When asked to revise this chapter for the latest edition of *Theoretical Models and Processes of Reading*, I thought about changes in the field of reading disabilities (RD) that have occurred since my initial writing of the chapter a number of years ago. Perhaps the most important changes have involved those spurred by the Individuals with Disabilities Education Improvement Act, popularly termed IDEA 2004, which permitted schools to adopt Response to Intervention (RTI) criteria in identification of RD and to eliminate the use of the IQ–achievement discrepancy model. The latter model, long the centerpiece of identification criteria for RD and other learning disabilities (LD), requires students to have IQ scores substantially higher than their achievement scores to be eligible for special education services in the category of LD. In contrast, RTI criteria do not require the routine use of IQ tests; rather, they involve providing research-based interventions to students who need them as part of the general education system. RTI models conceptualize students with LD as those failing to make adequate progress even in interventions effective for most other struggling students.

A fourth-grade student who I’ll call Jamie captures the type of experience I often had in schools a decade ago. Jamie’s teachers were considering him for special education services in the category of LD. He had had trouble in reading since early first grade but had not previously been eligible for services because he did not meet IQ–achievement discrepancy criteria. Reports in Jamie’s file indicated that he had a full-scale IQ score of 90, the lower end of the average range but well above the range for intellectual disabilities (below 70). After several years of struggling in reading and falling further and further behind—because special education was the main avenue for intervention in the district and required a disability classification—Jamie finally had a sufficiently large IQ–achievement discrepancy to qualify for LD services. As I spoke to the district administrator involved in his case to provide recommendations for helping him in reading, she seemed impatient. Finally, she made a comment that stunned me. “Well, you know,” she remarked dismissively, “it’s not like his IQ is 120.”
In recent years, educational policy in my state, as in some other states, has emphasized the use of RTI models in general education, required the use of RTI criteria in identification of LD, and eliminated IQ–achievement discrepancy criteria. Although implementation of RTI involves many challenges, now I rarely encounter students going without intervention because they lack a special education label, and educators no longer spend valuable assessment time documenting IQ–achievement discrepancies. Instead, educators tend to focus heavily on questions such as the following: What is the most effective intervention for this student? What is the best way to monitor his or her progress? How can we accelerate progress? These questions do not always have straightforward answers. However, at least the questions are educationally meaningful, based on the expectation that struggling students can learn, and focused on how to teach those students successfully.

There are indeed children who have unusual difficulty learning to read, whose reading problems cannot be accounted for by other disabilities, broad intellectual limitations, an impoverished home environment, or inadequate instruction. Many of these children require ongoing, intensive educational support to learn to read, and special education often is the appropriate avenue for providing this support. These students, as well as other struggling readers who do not meet formal criteria for RD but often benefit from similar interventions, are the focus of this chapter.

The chapter begins by considering core features of all definitions of RD, as well as the influence of RTI criteria on identification of RD in recent years. This first section reviews research on reading development and common patterns of reading difficulties and describes a theoretical model for understanding both typical reading and reading problems. The second section of the chapter considers the educational implications of the model, including the role of RTI in differentiating RD from other reading difficulties. The third section explores important challenges of RTI implementation for educators in relation to identification of RD. The chapter closes with conclusions and future directions for research.

**What Are RD?**

**Core Features of RD**

Most current legislation and identification guidelines subsume RD under the umbrella category of LD. In the United States, LD constitutes by far the largest single category of special education, with approximately 44% of students receiving special education classified as having LD in 2007 (Cortiella, 2009), often because of reading difficulties. IDEA 2004 specifies three areas of reading in which a student with LD can be eligible for services: basic reading (i.e., word-level reading skills), reading fluency, and reading comprehension. A student must have low achievement in at least one of these three areas to be identified with a learning disability in reading.

Historically, three core concepts have been central to RD. First, RD involves intrinsic, presumably biologically based, reading difficulties, as opposed to reading failure associated mainly with extrinsic causes such as poverty or poor instruction. Behavior-genetic studies of children’s reading development suggest substantial genetic influences on both word recognition and language
comprehension (Byrne et al., 2007; Olson et al., 2011). Converging evidence from functional brain imaging studies also suggests a neurobiological basis for some cases of RD (Lyon, Shaywitz, & Shaywitz, 2003). These findings do not mean that children with RD are incapable of learning to read; however, they support the view that some children find learning to read intrinsically difficult, even with good instruction and extensive literacy experiences.

A second core concept is that RD involve unexpected reading failure: reading difficulties not accounted for by other disabilities or lack of opportunity to learn. Finally, a third concept, related to the idea of unexpectedness, is that a specific cognitive deficit or set of deficits, not generalized learning problems, characterize RD. Recent research with middle elementary children (Compton, Fuchs, Fuchs, Lambert, & Hamlett, 2012) confirms the existence of struggling students with difficulties specific to either reading or mathematics and with distinctive patterns of cognitive and academic strengths and weaknesses, not attributable to broad cognitive limitations such as intellectual disabilities.

**RTI Approaches to Identification of RD**

Specific features of RTI models vary, but all involve a combination of population-based systems approaches to education (e.g., routine screening of entire school populations for early detection of reading difficulties) coupled with the use of research-based interventions for students who need them. Interventions entail tiers of increasing intensity, with greater intensity—for example, more intervention time and a smaller teacher–student ratio—for students at greater levels of risk. Educators consider students failing to respond to the most intensive interventions for special education services in a variety of categories, including LD. Rather than conceptualizing the unexpectedness of LD in relation to IQ, RTI models conceptualize it in relation to expected progress under intervention (Fletcher, Lyon, Fuchs, & Barnes, 2007). RTI-based definitions of LD typically retain the use of exclusionary criteria. Exclusionary criteria require that in order to be eligible for services in the category of LD, a student’s learning difficulties cannot primarily be due to another disability, such as sensory impairment or intellectual disabilities, or to environmental factors such as economic disadvantage, lack of instruction, or limited experience with English.

The changes in IDEA 2004 involving the discrepancy requirement stemmed at least in part from long-standing criticisms of this requirement in the scientific community (e.g., Siegel, 1988; Spear-Swerling & Sternberg, 1996; Stanovich, 1991). Criticisms include concerns about the use of IQ tests as measures of overall potential for learning, the exclusion of children who lack discrepancies from educational services, psychometric problems such as regression effects, and the fact that discrepancy criteria make early identification of reading problems difficult, because it often takes time for children to accumulate a significant discrepancy. As in Jamie’s case, some educators may erroneously view poor readers who have difficulty meeting discrepancy criteria as lacking the capacity for improvement. Perhaps most important, the discrepancy approach provides little insight into
the best way to help children with reading difficulties. Approaches that target individual poor readers’ specific component weaknesses—such as word reading versus comprehension—appear to lead to improved outcomes relative to the discrepancy model (Aaron, Joshi, Gooden, & Bentum, 2008).

Although not without their own challenges, RTI approaches to identification of RD address many of the aforementioned concerns. These approaches conceptualize children with RD as those who experience persistent reading difficulties over time, despite receiving intervention that is generally effective for most struggling readers. RTI approaches do not require the routine use of IQ tests, they emphasize prevention and early intervention, and they do not necessitate a label for extra help.

Most research on RTI has focused on primary-grade reading. In general, this research (e.g., Blachman et al., 2004; Denton, Fletcher, Anthony, & Francis, 2006; Denton et al., 2010; Simmons et al., 2011; Speece, Case, & Molloy, 2003; Vellutino & Scanlon, 2002) shows that early intervention in reading is very effective in ameliorating or preventing many children’s reading difficulties. Not surprisingly, longer interventions produce a higher percentage of intervention responders. Nevertheless, even high-quality, sustained RTI efforts do not eliminate all reading difficulties. A subgroup of at-risk readers requires long-term intervention, a finding supporting the view that genuine RD exist and a continued role for special education in serving these students, as well as those with other disabilities (D. Fuchs, Fuchs, & Stecker, 2010).

RTI approaches to identification of LD and RD have proliferated across states since the passage of IDEA 2004. However, because IDEA 2004 permitted multiple options for LD eligibility criteria, identification practices are highly variable. As of this writing, 15 states require the use of RTI criteria in identification of LD, either alone or in combination with other criteria such as an IQ–achievement discrepancy. Most states permit both RTI and discrepancy models, essentially leaving the choice to individual school districts (Zirkel & Thomas, 2010). Furthermore, most states implementing RTI do not prescribe a particular duration of interventions, decision rules for movement across tiers, or other implementation details (Zirkel, 2011).

Because of their focus on prevention, early intervention, and instructionally relevant information, RTI-based approaches to identification of LD are much more educationally useful than the discrepancy approach. In addition, an analysis of the specific cognitive profiles and patterns typical of struggling readers is extremely helpful for early identification and planning instruction, both for students with RD and poor readers in general. An important foundation for interpreting cognitive patterns and profiles involves understanding the development of typical readers, reviewed in the following section. Readers interested in further detail about typical reading development may wish to consult Ehri (2005) and the previous version of this chapter (Spear-Swerling, 2004a).
Abilities Involved in Reading Development

A number of reading development models emphasize the importance of two broad types of abilities in reading: oral language comprehension and word recognition (e.g., Adams, 1990; Chall, 1983; Hoover & Gough, 1990). Each of these two broad areas includes numerous component abilities. For instance, oral language comprehension includes vocabulary knowledge and grammatical understanding, whereas word recognition includes knowledge of letter–sound relationships, the ability to decode unfamiliar words, and automatic as well as accurate recognition of words. Reading fluently in text taps both types of broad abilities, not only automatic word recognition but also integrating a range of important subword-, word-, and comprehension-level processes (L.S. Fuchs, Fuchs, Hosp, & Jenkins, 2001). Fluency development is associated with improvements in prosody of oral reading, such as appropriate pauses and intonation while reading text. In young children, reading prosody predicts reading comprehension independent of reading rate (e.g., words read correctly per minute), and children may sometimes use good reading prosody to assist comprehension, especially when reading difficult material (Benjamin & Schwanenflugel, 2010; Kuhn, Schwanenflugel, & Meisinger, 2010).

One central set of linguistic processes in reading involves phonological processes. Phonological processes involve the use of phonological codes (abstract mental representations of speech sounds), or of actual speech, in a variety of cognitive and linguistic tasks, including memory and oral language as well as written language (Scarborough & Brady, 2002). Phonological processes play a key role in word recognition, especially in an alphabetic language such as English, in which the printed letters correspond primarily to sounds in spoken words. For example, phonemic awareness, which involves awareness and manipulation of individual sounds in spoken words (e.g., being able to segment a spoken word such as fish into three separate sounds: /f/, /i/, /sh/), greatly facilitates learning to decode printed words. Phonological awareness encompasses a more rudimentary level of awareness that includes the ability to perform tasks such as rhyming and alliteration. Other phonological processes directly influence working memory and comprehension, such as phonological memory, which facilitates holding words in memory to integrate meaning while reading or listening to text, although working memory also may play a role in decoding, especially of long, complex words (Compton et al., 2012). Phonological processes are a core difficulty in many cases of RD and other reading problems.

Although many abilities are ultimately important in learning to read, abilities involved in word recognition are especially important in the early elementary grades, when word-recognition skill is developing most rapidly, and the comprehension demands of most texts are relatively low. By fourth grade, typical readers already have acquired reasonably automatic, accurate word recognition for most common words, and the comprehension demands of texts escalate substantially, so oral language comprehension begins to account for more of the variance in
A Road Map for Understanding Reading Disabilities and Other Reading Problems, Redux


**A Model of Typical Reading Development**

An extensive research base exists on the cognitive processes involved in reading development, and the following model owes much to the work of other researchers (e.g., Adams, 1990; Chall, 1983; Ehri, 1991, 2005; Hoover & Gough, 1990; Perfetti, 1985; Rupley et al., 1998; Stanovich, 2000). An earlier version of this model was developed collaboratively by myself and Robert Sternberg (Spear-Swerling & Sternberg, 1994, 1996) and involves a series of six phases that constitute a road to proficient reading. The phases of typical reading development in the model appear on the left-hand side of Figure 1. These phases are intended to be specific to English, with the age and grade ranges approximations based on research involving mainly middle class samples of English-speaking youngsters, although children learning a variety of alphabetic languages seem to progress through a series of phases roughly similar to those outlined here.

Oral language comprehension develops prior to and simultaneously with word-level reading abilities, beginning during the early preschool years and continuing into adulthood. For most children, oral language comprehension substantially exceeds reading comprehension until about seventh or eighth grade (Biemiller, 1999). Even among typical readers, there are individual differences in oral language comprehension that influence and set limits on reading comprehension, especially after word-recognition skills have developed. Moreover, children’s own reading experiences and volume of reading exert important influences on their oral language development. Thus, oral language and reading development interact and are mutually facilitative.

**Visual-Cue Word Recognition.** This phase of reading, termed visual-cue or prealphabetic word recognition (Ehri, 1991, 2005), is characteristic of very young children, primarily preschoolers. Children do not yet grasp the alphabetic principle—the fundamental insight that written English involves a code in which printed letters map on to speech sounds in spoken words—and also often lack phonological awareness and knowledge of most letter–sound relationships. Instead, they rely on a salient visual cue, such as a distinctive logo or word shape, to recognize words and are heavily dependent on context in word recognition. For instance, a typical preschooler might recognize the word *stop* on a red, octagonal sign, or the word *McDonald’s* from the golden arches, but would not recognize those words if they were printed on a page.

**Phonetic-Cue Word Recognition.** Ehri (1991, 2005) terms this second phase of reading phonetic-cue word recognition or partial alphabetic reading. This phase is typical of kindergartners and first graders but also may occur in some preschoolers, especially those with extensive exposure to literacy. Phonetic-cue readers can use partial phonetic cues in word recognition because they grasp the alphabetic
principle, have at least a rudimentary level of phonological awareness (e.g., recognizing spoken words with similar beginning or ending sounds), and know at least some letter–sound relationships, especially for single consonants such as m and s. Often they attend to the first few letters of a word, or to the first and last letters,
but not to the middle part of a word. Hence, they may confuse similarly spelled words such as *boat* and *boot*. Because they do not make full use of all the letters in a word, phonetic-cue readers remain dependent on pictures or sentence context to aid word recognition.

**Controlled Word Recognition.** Children in this phase of reading development, often those in late first to second grade, can read a variety of common words accurately. They make full use of phonetic cues in word recognition, and therefore this phase has been termed *full alphabetic* (Ehri, 2005). Children with controlled word recognition have more advanced levels of phonemic awareness than do children in previous phases of reading; they also know a wide range of letter–sound relationships, including those for many common letter patterns (e.g., *sh*, *th*, *ck*, *oa*, *ay*) as well as single letters. However, they may have difficulty reading complex multisyllabic words, especially those tapping relatively sophisticated morphemic and linguistic knowledge, and they must expend mental effort to recognize many words, so their word recognition is not automatic. Thus, they may continue to rely on context cues, especially to speed word recognition.

**Automatic Word Recognition.** In this phase, children recognize a wide range of common words automatically as well as accurately. Consolidation and use of larger letter patterns, such as prefixes, suffixes, and common rimes (e.g., *ight*), appear to facilitate automatic word recognition. Hence, this phase is roughly analogous to one that has been termed *consolidated alphabetic* (Ehri, 2005). Children in this phase, usually late second to third graders, have greater ability to decode multisyllabic words than do children in previous phases of reading, and they integrate automatic word recognition with a variety of comprehension processes to achieve fluent reading of text. They depend on context only infrequently to aid recognition of unfamiliar words. Limits on reading comprehension begin to revolve less around word recognition and increasingly around language comprehension abilities and background knowledge.

**Strategic Reading.** Strategic readers have the ability to use routinely at least some reading comprehension strategies, such as summarization and making use of context to determine what a word means (as opposed to using context to read words). For instance, a strategic reader reading the sentence “Her *scarlet* cape flashed red in the crowd” would be able to recognize all the words in the sentence accurately and easily, including *scarlet*, but would concurrently use sentence context to figure out that the word *scarlet* means *red*. Children’s improved morphological awareness also facilitates their vocabulary development. Morphological awareness involves sensitivity to the morphological structure of words (e.g., the ability to recognize constituent morphemes in words like *motherhood*, *unspeakable*, and *plentiful* and to use morphemic knowledge to infer word meanings; see Carlisle, 2010). Children may develop and use some comprehension strategies in listening well before the phase of strategic reading, and they
certainly have some morphological awareness prior to this phase; for instance, a
typical first grader would recognize the use of final -s, not -z, to denote plurality
in a word like dogs. However, in the phase of strategic reading, children make
routine use of strategies in their reading as well as their listening, and they have
greatly increased morphemic awareness. Automatic word recognition facilitates
these achievements because it allows children to focus more of their mental re-
sources on comprehension of the text and provides a foundation of knowledge
about common word parts, such as common base words and affixes. Children can
now use reading extensively as a tool for gathering information, and their own
reading contributes increasingly to development of vocabulary and background
knowledge (Cunningham & Stanovich, 1991). Strategic reading typically begins
around the middle elementary grades (third to fourth grade) and continues to
develop in subsequent grades.

**Proficient Reading.** The primary distinction between strategic reading and
proficient reading involves the development of higher order comprehension abili-
ties. Examples of the latter include the ability to read critically, understand more
profound literary themes, and evaluate and integrate different kinds of information.
Although reading volume certainly affects background knowledge in previous
phases of reading, its cumulative effects are greatest in this final phase. Thus,
over time, reading volume may contribute to growth in broad verbal abilities
and to overall cognitive development (Stanovich, 2000). By this phase, oral and
reading comprehension are comparable, and reading comprehension may even
exceed oral comprehension for certain texts, such as dense informational texts
(Biemiller, 1999). Proficient reading typically begins in adolescence and contin-
ues throughout adulthood.

I should highlight several general points about the preceding model. First,
although the focus here is on reading, many of the cognitive processes typical of
a given phase of reading also reveal themselves in children's spelling. (See Ehri,
2005, for a detailed discussion.) Second, although skilled readers clearly use con-
text to aid comprehension and have more mental resources free for doing so be-
cause their word recognition is automatic, using context to aid word recognition
is a hallmark of unskilled reading (Stanovich, 2000). Third, the phases describe an
individual’s general approach to most, but not necessarily all, words and reading
tasks within a given phase. A child in the phase of controlled word recognition
might recognize automatically a few very common words; a proficient adult reader
who recognizes the vast majority of words automatically might use controlled
processing for a very unusual or technical word, such as unfamiliar science ter-
minology. Finally, the last four phases in the model overlap. For example, by the
phase of strategic reading, children have acquired the ability to use routinely at
least some comprehension strategies in reading, but further development in strat-
egy knowledge and strategy use continues into the phase of proficient reading.
Research on Common Profiles of Reading Difficulties

Table 1 displays three broad profiles common among poor readers: specific word-recognition difficulties (SWRD), specific comprehension difficulties (SCD), and mixed reading difficulties (MRD). Reading comprehension difficulties of students with SWRD relate entirely to their word-reading problems; with appropriate intervention for these problems, these students’ reading comprehension should be commensurate with their oral language comprehension. Students with SCD have the opposite profile; they have reading comprehension difficulties despite grade-appropriate word-recognition and phonological skills, with no history of word-recognition difficulties. Often these reading comprehension difficulties are associated with problems involving verbal working memory, defined as the ability to maintain a set of items in memory while processing an additional task (Daneman & Carpenter, 1980), and oral language comprehension (Cain, Oakhill, & Bryant, 2004; Catts, Adlof, & Weismer, 2006). However, oral language weaknesses of students with SCD can be mild, and frequently these students are not identified for speech/language services (Catts et al., 2006; Nation, 2005). Furthermore, some students with SCD function well within the average range on measures of broad oral language comprehension (e.g., Leach, Scarborough, & Rescorla, 2003). These latter students may have circumscribed language weaknesses not detected by broad language measures, or they may have limitations in other areas influencing comprehension, such as use of specific reading comprehension strategies (e.g., Garner, 1990).

Finally, students with MRD have trouble with word recognition, but they also have reading comprehension problems that cannot be fully accounted for by their word-recognition weaknesses; for example, they may have poor comprehension even when reading relatively easy text that they can decode well because of limitations in vocabulary, working memory, or strategic knowledge. To put it another way, SWRD involves a reading problem specific to word recognition, and SCD involves a reading problem specific to reading comprehension, but MRD involves problems in both word-recognition and core comprehension abilities.

Research suggests a nontrivial prevalence of each profile (Catts, Compton, Tomblin, & Bridges, 2012; Catts et al., 2006; Catts, Hogan, & Adlof, 2005; Compton et al., 2012; Leach et al., 2003; Nation & Snowling, 1997; Spear-Swerling, 2004b). However, the relative frequency of each profile varies across studies depending on methodology (e.g., whether SCD are defined in relation to reading comprehension or listening comprehension), as well as on the age and characteristics of the population studied. For example, Leach et al. studied a group of fourth and fifth graders from schools that included both affluent and socioeconomically diverse populations, but few ethnic-minority children and no English learners. These investigators found that a specific comprehension deficit, defined in terms of reading comprehension, constituted only about 6% of reading problems that had been identified in third grade or earlier, whereas SWRD and MRD involved approximately 49% and 46% of reading difficulties in third grade or earlier, respectively. However, proportions of SWRD, MRD, and SCD were roughly similar.
Table 1. Common Cognitive Profiles and Patterns of Reading Difficulties

| Pattern                          | Word-Recognition Skills | Oral Language Comprehension | Reading Comprehension | Overall Intervention Needs*
<table>
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<tbody>
<tr>
<td>Specific word-recognition</td>
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<td></td>
<td>Systematic phonemic awareness and phonics</td>
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<td>difficulties</td>
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<td>instruction, with fluency building</td>
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<tr>
<td>Nonalphabetic word reader</td>
<td>Well below average</td>
<td>Average or better</td>
<td>Below average</td>
<td>Systematic phonics instruction (with</td>
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<td>phonemic awareness instruction if phonemic</td>
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<td>awareness is weak), with fluency building</td>
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<td>Inaccurate word reader</td>
<td>Below average</td>
<td>Average or better</td>
<td>Usually below average;</td>
<td>Instruction focused on structural analysis</td>
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<td>may perform adequately</td>
<td>and decoding of multisyllabic words if</td>
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<td></td>
<td>on undemanding texts</td>
<td>needed, as well as on automaticity of word</td>
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<tr>
<td>Nonautomatic word</td>
<td>Below average, especially in automaticity and sometimes also in decoding of multisyllabic words</td>
<td>Average or better</td>
<td>Usually below average; may perform adequately on undemanding texts</td>
<td>fluency building.</td>
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<td>reader</td>
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<td>Delayed word reader</td>
<td>Average or better, but with a history of word-recognition problems</td>
<td>Average or better</td>
<td>Below average</td>
<td>Explicit instruction in comprehension</td>
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<td>strategies and other specific areas of</td>
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<td>comprehension in which student is weak</td>
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<td>(e.g., vocabulary or inferencing)</td>
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<td>Specific comprehension</td>
<td>Average or better, with no history of word-recognition difficulties</td>
<td>Varies, but often mildly below average</td>
<td>Below average; lacks strategic comprehension skills</td>
<td>Explicit instruction in comprehension</td>
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<td>difficulties</td>
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<td>strategies and other specific areas of</td>
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<td>Nonstrategic comprehender</td>
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<td>comprehension in which student is weak</td>
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<td>(e.g., vocabulary)</td>
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<tr>
<td>Suboptimal comprehender</td>
<td>Average or better, with no history of word-recognition difficulties</td>
<td>Varies, but often mildly below average</td>
<td>Lacks higher order comprehension abilities</td>
<td>Explicit instruction in higher order</td>
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<td>comprehension abilities (e.g., evaluating and</td>
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<td>synthesizing information)</td>
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<tr>
<td>Mixed reading difficulties</td>
<td>Difficulties with word recognition: nonalphabetic, inaccurate, nonautomatic, or delayed</td>
<td>Varies, but often mildly below average</td>
<td>Below average because of a combination of weaknesses in word-recognition and core comprehension abilities</td>
<td>Explicit instruction in word-recognition</td>
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<td>skills depending on pattern (see above),</td>
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<td>coupled with explicit instruction in</td>
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<td>comprehension strategies and other specific</td>
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<td>areas of comprehension in which student is</td>
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<td>weak</td>
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*Interventions should occur in the context of a comprehensive curriculum of reading and English language arts instruction. For example, although nonalphabetic, inaccurate, and nonautomatic word readers do not need interventions in the area of vocabulary and comprehension, like all students, they require instruction in these areas; usually this instruction would occur as part of their core reading program.
for cases identified after grade 3—each profile constituted about one-third of the poor reading group. In contrast, Lesaux and Kieffer (2010), studying a population of low-SES (socioeconomic status), sixth-grade struggling readers that included a large number of English learners, classified about 79% with SCD, about 21% with MRD, and essentially none with SWRD. Vocabulary weaknesses were ubiquitous in this sample and likely accounted for the absence of students identified with SWRD; some students did have word-reading difficulties, but they also had consistent vocabulary weaknesses, yielding a MRD rather than SWRD profile.

SWRD often emerge in the early grades, when children must acquire a foundation of basic word-recognition skills, and SCD in the later grades, when comprehension demands increase. However, all three profiles can be found across a wide range of grade levels. For instance, several studies have found evidence for late-emerging cases of SWRD (e.g., Catts et al., 2012; Leach et al., 2003; Lipka, Lesaux, & Siegel, 2006), usually defined as manifesting after third grade. Catts and colleagues documented almost all cases of these late-emerging word-reading difficulties by fourth grade, with word-reading difficulties involving problems in accuracy, automaticity, or both. These investigators suggest that late-emerging cases of SWRD may relate to changing expectations for word reading as children enter the middle elementary grades and must read greater proportions of complex multisyllabic words that place higher demands on children's phonological skills, morphological awareness, and working memory. Vocabulary knowledge also influences accurate reading of many multisyllabic words; for example, a pure decoding process can yield an approximation of words like sedimentary and canopy, but oral familiarity with these words facilitates accurate reading of them.

Children with late-emerging cases of SWRD may have relatively mild phonological, language, or working memory difficulties that enable them to perform adequately in the earliest phases of reading development, especially if they have certain compensatory strengths available to them. However, they may begin to have more difficulties with word reading in the middle elementary grades, when word-reading demands become more complex. Late-emerging cases of SWRD in Catts et al. (2012) typically involved children who in kindergarten had had relatively mild weaknesses in phonological awareness and expressive vocabulary coupled with strengths in receptive vocabulary and letter knowledge. Likewise, late-emerging cases of SWRD in Lipka et al. (2006) involved children with phonological weaknesses, who appeared better able to compensate for these weaknesses in the earliest grades than later on.

Specific Patterns of Reading Difficulties Within Each Profile: A Model of RD

As the previous discussion shows, difficulties of poor readers at various ages have been studied extensively (e.g., Catts et al., 2005; Shankweiler, Crain, Brady, & Macaruso, 1992; Siegel, 1988; Stanovich, 1986; Stanovich & Siegel, 1994; Torgesen et al., 2001; Vellutino & Scanlon, 2002; Vellutino et al., 2007; Wolf & Bowers, 1999). The patterns of reading difficulties discussed below are founded
in this research and involve a revision of a model originally described by Spear-Swerling and Sternberg (1994, 1996). The model conceptualizes reading difficulties as involving deviations from the path to proficient reading at various phases in development (Spear-Swerling & Sternberg, 1994, 1996). Figure 1 depicts this model, with the patterns of reading difficulties also described in Table 1. The further children go off track and fall increasingly behind their age cohort because of lack of intervention, the harder it is for them to get back on the road to proficient reading. For all struggling readers, the negative consequences of reading failure, such as decreased motivation, practice, and expectations—shown on the right-hand side of Figure 1—tend to complicate reading difficulties. These complications may begin as early as first grade (Stanovich, 1986). Specific patterns of reading difficulties associated with various profiles depend on the point at which a struggling reader has gone off track. Four patterns relate to SWRD and two patterns to SCD, shown in the center of Figure 1 and discussed next.

Patterns Related to SWRD

Nonalphabetic Word Readers. Nonalphabetic word readers have trouble very early in the process of reading development, in the phase of visual-cue word recognition. Like typically developing readers in this phase, they do not grasp the alphabetic principle, have limited letter–sound knowledge, and lack phonological awareness, so they must rely on visual cues alone, such as word shape, to recognize words. Because it is impossible to progress very far in an alphabetic language such as English without understanding the alphabetic code and acquiring some ability to use phonetic cues, nonalphabetic readers have extremely impaired word recognition and reading comprehension. They are often young children and are likely to be noticed because of the severity of their difficulties.

Inaccurate Word Readers. These children go off track in the phase of phonetic-cue word recognition. They have grasped the alphabetic principle, have some knowledge of letter sounds, and perhaps have a rudimentary level of phonological awareness, which enables them to use some phonetic cues in attempting to read words. However, they do not make full use of phonetic cues, and therefore their word recognition is inaccurate. Their difficulties may relate to poor phonemic awareness, insufficient knowledge of letter–sound relationships, or both areas. Inaccurate word readers may continue to rely on context cues, such as pictures or sentence context, to aid word recognition. In relatively easy texts, they may sometimes achieve adequate reading comprehension. However, as text demands escalate, it will become increasingly difficult for inaccurate readers to compensate effectively for their poor word recognition, and their reading comprehension will likely be impaired.

Nonautomatic Word Readers. Nonautomatic word readers go astray in the phase of controlled word recognition. As with typically developing readers in the controlled word-recognition phase, nonautomatic word readers have the ability
to read most common words accurately, but their word reading is effortful, and they may also have difficulty reading complex multisyllabic words. Their speed of reading text may remain very slow, and their use of mental resources to speed word recognition (e.g., via use of context cues) tends to impair reading comprehension, especially in more demanding texts. Nonautomatic word readers may have underlying deficits in rapid naming (e.g., Wolf & Bowers, 1999), although the interpretation of naming speed deficits, especially whether such deficits reflect a core phonological weakness, remains a matter of dispute (Kirby, Georgiou, Martinussen, & Parrila, 2010; Scarborough & Brady, 2002). Some nonautomatic word readers may have late-emerging SWRD (Catts et al., 2012; Lipka et al., 2006), whereas others may have had early word-reading difficulties that only partially resolved or responded to intervention.

Delayed Word Readers. This pattern of SWRD involves delayed development of word-recognition skills and not poor oral language comprehension (i.e., the “delay” pertains specifically to word recognition, not overall language development). Delayed word readers have a history of word-recognition difficulties that they eventually overcame, but at a cost: While these readers struggled to develop word recognition, they missed other kinds of reading experiences and instruction important to the development of reading comprehension, such as the use of comprehension strategies. Comprehension strategies require a proactive rather than passive stance on the part of the reader (Garner, 1990), as well as task persistence (Gersten, Fuchs, Williams, & Baker, 2001). Thus, strategic weaknesses in poor readers sometimes may reflect a tendency to give up easily when confronted with challenging reading tasks, not a true inability to develop or use strategic knowledge.

Patterns Related to SCD

Nonstrategic Comprehenders. Like delayed word readers, nonstrategic comprehenders also go astray in the phase of automatic word recognition, but for different reasons. Delayed word readers have a delay in acquiring word-recognition skills that has secondary effects on their acquisition of strategic comprehension skills; however, their oral language abilities are at least age appropriate. In contrast, nonstrategic comprehenders make normal progress in the early phases of reading development involving word recognition but fail to acquire reading comprehension abilities, such as strategic knowledge, for reasons other than a word-recognition or phonological problem. These reasons could include not only broad oral language weaknesses or working memory difficulties but also inadequate comprehension instruction, impoverished reading experiences, and lack of engagement. Nonstrategic comprehenders fail to develop routine use of reading comprehension strategies and thus are very impaired with regard to strategy use and comprehension.
Suboptimal Comprehenders. Like nonstrategic comprehenders, suboptimal comprehenders have a profile involving SCD. However, they go astray somewhat later in the process of reading development, in the phase of strategic reading, and primarily lack higher order comprehension abilities. Although they have the ability to use at least some comprehension strategies, suboptimal comprehenders may lack higher level strategies. Thus, the two patterns of SCD differ primarily in onset and degree of reading-comprehension impairment, with suboptimal comprehenders less impaired than nonstrategic comprehenders. However, at advanced levels of schooling, such as high school and college, suboptimal reading may still create serious difficulties.

Patterns Related to MRD

Students with MRD have sometimes been called “garden-variety poor readers” (e.g., Hoover & Gough, 1990; Spear-Swerling, 2004a); here I use the term mixed reading difficulties after Catts et al. (2005) to convey reading problems involving both word-recognition and core comprehension abilities. As in the case of SCD, these problems with core comprehension abilities often involve oral language comprehension (Catts et al., 2005, 2006; Nation, 2005), although weaknesses in other abilities, such as working memory or the use of text comprehension strategies, could also be involved. Like children with SWRD, those with MRD have trouble in the early phases of reading development because of poor word recognition and phonological weaknesses. In the early grades, the word-recognition difficulties of students with MRD may be more obvious than their comprehension problems because the comprehension demands of beginning texts are relatively low (Chall, Jacobs, & Baldwin, 1990) and because reading comprehension cannot even come into play without a basic level of word recognition. However, students with MRD have trouble with reading comprehension even after remediation of their word-recognition skills because their poor reading comprehension relates only partially to weak word recognition.

In contrast to children with SWRD, who generally do well with material presented verbally (e.g., during class discussions of material read aloud by the teacher), children with MRD may have comprehension difficulties in listening as well as in reading. They may appear to respond to intervention targeting word recognition in the early grades, only to fall behind again in the later grades. These students have especially complex intervention needs involving both word-recognition and core comprehension abilities. As shown in Table 1, these specific needs depend on the pattern of word-recognition difficulties (i.e., nonalphabetic, inaccurate, nonautomatic, or delayed) and the core comprehension abilities which are lacking (e.g., vocabulary, knowledge of comprehension strategies, inferencing). In terms of the map metaphor shown in Figure 1, students with MRD can be conceptualized as going off track at more than one phase of reading development, initially in one of the early phases involving word recognition and later on in one of the more advanced phases of reading.
Possible Shifts in Reading Profiles and Patterns

Reading profiles and patterns have the potential to shift over time. A variety of influences may contribute to changes in a student's profile of reading difficulties, including developmental changes and increasing grade expectations in reading. For example, Catts et al. (2006) found considerable stability in poor readers' underlying profiles of phonological word-reading versus oral language comprehension abilities from kindergarten to eighth grade. However, for students with SCD, reading comprehension difficulties as measured by the Gray Oral Reading Test were considerably less pronounced in second grade than in eighth grade, perhaps because of developmental changes in the relative importance of word reading versus language comprehension to reading comprehension across grades. Similarly, Chall et al. (1990) followed a group of low-SES youngsters with SCD whose vocabulary weaknesses became apparent in fourth grade but did not significantly influence reading comprehension until about sixth or seventh grade, with a progressive deterioration in reading comprehension thereafter. These and other studies support the idea that many students with SCD have subtle language problems from the early grades, but those language weaknesses have a larger impact on reading comprehension as the students progress into later grades.

Interestingly, Chall et al. (1990) found that a deceleration in vocabulary scores also was associated with a deceleration in word recognition and spelling scores in the later grades, and Compton et al. (2012) found that fifth-grade students identified with SWRD tended to have relative weaknesses in working memory and oral language. Thus, as students advance into later levels of schooling where decoding of multisyllabic words is important, oral language and working memory problems may begin to have an impact on word reading as well as reading comprehension.

Another potential influence on struggling readers' profiles involves certain “side effects” of the initial reading difficulty itself. Stanovich (1986) termed these Matthew effects after the Biblical phrase about the rich getting richer and the poor getting poorer. For example, children who struggle in reading tend to get much less practice reading than do good readers, both in and out of school. Because reading contributes to the development of important linguistic and cognitive abilities, individual differences in learning to read may have broad effects on background knowledge and language over time. In fact, Stanovich (1991) suggested that some children with SWRD eventually may develop an MRD profile, as their originally circumscribed word-recognition difficulties have a spreading effect on other areas of language and knowledge, although some studies have not found this spreading effect (e.g., Scarborough & Parker, 2003).

One obvious influence on patterns of reading difficulties involves instruction and intervention. Research on RTI models has demonstrated that especially in the area of word-level reading skills, research-based instruction and interventions can ameliorate, or even prevent entirely, some reading difficulties. Thus, a child with SWRD in the early grades, including one with an inherited vulnerability to RD, might become a normally achieving reader if provided with prompt, appropriate intervention; or, a student with SWRD and mild language weaknesses
might respond to effective phonics intervention in the primary grades but go on to evidence an SCD profile in the later grades.

**An Interactive Perspective on Reading Development and Disabilities**

The road map model involves an interactive perspective on reading development and reading disability (Spear-Swerling & Sternberg, 1994, 1996) that is very consistent with the views of a number of other investigators (e.g., Lipson & Wixson, 1986; Ruddell & Unrau, 1994; Valencia, 2011). The model conceptualizes both good and poor reading as involving an interaction between children's intrinsic characteristics and extrinsic factors such as instruction, experience, and home environment. Intrinsic characteristics include not only children's reading-related abilities but also other important intrinsic influences on reading outcomes, such as frustration tolerance and other abilities involved in self-regulation (Smith, Borkowski, & Whitman, 2008).

Although I have described the various profiles and patterns of reading difficulties in terms of deviations from the path of typical reading development, children with reading difficulties differ from typical younger readers in some important respects. For instance, students with SWRD may compensate for deficient phonological skills in ways uncharacteristic of younger, normally achieving children matched to them on word-recognition level (Greenberg, Ehri, & Perin, 2002), and like other struggling readers, they certainly have a host of negative experiences with reading, such as repeated failure, not typical of younger good readers. The road map metaphor and the right-hand box in Figure 1 labeled “negative consequences of reading failure” attempt to capture these distinctions between students with reading difficulties and normally achieving but younger readers.

**Educational Implications of the Road Map Model**

**Planning Intervention**

The use of poor reader profiles, as well as the specific patterns of reading difficulties within each profile explained above, can be very helpful in planning intervention. Students with poor reading comprehension related to SWRD require a different kind of intervention than do those whose difficulty involves SCD. Furthermore, inaccurate word readers have somewhat different instructional needs than do nonautomatic word readers. Both inaccurate and nonautomatic readers usually require fluency building, but inaccurate word readers require basic phonics intervention, whereas nonautomatic readers—if they need remediation of word accuracy at all—require a focus on structural analysis and decoding of multisyllabic words. Determining the underlying profile and pattern associated with poor reading is an important first step to designing appropriate intervention.

As discussed by Valencia (2011), profiles and patterns provide helpful initial information about struggling readers’ overall strengths and weaknesses in key reading-related abilities; however, for most struggling readers, additional diagnostic assessments will be necessary for planning instruction. For instance, two
inaccurate word readers might be functioning at different levels in terms of specific decoding skills; two nonstrategic comprehenders might vary substantially in important comprehension abilities such as vocabulary or use of specific comprehension strategies. Teachers should supplement information about profiles and patterns with more fine-grained analysis of students’ instructional needs, especially in their areas of difficulty.

**Early Identification and Prevention of Reading Problems**

Knowledge about the phases of typical reading development can help educators design effective core instruction by anticipating both current and future demands children have to meet in reading; for at-risk students, information about common profiles and patterns of reading difficulties can assist early identification efforts. For example, many students with SCD or MRD have subtle language weaknesses easily overlooked early on but exerting a bigger impact on reading comprehension in the upper grades, when expectations for comprehension become more demanding. In the primary grades, along with assessment of children’s phonological skills, assessment of other language abilities such as vocabulary and listening comprehension might enable more timely intervention and even prevention of future problems in reading comprehension in some children (Scarborough, 2005). Furthermore, given the common role of vocabulary weaknesses in the reading problems of low-SES children and English learners (e.g., Lesaux & Kieffer, 2010), an increased emphasis on vocabulary development in schools serving these populations in the primary grades might help prevent later reading difficulties in many children (Biemiller, 1999). In addition, because a history of preschool language delay tends to presage reading problems (Catts et al., 2012; Scarborough, 2005), educators should consider students’ developmental language history in screening for reading difficulties, both in the primary grades and at later levels of schooling.

**Using Profiles and Patterns in Identification of RD**

Simply evidencing a particular profile or pattern of reading difficulties does not mean that a student has RD. To be identified with RD, students must meet other criteria besides low reading achievement; in particular, their reading difficulties cannot primarily be due to another disability, lack of instruction, or lack of opportunity to learn. The logic behind RTI approaches to identification of RD is that the provision of research-based interventions helps rule out instructional factors and inadequate opportunity to learn as causes of students’ reading problems. Poor implementations of RTI can certainly undermine this logic. Nonetheless, RTI approaches address the need to consider instructional factors in identification of RD much more directly than have most previous identification practices, including the IQ–achievement discrepancy approach.

IQ–achievement discrepancy criteria tend to select for the SWRD pattern of reading difficulties, largely because of the relationship between verbal IQ and oral language abilities, especially vocabulary. Students with a large gap between their
IQs and their reading achievement are likely to have problems focused on word recognition not on language comprehension (Fletcher et al., 2007). However, with the use of RTI, students with a variety of reading profiles, including MRD and SCD as well as SWRD, could be eligible for RD services if they demonstrate inadequate response to research-based interventions in their areas of difficulty and meet exclusionary criteria. Thus, states eliminating the discrepancy model in favor of RTI criteria may identify a broader range of reading problems in the category of RD than they have identified in the past.

Exclusionary criteria exclude from the category of RD reading problems associated primarily with other disabilities, such as intellectual disabilities, as well as reading problems associated mainly with lack of instruction or lack of opportunity to learn. Exclusion of intellectual disabilities does not require routine IQ testing because students with intellectual disabilities have significant impairments in adaptive behavior—self-help and social skills—in addition to low IQ scores (Fletcher et al., 2007). Therefore, only students with limitations in adaptive behavior, not all students undergoing evaluation for RD, would require IQ tests to rule out intellectual disabilities.

The use of RTI approaches to identify RD will likely make application of exclusionary criteria more complex for educators than in past approaches to identification because of the wide variety of abilities that serve comprehension as well as the many types of disabilities associated with poor comprehension. For instance, students with autism spectrum disorders often show a profile of SCD in reading (Huemer & Mann, 2010). However, these students have some unique intervention needs, such as those involving pragmatic language and social functioning, that differ from those of students with language-based RD. Likewise, SCD is a common profile of adolescent English learners and students from low-SES backgrounds (Lesaux & Kieffer, 2010). Most of these previously mentioned students would not be conceptualized as having RD because they would not meet exclusionary criteria, although many would likely benefit from the research-based interventions provided via RTI approaches.

Application of exclusionary criteria sometimes requires consideration of students’ primary versus secondary problems. For example, an English learner could be identified with RD if it were determined that the student’s primary problem was a learning difficulty and not lack of exposure to English—say, as indicated by the student having similar language and reading problems in the native language as in English. Accurately distinguishing between primary and secondary difficulties can be challenging but is important so students with genuine RD, such as English learners or low-SES students with RD, are not wrongly excluded from special education services.

Some Challenges of Using RTI Criteria to Identify RD

Inconsistent Identification Practices

Under IDEA 2004, identification practices for RD will often be inconsistent across schools, given the fact that many states have chosen to leave decision
making about overall criteria for LD to local districts (Zirkel & Thomas, 2010). There is some logic to this choice; large-scale implementation of RTI is recent, and without evidence about the best ways to implement many specific details of RTI, states understandably are reluctant to be prescriptive. Nevertheless, inconsistent identification practices for LD have been a problem in the past (Moats & Lyon, 1993), and the use of RTI is unlikely to improve this situation in the near future.

**Challenges Involving Measurement and Assessment**

Universal screening and progress monitoring are fundamental to RTI approaches. For children with word-recognition and fluency difficulties, there are some very useful screening and progress-monitoring measures, including assessments of out-of-context word decoding and oral passage reading fluency. However, determination of intervention responsiveness and identification of RD may vary depending on the measures selected. In their study of first graders receiving a standard protocol intervention, Denton et al. (2010) identified 91% as showing adequate response to intervention based on word-reading accuracy criteria but only 48% based on oral reading fluency criteria (words read correctly per minute in first-grade text). Another study employing the same intervention (Mathes et al., 2005) found a similar pattern of results, although in this study a higher percentage of intervention responders (77%) met the oral reading fluency benchmark. Variations in choices of progress-monitoring tools will tend to exacerbate the inconsistencies in identification practices mentioned above.

In the area of comprehension, measurement issues are especially complex. Oral reading fluency measures, particularly those involving only a word-correct-per-minute benchmark, tend to miss struggling readers with a profile of SCD (Riedel, 2007; Valencia et al., 2010). The use of additional screening measures, such as oral vocabulary or passage comprehension, could improve early identification of these students. Some schools may already have reading comprehension scores available, such as state-mandated assessment data, for use in initial screening, especially beyond the early grades. However, another vital issue involves the fact that judgments of reading comprehension performance can vary substantially for individual children depending on the measure of reading comprehension. All reading comprehension measures tap both word-recognition and oral language comprehension abilities, but the extent to which specific tests tap these abilities, and hence the poor reader profile they most often identify, varies with the characteristics of the test. For instance, reading comprehension tests that employ a cloze or maze format tend to assess word recognition relatively more heavily than they assess oral language comprehension, whereas tests that require students to read passages and answer questions about them tend to show the opposite pattern (Keenan, Betjemann, & Olson, 2008; Nation & Snowling, 1997; Spear-Swerling, 2004b). The former tests, therefore, are somewhat more likely to identify poor readers with SWRD and the latter those with SCD. Many other features of reading comprehension
tests are also important in relation to individual students’ performance (see, e.g., Cutting & Scarborough, 2006; Jenkins, Johnson, & Hileman, 2004; Keenan & Betjemann, 2006). Educators must consider the nature of the comprehension measure when interpreting individual students’ reading comprehension performance. They also should interpret performance on formal tests in relation to everyday classroom work because many standardized reading comprehension tests do not tap the complex comprehension abilities expected of students at upper grade levels (Allington & McGill-Franzen, 2008).

**Challenges Involving Intervention**

In using RTI criteria to identify RD, much hinges on the quality of interventions. Inappropriate interventions not only may fail in effectiveness and waste resources but also will have little value in helping to rule out instructional or experiential factors in the difficulties of struggling readers under consideration for special education. Although there is considerable research evidence on appropriate interventions for students with SWRD, evidence is more limited for those with comprehension-based reading difficulties, especially at upper grade levels. More research is needed on the different components of comprehension (e.g., vocabulary, listening comprehension, strategic knowledge) and on how different types of comprehension weaknesses might respond to different approaches to comprehension instruction. Further study of the efficacy of interventions aimed specifically at older poor readers is essential because there is substantial agreement that even the most effective early intervention programs will not prevent reading difficulties in all children and because some serious reading problems do not emerge until the middle grades or later.

Not only effective methods of intervention but also knowledgeable teachers are important to good reading outcomes (Piasta, Connor, Fishman, & Morrison, 2009). Information about common reading profiles and patterns of difficulties can be useful to all teachers of reading, but making use of this information entails a substantial knowledge base about reading development and individual differences that affect reading, as well as about how to assess and teach a wide range of reading-related abilities to diverse learners. Currently both general and special educators often lack this kind of knowledge (Spear-Swerling, 2008; Spear-Swerling & Cheesman, 2012), so implementing RTI effectively in many schools will require substantial professional development efforts.

**Conclusions and Future Directions**

Despite the kinds of challenges outlined above, the use of RTI criteria to identify RD is a major advance over traditional approaches to LD identification based on the IQ–achievement discrepancy model. If Jamie, the fourth grader discussed in the opening to this chapter, had attended a school with an RTI model, educators would likely have identified and addressed his reading difficulties much earlier, before he fell so far behind. His teachers probably would have employed assessments with better capacity to inform his interventions and less likelihood of doing
harm because of inappropriate inferences based on his IQ score. Furthermore, RTI criteria for identifying RD would have focused Jamie’s teachers, and other adults trying to help him, on educationally meaningful questions, even if not all of those questions currently have clear or easy answers.

Implementing RTI involves many challenges for schools beyond those discussed here. There certainly is a need for further research in many areas, including the most effective approaches to measurement of progress for readers of different profiles and ages; assessment of reading comprehension; interventions for comprehension, including different components of comprehension; and pre-service preparation and professional development of teachers. However, RTI criteria avoid many past problems with identification of RD via the IQ–achievement discrepancy model, such as failure to identify at-risk readers early, misidentifying as disabled poor readers whose problems are largely experiential or instructional in nature, limited educational relevance, and myriad problems associated with the routine use of IQ tests. In conjunction with RTI, an analysis of common profiles and patterns of reading difficulties is highly relevant to prevention of reading difficulties, as well as to early identification and planning intervention for students with reading problems. Moreover, such an approach is useful not only for students with RD but for other poor readers as well.

**QUESTIONS FOR REFLECTION**

1. What are the advantages of using RTI criteria to identify reading disabilities rather than the IQ–achievement discrepancy model?

2. In what ways are the core features of reading disabilities accounted for through RTI?

3. In what ways do the common cognitive profiles and patterns of reading difficulties that Spear-Swerling provides account for the various challenges that struggling readers face?

4. In what ways can the common cognitive profiles and patterns of reading difficulties be used to identify reading disabilities?

**REFERENCES**


remediation for second and third graders. *Journal of Educational Psychology*, 96(3), 444–461. doi:10.1037/0222-0663.96.3.444


without reading it: Why comprehension tests should not include passage-independent items. *Scientific Studies of Reading*, 10(4), 363–380. doi:10.1207/s1532799xssr1004_2


