

Intensive Word Study and Repeated Reading Improves Reading Skills for Two Students With Learning Disabilities

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By combining intensive word study with the timed repeated reading of poetry, this teacher was able to improve the reading skills of learning disabled students.

I learned early in my job as a reading specialist at a school in south-central Pennsylvania that reading fluency was far more important than I had first thought during my training. The school is an independent school for students in grades K–12 who have been diagnosed with learning disabilities. In the fall of 2004, at the start of this study, 55% of our students were in the Lower Division, grades 1–7, and 45% were in the Upper Division, grades 8–12. Our students came from an eight-county area. They had diagnoses of reading disabilities (52.5%), nonverbal learning disabilities (21.25%), Asperger's Syndrome (18.75%), Attention Deficit Disorders (2.5%), and mixed diagnoses (5%).

Our students with reading disabilities received intensive instruction in phonemic awareness and phonics both in small classes that ranged in size from 3–10 students and in daily tutorials where they received individualized instruction in their areas of greatest need. The school provided a variety of materials such as *Megawords: Multisyllabic Words for Reading, Spelling, and Vocabulary* (Johnson & Bayrd, 1998), and *Explode the Code* (Hall & Price, 1993) as well as training for the teachers in reading programs such as the *Wilson Reading System*, (Wilson, 1996), *Seeing Stars: Symbol Imagery for Phonemic Awareness, Sight Words, and Spelling* (Bell, 1997), and *Visualizing and*

Verbalizing (Bell, 1986). These materials provided our students with the intensive practice they needed to master word recognition skills. Teachers used informal and formal assessments to tailor the instruction to their students' needs. Although teachers had personal favorites, the school did not promote one program above another. It recognized that the phonemic awareness and phonics instruction needed to be systematic and assessment needed to drive the instruction. The programs do not differ significantly in their effectiveness (National Institute of Child Health and Human Development [NICHD], 2000).

As was the case in many public and independent schools at that time, word recognition skills and reading comprehension were the primary goals of our reading instruction, and developing reading fluency was not emphasized as much (NICHD, 2000). Unfortunately, as is often the case with students with learning disabilities, our students' improvement in word recognition skills did not naturally lead to an acceptable level of reading fluency (Shanahan, 2006; Torgesen, Rashotte, & Alexander, 2001). In fact, students with learning disabilities are those who are most likely to be disfluent readers (Chard, Vaughn, & Tyler, 2002), and fluency is among the most difficult dimensions of reading to remediate (O'Connor, White, & Swanson, 2007). Not surprisingly, many of my students were strongly disfluent, which made it impossible for them to read books at reading levels that the Qualitative Reading Inventory—3 had established for them. They could not sustain the intensive effort it took them to read a short passage on a test over the significantly longer time required to read a book at the same grade level.

By the end of my first year of teaching, I realized that improving my students' reading fluency was the most important work I could do with them. Through research, I learned that repeated reading was the most widely used method for helping weak readers improve their reading fluency (Samuels, 1997). I chose to use timed repeated reading because Samuels found it was an excellent motivating device for students when they recorded the gains in their reading times. As students kept track of their progress, their success encouraged them to work harder. I encouraged students to set goals for themselves, a practice that Therrien (2004) called an essential component of repeated reading. For many of my students, recording their repeated reading times gave them their first concrete signs of reading success. Samuels reported that in order for students to develop automaticity in reading, they needed decoding instruction and time to practice their decoding skills, which timed repeated readings provided. In addition to improving reading fluency and word recognition, repeated oral reading also improves reading comprehension when it is used in the context of an overall reading program (NICHD, 2000). When I added timed repeated reading to my instruction, my students showed substantial gains not only in their reading fluency, but also in their comprehension and word recognition skills.

New Students Bring New Challenges

Two fourth-grade students, Anne and Will (pseudonyms), challenged me to find a different approach to teaching reading when they joined me for tutorials in the fall of 2004. Both were hard-working children who wanted to succeed in reading; yet, after three years of intensive instruction in phonemic awareness and phonics, both students were reading books two grades below their grade level. They haltingly read word by word and were slow to recognize words they knew, instead sounding out the words letter by letter. They struggled to apply the phonological skills they had studied diligently for three years, often needing prompting and reminders. Their weak memory for word recognition sadly illustrated Samuels and Flor's (1997) explanation that students who do not reach automaticity in word recognition skills are at serious risk of forgetting and having to relearn the material.

Both Anne and Will's combined scores on the Wechsler Intelligence Scale for Children—III fell within the average range, and they were diagnosed as having learning disabilities. Anne had auditory processing difficulties; deficits in auditory and visual memory; auditory discrimination problems; an impaired executive function, which resulted in widespread organizational problems; and a diagnosis of attention-deficit hyperactivity disorder (ADHD)—inattentive type. Will had severe deficits in word retrieval, phonological awareness, visual-spatial organization, and auditory working memory. He had specific learning disabilities in reading, math, written expression, and a mixed receptive and expressive language disorder. He also had a diagnosis of ADHD and an auditory processing disorder.

The following is an example that illustrates Will's difficulties expressing himself and using language clearly. We had a conversation at the beginning of the year where he described his family's recent visit to Washington, D.C. He did not use names such as the White House or the World War II Memorial; rather I had to supply them to his story. He confused me when he tried to tell me about something he had seen that was "big and gray" with colors on it. I questioned him until he told me it was "pointy," and I realized that he was describing the Washington Monument as they had seen it at night.

Clearly, Anne and Will's learning disabilities were complex and presented new challenges for me as I designed their tutorials. Despite intensive and repeated phonological instruction over several years, their word recognition skills were inaccurate and exceedingly slow. Their weak decoding and vocabulary skills were largely responsible for their poor reading comprehension. Both of them had difficulty remembering what they had read. Will's father often read to Will his nightly independent reading assignment after Will had first read it for himself, otherwise Will was unable to discuss what he had read in tutorial the next day.

On informal assessments at the beginning of the year, Anne read a third-grade passage in the Qualitative Reading Inventory—3 at 48 words per minute (wpm), and Will read the identical passage at 29 wpm. Hasbrouck and Tindal (1992) found that reading 99 wpm is the median rate for students beginning fourth grade. I knew repeated reading was a method that had helped other students with learning disabilities improve their reading fluency, word

recognition skills, and comprehension (Chard et al., 2002; Meyer & Felton, 1999; Therrien, 2004; Therrien & Hughes, 2008), and I intended to make it an important part of their tutorial.

In addition to the repeated reading, I thought that Anne and Will needed phonics and phonemic awareness instruction in their tutorials that would supplement what they were receiving in their reading classes. Combining phonics training with repeated reading would likely maximize the students' chances to become fluent readers (Morgan & Sideridis, 2006). Accordingly, Anne and Will periodically reviewed the sound-symbol relationships for vowels, vowel pairs, and common suffix endings using the *Advanced*

Reading Deck (Cox, 1980).

They practiced decoding two-syllable words using a method developed by Patricia Cunningham (1978). They reviewed how to divide words into syllables and how to use the six syllable types (Blevins, 2001) to decode words they did not know in their independent reading and fluency passages. They also sorted words from *Words Their Way* (Bear,

Invernizzi, Templeton, & Johnston, 2000), and they used small colored blocks to help them blend and segment words.

To optimize Anne and Will's repeated reading practice, I used text at their instructional level, and I gave them corrective feedback (O'Connor et al., 2002; Pany & McCoy, 1988; Therrien, 2004). Often I modeled reading the text, which has been shown to improve the accuracy rate for students with learning disabilities (Chard et al., 2002). Modeling also helps children learn to read with better expression, an important component of fluent reading (Kuhn & Stahl, 2003; Torgesen et al., 2001). Schreiber (1991) described fluent reading as reading with syntactically appropriate pauses, intonation, and phrasing. Children who read haltingly with little expression and comprehension are failing to recognize the syntactic structure of written language. They most likely understand syntax in speech, but they have not learned strategies for organizing written text into syntactic structures. Modeling fluent, oral reading shows

students where to pause, where to change pitch, which words to stress, and which segments to elongate (Dowhower, 1991). Because Anne and Will were severely disfluent, I wanted to be sure that prosody was taught directly to them to strengthen their understanding of oral language, as well as to improve their reading fluency.

Even though it appeared that Anne and Will's disfluent reading and poor language skills primarily were responsible for their difficulties in reading comprehension, I wanted to incorporate comprehension activities with their repeated reading. As their reading fluency improved, it was important that they learned to think strategically about their reading. Samuels (1997) recommended asking a different comprehension question after each repeated reading to build comprehension. Chard et al. (2002) reported that combining repeated reading with comprehension activities led to improved fluency and comprehension skills for students with learning disabilities. I modeled, and Anne and Will practiced making connections, asking questions, and summarizing. The figurative language found in the poems was useful for modeling how to make inferences, which was an important exercise for them because they were literal readers.

Intensive Word Study Builds Vocabulary Knowledge and Fluency

As I considered the needs of my two new tutorial students, I knew that I wanted to make changes in how I used timed repeated reading. I chose fun, easy poems to read instead of informational passages because I wanted them to hear the rhythm of the words and gain a better sense of phrasing and expression in the hope that they would begin to read more naturally and not word by word. Rasinski (2000) reported that using poetry for repeated reading works well for all students, helping them to improve word recognition efficiency and to develop greater sensitivity to syntax. Using poetry for reading intervention can lead to improved attitudes toward reading in struggling readers (Wilfong, 2008), which certainly appeared true for Anne and Will. Every Monday I introduced a new poem and recorded how long it took them to read it. Every day for the rest of the week, we timed their reading of the poem and regularly spiraled back

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to reread and time poems they had practiced earlier in the year.

As I worked with Anne and Will, I questioned how deeply their weak language skills affected their comprehension. I wondered how well they even understood the basic workings of our language. I surmised that they needed intensive direct instruction in word study. Chard, Pikulski, and McDonagh (2006) reported that reading fluency depends on the readers' word knowledge as much as their word recognition skills. Meyer and Felton (1999) recommended that fluency training be combined with vocabulary study for students with learning disabilities. Vadasy and Sanders (2008) found that effective fluency instruction needed to attend to all the gaps students have in sublexical and word-level skills and in semantic, orthographic, and morphological processes.

The research, however, that primarily influenced my teaching plans for Anne and Will was an experimental program called RAVE-O (Retrieval, Automaticity, Vocabulary, Engagement, Orthography) that was developed for struggling readers in second and third grade. The program was part of a study by the NICHD (Wolf, Miller, & Donnelly, 2000). What set it apart from other reading programs was its strong emphasis on explicit instruction addressing "all the multiple aspects of linguistic knowledge." The vocabulary study in RAVE-O addressed key concepts in phonology, orthography, morphology, and semantics. The preliminary data showed the students making significant gains in word attack, word identification, oral reading rate and accuracy, and passage comprehension (Wolf & Katzir-Cohen, 2001). The RAVE-O program was not yet available commercially, so I decided to adapt its methods to my tutorial program.

Choosing poetry for the timed repeated reading lent itself well to the intensive word study I wanted to do, and it made the reading entertaining, which was important for my struggling readers (Towell, 2002). The poets' word play and choice of words presented many opportunities to address Anne and Will's weak language skills. Their first challenge in reading the poems was comprehension since every poem had words that were new to them. Like many children who struggle to read, my students were unaware that words often had multiple meanings or that a word could be used as different parts of speech. Homophones and word play confused them. When they read, they often dropped the endings off words and sometimes added endings that were not part of

the text. This inattention to morphology also negatively affected their reading comprehension. Reading poems with them required intensive word study to scaffold their comprehension.

My students had other areas of delayed language development. For example, their writing showed only an elementary understanding of sentence structure and spelling patterns, which indicated a need to address syntax and orthography. Rereading poetry helped them hear and enjoy a more mature-sounding syntax not found in the simple books they were reading independently. Despite having received intensive instruction in phonemic awareness, both of them were still slow to recognize rhymes and segment sounds. Their difficulties in understanding language were hindering their ability both to retrieve words correctly and to understand them while they read. I found that using poetry for timed repeated reading provided interesting words for them to study and learn in a way that remediated their weak language skills.

What follows are some of my tutorial notes that illustrate the different methods I used to address vocabulary development, phonological awareness, morphology, and orthography. (See Table 1.)

In a poem we read at the beginning of the year, *mEEK* and *fleece* were unknown words for Anne and Will. I drew a continuum of adjectives and put *mEEK* on one end of it and *violENT* at the other end. I then asked the students to think of other adjectives to place along the continuum. This was difficult for them to do. *Fleece* was easy to describe, and we made a connection to the soft, warm fleece jackets that they wore. I made a distinction between *fleece* and a word with similar sounds, *fleas*. We practiced segmenting the sounds of both words with colored blocks. We looked at the different spelling patterns and sorted words spelled with *ee* or *ea*.

In another poem, *loveliness* and *nevertheless* gave them three- and four-syllable words to divide into syllables and read. Studying the parts of *nevertheless* led to generating a list of other compound words. *Loveliness* had a root word and two suffixes, one a common suffix that they did not recognize because of its change in spelling when the final suffix was ended. We added different suffixes to other words that ended in the letter *y* like *beautiful*, *friendlier*, and *happiest*.

To help them understand that words have different functional uses, we talked about the different

Table 1
Expanding Vocabulary Knowledge

Choosing words for study	Key questions: Do the vocabulary words...	Possible teaching points
Look for words that have several aspects for study. (See next column.)	have multiple meanings?	Create a word web with a separate area for each meaning. In each area, list words that are synonyms or have associations to that meaning. (Example in text: <i>play</i>)
Choose more commonly used words or words that are useful in the content areas.	function as more than one part of speech?	Draw a picture of the word, demonstrating each part of speech and write a sentence for each picture. Save drawings in a student-made dictionary for review. (Example in text: <i>play</i>)
Choose words that the student has trouble decoding. Focus minimally on segmenting, spelling patterns, and morphology.	have a prefix, suffix, and/or a common root?	List other words with the same prefix, suffix, or root. Compare their meanings. Generate words that have the same root. (Examples in text: <i>loveliness, friendliness</i>)
If a student continues to stumble over a word in the repeated practice, teach additional aspects about the word or relate it to similar words. The more a student knows about a word, the easier it is for the student to retrieve it.	sound and/or spell like another word with which it is easily confused? or have an unusual spelling?	Segment the sounds using colored blocks or other manipulatives. Compare the spellings of similar words. Generate a word sort. (Examples in text: <i>fleece, fleas</i>)
	have a common onset or rime pattern? (Poems with alliteration provide onsets to study.) rhyme, but have different rime patterns?	List words with the same onset. Look for other ways these words may relate. Generate words that rhyme with the rimes and sort according to spelling patterns. (Examples in text: <i>leaves, grieves</i>)
	relate to other adjectives by denoting degrees of difference?	Make a continuum of words that demonstrate shades of meaning. (Example in text: <i>mEEK</i>)
	show similarity or contrast?	Generate additional synonyms and antonyms and link them to other nouns. (Examples in text: <i>smooth, knobby; knobby knees, knobby trees</i>)
	function figuratively?	Compare literal and figurative meanings. Think of a related metaphor or simile. Figurative language lends itself to making inferences.

meanings of *play* and noted that sometimes it worked as a noun and sometimes as a verb. We made a word web using the different meanings of *play* and added words that related to each meaning. For example, one meaning of *play* had words like *tag, soccer, softball, and kickball* associated with it. Another meaning of *play* had *theater, stage, and actors* as some of the related words.

Orthography was addressed by noting that the rhyming words *place* and *grace* followed a common spelling pattern, but *grieves* and *leaves* in the same

poem did not. We explored other words with those spelling patterns and sorted them according to their *ie* and *ea* spellings. We also looked at other words with the letter *c* to determine when it says its hard sound as in *cat, coat, and curve* in contrast to words like *ceiling, city, and fancy* and the words that have both sounds of the letter *c* like *circus, circle, and icicles*. In another poem, *knobby* was an unknown word that led the discussion to doorknobs, hills, and knobby knees. The silent *k* before the *n* in *knobby knees* led into an orthography lesson looking through the

dictionary for all the words they knew that started with *kn*.

The timed repeated reading process gave us five days to develop and review these points. Sometimes we rewrote a poem in prose form so they could use a different passage for repeated reading that had a substantial number of the same words. This adaptation was designed to strengthen their reading fluency (Rashotte & Torgesen, 1985). This provided good fluency practice for Anne and Will along with a chance to compare the differences between poetry and prose. (Both of them preferred reading the poems rather than the summaries.)

The word study continued in this format throughout the year as they worked on timed repeated reading. (See Table 2 for a list of poem characteristics that ensure a good poem selection and Table 3 for suggested poems.) I encouraged the students to look for the words they studied with me when they read independently and in their classrooms. We regularly reread and discussed the poems they had studied to strengthen their fluency and to review the vocabulary words they learned (Blachowicz & Fisher, 2000).

Table 2
Characteristics of Good Poems for Study

Poem characteristics
Fun and humorous
Strong rhythm pattern
Rhyme, alliteration, and sound play
Figurative language
Appealing topics for children such as animals, family, familiar or fantastical experiences

Growth in Reading Fluency, Word Recognition, and Comprehension

By the end of the year, both Anne and Will had made wonderful progress. Figure 1 shows that Anne made a gain in her reading speed of 67%, and that Will's gain was even greater at 138%. Anne read a third-grade passage in the Qualitative Reading Inventory—3 at 48 wpm in September and 80 wpm on the same passage in May. Will read the identical passage at

Table 3
Suggested Poems

Poem	Volume	Poet
Awful Ogre Runs Wild	<i>Awful Ogre Running Wild</i>	Jack Prelutsky
The Barracuda	<i>Big, Bad and a Little Bit Scary</i>	Wade Zahares, compiler
Cartoons for Raccoons	<i>Fly with Poetry</i>	Avis Harley
Changes	<i>Science Verse</i>	Jon Scieszka
Dinnertime	<i>Fathers, Mothers, Sisters, Brothers</i>	Mary Ann Hoberman
The Elephants Are Trumpeting	<i>Off to the Sweet Shores of Africa</i>	Uzo Unobagha
The Googies Are Coming	<i>Where the Sidewalk Ends</i>	Shel Silverstein
Halloween	<i>Monster Soup</i>	Dilys Evans, compiler
I'm Not Lion	<i>Animal Tracks</i>	Charles Ghigna
Jenny the Juvenile Juggler	<i>The Ice Cream Store</i>	Dennis Lee
Mummy Slept Late and Daddy Fixed Breakfast	<i>A Jar of Tiny Stars</i>	Bernice Cullinan, Compiler
November	<i>A Child's Calendar</i>	John Updike
The Pack Rat	<i>Zoo Doings</i>	Jack Prelutsky
Three Dinosaur Ages	<i>Dinosaurs Forever</i>	William Wise
A Tomcat Is	<i>A Hippopotamusn't</i>	J. Patrick Lewis
Weevils	<i>Insectlopedia</i>	Douglas Florian

29 wpm in the fall and at 69 wpm in the spring (see Figure 1). Both students made solid improvement on the Woodcock Reading Mastery Test—Revised (WRMT—R) in decoding both real words on the Word Identification Subtest and in decoding non-words on the Word Attack Subtest. Both students showed larger gains in reading nonwords, which indicated that they had improved in using rules and patterns to decode unknown words. Anne scored at the 36th percentile in word attack skills in April 2005

and at the 48th percentile in April 2006 (see Figure 2). Will's word attack skills increased from the 33rd percentile to the 66th percentile (see Figure 3).

Both students demonstrated excellent gains in their reading comprehension scores as illustrated by Figures 4 and 5. Although the Comprehension Subtest of the Gates-MacGinitie Reading Tests (GATES) is a timed test, it was administered also as an untimed assessment to accommodate the students' slow reading rates. Both students showed greater gains in comprehension when they were given additional time to complete the test. Anne's untimed comprehension score increased from the 7th percentile to the 47th percentile (see Figure 4) while Will's untimed comprehension score improved from the 11th to the 59th percentile (see Figure 5).

Anne and Will's low untimed scores on the GATES comprehension subtest before they started the intervention serve as a cautionary tale that giving students with learning disabilities extra time on standardized tests may not be an effective accommodation for their poor decoding skills. Only after Anne and Will's decoding skills were near the 50th percentile, as measured by the WRMT—R, did the extra time on the test prove beneficial to them and allow them to show what they could understand. The following year when Anne and Will were reading more fluently, their timed scores on the comprehension subtest of the GATES showed greater improvement. Anne's

Figure 1
Reading Speed Gains

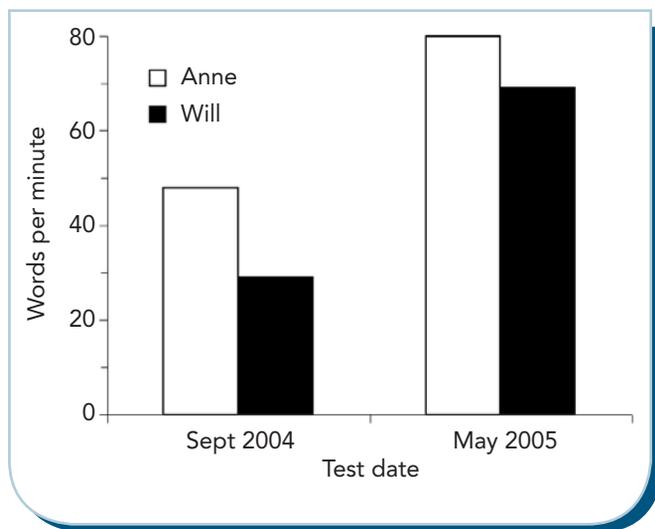


Figure 2
Anne's Word Attack Skills

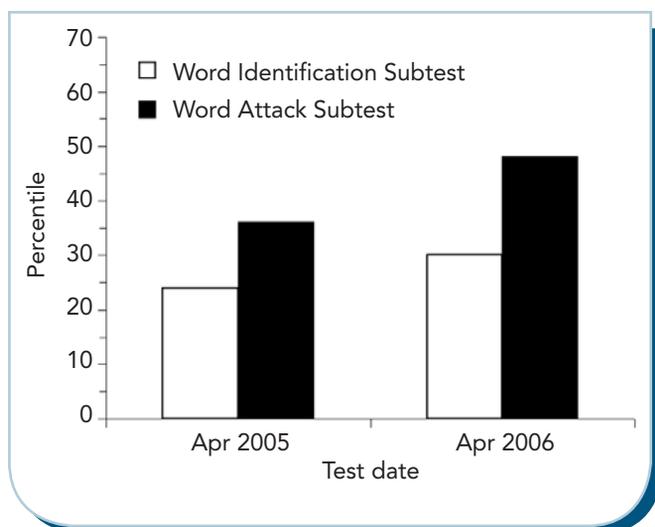


Figure 3
Will's Word Attack Skills

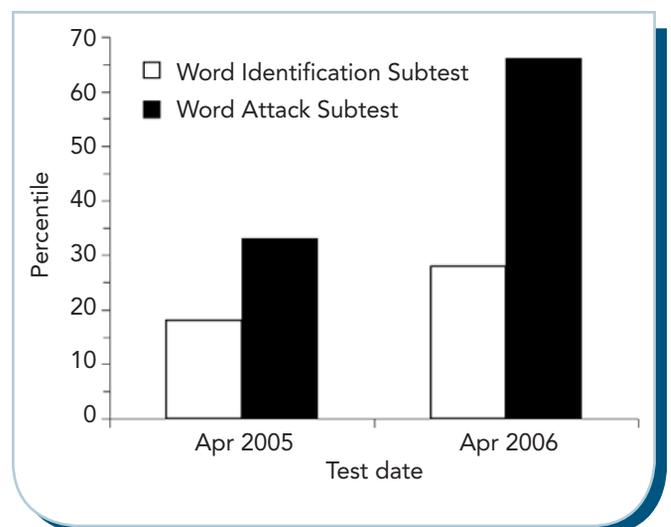


Figure 4
Anne's GATES Test Results

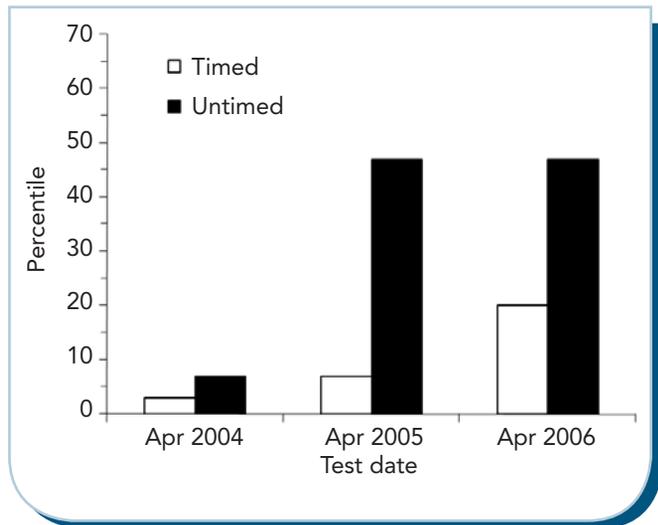
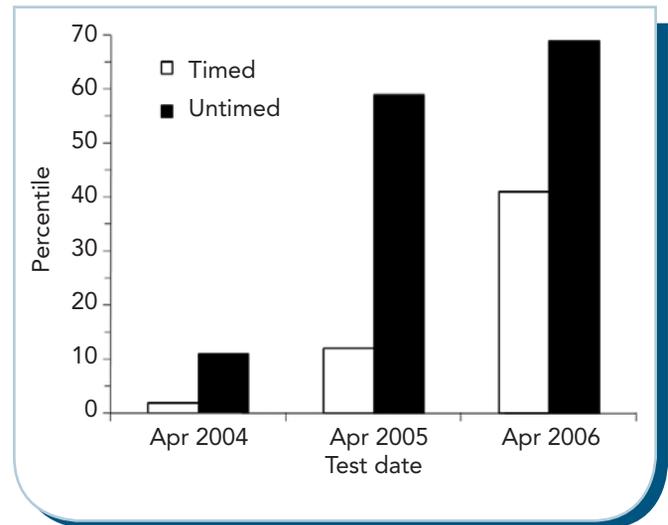


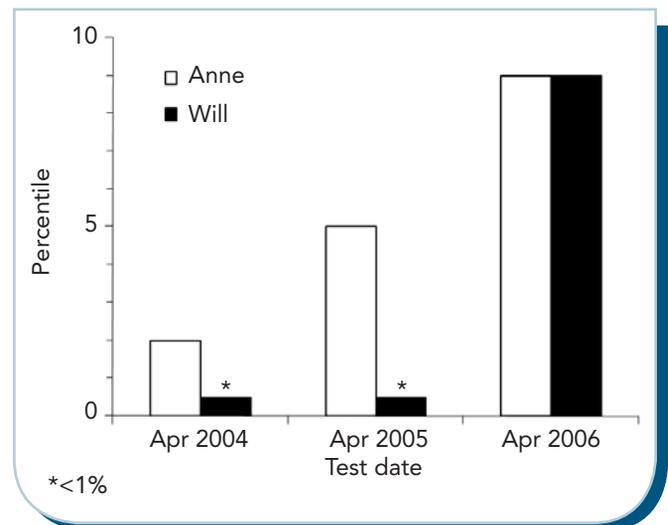
Figure 5
Will's GATES Test Results



timed score in the spring of 2005 was at the seventh percentile and in the spring of 2006 at the 20th percentile (see Figure 4). Will's timed score in the spring of 2005 was at the 12th percentile and in the spring of 2006 at the 41st percentile (see Figure 5).

Both students had made great progress in their reading fluency in the 2004–2005 school year. They were reading, however, at speeds between the 25th and 50th percentiles for second-grade students as recorded by Hasbrouck and Tindal (1992). In spite of their progress, their fluency rates were two grade levels below where they needed to be. Vaughn et al. (2000) similarly found that third-grade students with learning disabilities who participated in a fluency and comprehension intervention made significant gains, but the gains were not sufficient to get them to grade-level reading skills. On the fluency subtest on the Gray Oral Reading Test—4 (GORT), Anne made only a small improvement from the second percentile in April 2004 to the fifth percentile in April 2005. Will showed no improvement, testing at below the first percentile both years despite his impressive fluency gain of 138% as recorded on the Qualitative Reading Inventory—3. It took additional fluency work in tutorials during the following year before they both made enough improvement that could be measured on a standardized fluency assessment. In April 2006, Anne and Will scored at the ninth percentile on the fluency subtest on the GORT (see Figure 6).

Figure 6
GORT Fluency Test Results



Although Anne and Will were still slow readers, the gains they made in their reading fluency were large enough to make a strong impact on their word recognition and reading comprehension skills. Perhaps the best result overall was that reading was no longer onerous for them, and as a result, their interest in reading grew.

Sum and Substance

My teaching experience has taught me that intensive remediation in phonemic awareness and phonics does not necessarily lead to fluent reading for students with learning disabilities; however, the addition of timed repeated reading to their instruction will increase students' reading fluency. Improved reading fluency generates additional improvements in comprehension and decoding skills. Students with learning disabilities who have strong language deficiencies benefit from direct instruction in intensive word study that includes phonological awareness, orthography, morphology, and semantics in addition to a program of systematic phonics instruction to ensure optimal growth in reading fluency. My decision to emphasize vocabulary development, spelling patterns, roots, and affixes while using timed repeated reading to improve my students' reading fluency was influenced by research that shows that the more a child knows about a word, the easier and faster that word can be read. Vocabulary development and word knowledge are therefore essential for the rapid retrieval of words (Wolf & Katzir-Cohen, 2001). Combining intensive word study with the repeated reading of poetry proved a successful plan for improving the reading fluency, word recognition, and comprehension skills of my students with learning disabilities while at the same time improving their understanding of how our language works. The poets' love of language presented a bounty of new and interesting words for my struggling readers to study. The rhythms, rhymes, and nonsense made their reading fun.

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