: IN, MA, MI

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 3–11

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

Participants: N=170

Implementation: 50 to 90 minutes daily (Stand-Alone)

▶ **English language learners demonstrate significant improvement in decoding and word-reading fluency.**

OVERVIEW

During the 2009–2010 school year, three public school districts in central Indiana, eastern Massachusetts, and southeastern Michigan piloted *System 44* for their most challenged readers who had not yet mastered basic phonics and decoding skills. Total student enrollment in these three urban districts varied from 12,220 to 16,536 students, representing a diverse mix of English language learners (ELL) and students with disabilities. Across the three districts, a total of 331 students participated in *System 44* during the 2009–2010 school year. Approximately 170 of the 331 *System 44* students were ELLs. The ethnic demographics of the sample varied across the three districts. In the Indiana district, the majority of ELLs were Asian/Pacific Islander (83%) or Hispanic (16%). In the Massachusetts district, a large proportion of the ELLs were Hispanic (87%) and 13% were identified as multiracial/other. The ELL population in the Michigan district was 58% Hispanic, 25% Caucasian, 8% African American, 4% Asian/Pacific Islander, and 4% multiracial/other.

A total of 170 third- through eleventh-grade ELLs across the three districts comprise the sample in this report. Students were placed into *System 44* if they performed poorly on SRI, and then exhibited poor word-reading skills on SPI. *System 44* was implemented using a stand-alone model in all three districts. In one district, *System 44* was implemented in a 60-minute classroom period that started with a 10-minute whole-group introduction, 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.

RESULTS

In order to measure changes in reading skills, SPI, Woodcock-Johnson III (WJ III), and SRI data were obtained from 170 elementary, middle, and high school students who used the program during the 2009–2010 school year. Findings indicate that this sample of *System 44* ELLs demonstrated significant improvement in performance on SPI. As shown in Graph 1, ELLs across all grades averaged gains of 4.1 points in Fluency. The elementary school students in the sample averaged a 6.1 point gain in Fluency. Middle school ELLs gained 3.5 points in Fluency, on average, and high school students evidenced a 1.7 point gain in Fluency, though not statistically significant.

System 44 ELLs demonstrated significant improvements on the Basic Reading Skills cluster from the WJ III. Overall, students' mean score was 7 points higher at posttest than at pretest. 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 1).

SRI results indicated that on average, *System 44* ELLs also made significant gains in reading comprehension. On average, students improved from 55 Lexile (L) measures at pretest to 148L at posttest, a statistically significant gain of 93L. As Graph 2 indicates, over the course of the school year, elementary school *System 44* ELLs improved 141L over the year, middle school students gained 61L, and high school students improved 52L.

GRAPH 1

Three Public School Districts' *System 44* **Students, Grades 3–11 (N=170)**

Change in SPI Fluency Score by Grade Level, 2009–2010

Y-axis: **Change in SPI Fluency Score**

- All Students (N=170): 4.1
- Elementary School (n=60): 6.1
- Middle School (n=86): 3.5
- High School (n=24): 1.7

Note. The gains were statistically significant for overall Fluency (t=8.20, p=.00), elementary school Fluency (t=7.19, p=.00), and middle school Fluency (t=4.83, p=.00).

TABLE 1

Three Public School Districts' *System 44* **Students, Grades 3–11 (N=170)**

Performance on WJ III Basic Reading Skills Cluster by School Level, 2009–2010

Grade Level	N	Fall WJ III Basic Reading Skills Cluster Standard Score (Percentile)	Spring WJ III Basic Reading Skills Cluster Standard Score (Percentile)	WJ III BRS Gain (Percentile Points)
Elementary	60	83 (13th)	87 (19th)	4
Middle	86	72 (3rd)	80 (8th)	8
High	24	54 (<1)	65 (3rd)	11
All	170	73 (4th)	80 (9th)	7

Note. The increase in score was statistically significant for elementary school (t=3.50, p=.00), middle school (t=5.39, p=.00), high school (t=4.14, p=.00), and overall (t=7.41, p=.00). Standard scores are rounded to the nearest integer.

GRAPH 2

Three Public School Districts' *System 44* **Students, Grades 3–11 (N=134)**

Performance on SRI by School Level, 2009–2010

Y-axis: **SRI Lexile Score**

Legend: Fall 2009, Spring 2010

- All Students (N=134): 55L (Fall 2009), 148L (Spring 2010), Gain: 93L
- Elementary School (n=50): 59L (Fall 2009), 200L (Spring 2010), Gain: 141L
- Middle School (n=69): 59L (Fall 2009), 120L (Spring 2010), Gain: 61L
- High School (n=15): 19L (Fall 2009), 71L (Spring 2010), Gain: 52L

Note. The gain in Lexile score was statistically significant for all students (t=8.08, p=.00), elementary school students (t=10.35, p=.00), middle school students (t=3.72, p=.00), and high school students (t=2.35, p=.03).

Multisite

THREE PUBLIC SCHOOL DISTRICTS: IN, MA, MI

STUDY PROFILE

Evaluation Period: 2009–2010

Grades: 3–11

Assessment: Woodcock-Johnson III (WJ III), Test of Word Reading Efficiency (TOWRE), Scholastic Reading Inventory (SRI)

Participants: N=85

Implementation: 50 to 90 minutes daily (Stand-Alone)

▶ **Students with disabilities demonstrate significant improvement in decoding and reading achievement.**

OVERVIEW

During the 2009–2010 school year, three public school districts in central Indiana, eastern Massachusetts, and southeastern Michigan piloted *System 44* for their most challenged readers who had not yet mastered basic phonics and decoding skills. Total student enrollment in these three urban districts varied from 12,220 to 16,536 students, representing a diverse mix of English language learners (ELL) and students with disabilities. Across the three districts, a total of 331 students participated in *System 44* during the 2009–2010 school year. Of the 85 students with disabilities, 30 (35%) were elementary school students, 35 (41%) were middle school students, and 20 (24%) were high school students. The multisite sample varied ethnically: 40% of the students were Hispanic, 25% were Caucasian, 25% were African American, and 10% were multiethnic.

A total of 85 *System 44* third- through eleventh-grade students with disabilities across the three districts comprise the sample in this report. Students were placed into *System 44* if they scored below 400 Lexile (L) measures on SRI and exhibited difficulty with word-reading skills on SPI. A stand-alone model was used in all three districts. In one district, *System 44* was implemented in a 60-minute classroom period that started with a 10-minute whole-group introduction, 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.

RESULTS

Fall 2009 and spring 2010 Woodcock-Johnson III (WJ III), Test of Word Reading Efficiency (TOWRE), and SRI data were gathered from 85 *System 44* students with disabilities. Results showed that the *System 44* students with disabilities revealed significant improvements in both word-reading and reading comprehension skills. After participation in *System 44*, students in the sample averaged a statistically significant standard score gain of 3 points on the Basic Reading Skills (BRS) cluster of the WJ III, a test that measures word-identification skills and proficiency in applying phonics and structural analysis to the pronunciation of unfamiliar printed words. Students demonstrated a gain of 2 points on the TOWRE Total Word Reading Efficiency, the subtest that measures students' ability to recognize sight words and "sound out" nonwords (Table 1).

Additionally, an evaluation of changes in grade equivalent scores on the WJ III Basic Reading Skills cluster showed that from 2009 to 2010, the percentage of students with disabilities performing at the fourth-grade equivalent or higher more than doubled, from 11% to 26% (Graph 1). Overall, *System 44* students with disabilities demonstrated a significant improvement in reading comprehension on SRI. On average, the 71 *System 44* students with pretest and posttest SRI Lexile data advanced from 157L in the fall to 241L in the spring, a significant gain of 84L (Graph 2).

TABLE 1

Three Public School Districts' *System 44* Students, Grades 3–11 (N=85)

Performance on WJ III and TOWRE by School Level, 2009–2010

Grade Level	N	Fall WJ III Basic Reading Skills Cluster Standard Score (Percentile)	Spring WJ III Basic Reading Skills Cluster Standard Score (Percentile)	WJ III BRS Gain	Fall TOWRE Standard Score (Percentile)	Spring TOWRE Standard Score (Percentile)	TOWRE Total Gain
Elementary	30	81 (13th)	83 (19th)	+2	76 (5th)	80 (9th)	+4
Middle	35	69 (3rd)	72 (8th)	+3	65	66	+1
High	20	56 (<1)	62 (1st)	+5	61 (3rd)	64 (1st)	+3
All Students With Learning Disabilities	**85**	**70** (4th)	**74** (9th)	**+3**	**68** (2nd)	**71** (3rd)	**+2**

Note. The gains on WJ III and TOWRE are statistically significant (t=5.19, p=.00, and t=4.40, p=.00, respectively).

GRAPH 1

Three Public School Districts' *System 44* Students, Grades 3–11 (N=85)

Grade Equivalent Performance on WJ III Basic Reading Skills Cluster, 2009–2010

Note. The increase in percentage of students performing at the fourth-grade equivalent or higher was significant (t=3.34, p=.00).

Multisite

GRAPH 2

Three Public School Districts' *System 44* Students, Grades 3–11 (N=71)

Performance on SRI, 2009–2010

Note. The increase in Lexile was statistically significant (t=5.41, p=.00).

ASSESSMENT MEASURES

California English Language Development Test (CELDT)

An English skills test is required by law for students in Grades K–12 whose home language is not English. The CELDT is the English skills test given in California. It was developed to identify students with limited-English proficiency, determine the level of English language proficiency of those students, and assess the progress of limited-English-proficient students in acquiring the skills of listening, speaking, reading, and writing in English. The CELDT results are reported by the following performance levels: Beginning, Early Intermediate, Intermediate, Early Advanced, and Advanced. Results show the overall English performance level attained by students as well as performance in each domain by level.

California Standards Test of English Language Arts (CST ELA)

The CST ELA is given to students in Grades 2–11 as a part of the Standardized Testing and Reporting (STAR) Program. Developed exclusively for California's public schools, the CST ELA provides information that can be used to determine how well students are achieving state content standards. The CST ELA reports students' performance as both a scale score (which can range from 150–600) and as one of five Performance Levels. Each of the five Performance Levels (Far Below Basic, Below Basic, Basic, Proficient, or Advanced) is associated with a range of scale scores for each grade level.

Comprehensive Test of Phonological Processing (CTOPP)

The CTOPP assesses phonological awareness, phonological memory, and rapid naming. It was developed to aid in the identification of individuals from kindergarten through college who may profit from instructional activities to enhance their phonological skills. Results are provided in percentiles, standard scores, and age and grade equivalents.

Florida Comprehensive Achievement Test (FCAT): Reading Test

The FCAT Reading Test is a criterion-referenced test administered to students in Grades 3–11 to measure student progress toward meeting the state benchmarks in English Language Arts standards. The test measures four key areas: 1) words and phrases in context; 2) main idea, plot, and purpose; 3) comparisons and cause/effect; and 4) reference

and research. The FCAT Reading Test provides vertically scaled Developmental Scale Scores (DSS), which range from 0–3000 and allow student progress to be tracked over time.

Florida Oral Reading Fluency (FORF)

The FORF includes grade-level passages that students read aloud for one minute. The score represents the number of words correct per minute (WCPM). The FORF is administered to students in Grades 6–10 who have scored in Level 1 or Level 2 on the prior year's FCAT and is administered three times each year, in the fall, winter, and spring.

The Integrated Louisiana Educational Assessment Program (iLEAP)

Students in Grades 3, 5, 6, and 7 take the state's iLEAP test, which is designed to measure student progress but does not determine whether they will be retained in their current grades. The iLEAP is referred to as an "integrated" LEAP because it combines a norm-referenced test, which compares a student's test results to the performance of students in a national sample, and a criterion-referenced test, which reports student results in terms of the state's standards. The assessment reports students' performance as both a scale score and as one of five Performance Levels (Advanced, Mastery, Basic, Approaching Basic, and Unsatisfactory). The iLEAP tests include mostly multiple-choice questions but also include some constructed-response items that require students to compose an answer and generally require higher-order thinking.

The Louisiana Educational Assessment Program (LEAP): English Language Arts

The LEAP ELA is a high-stakes test given to fourth- and eighth-grade students. The assessment reports students' performance as both a scale score and as one of five Performance Levels (Advanced, Mastery, Basic, Approaching Basic, and Unsatisfactory). In order to pass the assessment, students must score in the Basic or above performance level.

Northwest Evaluation Association Measures of Academic Progress (NWEA MAP)

NWEA MAP consists of computerized adaptive assessments, aligned to national and state curricula and standards, which

[1] Prior to 2015, *The Phonics Inventory* was known as the Scholastic Phonics Inventory (SPI).
[2] Prior to 2015, *The Reading Inventory* was known as the Scholastic Reading Inventory (SRI).

provide immediate feedback on student progress. Every test item on an NWEA MAP assessment corresponds to a value on the RIT Scale. The RIT Scale is a curriculum scale that uses individual item difficulty values to measure growth over time and an equal interval scale that has the same meaning regardless of grade level.

Oregon Assessment of Knowledge and Skills (OAKS)

Partnering with the American Institutes for Research (AIR), the Oregon Department of Education created this online testing system to assess students' mastery of Oregon English Language Arts content standards, as well as mathematics, science, and social studies. The OAKS assessments are criterion-referenced tests that report student performance in each subject using five levels (Exceeds, Meets, Nearly Meets, Low, and Very Low).

Test of Silent Reading Efficiency and Comprehension (TOSREC)

The TOSREC is a brief group or individually administered test of reading that assesses silent reading of connected text for comprehension. The measure can be used for screening, progress monitoring, and clinical and research purposes. The TOSREC has four test forms at each grade level from 1st to 10th grade and above. Test forms require respondents to read and verify the truthfulness of as many sentences as possible within three minutes.

Test of Word Reading Efficiency (TOWRE)

The TOWRE is a measure of an individual's ability to pronounce printed words (Sight Word Efficiency) and phonemically regular nonwords (Phonemic Decoding Efficiency) accurately and fluently. The Sight Word subtest requires recognizing familiar words as whole units or "sight words," and the Phonemic Decoding Efficiency subtest measures students' ability to "sound out" nonwords. The TOWRE Total Word Reading Efficiency score is based on the combined performance on the two subtests.

Texas Assessment of Knowledge and Skills (TAKS)

The TAKS Reading test assesses a subtest of the Texas Essential Knowledge and Skills (TEKS), the state-mandated curriculum, and includes a variety of narrative and expository texts. Four objectives are measured: basic text understanding, knowledge of literary elements, analysis

using reading strategies, and analysis using critical-thinking skills. A student's performance on the TAKS Reading test is reported as both a scale score and a performance level descriptor (Did Not Meet the Standard, Met the Standard, and Commended Performance).

The Phonics Inventory[1]

Published by HMH, *The Phonics Inventory* 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 Phonics Inventory* 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. *The Phonics Inventory* was validated against two forms of the Sight Word Efficiency and the Phonetic Decoding Efficiency Subtets from the Test of Word Reading Efficiiency (TOWRE) (Torgesen, Wagner, & Rashotte, 1999), and the Word Attack and Letter-Word Identification subtests from the Woodcock-Johnson III (Woodcock, McGrew, & Mather, 2001).

The Reading Inventory[2]

Published by HMH, *The Reading Inventory* 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 Reading Inventory* is reported as a Lexile® (L) Measure. 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 Reader (1500L).

Woodcock-Johnson III (WJ III)

The WJ III Basic Reading Skills (BRS) cluster score measures a student's ability to identify words and his or her proficiency in applying phonics and structural-analysis skills to the pronunciation of unfamiliar printed words.

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[1] In 2015, the SPI was renamed *The Phonics Inventory.*
[2] In 2015, the SRI was renamed *The Reading Inventory.*

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