A Comparison of Two Direct Instruction Reading Programs for Urban Middle School Students

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ABSTRACT

This study investigated the differential effects of two direct instruction (DI) reading programs, one with overt decoding strategies and one with more covert decoding strategies, on the reading achievement of struggling seventh graders in an urban middle school. The students participating in this study ($N = 55$) were 2 to 4 years behind in reading achievement according to standardized pretests. Results indicate that after a 6-week reading intervention, all students, regardless of overt or covert DI programs, made significant gains in reading, with the only differential effect demonstrated in the area of reading rate. These findings are significant considering that the participants were struggling readers. Implications for increasing the performance of struggling middle school readers are discussed.

THE ABILITY TO READ EFFICIENTLY AND EFFECTIVELY has clear implications for a student's overall academic performance. Some students acquire the necessary prerequisite skills and become proficient readers, whereas others do not. These students are commonly referred to as "poor readers" (Spear-Swerling & Sternberg, 1994). According to some estimates, reading problems affect as many as 10 million children in the United States alone (Simos et al., 2002). For those children who encounter difficulties in acquiring reading skills, the long-term consequences of reading failure are tremendous (Cunningham & Stanovich, 2001; Torgesen, 2000).

Although most students acquire language in a natural, developmental manner, the ability to acquire basic reading skills is not a natural process (Lyon, 1999; Moats, 1999). Teachers encounter students who come to school with environmental, experiential, and individual differences (Lyon, 1999; Moats, 1999). Students at risk for learning difficulties tend to differ from their average-achieving peers in the areas of language processing, memory, learning strategies, and vocabulary (Kame'enui & Carnine, 1998). One of the most prevailing problems in today's schools is teaching students to read (Atkinson, Wilhite, Frey, & Williams, 2002).

Moreover, the total act of reading is affected when students are weak in just one reading skill (Chall, Jacobs, & Baldwin, 1991). For example, weak word recognition skills negatively affect a student's ability to read in an effortless manner. Lack of fluent reading tends to lower a student's motivation to continue to read. Limited reading practice restricts a student's vocabulary knowledge and comprehension, which results in poor academic achievement and underdeveloped literacy skills (Shippen, Houchins, & Steventon, 2003). As the developmental process continues, young struggling readers become older struggling readers, and the achievement gap widens (Stanovich, 1986).

Middle School Challenges

As the achievement gap in reading widens, a large number of middle school students struggle in all areas of academics—

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especially students from racially and ethnically diverse backgrounds (Ikpa, 2004). The content-driven nature of secondary schools only perpetuates the frustration that these youth experience. Because secondary classrooms tend to be content centered and rarely provide reading-centered instruction, secondary teachers grapple with how best to serve students with reading difficulties (Cole & McLeskey, 1997; Olson & Platt, 2004). For example, Falvey, Gage, and Eshilian (1995) pointed out that in a given day, a secondary school teacher may serve 150 to 180 diverse students, which intensifies the challenge of meeting the varied needs of students, especially those of struggling readers.

With these challenges in middle schools, providing intense, direct, and explicit instruction in reading is critical to close the reading achievement gap (Foorman, Fletcher, Beeler, Winkates, & Francis, 1997; Salinger, 2003). Teaching reading is a complex process, requiring extensive training, practice with supervision, and considerable experience (Carnine, Silbert, Kame'enui, & Tarver, 2004). By providing explicit, intense, and rule-based reading instruction, teachers increase the likelihood that older poor readers will gain skills (Adams & Engelmann, 1996).

Poor readers, especially those with learning disabilities (LD), are often "inactive" learners who lack task persistence and self-monitoring (Jitendra, Cole, Hoppes, & Wilson, 1998; Williams, 1998). This lack of self-monitoring may be related to problems with executive functioning (Lyon & Krasnegor, 1996). These students often make inefficient or incorrect use of the strategies and skills they have been taught (Deshler, Ellis, & Lenz, 1996). This inattention to their own comprehension must be compensated for with explicit instructional strategies. Effective readers make predictions about what they are reading, figure out the meanings of unknown words in context, reread sentences or passages for understanding, and self-monitor their comprehension (Pressley, Roehrig, Bogner, Raphael, & Dolezal, 2002). Poor readers begin reading without preparation or purpose, labor with word identification skills, do not recognize important vocabulary, and demonstrate limited connections between reading and thinking (Deshler et al., 1996).

Researchers, practitioners, and policymakers continue to address the issues related to poor reading achievement. These stakeholders recognize how notably the issue of reading achievement affects students, whole schools, and school districts. Recent legislation in the area of school achievement has direct implications for poor readers and the schools that serve them, especially those in urban settings.

Urban Schools and Reading Achievement

The United States Congress passed the No Child Left Behind (NCLB) Act of 2001. This legislation is intended to guarantee that all children are able to read fluently by the third grade. It further intends to close the literacy development gap between the high-performing and low-performing schools. Policymakers, administrators, teachers, and parents are hopeful that this legislation will aid struggling readers, especially those in urban schools.

Urban schools are those in which 75% or more of the households served are within the central city of a metropolitan area (Reid, 2003). Often, urban populations are composed predominantly of minorities and people from low-income backgrounds. In 1998, the National Assessment of Educational Progress (NAEP) reported that minorities consistently perform below their nonminority peers in reading. This gap widens as students move from first grade through third and fourth grades. Hirsch (2001) suggested that the gap is largely due to "vocabulary deficit." Children from lower income backgrounds, including those in urban settings, do not have the extensive range of knowledge and language that middle class students have available to them.

It is important to note that although urban schools are characterized as serving children from low-income backgrounds, low socioeconomic status (SES) alone does not contribute to reading failure. When minority students from low SES homes are compared to nonminority peers with the same income and amount of schooling, the disparity between reading performances narrows only slightly (Jencks & Phillips, 1998). In addition to the effects that low-income backgrounds may have on poor reading achievement in urban schools, numerous other factors may contribute to underachievement in the area of reading. These factors include teacher classroom behavior management and expectations, class size, high student mobility rates, level of parents' education, and student off-task behavior (Arroyo & Rhoad, 1999; Washington, 2001).

Regardless of the factors that contribute to reading failure among students in urban schools, teachers are still faced with the daunting task of educating these students. Despite the unfavorable educational circumstances associated with urban schools, it is essential that these schools use effective, research-based programs to address the reading difficulties experienced by many students. One such research-validated reading program is direct instruction (Adams & Engelmann, 1996).

Direct Instruction

The direct instruction (DI) model promotes mastery of meaningful reading through explicit teaching. DI involves an emphasis on fast-paced, scripted, well-sequenced, rule-based, and highly focused lessons (Swanson, Hoskyn, & Lee, 1999). Students in DI classes are usually instructed in small groups and given several opportunities to respond in unison and individually, with immediate feedback using a specific correction procedure. Teachers using DI generally employ a three-step instructional sequence. They *model* (provide the correct response), *lead* (have the student say the correct answer with the teacher), and *test* (give immediate feedback and a delayed probe on the task initially attempted; Engelmann & Carnine, 1982).

A recent meta-analysis of successful comprehensive school reform models (Borman, Hewes, Overman, & Brown, 2003) places direct instruction in the top 3 models of the 29 reviewed for its effectiveness in urban and low-performing schools. DI has a long history of effective results for at-risk students and students with disabilities, especially as an intervention for older struggling readers (Carnine et al., 2004). Furthermore, Kame'enui and Carnine (1998) pointed out that students at risk for reading failure tend to differ from their average-achieving peers in the areas of language processing, memory, learning strategies, and vocabulary and, therefore, benefit from intensive, well-sequenced, and teacher-directed instruction.

Criticism of DI

In recent years, an increasing number of school systems have embraced the comprehensive school reform model. As a result, DI has gained new attention and attracted renewed controversy (Leontovich, 1999). Critics of the DI method claim that the programs are rigid, stifle teacher creativity, promote passive learning, and fail to foster higher level skills (Adams & Engelmann, 1996; Leontovich, 1999). Although DI programs have been effective particularly with disadvantaged and minority children, some critics view it as a racist program that emphasizes rote learning and assumes that minority children cannot assimilate higher order thinking skills (Leontovich, 1999). Siegfried Engelmann, originator and author of the majority of DI programs, has answered such claims by pointing to a significant amount of research that "shows that DI programs have accelerated lower performers beyond higher performers who received other programs" (Adams & Engelmann, p. 6).

The purpose of this study was to investigate the differential effects of two DI reading programs on the reading performance of struggling urban middle school students. The research questions included

1. Do urban middle school students with poor reading skills demonstrate differential skill improvement in *word reading efficiency* based on the type of DI reading program intervention?
2. Do urban middle school students with poor reading skills demonstrate differential skill improvement in *oral reading performance* (rate, accuracy, and fluency) based of the type of DI reading program intervention?

Method

Setting

The middle school in this study is located in a large southeastern inner-city school district. According to the school district demographic report, the school had an enrollment of 714 students, who were 99% African American and 1% European American. The population was evenly distributed by gender, with 50% boys and 50% girls; 13% of students were identified with disabilities, and 97% of the students received free or reduced-price lunch.

Participants

Seventh-grade students who were performing 2 or more years behind in reading were the target population for this study. Of the 110 students who were performing 2 or more years behind in reading and who received permission forms, 78 students returned the forms and participated in the pretesting. Due to attrition, 55 students were included in the final sample. Of the 55 students in the final sample, 3 (5%) were identified as students with mild disabilities in the area of learning disabilities or mild intellectual disabilities. The remaining 52 (95%) were general education students. All of the 55 students in the final sample were African American; 40% (n = 22) were girls, and 60% (n = 33) were boys. Their ages ranged from 12 years 4 months to 14 years 6 months.

Treatment

Corrective Reading Decoding B2 (Engelmann, Johnson, et al., 1999), *Corrective Reading Decoding C* (Engelmann, Meyer, Johnson, & Carnine, 1999), and REWARDS (*Reading Excellence: Word Attack and Rate Development Strategies*; Archer, Gleason, & Vachon, 2000) were the treatments used in this study. These programs are designed for students in Grades 4 through 12 who have difficulty in basic reading decoding skills, including difficulty decoding multisyllabic words found in content-area texts.

REWARDS is a 20-lesson curriculum that teaches an overt reading decoding strategy that is faded during the final 8 lessons. *Corrective Reading Decoding B2* is a 65-lesson curriculum that targets word attack skills, with emphasis on basic sound–symbol associations of individual letters, digraphs, and blends. *Corrective Reading Decoding C* is a 125-lesson curriculum that also targets word attack skills, but at a more sophisticated, multisyllabic level. A student's performance on the *Corrective Reading Decoding* placement test determines which program—*Corrective Reading Decoding B2* or *Corrective Reading Decoding C*—is appropriate for the student. Of the two programs, *Corrective Reading Decoding B2* is for students who demonstrate lower performance in basic reading skills as indicated by the curriculum-based program placement test.

The treatment, direct instruction reading using either *Corrective Reading Decoding* or REWARDS, was implemented for 30 daily instructional sessions lasting approximately 55 minutes. The treatment ended on completion of the final REWARDS lesson. Participants receiving the *Corrective Reading Decoding* treatment also stopped after 30 instructional sessions. Participants in the B2 group received

instruction on 29 lessons, and participants in the C group received instruction on 30 lessons.

Teacher Training

Four general education teachers from the middle school delivered the reading instruction in this study. These teachers were selected by the school principal to participate in the study. All four were seventh-grade content-area teachers. One teacher taught science, one teacher taught social studies, one teacher taught mathematics, and one teacher taught language arts.

The authors trained two of the teachers to use the *Corrective Reading Decoding* program in one 3-hour session. Training was provided for all four types of exercises within the program (i.e., word attack, story reading, reading checkouts, and workbook). Five critical teaching behaviors were emphasized throughout the training. These teaching behaviors included (a) following the script, (b) signaling, (c) error corrections, (d) firming up, and (e) pacing. During the training session, the trainers modeled each of the four types of exercises, and after each model, the trainers asked the trainees to model the exercise. If the trainee modeled the exercise incorrectly, the trainer immediately corrected the error and modeled the correct teacher behavior.

Throughout the remainder of this first training session, the trainers periodically returned to exercises that the trainees initially modeled incorrectly and asked the trainee to model the exercise again. At the end of the *Corrective Reading Decoding* training session, each of the two trainees modeled instructional delivery independently while the trainer acted as the student. Training was completed when the trainee exhibited all five critical teaching behaviors (i.e., following the script, signaling, error corrections, firming up, and pacing) without error.

The third author conducted training for the REWARDS program with the remaining two teachers in another 3-hour session. Training was provided on preskill activities presented in the first 12 lessons of the REWARDS program. These preskills (i.e., blending and reading word parts, underlining vowel sounds in words, and identifying word parts at the beginning and ending of words) are necessary for applying the decoding strategy presented and practiced in Lessons 13 through 20 of the REWARDS program. The trainer modeled each preskill teaching format and asked the trainees to practice each of the formats. Next, the trainer demonstrated each step in the overt decoding strategy (e.g., circle word parts at the beginning and ending of words, underline vowel sounds in the rest of the word, say the parts in the word, and say the whole word). Finally, each of the two trainees independently modeled instructional delivery of the preskills and the strategy while the trainer acted as a student. Training was completed when the trainees' demonstrated proficiency on the same five critical teaching behaviors specified in the *Corrective Reading Decoding* training session.

During the first week of implementation, the first and third authors modeled one lesson with students in each of the participating teachers' classrooms. The teachers observed while the authors demonstrated in vivo. Also during the first week, teachers received feedback on the fidelity of the program implementation. For each of the remaining 5 weeks of the implementation, coaching and feedback was intermittent, with the exception of one group meeting with the teachers during the third week of implementation. During this meeting, the first author clarified the correction procedure format and emphasized the importance of signaling.

Pre–Post Measures

Two pre- and posttest measures were administered. The first measure administered was the *Test of Word Reading Efficiency* (TOWRE; Torgesen, Wagner, & Rashotte, 1999), which includes subtests of phonemic decoding efficiency, sight-word reading efficiency, and an overall measure of word reading efficiency. The TOWRE yields standard scores with a mean of 100 and a standard deviation of 15. Standard scores are described as *very superior* (131–166), *superior* (121–130), *above average* (111–120), *average* (90–110), *below average* (80–89), *poor* (70–79), and *very poor* (35–69).

The second assessment was the *Gray Oral Reading Test* (GORT-4; Wiederholt & Bryant, 2001). All subtests of the GORT-4 were administered. The GORT-4 yields measures of reading rate, reading accuracy, reading fluency, and reading comprehension. The overall measure on the GORT-4 is an oral reading quotient. The GORT-4 has a mean standard score of 10 with a standard deviation of 3. Standard scores are delineated by 1 point. The GORT-4 standard scores are described as *very superior* (17–20), *superior* (15–16), *above average* (13–14), *average* (8–12), *below average* (6–7), *poor* (4–5), and *very poor* (1–3).

Fidelity of Implementation

Five critical aspects of direct instruction were assessed for procedural fidelity—following the script, signaling, error corrections, firming up, and pacing. All five areas were observed by the authors for approximately 15 minutes across 20% of the instructional sessions for each of the four teachers. Teacher behaviors were recorded as either a *yes* (evidence of behavior), *no* (no evidence of behavior), or *NA* (not applicable). The number of *yes* recordings was divided by the total number of recordings (excluding the *NA*) to determine procedural fidelity for the five areas. Whereas procedural fidelity was measured for 20% of the sessions, interobserver reliability of procedural fidelity was calculated for 20% of those sessions.

Procedure

The authors trained a cadre of teachers from the middle school to administer the *Corrective Reading Decoding* placement test. The cadre of teachers tested all students at the mid-

dle school. After meeting with the school principal, the researchers agreed to target the seventh-grade population, as this group had the largest number of students placing in a *Corrective Reading Decoding* program. Next, the researchers obtained participant permission from the targeted seventh graders and their parents. Once the deadline for permission forms was met, the authors and graduate research assistants administered the TOWRE (Torgesen et al., 1999) and the GORT-4 (Wiederholt & Bryant, 2001) individually to all students who had permission to participate.

Of the 55 students in the final sample, the students who placed in *Corrective Reading Decoding B2* ($n = 29$) and *Corrective Reading Decoding C* ($n = 26$) were segregated by level (B2 and C) and then randomly assigned to *Corrective Reading Decoding* or REWARDS. That is, the *Corrective Reading Decoding B2* group was randomly assigned to a treatment group (*Corrective Reading Decoding B2* or REWARDS), and then the *Corrective Reading Decoding C* group was randomly assigned to a treatment group (*Corrective Reading Decoding C* or REWARDS). This procedure was conducted to ensure homogeneous grouping. After random assignment, the *Corrective Reading Decoding B2* subset ($n = 29$) consisted of 13 participants in *Corrective Reading Decoding B2* and 16 participants in REWARDS. The *Corrective Reading Decoding C* subset ($n = 26$) consisted of 12 participants in *Corrective Reading Decoding C* and 14 participants in REWARDS.

Social Validity

Social validity is important for establishing the acceptability and usefulness of the assessment and treatment procedures (Wolf, 1978). To measure social validity, the students and teachers in this study were each asked to complete separate surveys. A 3-point Likert-type scale, ranging from *agree* to *disagree* with a middle range of *neutral,* was used for each survey. The items addressed the teachers' and students' perceptions of the efficacy, feasibility, and continued use of direct instruction reading programs.

Data Analysis and Results

This study employed a quasi-experimental pre–posttest design. Participants were randomly assigned to a treatment group (*Corrective Reading Decoding* or REWARDS) by reading level (*Corrective Reading Decoding B2* or *Corrective Reading Decoding C*). The data were analyzed using a repeated-measures multivariate analysis of variance (MANOVA). Stevens (1996) pointed out that "in repeated measures designs . . . variability among the subjects due to individual differences is completely removed. . . . This makes these designs much more powerful than completely randomized designs" (p. 250).

A 2 (*Corrective Reading Decoding* and REWARDS) × 2 (*Corrective Reading Decoding B2* and *Corrective Reading Decoding C*) between-subjects analysis was conducted. Also, a 2 × 4 within-subjects analysis was conducted, with the factor being time (pre and post) and the four dependent measures being word reading efficiency, reading rate, reading accuracy, and reading fluency. The means and standard deviations for the difference scores on the dependent measures are presented in Table 1.

The results of the MANOVA indicated a significant main effect for time, Wilks' lambda $\Lambda = .60$, $F(4, 48) = 7.89$, $p < .05$; level, Wilks' lambda $\Lambda = .55$, $F(4, 48) = 9.76$, $p < .01$; and treatment, Wilks' lambda $\Lambda = .76$, $F(4, 48) = 3.79$, $p < .01$. No interaction effect was found for time × level or

TABLE 1. Means and Standard Deviations of Difference Scores for All Dependent Measures by Level and Treatment

	Word reading efficiency		Reading rate		Reading accuracy		Reading fluency	
Level and treatment	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
B2								
CRD	.85	6.89	.15	.99	.08	3.04	–.79	4.04
REWARDS	2.56	4.03	.88	1.31	1.19	2.51	1.19	2.17
C								
CRD	5.67	10.88	1.91	1.73	.25	2.73	1.42	3.02
REWARDS	1.14	5.16	.93	1.64	2.14	1.61	2.79	2.52
Overall sample								
CRD	3.16	9.17	1.00	1.63	.16	2.84	.27	3.69
REWARDS	1.90	4.57	.90	1.45	1.63	2.16	1.93	2.43

Note. CRD = *Corrective Reading Decoding* (Engelmann, Johnson, et al., 1999; Engelmann, Meyer, et al., 1999); REWARDS = *Reading Excellence: Word Attack and Rate Development Strategies* (Archer et al., 2000).

time × treatment group. Estimates of effect size indicated a small effect for time, d = .40, level, d = .45, and treatment group, d = .24.

The univariate tests associated with the time main effect were highly significant for word reading efficiency, reading rate, reading accuracy, and reading fluency, $p < .01$. The tests of between-subjects effect associated with the level main effect were highly significant for word reading efficiency, reading rate, reading accuracy, and reading fluency, $p < .01$. The tests of between-subjects effect associated with the treatment main effect were only significant for reading rate, $p < .05$.

Fidelity of Implementation and Interobserver Reliability

Fidelity measures were taken for 20% of the 30 instructional sessions. Teachers were rated on the five critical direct instruction behaviors emphasized in the training (i.e., following the script, signaling, error corrections, firming up, and pacing). Fidelity averages ranged from 67% to 89%. Interobserver reliability of procedural fidelity was calculated for 20% of the fidelity of implementation sessions. The average interobserver agreement across teachers was 91%.

Social Validity

The students who participated in the reading program responded to an eight-question survey regarding their opinion of the DI reading programs. The responses to the survey were delineated on a 3-point Likert-type scale with response choices of *agree, neutral,* and *disagree* for each of the items. The majority of students responded positively to the impact of DI (see Figure 1).

Overall, the REWARDS students who responded to the survey liked the program more than the *Corrective Reading Decoding* groups. The level C REWARDS students reported the most satisfaction, and the *Corrective Reading Decoding B2* students reported the least satisfaction with the reading program.

All four teachers agreed that DI reading enhanced students' reading skills, improved performance on daily reading tasks, and would be helpful to other middle school students. One teacher was neutral about whether DI programs are easy to manage. Two teachers disagreed that the students were actively engaged during DI reading. It should be noted that these two teachers had the lowest fidelity of implementation measures, which may have affected student engagement.

- 70% agreed that DI would help other middle school students
- 67% agreed that DI had helped them to become a better reader
- 56% agreed that DI had helped them to read more words correctly
- 56% agreed that DI had helped them with reading in other classes
- 46% liked the timed reading checkouts
- 40% liked using a workbook
- 38% hoped to continue to use DI
- 38% enjoyed participating in DI

FIGURE 1. Students' social validity responses. *Note.* DI = direct instruction.

Discussion

The purpose of this study was to investigate the differential effects of two DI reading programs on the reading performance of struggling urban middle school students. The research questions included the following: (a) Do urban middle school students with poor reading skills demonstrate differential skill improvement in word reading efficiency based on the type of DI reading program intervention? and (b) Do urban middle school students with poor reading skills demonstrate differential skill improvement in oral reading performance (rate, accuracy, and fluency) based of the type of DI reading program intervention?

The students who participated in this reading study were markedly behind in reading skills, as evidenced by their pretest scores on both reading measures; however, after a 6-week intervention, they showed gains in word reading efficiency, reading rate, reading accuracy, and reading fluency regardless of the DI program used. Perhaps with longer and more intense intervention, these students could have reached even higher reading performance. This study continues to confirm the effectiveness of highly structured, explicit, teacher-directed instruction for struggling readers.

Although all groups made significant gains, the DI programs—both *Corrective Reading Decoding* and REWARDS—were more effective and efficient for the stronger readers. That is, the students who originally placed in *Corrective Reading Decoding C,* the higher performing group, made more gains than the students who originally placed in *Corrective Reading Decoding B2,* the lower performing group. This outcome echoes Stanovich's (1986) "Matthew effect." Thus, the more capable readers showed more gains. In this case, students who began the study reading at or above the fourth-grade level progressed more rapidly than students reading at the third-grade level or below.

Limitations

These findings must be viewed with caution. Most results that showed statistical significance may not hold practical significance, in the sense that students were still performing poorly in many important areas of reading. The small effect size further demonstrates the need to view these findings with cau-

tious optimism. More studies are needed to see what the long-term and maintenance effects are for students in both the *Corrective Reading Decoding* and REWARDS programs. As REWARDS is a fairly new program, more data are needed to verify its effectiveness for struggling older readers.

Finally, and critically, one of the issues that may have strongly contributed to these outcomes is the variation in fidelity of implementation across teachers. It should be noted that these teachers had minimal training in highly technical and structured programs; however, outcomes for the students were positive. The fact that some teachers exhibited more fidelity of program implementation than others certainly affected outcomes for students.

This inconsistency in teacher performance speaks to the need for ongoing, intensive technical assistance for teachers who implement DI programs. Along with ongoing technical assistance and coaching, continuous progress monitoring of student performance would inform teachers and allow them to make adjustments in the instructional sequence as needed. Teacher performance and student performance are inextricably linked; therefore, teachers need the highest quality of technical support to better serve their students when implementing highly structured and explicit reading programs.

Implications for Practice

Fluent word recognition continues to reliably differentiate readers of high and low reading ability. Alverman and Moore (1991) summarized the research on secondary reading practices and concluded that teacher-directed strategies were moderately successful with students of varying abilities, but were more successful with skilled readers who possessed adequate decoding skills. Students who are experiencing difficulties in becoming fluent readers should be identified and participate in effective intervention and remediation programs (Snow, Burns, & Griffin, 1998). We believe that the design of DI programs may yield more progressive benefits to readers with requisite skills, while still increasing the skills of more naïve learners.

The social validity measures indicated that the majority of students believe that they benefited from the DI reading programs. Motivation is crucial to the reading and learning process (Snow, Burns, & Griffin, 1998). Students who experience increased reading skills resulting from their direct involvement with effective reading interventions may regain their motivation to read. With this motivation, exposure to reading and different text structures increases the likelihood of continued reading activities across the life span. Continued reading engagement leads to vocabulary and comprehension development (Cunningham & Stanovich, 2001).

In this age of accountability ushered in by the No Child Left Behind Act of 2001, the lowest performing students continue to be the epicenter for effective research-validated instruction. With the Matthew effect (Stanovich, 1986) in reading once again demonstrated in this study, struggling readers have no time to lose. Likewise, teachers, researchers, and policymakers must harness this sense of urgency, as the children we serve deserve nothing less. ■

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