Response to Intervention by a Child With a Severe Reading Disability
A Case Study

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Within a short time span, response to intervention (RTI) has altered how educators serve students with reading difficulties. Its impact is most evident at the primary level, where the focus is on limiting referrals to special education by preventing reading difficulties. Educators have paid less attention to exploring how to use RTI with older elementary-aged students who experience severe reading difficulty. For that population of students, motivational issues often compound reading problems and prevention techniques have not been successful. This article applies basic RTI principles to constructing, implementing, and evaluating an individualized reading intervention program for a fourth-grade student with a learning disability (LD) who has secondary challenges in behavior and attention.

Background
Mike is a 10-year-old fourth-grade student from a small New England town. He is a respectful boy with a keen sense of humor who is well liked by peers and adults. He is an avid dirt biker who can talk about mudguards, pinch flats, and local dirt bike trails in great detail. One would not expect this energetic young man to have complex processing issues.

The first author met Mike when he was a student new to her school, where she was his special education teacher. His records indicated that he had started receiving speech and language services when he was 3 years old and had received special education services since first grade. According to his individualized education program (IEP), Mike had a specific learning disability in reading, expressive language delays, and an attention deficit disorder (ADD). He also displayed behavioral challenges. Interviews of teachers at Mike’s previous school revealed that in moments of difficulty he shouted in frustration and referred to himself as “stupid.” Reports indicate that he hit his head against the wall and once bit a teacher. Mike’s former school district considered his disability sufficiently significant to assign him a one-to-one paraprofessional, and this recommendation traveled with him to his new school. Mike’s parents also provided important information related to his needs. Recently Mike had begun to have headaches and visited a neurologist, who discovered that a portion of his right cerebellar hemisphere was missing, a condition that occurred in utero.

Meeting Mike’s needs afforded his special education teacher and her professor, who was teaching a course on reading and inclusion, a perfect opportunity to connect theory with practice: How do principles of RTI apply to service delivery for a student identified with a learning disability? How would the design of interventions in reading, with attention to behavior, be affected? How would educators monitor his progress? This article describes Mike’s fourth-grade school year, one that was ultimately satisfying for Mike as a reader and as a learner.

Assessment and Evaluation
In September, Mrs. Katz, Mike’s fourth-grade teacher, asked her students to read selected texts aloud for independent reading. Like his classmates, Mike picked a series book. He was notable to identify most of the words and spent several minutes reading and rereading the first two sentences. Mrs. Katz tried to offer suggestions for other books, but Mike was adamant that this was the book that he wanted and that it was not too difficult for him.

The next day, the teacher used the Developmental Reading Assessment 2 (DRA2) to obtain Mike’s instructional reading level (Beaver, 2006). The results placed him at Level 16, a first-grade level. His oral reading was labored and dysfluent. Obtaining an

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estimate of his reading comprehension through story retelling was difficult. Mike struggled with that task, but he clearly understood more than he could express. He could recall a general phrase or note an illustration, but then stop, unable to elaborate. When prompted to tell more, he was quick to say, “I don’t know.”

A weakness in reading comprehension, as indicated by Mike’s DRA2 retelling score, was not consistent with teacher observations and assessment records. Mrs. Katz reported that Mike seemed capable of learning new vocabulary and was able to contribute meaningfully in class discussions. By all reports, Mike appeared to have a substantial store of background knowledge and solid receptive oral-language skills. When he was able to bypass print, such as through listening, he was generally able to comprehend at a level commensurate with that of his peers, as long as he was attending.

Formal testing in early October revealed that Mike’s overall intellectual ability spanned from the average to low-average range, with significant variability. Receptive vocabulary and oral comprehension were strengths, and his background knowledge was equivalent to that of same-age peers. In contrast, his expressive language, word retrieval, and working memory were well below average. Educators also noted weaknesses in executive function, particularly planning. These weaknesses are consistent with a diagnosis of ADD (Barkley, 1997).

Features of Mike’s profile resembled dyslexia, a condition characterized by severe and persistent weakness in decoding and word identification that has been attributed to weak phonological processes (Catts & Kamhi, 1999), but his difficulties in organizing and monitoring his language and behavior pointed to something more. Nonetheless, Mike clearly needed to gain access to print. Without growth in fundamental reading skills, the reading gap between him and his peers would widen when he approached middle school. In light of increased demands to read in the content areas, his behavioral and motivational vulnerabilities were of particular concern. Understanding all aspects of a child’s learning profile helps ensure that educators choose appropriate interventions.

**RTI**

RTI is both a model used to identify students whose reading problems are the result of an LD and an innovative approach to service delivery (Barnes & Harlacher, 2008). As an LD initiative, RTI replaces the discrepancy approach used to determine special education eligibility for a learning disability. Struggling readers who do not respond to high-quality research-based interventions after an appropriate amount of time are eligible to qualify for special education services (Torgesen, 2000). As an approach to service delivery, RTI seeks to prevent reading problems from occurring and to intervene when these problems persist. RTI potentially represents a shift in how schools allocate instructional time and human resources. From a general education perspective, students who find reading difficult receive the assistance that they need when they need it. From a special education perspective, educators have an opportunity to work with students with disabilities (and other nonresponders) in an acutely focused manner.

Most RTI models have three or four levels, or tiers, which differ in intensity (Fuchs & Fuchs, 2007). Most models agree that the first tier is general education and the final tier is special education, with one or two tiers between them (Reschly, 2005).
### Features That Contribute to Intervention Intensity

- Duration
- Session frequency and length
- Student–teacher ratio
- Specificity of the intervention
- Target
- Precision of progress monitoring
- Expertise of the provider
- Explicitness of instruction
- Systematicity of instruction
- Practice opportunities
- Teacher feedback

Intervention intensity increases as a child moves up tiers; educators gauge this intensity by using several factors, including physical features of the intervention (duration, session frequency, and length) and the student-teacher ratio (see box, “Features That Contribute to Intervention Intensity”). As a student moves up tiers and intervention intensifies, daily sessions may span the entire school year. At lower tiers, intervention is brief and may occur for short sessions a few days each week. Of particular significance are changes in the size of the student groupings. The student–teacher ratio decreases as interventions become more intense (Bradley, Danielson, & Doolittle, 2007).

Precisely defined student learning outcomes and their ongoing measurement are essential when implementing RTI, as is the expertise of the individual who delivers the intervention (Vaughn & Roberts, 2007). Educators use reading performance indicators in the form of benchmarks or scores to judge student progress. Students who struggle in reading are a diverse group; therefore, literacy specialists, speech and language professionals, and bilingual and special education teachers are involved. The RTI model uses a team approach with multidisciplinary lenses to improve the likelihood that students will respond favorably.

In the area of literacy, primary or Tier 1, intervention gives all students high-quality reading instruction through their general education classroom teacher (Fuchs & Fuchs, 2007). The classroom teacher focuses on preventing reading problems and addressing small difficulties before they become bigger. For example, teachers might group beginning readers who have difficulty decoding so that they can receive explicit teaching and practice in phonoeme blending. At Tier 1, the classroom teacher assumes responsibility for targeted short-term instruction of students who are not making expected progress. Differentiation is integral to the model. When preventive methods fail, students receive more intense support.

Secondary or Tier 2, intervention supplements classroom literacy instruction and is typically implemented over a longer period of time, usually 3 to 6 months (Vaughn & Roberts, 2007). The classroom teacher or a reading specialist delivers intervention to groups of three to six students, usually not at the same time that the educator teaches the content to the whole class. When properly trained and supported, paraprofessionals and tutors can also deliver intervention effectively at this level (Causton-Theoharis, Giangreco, Doyle, & Vadasy, 2007).

Educators identify specific reading needs and design sequences of instruction with extended opportunities for review, immediate feedback, and monitoring student progress. At this tier and the next, assessments used to track student’s responses are important. Generally, multiple measurements that provide evidence on student progress are necessary. If progress does not meet expectations, the student may continue at Tier 2 with adjustments or may receive a referral to the next level.

Educators reserve tertiary or Tier 3 (and in some models, Tier 4), intervention for students who have demonstrated a history of nonresponsiveness and significantly low achievement. For intervention at its most intense, a very low student-teacher ratio, often 1:1 or 1:2, is desirable (Fuchs & Fuchs, 2007). Interventions are highly focused at this level and are delivered in an even more explicit and systematic manner than at the Tier 2 level. Students receive more opportunities for practice, with and without teacher support, over a longer period of time (Denton, n.d.). Progress monitoring is precise and frequent. Personnel with specialized expertise, including reading and special education teachers, deliver Tier 3 interventions (Vaughn & Roberts, 2007). In some models, this tier resembles special education (Bradley et al., 2007) and students may undergo evaluations to determine special education eligibility or, like Mike, they may already be identified as having a disability.

**Mike’s Reading Program**

Mike’s individualized reading program was aggressive. In addition to reading at a level 3 years behind that of his peers, he presented with clear biological anomalies, a history of reading failure, behavioral challenges, and strong negative beliefs about his own competence as a reader. Classroom expectations had begun to focus on using reading to learn new material and no longer focused as much on learning to read. Halting Mike’s expectation of failure and his negative self-efficacy as a reader was important before they spiraled further downward.

Table 1 shows Mike’s reading program. His program occurs primarily at Tier 3, where intervention is at its most intense. The model presented departs from RTI approaches that designate student support at a given tier and increases it when students fail to make adequate progress. Educators instead simultaneously furnish support at different tiers and use them flexibly in response to student need and school resources, including available personnel.
In keeping with Mike’s reading profile, his interventions focused on helping him identify words more accurately and automatically. This educational component took place in a special education classroom on a 1:1 basis. In this setting, free from classroom distractions, Mike had opportunities to be physically active to accommodate his attention difficulties. For example, he could sit facing the whiteboard and get up to walk a few steps to write a response, or he could shuffle word pattern cards while they were read, rather than the special education teacher presenting them one by one.

A complementary intervention of moderate intensity targeted spelling high-frequency words. A paraprofessional, who followed a structured program, delivered this intervention in the classroom. The instructor did not have full teaching credentials, thereby decreasing the intensity of the intervention. Fluency practice was also an intervention of moderate intensity. Several adults, including the literacy teacher, worked with Mike and other struggling readers, some without disabilities, in the school’s computer lab. Finally, Mike participated in cooperative word play with three other students with LD whose reading needs were similar to his. Educators considered this intervention to be of moderate intensity, because the gamelike format functioned as a review.

Preventive and in-class efforts focused on responding to literature and critical thinking. Mike’s teacher used methods that enabled equal access to the curriculum, such as read-alouds. Shared reading strategies and cooperative learning projects were classroom norms.

As indicated in the box “Features That Contribute to Intervention Intensity,” instructional interactions also influence intensity. As the child moves up tiers, explicitness (important reading knowledge, skills, and strategies that educators have identified and directly teach) and systematicity (a planned and logical sequence of instruction) increase (Denton, n.d.). For example, Mike’s instructor asked him to read simple phonograms before asking him to read multisyllabic irregular words. The systematic instructional sequence helped him know what he was learning, why it was important, and how he could use it. The instructor met Mike at his instructional reading level, thereby ensuring a high rate of successful responses. When Mike made errors, the instructor corrected them immediately (Denton, n.d.).

**Tier 3**

Mike’s reading program, at its most intense, focused on increasing his awareness of how speech maps onto print. Initial assessment indicated that Mike had specific gaps in phonics (e.g., short vowels) and in identifying phonograms/word families (e.g., ip and op, ish and ash, ang and ong, ack and ake). He also had difficulty blending sounds into words and could only recognize a limited number of sight words. To control for difficulty, Mike read words from targeted word families in progressively longer segments—in isolation, in meaningful phrases, in sentences, and in decodable text. Mike received multiple practice opportunities, with and without teacher support, to help him become more automatic in deciphering print. The educators selected controlled, decodable text to provide him extended practice and to build his confidence. The words that the instructor expected Mike to read in

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**Table 1. Mike’s Reading Intervention Plan**

<table>
<thead>
<tr>
<th>Tier</th>
<th>Personnel</th>
<th>Student-Teacher Ratio</th>
<th>Session Length</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>SE teacher</td>
<td>1:1</td>
<td>Mike only 30 minutes</td>
<td>Phonemic awareness, phonics, decoding</td>
<td>Phonemic awareness, phonics, decoding</td>
<td>Phonemic awareness, phonics, decoding</td>
<td>Phonemic awareness, phonics, decoding</td>
<td>Phonemic awareness, phonics, decoding</td>
</tr>
<tr>
<td>2</td>
<td>Paraprofessional</td>
<td>1:1</td>
<td>Mike only 15 minutes</td>
<td>Spelling</td>
<td>Spelling</td>
<td>Spelling</td>
<td>Spelling</td>
<td>Spelling</td>
</tr>
<tr>
<td>2</td>
<td>SE teacher, reading teacher, paraprofessionals</td>
<td>1:3.2 16 struggling readers, 50% with LD</td>
<td>—</td>
<td>Fluency</td>
<td>Fluency</td>
<td>—</td>
<td>Fluency</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SE teacher</td>
<td>1:4</td>
<td>All LD 30 minutes</td>
<td>Group word play</td>
<td>—</td>
<td>—</td>
<td>Group word play</td>
<td>—</td>
</tr>
<tr>
<td>1</td>
<td>GE teacher</td>
<td>1:30</td>
<td>30 minutes</td>
<td>Literacy</td>
<td>Literacy</td>
<td>Literacy</td>
<td>Literacy</td>
<td>Literacy</td>
</tr>
</tbody>
</table>

Note. Components appear in order from most intense to least intense. Tier designation is approximate. LD = learning disability. SE = special education. GE = general education.
this component of his reading plan contained only the sounds, letter patterns, and irregular words that he had been taught. Controlled text is essential for older elementary students with emerging word attack skills (Birsh, 2005). A review of potential sources of instructional texts resulted in selecting the Merrill Linguistic Reading Program (Wilson & Rudolph, 1980). In this context, Mike started to solve problems actively and to self-correct. After several months, he began to actively decode unfamiliar words while he was reading. When he made errors, he paused and said “No!” before the teacher noted the error. With each passing lesson, feelings of competence and control started to take hold. Mike began to ask for affirmation by questioning, “Am I doing a good job?”

Expectations for Mike were high, but interactions were casual. The special education teacher encouraged Mike to make choices and take control within a structured lesson format that lent itself to predictability and a quick pace of instruction with many opportunities for practice (see box, “Lesson Format at Tier 3”). After an initial assessment, lessons targeted high-frequency word families, and the teachers monitored the word families that Mike had already learned to ensure that he was generalizing his skills in reading and spelling. Mike also received many opportunities for cumulative review. Predictability, opportunities for continued practice, close monitoring, and cumulative review are key features of interventions at their most intense. Each week, depending on Mike’s progress, the first teacher selected two visually and phonetically similar word families (e.g., -op and -up patterns) to force Mike to attend to subtle differences in letters and sounds.

The lesson began with a 2-minute drill, during which Mike named the vowels, pronounced them, and performed auditory or visual discrimination tasks as quickly and as accurately as possible. For example, Mike might cross out all the nontarget words from a string of distracters (e.g., hop : hip – hop – hot or saw : was – asw – saw) or orally segment words (“Do you hear -op in hop? In hip?”). The gamelike format hooked Mike right from the start and was a source of motivation.

The following 10-minute lesson segment focused on teaching Mike phonics and decoding skills embedded within oral and written language. First, the teacher wrote several words from the same word family in large, colorful letters on the whiteboard and encouraged Mike to generate rhymes. For example, if zip and trip were on the board, Mike might write lip, ship, and chip. When he said the words, the teacher encouraged him to write them and slowly stretch the sounds while carefully coordinating sound and letter production. This simple multisensory technique allows for simultaneous auditory and visual processing and maximizes retention (Birsh, 2005). After the teacher generated the list, Mike read it aloud.

Following phonemic awareness, the focus was on Mike’s application of these new skills in a format that required him to read targeted words in successively longer segments of text. The special education teacher con-structed a series of controlled phrases and sentences, such as will not fit or the map is on his lap. The teacher regularly included words that Mike had previously learned. After reading phrases and sentences, Mike wrote sentences. Spelling was difficult for him, but he worked diligently and whispered to himself while he wrote. The teacher interpreted this self-talk as a sign of self-regulation that indicated that Mike was starting to believe that his efforts made a difference. If Mike had difficulty, the teacher prompted him to select the right strategy for the job: a phonemic segmentation strategy for phonetically regular words or a visualization strategy for “nonbehaving” irregular words.

During the final 10 minutes, Mike had additional opportunities to read connected text. The Merrill stories and passages did not have rich themes, but they contained many instances of the word pattern under study. This text feature was critical for Mike because it enabled him to gradually move from simple to complex patterns and to use skills within the context of actual reading. For a child defeated by reading, baby steps ensuring small successes were important. After silently reading the passage, Mike read it aloud. He received immediate and specific feedback until he started to self-monitor and self-correct on his own. Finally, Mike practiced retelling or responding in writing to the passage. The special education teacher used visual and verbal cues to encourage a complete response. Because most of the stories featured action sequences, she simply asked him what happened next. This question was usually sufficient to elicit a more detailed response. For more complex stories that featured problem-solution structures, Mike was asked to reread and summarize.

Tier 2
A range of providers furnished supplemental reading interventions in fluen-

For a child defeated by reading, baby steps ensuring small success were important.
and several paraprofessionals supervised 16 students in the computer lab for 30 minutes a day, 3 days each week. Students worked at their own pace and engaged in repeated readings of high-interest fiction and nonfiction stories. The words in these passages are not controlled and are not restricted to specific phonemic patterns. The computer reads the story fluently and expressively, and the reading rate gradually increases while the stories are repeated. Students repeat readings of the story until they reach a predetermined goal rate.

The spelling component of Mike’s program used Spelling Words for Writing (Forest & Sitton, 1994). This program encourages students to use visualization to copy and unscramble high-frequency words. Visualization complements the auditory approach emphasized in Mike’s reading program. Learning how to spell common words fit Mike’s need to develop functional writing competencies. Mike’s teacher provided a few additional words that corresponded to the science or social studies theme that Mike was studying. She easily incorporated such words as canopy, rain forest, and underground railroad. Once a week, the educators reviewed Mike’s progress and constructed homework activities. Again, cumulative reviews occurred throughout the year.

The final Tier 2 intervention, a cooperative word-play group, included Mike and three peers who also had LD. The four boys, all of whom were reading at partial alphabetic phases of word learning, engaged in gamelike phonics activities. Board and card games and friendly partner competitions reinforced letter-sound associations (Ehri & McCormick, 1998).

**Tier 1**

Because the gaps in Mike’s vocabulary and comprehension were less pronounced than his gaps in other areas, educators addressed them in his fourth-grade classroom. Mike’s classroom teacher used various adaptations to provide Mike access to books that his peers read. She either read stories aloud to Mike or he engaged in partner reading—a peer read the story and Mike contributed as much he could. On occasion, he worked with peers and read themed sets on a topic or explored relevant sites on the Internet. Gaining access to difficult text was necessary to enable Mike to be a more active participant in his literacy block, in which he engaged in cooperative problem-solving endeavors.

**Progress Monitoring**

Through ongoing monitoring of students’ responses to intervention, educators acquire valuable feedback on the effectiveness of their methods. Some students make sufficient progress, and their performance falls within acceptable ranges. Others may be slow to respond or achieve minimal growth and require changes in the intensity of the intervention. Mike fell somewhere between these two extremes.

As Figure 1 indicates, Mike demonstrated the equivalent of a year’s growth in his reading level. In September, Mike was reading text at a DRA2 level of 16, commensurate with a mid-first grade level; and by the end of the year, he was reading at Level 28, equivalent to a late second-grade level. He also made good progress in his reading rate. Words correct per minute (WCPM) is a measure that educators can use to assess fluency (Good, Simmons, & Kame’enui, 2001). To evaluate whether Mike made sufficient progress, educators used norms for struggling readers rather than norms for typical readers (Hasbrouck & Tindal, 2006).

They based the expected growth in Mike’s reading rate on projected gains made by fourth-grade readers who read at the 10th percentile. The slope of the line in Graph 2 uses an expected weekly growth of 0.8 words correct per minute. Mike exceeded this expectation, but a significant reading gap still remained.

Mike also made progress in spelling. In October, he was able to spell 54% of Fry’s first 150 instant words (Fry, 1980); by June, he accurately spelled 73% of the words. Mike’s teacher observed that he was correctly spelling instructed words in his written class-room work. Comparison of a random sample of classroom writing showed that Mike was spelling 68% of Fry’s words correctly in September and that he spelled 87% correctly in June. Moreover, reversals decreased significantly in his reading and writing. At the beginning of the year, Mike reversed z, e, b, d, and question marks 65% of the time and occasionally confused such words as was and saw. By June, Mike consistently self-corrected reversals without teacher prompting.

The changes in Mike’s reading behaviors and attitudes were as telling as the changes that educators could express numerically. In September, he often shut down when presented with any kind of reading material. He would physically push the paper away and say, “I can’t do this. You read it.” In January, after 4 months of intervention, Mike began to read for pleasure and select books on his own. He willingly conferred with his teacher for confirmation that his choice was a good one. He began to show pride in his accomplishments. On one occasion he was holding up a book on UFOs, with a crowd of students looking on. He was pointing out pictures and supplying details and facts that he had recalled from a previous reading.

The concrete indicators of growth furnished by benchmark measurements provided tangible feedback for Mike, who was keenly interested in graphs that showed his progress. In fact, an unexpected outcome of this program was the positive effect of Mike’s participation in progress monitoring. As he saw evidence of his successes, he began to expend the effort needed to self-regulate and attributed his reading gains to “working hard” and being “smart.”

However, much work still remains. Mike will be entering fifth grade next year, but he is reading at only a second-grade level. At his annual IEP meeting, the team agreed to continue with the program at its present intensity. At the end of the year, during a field observation that the second author conducted, she was first struck by the degree of self-regulation and control that Mike assumed. He showed initia-
tive and monitored his own responses, applying reading and writing self-correction strategies throughout the session. However, she also noticed Mike’s lack of automaticity. Although he readily self-corrected basic errors (spelling bag instead of bang or misreading chin for shin), he clearly still relied on phonemic segmentation and blending strategies to identify and spell words. Given the intense levels of practice and multiple exposures to a controlled set of words, Mike’s lack of automaticity is striking.

**Final Thoughts**

Although educators already view RTI as a general education initiative devoted to preventing reading difficulty, this summary of Mike’s journey in the process demonstrates how it can also revitalize special education services for a student with a serious reading disability. Successful interventions build on sound practices for reading instruction and consider students’ behavioral and social history. A significant number of students with reading problems, like Mike, also have difficulty with attention and self-regulation (Torgesen et al., 2001). Expert attention to the needs of the whole child is necessary. Precision and relentlessness mark the individualized focus of interventions at their most intense.

The RTI model described in this article advocates flexible, simultaneous use of support at various tiers and capitalizes on available supports within the school. It embodies a problem-solving orientation and includes professionals from various disciplines, thereby reducing the division between general and special education and providing targeted high-quality intervention that is responsive to changes in learning for students who struggle.

**References**


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