The Power of RTI and Reading Profiles

A Blueprint for Solving Reading Problems

by

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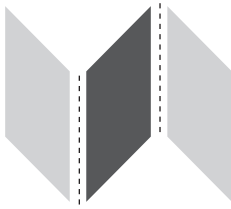New Haven

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Dr. Spear-Swerling's research interests include literacy acquisition, reading difficulties, and teacher education, and she has published many peer-reviewed articles and book chapters on these topics. In addition to consulting for K–12 public schools and state departments of education, she has for more than 3 decades helped prepare both general and special educators to teach reading.

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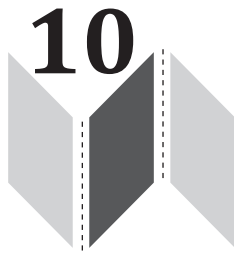
The Role of Teacher Effectiveness in Children's Reading Achievement

When I first began my career as a teacher of reading, my classroom happened to be next door to that of a veteran educator with a sterling reputation for teaching literacy. During spare moments, operating on the theory that a good model can be worth a thousand words, I often lingered by my classroom door to observe this teacher working with her students. Happily, her reputation turned out to be well deserved. Although I had been fortunate to have good preservice preparation in reading, over time, I learned a great deal from observing this teacher's wonderful model— about how to teach explicitly and unambiguously, provide clear and constructive feedback, and engage and motivate children at different levels of achievement.

This chapter considers the knowledge and skills needed to be a successful teacher of reading as well as how schools of education might better prepare elementary-level educators to teach reading to children from a variety of backgrounds and with a range of instructional needs, including the kinds of students discussed in the past three chapters. No teacher can be maximally effective without the right supports, such as an appropriate curriculum, books, and administrative leadership; furthermore, knowledgeable, well-prepared teachers certainly will not eliminate all reading problems. However, there are good reasons why many researchers and policy makers have focused on trying to improve teacher quality. First, effective teachers matter, especially (though not only) for children with a vulnerability to reading difficulties. Moreover, unlike certain variables that may influence children's reading progress—genetic inheritance, poverty, and many disabilities—teacher quality is relatively amenable to change through teacher preparation and professional development. Research suggests that there is copious room for improvement in teacher preparation practices, improvement with the potential to help retain capable teachers in the profession and increase many students' reading achievement.

The chapter begins by reviewing research on teacher effectiveness, teacher knowledge, and teacher preparation in reading, drawing some practical implications from this research. Next, the chapter outlines the kinds of disciplinary knowledge and competencies involving reading that all elementary-level general and special educators should have as well as how knowledge about common profiles and patterns of reading difficulties can be useful in teacher education. The chapter concludes by considering how teachers could be better prepared to implement RTI/MTSS models, with some suggestions for specific educational policies that could improve preservice teacher preparation in reading.

RESEARCH ON EFFECTIVE TEACHERS OF READING

One recent line of research (e.g., Chetty et al., 2011; Heck, 2009; Hanushek & Rivkin, 2010; Nye, Konstantopoulos, & Hedges, 2004) has employed a statistical measure of teacher effectiveness termed *value-added*, an indicator of individual teachers' contributions to the achievement of their students. For example, Chetty and colleagues (2011), who studied math and reading achievement scores of Grade 4–8 students from a large urban district, first calculated predicted estimates of each student's performance based on the performance of other students with similar background characteristics and prior achievement. They then compared those predictions to students' actual performance, with differences averaged across a given teacher's students. They ranked all teachers of a particular subject (reading or math) on these average differences; high value-added teachers were in the top 5% of the teacher distribution in terms of student outcomes, and low value-added teachers were in the bottom 5%. Chetty and colleagues found that when a high value-added teacher started teaching students in a cohort, or when a low value-added teacher stopped teaching (e.g., because of naturally occurring events such as retirements), student achievement in reading improved. Conversely, achievement declined when a low value-added teacher started teaching a particular cohort of students or a high value-added teacher stopped teaching it. Similarly, the results of Nye and colleagues (2004) indicated substantial differences among teachers in the ability to promote students' reading and mathematics achievement and showed that teacher effects on achievement were especially large in schools serving students from low-SES backgrounds. Furthermore, Heck (2009) found that the effectiveness of successive teachers as well as organizational factors such as the stability of teaching staff at a school positively related to students' reading achievement, suggesting the importance of systemic factors in student outcomes.

Teacher effectiveness research has been so persuasive in showing teacher influences on achievement that some policy makers have advocated using VAM in high-stakes evaluations of individual educators—for example, in decision making about merit pay or promotion. However, the use of these

measures in individual teacher evaluations is fraught with numerous technical problems as well as with the potential for unintended negative consequences (e.g., Braun, 2005; Darling-Hammond et al., 2011; David, 2010; Haertel, 2013). Technical problems include variability in results by outcome measure (e.g., the specific reading achievement test used to measure student outcomes), variability based on which students (e.g., disproportionately at risk versus not at risk) may be assigned to a given teacher, and a possible systematic bias in VAM scores based on demographics, school context, grade, or other factors. Unintended consequences include increased pressure on educators to teach to tests and less receptivity on the part of teachers to work with students who tend to score poorly. Still, even critics of VAM for teacher evaluation agree that substantial teacher effects on student achievement exist and that research studies using VAM with large groups of teachers and students can provide valuable information about these effects.

Research with VAM has focused on quantifying the contributions of teachers to student achievement, not on the specific skills needed to teach reading successfully to diverse groups of children. Other lines of research offer these more fine-grained insights. One line of work has involved systematic observations of teachers during classroom instruction as well as assessments of their students' reading progress. For example, Carlisle and her colleagues (e.g., Carlisle, Kelcey, Berebitsky, & Phelps, 2011; Carlisle, Kelcey, & Berebitsky, 2013) have studied the instructional practices of third-grade teachers in Reading First schools in relation to student achievement in reading comprehension. Carlisle, Kelcey, Berebitsky, and colleagues (2011) found that teachers who provided more teacher-directed instruction (e.g., explicit teaching and modeling) as well as more support for student learning (e.g., fostering discussion and providing feedback on student work) had students who made more reading comprehension progress during the school year, even with important confounding variables, such as students' prior achievement, accounted for. Similarly, the findings of Carlisle and colleagues (2013) showed that the amount and type of support teachers provided for their students' vocabulary learning—such as explicitly discussing word meanings and using unfamiliar words in sentences—also was positively associated with their students' gains in reading comprehension.

Teacher-directed instruction and support for student learning have often been found to be especially beneficial for at-risk students, with risk defined in relation to eligibility for free or reduced-price lunch (e.g., Connor et al., 2007; Juel & Minden-Cupp, 1999–2000). For instance, Juel and Minden-Cupp (1999–2000) studied four experienced first-grade teachers at two demographically similar schools serving primarily low-income, minority students. They found that children who entered first grade with the lowest reading-related skills did best in reading with a teacher who provided a strong dose of highly explicit, systematic phonics for the first half of the school year and more emphasis on vocabulary and discussion of text later in the year. In fact,

in this teacher's classroom, all the children in the lowest reading group read on or close to end-of-first-grade level in May.

In another classroom observational research project, one involving ELLs, Graves, Gersten, and Haager (2004) and Gersten, Baker, Haager, and Graves (2005) analyzed the reading instruction of a group of first-grade teachers of ELLs using an instrument called the English Language Learners Classroom Observation Instrument (ELCOI). The ELCOI evaluated teachers' instruction on qualities such as explicitness of teaching, student engagement, provision of systematic phonemic awareness and decoding instruction, the extent to which instruction targeted the needs of low achievers, and emphasis on vocabulary development. Teachers' ratings in these areas varied greatly, with ratings significantly predicting students' gains in ORF at the end of first grade.

Overall, these observational studies suggest that primary-grade instructional practices involving explicit teaching and modeling, high levels of student engagement, clear feedback to student performance, and the use of research-based instruction all promote reading achievement, especially in children vulnerable to reading difficulties. It is also important to note that most studies in this area have been small ones focused on a particular grade level and outcome measure in reading. The characteristics of effective instruction might vary in important ways for children at different levels of development or for different areas of reading (e.g., word decoding versus comprehension).

TEACHERS' DISCIPLINARY KNOWLEDGE ABOUT READING

Yet another line of work on teacher quality involves studies of teachers' disciplinary knowledge for teaching reading (e.g., Brady et al., 2009; Carlisle, Kelcey, Rowan, & Phelps, 2011; Cunningham et al., 2004; McCutchen et al., 2009; Moats, 1994; Moats & Foorman, 2003; Piasta et al., 2009; Spear-Swerling & Brucker, 2004; Spear-Swerling et al., 2005; Spear-Swerling & Cheesman, 2012), sometimes termed *pedagogical content knowledge*. Early studies of teachers' disciplinary knowledge, following the seminal work of Moats (1994), focused on teachers' understanding of English word structure and phonics— for example, teachers' abilities to count phonemes and morphemes in words, identify phonetically irregular words, classify words by syllable type (e.g., closed, magic e, or r-controlled), or explain common spelling generalizations. More recent studies (e.g., Brady et al., 2009; Carlisle, Kelcey, Rowan, et al., 2011; Spear-Swerling & Cheesman, 2012) have attempted to use measures of teacher knowledge that encompass all five components of reading as well as classroom scenarios requiring the application of disciplinary knowledge.

The results of these studies are very worrisome. In general, they suggest that even experienced, credentialed teachers often have great difficulty with tasks measuring phonics knowledge or understanding of phonemic awareness. For example, in the studies that my colleagues and I have done, licensed teachers have repeatedly confused phonemic awareness with knowledge of letter sounds. In one study (Spear-Swerling et al., 2005), less than 10% of

credentialed teachers could correctly answer the question, "What is phonemic awareness and why is it important?" In the same study, licensed teachers experienced great difficulty on a simple classification task requiring them to identify whether common words were phonetically irregular (e.g., *what, done, of*) or regular (e.g., *boy, too, at*). Educators also were frequently unfamiliar with syllable types, such as closed or magic-*e* syllables, which are useful to help children predict likely vowel sounds in words, and they could accurately count phonemes only in about 70% of words, making many errors on less transparent types of words such as *mix* (four phonemes) or *eight* (two phonemes). These findings about teachers' limited knowledge of phonemic awareness and phonics are very consistent with those of many other investigations (e.g., Brady et al., 2009; Cunningham et al., 2004, 2009; Moats, 1994; Moats & Foorman, 2003) involving varied samples of educators from different states. In part, teachers' difficulties reflect the confusion created by proficient adult readers' own automatic processing of words and knowledge of word spellings (Scarborough, Ehri, Olson, & Fowler, 1998). For example, proficient readers' knowledge of the spelling of *mix* tends to lead them to specify three, not four, phonemes in the word (/m/, /i/, /k/, /s/); they are more likely to segment a relatively transparent word such as *rocks* (/r/, /o/, /k/, /s/) correctly. Even teacher candidates with particularly strong component word-attack skills have difficulties on tasks tapping word-structure knowledge (Spear-Swerling & Brucker, 2006).

To sum up these findings, explicit knowledge about word structure is not an automatic consequence of high levels of literacy, and in order for prospective teachers to be prepared to teach phonemic awareness and phonics skills effectively, teacher educators must teach information about word structure directly, including addressing the potential confusions created by candidates' knowledge of word spellings. In addition, studies comparing licensed general and special educators (e.g., Cheesman, McGuire, Shankweiler, & Coyne, 2009; McCutchen et al., 2002) typically indicate that both groups have similar limitations in phonemic awareness and phonics knowledge. These findings are especially disquieting given that many struggling readers have difficulties centering on decoding and that the mission of special educators is to help children with the most serious reading problems; it certainly supports the need to include this information in the preparation of both groups of teachers.

Fewer studies have attempted to assess teacher knowledge in areas beyond phonemic awareness and phonics, but the existing ones are not comforting. Brady and colleagues (2009) assessed the knowledge base of 65 teachers in four areas—phonemic awareness, code concepts, fluency, and foundations of reading comprehension (including both vocabulary and oral comprehension)—with mean scores at pretest (prior to professional development) in these four areas ranging from 37% to 54% correct. Washburn, Joshi, and Binks-Cantrell (2011) surveyed elementary teachers' understanding of dyslexia, the most common LD affecting reading, and found that many

teachers held antiquated views of dyslexia as caused by poor visual processing (e.g., seeing letters and words backward); few correctly understood dyslexia as a disability involving core phonological weaknesses. Spear-Swerling and Cheesman (2012) examined knowledge about the five components of reading in 142 teachers from two different states, using a multiple-choice Teacher Knowledge Survey (TKS) that included application items involving classroom scenarios. Scores on the TKS were grouped into three different subscales, involving questions about phonemic awareness and phonics; fluency, vocabulary, and comprehension; and assessment and RTI practices. Participants' mean scores for all subscales were less than 65% correct. Error rates were particularly high for questions about assessment, such as those about CBMs or those requiring participants to recognize when a child had been placed for reading in a text that was too difficult for him or her. General and special educators performed similarly on all subscales except for the one involving assessment/RTI practices on which special educators outperformed general educators; however, even on this last subscale, both groups of educators had means less than 70% correct.

One would expect teachers' disciplinary knowledge about reading to be an important foundation for effective teaching and a contributor to students' reading growth. It is difficult to imagine, for instance, that teachers can teach or assess phonemic awareness well when they themselves do not understand what phonemic awareness is and cannot count phonemes in common words correctly. Field or clinical supervision often reveals the consequences of a candidate's faulty grasp of word structure, such as the time I observed a candidate present the phonetically irregular *done* as an example of a magic-*e* word to a child. Predictably, there was much ensuing confusion on the part of the child, who then tried to decode the word to rhyme with *bone*. Candidates who lack a grasp of word structure also cannot respond appropriately and flexibly to children's errors; if a child struggles to read *done*, teacher feedback to "sound it out" (the response of the teacher candidate in the preceding example) will certainly not be helpful. Although in a supervised setting these unintentionally confusing mistakes can be corrected, the results of many studies in this area suggest that comparably faulty instruction likely occurs repeatedly, without being addressed, in the classrooms of teachers not well prepared to teach phonemic awareness or phonics skills. Indeed, Piasta and colleagues (2009) actually found an inverse relationship between teacher knowledge and time spent in explicit decoding instruction; teachers with low phonics knowledge who spent more time on decoding had students who made *less* decoding growth than if the teacher had not provided explicit decoding instruction at all, likely because of inadvertently confusing instruction. These researchers also found that the use of highly scripted, generally effective core curricula did not eliminate the need for knowledgeable teachers. Rather, both high teacher knowledge *and* time spent in explicit, research-based decoding instruction were necessary for students to make strong decoding gains.

As the findings of Piasta and colleagues (2009) indicate, relationships among teacher knowledge, effective instructional practices, and student reading growth appear to be complex. This complexity may explain why some studies have found significant relationships between individual teachers' disciplinary knowledge and their students' reading progress (e.g., McCutchen et al., 2009; Spear-Swerling & Brucker, 2004), whereas other studies have yielded nonsignificant or inconsistent relationships (e.g., Carlisle, Kelcey, Rowan, et al., 2011; Spear-Swerling, 2009). Piasta and colleagues (2009) suggest that teacher knowledge influences children's word-reading gains primarily through its impact on the quality of decoding instruction.

In line with this view, in their study of teachers' support for students' vocabulary learning, Carlisle and colleagues (2013) found that relatively knowledgeable teachers (as assessed by a multicomponent measure of teacher knowledge) tended to provide better support for students' vocabulary learning than did less knowledgeable teachers. However, teacher knowledge about reading had a stronger influence, and teachers provided more support for student vocabulary learning, in classrooms with relatively stronger reading comprehension performance at the start of the school year. Classrooms with relatively weaker reading comprehension performance tended to have relatively more challenging students, such as a higher percentage of students with disabilities and students from low-income backgrounds. Thus the researchers speculated that teachers in relatively lower-performing classes could have certain constraints on them—for example, a need to use instructional time for other purposes—that influenced how (or how much) they could apply their disciplinary knowledge in practice. In other words, even relationships between teacher knowledge and teachers' instructional practices may be quite complex. Another important issue in research examining relationships between teacher knowledge and other important variables involves problems with measurement of teacher knowledge and the need to improve the technical adequacy of these measures (Carlisle, Kelcey, Rowan, et al., 2011).

Much work remains to be done to explicate the relationships among teacher knowledge, teachers' instructional practices, and children's reading growth—for children at different developmental levels, with different learning characteristics, and for varied components of reading. However, studies yielding inconsistent relationships between teacher knowledge and student reading achievement should not be interpreted to mean that this knowledge is inconsequential for effective teaching. Teachers' knowledge about language structure, important components of reading development, research-based approaches for assessing and teaching those component areas, and common types of reading problems is fundamental knowledge akin to physicians' grasp of basic anatomy and of consensus scientific findings about common health problems. Although many kinds of knowledge and skills are important for effective medical practice, few of us would be comfortable seeing a doctor who lacked basic knowledge of anatomy or who had never heard of the germ

theory of disease. Likewise, teachers' research-based disciplinary knowledge is foundational knowledge that is necessary, but certainly not sufficient, for effective teaching of reading.

PRESERVICE TEACHER PREPARATION IN READING

A consistent finding from preservice preparation studies (e.g., Spear-Swerling & Brucker, 2004) and from professional development studies (e.g., Brady et al., 2009; McCutchen et al., 2009) is that when research-based disciplinary knowledge is taught to preservice teachers or teacher candidates, they learn it. Repeated findings of inadequate knowledge in licensed teachers about some of the most fundamental, well-researched concepts needed to teach reading well point strongly to flaws in preservice teacher preparation as at least one source of these knowledge weaknesses. Tremendous variability across and even within states exists with regard to teacher preparation practices in reading, such as in course and licensure exam requirements, and there are certainly limitations in the existing database on teacher preparation (National Research Council, 2010). However, numerous studies involving a wide range of states have focused on teacher preparation in reading, and the results of these studies strongly converge with those on teachers' knowledge weaknesses. Overall, their findings suggest that many teacher preparation programs do not adequately cover the five components of reading on their course syllabi (McCombes-Tolis & Spear-Swerling, 2011; National Council on Teacher Quality [NCTQ], 2006); that textbooks popularly used in reading methods courses often provide inadequate or erroneous coverage of the five components (Joshi, Binks, Graham, et al., 2009); that teacher educators themselves may lack research-based disciplinary knowledge about reading (Joshi, Binks, Hougen, et al., 2009); and that licensure exams used for teacher credentialing often do not tap this kind of knowledge (Stotsky, 2009). Moreover, low expectations and a general lack of substance pervade too many teacher preparation programs (Levine, 2006; McCombes-Tolis & Spear-Swerling, 2011; NCTQ, 2006; Ripley, 2013).

To be sure, good teacher preparation programs do exist, and many individual, highly knowledgeable teacher educators do base their work with teachers on a solid foundation of research. However, effective teacher preparation practices are clearly not *systemic*, and they do not appear to be predictable by factors such as the cost or selectivity of the institution (NCTQ, 2006), meaning that prospective teachers who get into and pay for selective private schools are not necessarily guaranteed high-quality preparation. Currently, effective programs depend largely on the skill and knowledge of individual teacher educators who happen to be at a particular institution, and in some cases, a teacher educator who is teaching candidates erroneous information about multiple cuing systems or children who see words backward may greatly undermine the work of an outstanding colleague in the office next door. At best, this situation is likely to confuse teacher candidates, and at worst, it

conveys the impression that disciplinary knowledge about reading is simply a matter of opinion, not grounded in scientific evidence. Moreover, the amount of knowledge candidates need to learn to teach reading effectively is extensive (e.g., International Dyslexia Association, 2010; International Reading Association, 2010; Moats, 1999) and continues to emerge so that even the best preservice preparation program cannot provide candidates with all the knowledge they require for a professional lifetime. In addition, both general and special educators must be prepared to assess and teach many areas besides reading. Consistent attention to foundational knowledge across preservice preparation programs is therefore essential so that all beginning teachers have at least the foundational competencies they need to teach reading well, and so that in-service professional development can emphasize advanced types of teacher competencies. In-service professional development should also support teachers' ongoing learning and application of new knowledge to specific contexts (Snow, Griffin, & Burns, 2005). In sum, teacher preparation in reading desperately needs a systemic approach, something like a comprehensive, research-based core Tier I curriculum. What should this curriculum look like?

KEY DISCIPLINARY KNOWLEDGE AND SKILLS FOR TEACHERS OF READING

Many professional groups and authorities (e.g., International Dyslexia Association, 2010; International Reading Association, 2010; Moats, 1999; Snow et al., 2005) have outlined the knowledge and skills needed to teach reading well to diverse groups of children. Although these different sources vary in important ways, substantial consensus exists among them, and along with the extensive scientific literature on reading, these professional guidelines can inform preservice teacher preparation. Drawing from this range of sources, Table 10.1 displays the kinds of important knowledge and skills that preservice preparation programs should develop in all teachers of reading at the elementary level. I use the term *teacher of reading* to refer to *any* educator responsible for reading instruction, including general educators, special educators, and reading specialists. The table is intended only as a broad overview, not an exhaustive list; readers are encouraged to consult the sources cited here for much further detail about the knowledge and skills that should be addressed by preservice preparation programs.

Core Knowledge and Skills for All Elementary-Level Teachers of Reading

As shown in Table 10.1, all prospective teachers of reading require core knowledge and skills in at least five areas: basic knowledge about typical reading development and reading problems; knowledge about the structure of language, including multiple levels of language as well as English word structure; knowledge of foundational research in reading from multiple disciplines;

Table 10.1.   Important knowledge and skills for elementary (K–6) teachers of reading

Area	Disciplinary knowledge and teaching competencies for teacher candidates
Knowledge about typical reading development, common reading difficulties, and disabilities	• Explain phases, abilities, and processes involved in typical reading development, including the five components of reading and how the importance of different components shifts during development. • Describe the influence of socioeconomic, cultural, and linguistic factors on children's reading development, including for English language learners. • Explain key abilities/knowledge involved in reading comprehension such as background knowledge, inferencing, and knowledge of text structure. • Describe common profiles and patterns of reading difficulties as well as basic features of common disabilities that affect reading (e.g., dyslexia). • Explain the most important provisions of federal and state laws for students with disabilities (e.g., free appropriate public education).
Knowledge about the structure of language	• Segment phonemes and morphemes in words, identify syllable types, and identify phonetically irregular words. • Identify common roots, prefixes, and suffixes as well as generalizations for syllabication of long words. • Explain common spelling generalizations. • Identify common morphemes, cohesive words, and semantic relationships among words. • Identify different sentence and paragraph structures. • Identify different genres and discourse structures. • Identify specific features of a text that may make comprehension difficult (e.g., complex syntax, double negatives).
Research foundations	• Explain fundamental consensus research findings about reading (e.g., skilled reading is associated with highly accurate, automatic decoding; language differences and early language delay are risk factors for reading difficulties) and their implications for educational practice. • Recognize the importance of ongoing professional development that includes reading professional journals and other sources of research.
Assessment	• Explain important concepts about the technical adequacy of tests, such as reliability and validity; interpret information about specific tests to determine if the test is technically adequate for its intended purpose. • Administer and interpret assessments for screening, progress monitoring, and evaluation of outcomes. • Administer and interpret assessments of the five components of reading, including diagnostic assessments. • Interpret multiple assessments in conjunction with each other to determine a student's overall profile or pattern of reading difficulty (e.g., recognize when a child's poor reading comprehension is due solely to decoding difficulties versus core comprehension weaknesses).

Instruction	• Provide explicit, systematic teaching of the five components of reading and of specific comprehension abilities/knowledge (e.g., inferencing, text structure, cohesive words).
	• Integrate instruction appropriately across different components, including making instructional connections between specific components of reading and specific components of writing.
	• Choose appropriate instructional examples or questions in all five component areas.
	• Provide clear, constructive feedback to children's errors and confusions for all five components.
	• Differentiate and adapt instruction for students with varied needs, including for English language learners, for students with common disabilities, and for different profiles and patterns of reading difficulties.
	• Motivate and engage students of varied achievement levels and cultural-linguistic backgrounds as well as manage groups of students.
	• Describe different text types (e.g., predictable, decodable, children's literature, informational) and how/when each is useful in instruction.
	• Place children in appropriate texts for instruction and identify when a text is too difficult / too easy for a given child.
	• Appropriately foster, monitor, and guide children's independent reading.

assessment-related knowledge and skills; and instructional knowledge and skills. In preparing teachers of reading, teacher educators should also directly address common myths, such as the idea that children from poverty backgrounds, children with disabilities, and ELLs cannot learn to read well (Snow et al., 2005).

Virtually all professional organizations and authorities in reading (e.g., Moats, 1999; Snow et al., 2005), including accrediting organizations such as the Council for the Accreditation of Educator Preparation (2010), agree that in order to develop practical teaching competencies, teacher candidates need extensive, supervised field or clinical experiences. These practical teaching experiences should be well integrated with coursework and must involve supervision by highly knowledgeable, skilled mentors. Without expert supervision, candidates will not receive the modeling, guidance, and feedback they require to learn how to teach effectively, administer assessments appropriately, engage students, and manage students' behavior. Supervision also provides teacher educators with a broad perspective on the strengths and weaknesses of individual candidates, an essential perspective given that many qualities in addition to academic competence and knowledge play a role in good teaching.

Successful implementation of the CCSS at the elementary level also hinges on the types of knowledge and competencies listed in Table 10.1. Not

only do the CCSS require that educators be able to effectively teach all five components of reading as well as appropriately integrate those components with each other and with components of writing, but many of the advanced comprehension standards require teachers to have strong knowledge of language structure. For instance, in order to teach fifth graders how to "Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts" (English/Language Arts [ELA]-Literacy.RI.5.5), teachers need to understand text and discourse structure. Effective teaching of many aspects of writing also depends heavily on teachers' knowledge of language structure, such as ELA-Literacy.W.4.2c: "Link ideas within categories of information using words and phrases (e.g., *another*, *for example*, *also*, *because*)." This standard requires teachers to understand the role of cohesive words in texts, an aspect of language structure that they can use to facilitate reading comprehension as well as clear, effective writing by their students.

Specialized and Advanced Knowledge and Skills for Teaching Reading

The core competencies displayed in Table 10.1 must be supplemented with other kinds of knowledge and skills for teaching reading, particularly in the case of certain professional groups. For example, teacher candidates in special education require not only the core competencies for teaching reading listed in Table 10.1 but also additional competencies. These competencies include, relative to Table 10.1, greater knowledge about disabilities, special education laws, and research foundations of special education; greater assessment knowledge and expertise; and greater instructional expertise that will enable them to teach children with the most serious, persistent reading difficulties. Special educators' teaching skills must be developed in supervised field experiences that include direct instruction of students with various disabilities. Moreover, special educators often collaborate with many other educators as well as with parents, and they must be able to modify and structure learning environments for students with disabilities (e.g., facilitating inclusion of a student with a disability in a general education class), so competencies in these areas are vital for them (Council for Exceptional Children, 2009).

Brownell, Sindelar, Kiely, and Danielson (2010) suggest using an RTI framework to rethink preparation of special educators. They argue that the extensive expertise required of special educators necessitates preparation in both general and special education coupled with extensive reforms of general as well as special education teacher preparation. If general education teacher preparation lacks a foundation in research or fails to address the types of competencies displayed in Table 10.1, then general educators will not be prepared to teach reading well and to differentiate reading instruction in Tier I, completely undermining special education reform efforts, like a growing sinkhole under the foundation of a building. Although recognizing the genuine challenges of their proposal, especially perennial teacher shortages

in special education that frequently have led only to short-term, piecemeal fixes, Brownell and colleagues (2010) make a strong case for requiring dual licensure of special educators in general as well as special education. Furthermore, they point out that special education preparation can make general educators more effective teachers, even for students without disabilities; they therefore suggest that states *require dual licensure even of general educators*, with more advanced preparation in literacy (and numeracy) for special educators, and with salary scales adjusted to be commensurate with greater levels of teacher expertise.

Reading specialists and literacy coaches also require advanced knowledge and expertise (International Dyslexia Association, 2010; International Reading Association, 2010). Although the primary focus of reading specialists does not typically involve students with identified disabilities, these specialists certainly should have specialized expertise for assessing and teaching children with a variety of reading problems, including both decoding and comprehension-based types of difficulties, in culturally and linguistically diverse groups. Like special educators, reading specialists require especially strong consultative and collaborative skills because they may be involved in reading curriculum development as well as in supporting classroom teachers' professional development. Although special educators rather than reading specialists will typically deliver reading instruction for students with identified disabilities, reading specialists certainly should have strong knowledge of disabilities such as dyslexia as well as of interventions that generally work for these students and that often will benefit other poor readers, including many children to whom reading specialists may deliver tiered interventions.

All these groups of teachers require ongoing, research-based professional development in reading, with opportunities for coaching by knowledgeable mentors. Research-based knowledge surveys, classroom observations, and student achievement data should be used to target professional development efforts because different educators, or those in different schools, may have varying needs. Successful reform of preservice teacher preparation would enable in-service professional development to emphasize advanced types of teaching skills (as opposed to, e.g., what phonemic awareness is and why it is important). Conversely, however, poorly conceived professional development can weaken or even undo strong preservice preparation.

Several years ago, I visited the classroom of a teacher who had once been my student—indeed, she was one of the best students of her cohort. Although in her undergraduate special education program she had received good preparation to teach reading, during my classroom visit I was surprised and quite dismayed to find her using many inappropriate practices, such as encouraging children to guess at words instead of apply decoding skills—practices that were certainly not taught in her preservice program. It soon became apparent that 5 or 6 years of weak in-service professional development and teaching

at a school with a whole language orientation had greatly undermined this educator's initial preparation. The lesson of this story is that just as a strong Tier I reading curriculum depends on good integration of instruction across grades, with later grades building on skills developed in previous grades, good integration of preservice and long-term in-service professional development is vital for effective teacher education in reading. As many authorities (e.g., Moats, 1999; Snow et al., 2005) have emphasized, teacher professional development is a career-long process; inadequate preparation at any stage of that process can lead to undesirable outcomes.

USING COMMON PROFILES AND PATTERNS OF READING DIFFICULTIES IN TEACHER PREPARATION

Knowledge about common profiles and patterns of reading difficulties is useful for all teachers of reading at all levels of professional development. Furthermore, a model that relates reading problems to typical reading development, as discussed in Chapters 3 and 4, is very helpful for both general and special educators—for example, in highlighting the ways that at-risk readers are most likely to stray from the path to proficient reading. Especially for preservice teachers, information about profiles and patterns also provides a useful level of analysis between two extremes: "all reading problems are alike" (clearly false) and "every reading problem is different" (which implies that no generalizations about reading problems exist, also false). Profiles and patterns capture many instructionally relevant distinctions about reading problems, such as distinctions between reading comprehension problems based solely in decoding or fluency and those with a core comprehension component. They can help novice teachers integrate and interpret information from multiple assessments as well as provide practical implications for planning instructional groups, interventions, and progress monitoring.

For teachers with advanced levels of expertise, profiles and patterns provide a useful foundation for developing an increasingly nuanced understanding of reading problems. A special educator who already understands common profiles and patterns of reading difficulties has a framework for analyzing the more complex needs of certain students with disabilities, such as a child with dyslexia or with ASD who also happens to be an ELL. The teaching competencies required to address common profiles and patterns are a helpful starting point for more specialized types of intervention strategies that may be required for these students' more complex needs. Similarly, a reading specialist who is knowledgeable about common profiles and patterns of reading difficulties can use this knowledge in coaching classroom teachers and in making decisions about reading curriculum. Like special educators, reading specialists can build on this knowledge to develop a complex understanding of different reading difficulties as well as increased expertise in assessment and intervention to help them better meet the needs of a range of children.

HOW CAN TEACHERS BE BETTER PREPARED TO IMPLEMENT RESPONSE TO INTERVENTION?

The research reviewed in this chapter suggests that, currently, many teachers, both general and special educators, are poorly prepared to implement RTI/MTSS models. Without basic knowledge of the structure of language, typical reading development, important components of reading, and research-based approaches to instruction, it seems highly unlikely that teachers can effectively differentiate classroom instruction to meet the needs of at-risk students, let alone successfully implement interventions to help the most difficult-to-teach poor readers. Limited knowledge of assessment (e.g., Spear-Swerling & Cheesman, 2012) is especially problematic for implementation of RTI because the prompt intervention at the heart of RTI depends on educators' ability to administer and interpret a range of assessments correctly.

Moreover, many teachers may be unaware of research-based instructional models and interventions that could be extremely helpful resources to them in implementing MTSS. In our study of teachers' knowledge base for implementing RTI, my colleague Elaine Cheesman and I asked participants to indicate their familiarity and experience with a list of research-based interventions widely recognized in the scientific community. "Familiar" meant that the participant had at least heard of the intervention or instructional approach, whereas "experience" meant that the participant had actual experience using it with children. Many participants indicated that they were completely unfamiliar with specific research-based interventions for multiple components of reading. For instance, 63% of participants were unfamiliar with MSL programs such as the Orton-Gillingham approach (Gillingham & Stillman, 1970) or the Wilson program (Wilson, 1988); 65% of participants were unfamiliar with specific fluency interventions such as Read Naturally (Hasbrouck et al., 1999); and 84% and 77% respectively were unfamiliar with two well-researched models for comprehension instruction: Questioning the Author (Beck & McKeown, 2006) and Reciprocal Teaching (Palincsar & Brown, 1984). A whopping 92% were unfamiliar with an extensively researched model especially useful for differentiation of core instruction and for Tier II intervention: PALS (e.g., Fuchs & Fuchs, 2005). Teachers unfamiliar with these and other specific interventions named in the study still might be able to teach poor readers well, of course. Nevertheless, these results are unsettling because well-researched, published interventions and instructional models are important resources for educators with many demands on their time. Lacking familiarity with (or access to) these resources, educators would need to develop their own, a requirement that research suggests is not realistic for many educators, especially on the wide scale demanded by RTI.

Better preparation of educators to implement RTI should begin with the types of competencies and knowledge shown in Table 10.1 but should include other competencies as well. For example, to implement RTI effectively, teachers must have at least a passing familiarity with examples of research-based

interventions for different types of reading difficulties, with supervised teaching experience for educators who will actually implement interventions. For preservice candidates, placement in field and student teaching settings in which RTI is implemented well is important, as are, for in-service teachers, professional development models that include well-informed coaching (e.g., Brady et al., 2009; Carlisle, Cortina, & Katz, 2011; Moats & Foorman, 2003). Because research on RTI is ongoing, with many practical implications continuing to emerge from this work, educators' willingness and ability to keep up with this research is crucial, especially for those involved in setting district literacy policies (e.g., administrators, supervisors of special education, reading supervisors). For instance, these educators should be familiar with research on the value of two-stage screens (e.g., Fuchs, Fuchs, Compton, et al., 2012; Johnson et al., 2009) as well as with findings indicating the need to "fast-track" certain students to special education or to the most intensive level of intervention (e.g., Fuchs, Fuchs, Compton, et al., 2012; Vaughn et al., 2010).

Developing these kinds of competencies will require many reforms in preservice preparation as well as ongoing professional development for in-service educators. It should be noted, however, that many of the teacher competencies that need to be developed are important with or without the use of formal MTSS models. *All* teachers of reading should be able to identify at-risk readers early, use assessments to plan effective instruction, and deliver at least some research-based interventions to struggling students, whether or not they are in schools using RTI models.

IMPROVING PRESERVICE TEACHER PREPARATION IN READING

Here are a few specific suggestions for state departments of education, schools of education, and policy makers focused on preservice preparation, a critical foundation for all other efforts in improving teacher professional development in reading.

Require the equivalent of at least 12 credits of preparation involving reading for all candidates whose certifications will include teaching reading, with substantial integration of supervised field or clinical experiences well before student teaching. The kinds of teacher competencies displayed in Table 10.1 cannot be developed in only one or two courses, and supervised teaching experience, essential to good teacher preparation, requires considerable amounts of time as well.

Promote high expectations and substance in teacher education. Quality of preparation is as important as quantity. Not only do teacher candidates require the kinds of competencies listed in Table 10.1, but in order to teach reading well, they must also be able to serve as excellent models of literacy—as critical thinkers, good writers, and thoughtful, perceptive readers, who read widely and often. Preparation programs with minimal expectations of teacher candidates are not likely to attract or produce these kinds of educators.

Ensure that preparation in reading is delivered by faculty with the appropriate expertise. Faculty who teach reading methods courses and who supervise reading-related field experiences must have expertise that includes deep knowledge of the kind of competencies displayed in Table 10.1; as Binks-Cantrell, Washburn, Joshi, and Hougen (2012) point out, teacher educators cannot develop knowledge in their candidates that they themselves lack. Unfortunately, deep knowledge of the competencies displayed in Table 10.1 cannot be inferred merely based on whether a teacher educator has a terminal degree in "reading" or "literacy." Teacher educators with such a degree might have excellent, research-based expertise, or they might have years of preparation completely disconnected from the interdisciplinary research base on reading (see, e.g., Linn, 2012) on multiple cuing systems and whole language methods. On the other hand, a teacher educator with a terminal degree in a field other than but related to reading, such as educational psychology or special education, might have strong expertise for teaching reading methods courses to general as well as special education candidates.

Develop interdisciplinary preparation programs. Teacher candidates cannot be well prepared in programs narrowly focused on a single field—whether that field is reading, education, or special education—because the knowledge base that underlies reading is multidisciplinary. Preparation of both general and special educators therefore must include substantial content in areas such as speech-language and cognitive-developmental psychology as well as in reading, education, and special education. This content should not involve a jumble of courses picked from different departments in a university catalog; it must be well integrated into a coherent program that develops candidates' practical teaching competencies as well as their disciplinary knowledge.

Employ research-based, sufficiently detailed professional standards for teacher candidates who will teach reading. Accreditation processes for schools of education, such as those of CAEP, employ broad professional standards that reflect their accreditation of a wide range of teacher preparation programs (e.g., elementary education, secondary science, music education) in conjunction with more discipline-specific standards for different fields. As noted previously, the professional standards of different organizations with a stake in the preparation of teachers of reading (e.g., Council for Exceptional Children, 2009; International Dyslexia Association, 2010; International Reading Association, 2010) have many areas of broad consensus. However, these standards do not all provide equivalent detail about the specific knowledge and competencies that teacher candidates require in reading—and detail is essential for informing course and program design. The International Dyslexia Association (IDA; 2010) professional standards, which address important competencies for all teachers of reading, not only special educators, have this kind of explicit detail and certainly can be employed in conjunction with other standards as needed.

Adopt a research-based teacher licensure exam in reading for all initial certification candidates whose certifications include teaching reading, with a more advanced licensure exam for candidates who require more specialized or advanced knowledge (e.g., special educators, reading specialists). A research-based licensure exam that addresses disciplinary knowledge about all five components of reading as well as about other important areas, including both assessment and instruction, is essential for accountability of higher education institutions and for driving change in teacher preparation in reading. In my own state, adoption of a research-based licensure exam has not only improved accountability but also had many other benefits, such as increasing attention to research-based resources (see Spear-Swerling & Coyne, 2010). A more advanced exam for special educators and reading specialists could help to ensure that these groups of educators receive the preparation they need as well as facilitate some badly needed integration of preservice preparation and advanced levels of professional development. A sufficiently high passing score (e.g., 75%–80% of questions correct on all parts of the exam) is necessary for both the initial and advanced exam so that candidates with serious weaknesses in any area cannot obtain licensure. Retakes of exams should be permitted.

Adopt meaningful accreditation processes that require schools of education to demonstrate that they are developing research-based knowledge and competencies in their teacher candidates, with constructive review and feedback that enables programs to improve. Accreditation through organizations such as CAEP might involve this kind of meaningful accreditation process. However, if state departments of education and policy makers want to ensure adequate preparation of teachers of reading, they should not cede all oversight to any accrediting body but should have their own monitoring systems involving, for example, syllabus review by appropriate state education officials with strong, multidisciplinary, research-based expertise in reading. Accreditation and self-study processes must not be so burdensome for teacher educators that they drain disproportionate amounts of time and energy from other important responsibilities such as teaching, supervision, and scholarly activity.

Provide extensive opportunities for research-based professional development of teacher educators as well as in-service teachers. Many teacher educators are open to opportunities for ongoing professional development, and some of the other steps mentioned here may enhance their receptivity. For instance, no teacher educator wants to have students who repeatedly fail the state licensure exam. Poor teacher candidate scores on an appropriate licensure exam, one tapping candidates' knowledge about how to teach all important components of reading, can make teacher educators more aware of their students' knowledge limitations and more receptive to opportunities for professional development that could help them improve their preparation of candidates. Higher education collaboratives, which provide research-based professional development as well as other kinds of support

for teacher educators (e.g., Cheesman, Hougen, & Smartt, 2010), provide one valuable model for professional development of teacher educators. Similarly, research-practice collaborations in clinical settings or through professional development schools can benefit the expertise of both teacher educators and participating schools. Other related policy steps also matter. For example, to continue their own professional development, teacher education faculty require adequate funding for travel to conferences as well as support for creative activity and service, including release time for research and for important responsibilities such as supervising field placements and accreditation processes.

Finally, policy makers and others wishing to improve teacher preparation practices in reading should seek ways to encourage new Ph.D.s with strong research backgrounds and appropriate teaching experience to pursue careers in teacher education. That recommendation might be a hard sell after the many problems in teacher preparation that I have detailed in this chapter. However, despite its frustrations and challenges, a career in teacher education can be deeply rewarding (and an academic research career has challenges and frustrations of its own). The opportunity to shape excellent teachers and to improve children's reading instruction on a broad scale, as well as the privilege of continuing to learn from these teachers and their students, is highly meaningful, important, and intellectually engaging work. Without knowledgeable, committed teacher educators as well as teachers, scientific research on reading will never have the impact on educational practice that it should.