Preface

The purpose of this book is to help the many children, adolescents, and adults who encounter difficulty with reading. Designed as a text for both undergraduate and graduate students, *Reading Problems: Assessment and Teaching Strategies* guides prospective and present teachers in assessing and teaching students who are struggling with reading and writing.

Reading Problems is a comprehensive survey of teaching strategies, formal and informal assessment, theory, and research. The reader will find information both from the field of reading and from allied fields, such as special education, bilingual education, medical science, and policy studies. Together, these areas provide a coherent framework for helping students with reading problems.

The seventh edition of *Reading Problems* combines new approaches with time-tested ones to provide teachers a wide variety of approaches from which to choose. Recent research has clarified the reading process and substantiated effective instructional strategies. New insights provide a rich source of innovative diagnostic and teaching methods.

Most of all, we hope that *Reading Problems* will be a valuable resource for teachers. Hundreds of instructional strategies are presented for immediate use by teachers. Many of the strategies are illustrated by "Strategy Snapshots" depicting examples of actual classroom use. These snapshots are from our own experiences in working with students in the Literacy Centers at our universities and with teachers and students in schools.

Chapters 1 through 5 present general information about the reading process and students with reading problems, the use of interviews to obtain information about factors related to reading, and an overview of assessment, including formal and informal assessment, with an emphasis on the vast amount of information gained through administering and analyzing the results of an informal reading inventory.

Chapter 1 provides an overview of reading and reading problems, including response-to-intervention (RTI).

Chapter 2 discusses factors associated with reading and their impact on development.

Chapter 3 provides suggestions for gathering background information and pertinent data about students.

Chapter 4 includes information about current norm-referenced and criterion-referenced assessments either used by reading specialists or that may need to be interpreted by reading specialists.

Chapter 5 includes a section on using informal reading inventories as an RTI assessment tool.

Chapter 6 describes successful reading intervention programs, including group and classroom instructional models. The chapter presents a new perspective on intervention: defining intervention success in terms of grade-level competence.

Factors Associated With Reading Problems

Introduction

In this chapter, we explore some of the factors that are associated with difficulty in reading. Reading problems can be rooted in neurological and cognitive factors. Environmental factors include the student's home, school, social, and cultural environments. Difficulty in reading can also be linked with emotional factors. Reading difficulty is often associated with intelligence and intellectual factors. Language factors also affect reading performance.
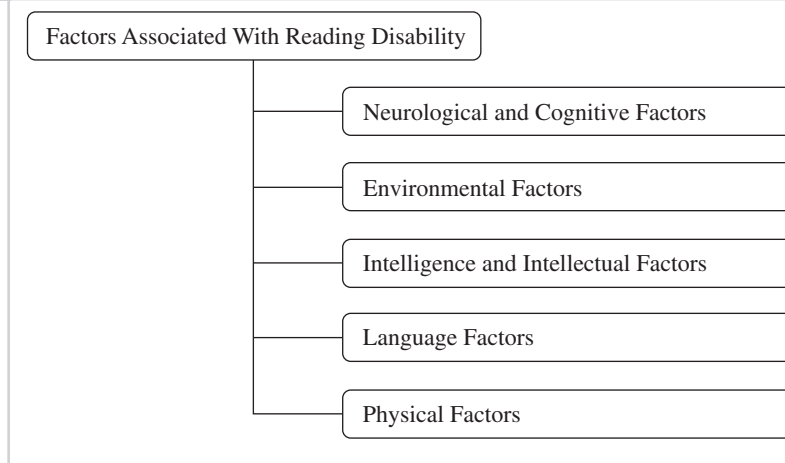
A summary of the factors that are associated with difficulty in reading is shown in Figure 2.1.

Neurological and Cognitive Factors

A student's problem in reading can be linked to intrinsic neurological and cognitive factors within the individual student. Every teacher has had experience with a student who struggles with reading difficulty, despite having a dedicated family, a nurturing school environment, average or above-average intelligence, and many economic advantages.

For more than 100 years, medical researchers have tried to detect those neurological factors within the brain that are related to reading problems. As early as 1896, W. P. Morgan, a physician, described a condition he called "word blindness." Hinshelwood (1917), an ophthalmologist, reported the case of an otherwise normal teenage boy who could not learn to read. Other medical researchers reported similar cases of students who had great difficulty learning to read (Critchley, 1970; Orton, 1937). However, it is only recently that researchers have begun to use new technologies to actually study the brain as the individual reads. Using *functional magnetic resonance imaging* (fMRI) technology, brain research has led to clues about the role of

FIGURE 2.1 Factors Associated With Reading Disability

neurological factors that are associated with an individual's reading problem. The brain research shows strong evidence of differences in brain function between poor readers and normal readers (Shaywitz, Morris, & Shaywitz, 2008).

The term *dyslexia* is sometimes used to describe individuals with severe reading disabilities, individuals who acquire reading abilities with extreme difficulty. Genetic differences in the brain make learning to read a struggle for children with dyslexia. Luckily, much of our brain development occurs after we are born, when we interact with our environment. This means that teaching techniques can actually retrain the brain, especially when the instruction happens early (Shaywitz et al., 2008).

Studies with fMRI scans compared English-speaking and Chinese-speaking children with dyslexia. Chinese children and American children with dyslexia are different. The research shows that dyslexia affects different parts of the brain depending upon whether the child uses an alphabet-based writing system (such as English) or a symbolic writing system (such as Chinese). Learning to read in English, an alphabet-based writing system, requires awareness of the sounds of language (phonemic awareness). In contrast, learning to read in Chinese, a symbol-based writing system, requires abilities with pictorial and visual symbols (Hotz, 2008; Siok, Niu, Jin, Perfetti, & Tan, 2008).

When we consider neurological or cognitive factors, we take into account the way in which an individual's brain operates during the process of learning to read. The term *cognitive processing* refers to the mental activities that an individual uses in learning, such as visual processing, auditory processing, memory abilities, or language-related abilities. Cognitive processing deficits can interfere with the way that students understand information presented to them. For some students with a reading disability, cognitive processing deficits can play a major role.

Cognitive processing differences are also recognized in special education law, specifically in the Individuals with Disabilities Education Improvement Act of 2004 (IDEA-2004). Students with learning disabilities are identified as having "disorders in psychological processing." Research shows that poor readers display more differences in cognitive processing than good readers (Lerner & Johns, 2012; Shaywitz et al., 2008).

Differentiated Instruction

Differentiated instruction is an often-recommended approach to teaching students in general education. Differentiated instruction reflects a philosophy of teaching that enables the teacher to meet the specific needs of each student, capitalizing on the unique strengths and weaknesses of each student. That includes the student's individual interests, talents, way of processing information, and other proclivities. The approach of differentiated instruction involves teaching by matching individual student characteristics to instruction. This includes the individual cognitive processing skills of the students (Bender, 2006; Díaz-Rico, 2012; Tomlison, 2001).

Working Memory

Working memory (WM) is defined as a processing resource of limited capacity, involved in the preservation of information while processing the same or other information (Swanson & O'Conner, 2009). WM plays a major role in integrating information

during the task of comprehending text. Swanson and O'Conner found that WM plays a major role in moderating overall outcomes in text comprehension. Difficulty with WM was a major problem in children with specific learning disorders (Morris et al., 2012; Schucardt, Maehler, & Hasselhorn, 2008).

Cognitive Strategy Instruction

Cognitive strategy instruction (CSI) focuses on *how* students learn rather than on *what* they learn. It is an explicit instructional approach that teaches students specific and general cognitive strategies to improve learning and performance. Many students with reading problems are inefficient and ineffective strategic learners. Cognitive routines help students regulate and monitor their reading comprehension. The ability to identify and utilize effective strategies is a necessary skill for reading comprehension. Students who use cognitive strategies ask themselves questions, they connect new information with what they already know, and they try to predict what will come next (Krawiec & Montague, 2012).

Environmental Factors

Environmental factors are associated with reading disability. Students live and grow in several different environments, and each environment has a strong influence on student desires and abilities to learn. Environments include the student's home environment, school environment, social environment, and cultural environment. Each of these environments can affect a student's reading. Figure 2.2 illustrates each of these environmental factors and their interaction.
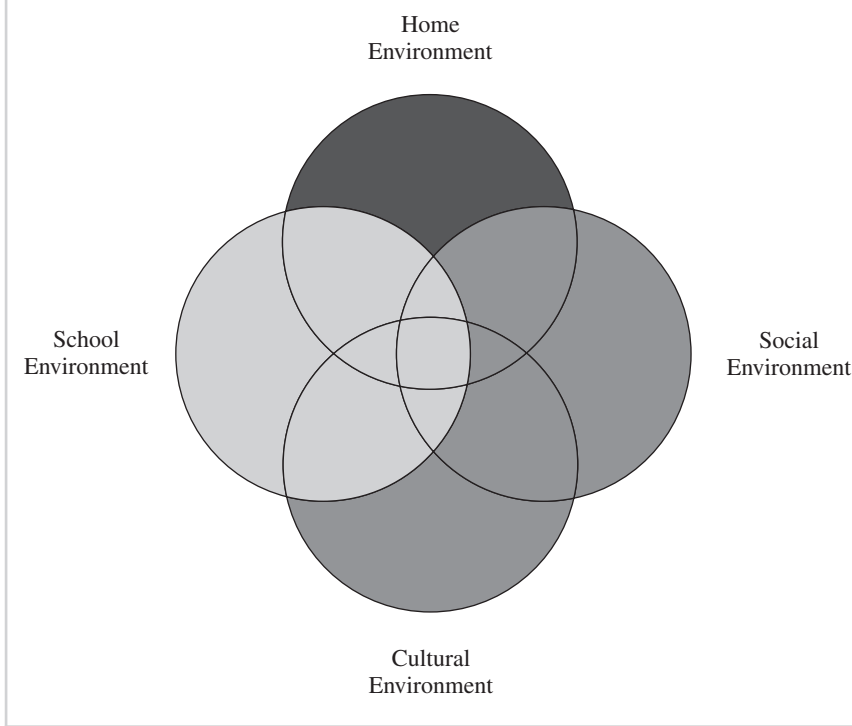
The Home Environment

The home is the child's first environment. The child's home environment can be the foundation for tremendous cognitive growth and development. The child's experiences that occur during the critical first 5 or 6 years of life have powerful influences on a child's development.

In the home environment, parents can provide emotional well-being as well as intellectual stimulation. For example, a child's early development of self-concept is dependent on the support and encouragement of parents. Studies that compare good and poor readers show that students who experience success are much more likely to have a favorable home environment.

Parents can also stimulate their child's love for reading. Parents who read to children, take them to libraries, and buy books as presents teach children to value reading. When children observe parents who are readers, the parents provide a role model for literacy. Further, the parental role continues to be crucial even after the child enters school.

Youngsters who experience difficulty learning to read need satisfying family relationships. Parents can alleviate some of the psychological and emotional consequences

FIGURE 2.2   Environmental Factors

Home
Environment

School
Environment

Social
Environment

Cultural
Environment

of reading failure by what they do in the home environment. Parents can provide love, acceptance, and other opportunities for success.

Today, many children come from increasingly risk-filled home environments. For example, poverty is a major factor that is related to a child's risk levels in the areas of health, education, emotional welfare, and delinquency. According to the U.S. Census Bureau (2010), about 22% of all children in the United States are living in poverty.

Homes that are weighed down by poverty, family instability, and neighborhoods where violence is commonplace increase the likelihood that children will be at risk for school failure. On any given night, the number of homeless children is estimated to be at least 500,000 (U.S. Census Bureau, 2010).

Health and emotional problems tend to increase when children live in difficult environments. Poorer mothers are less likely than more affluent mothers to seek pre-natal care. Alcohol addiction in parents may affect a child in two ways: the child may be born with fetal alcohol syndrome, and the parent may not have the energy to nurture the child's education.

Children who are hungry or homeless have little energy to focus on school. Their overburdened, often undereducated parents and guardians may lack the time and skills to nurture literacy by sharing books with them, encouraging them to do

homework, or communicating with their teachers. Some families are able to rise above their problems and provide warm, nurturing places that support education, but the sad fact remains that children born into poor or unstable families are at risk for educational failure. Thus, many family and home environmental causes combine to produce an increased risk for reading problems.

The School Environment

A substantial portion of students' waking hours is spent in school, and so the experiences and relationships in the school environment profoundly affect their lives. For the poor reader, school experiences are often unhappy ones. At times, even a well-meaning, stable family may not be able to prepare a child for the school situation. Even in affluent neighborhoods, teachers are noticing changes in the home environment, such as an increase in family breakups. School problems are multiplied in less-fortunate settings. As family instability increases, teachers in all schools are instructing at-risk children (Lerner & Johns, 2012).

Some school practices can actually contribute to a child's reading problems. For example, in some cases, teachers might give up entirely on trying to teaching a child to read, and instead simply read everything to the child. During reading time, these children might be expected to sit quietly and do nothing. In such situations, the school system does little to help the child with significant reading problems.

In the school environment, students with reading problems do not read as much as students who are good readers. In an extensive line of research, Allington (1986) and Stanovich (1993–1994) compared the time spent and amount of reading in low-achieving and average students. Unskilled readers spent less time reading in school than did average students. Poor readers read only a third as many words as average students in school. Students who already have reading problems are not practicing enough to improve their reading skills (Lerner & Johns, 2012).

Students with reading problems often have unsatisfactory relationships with adults in the schools. Studies show that poor achievers tend to be perceived negatively by teachers, paraprofessionals, and principals. Teachers often identify poor readers as aggressive, lacking self-discipline, and unmotivated. Low achievers receive less praise or acknowledgment from teachers, and they are more likely to be criticized.

Instruction that does not meet a student's needs can be an important factor in a reading problem. For example, when immature children are given formal reading instruction before they can profit from it, they may become frustrated and develop reading problems. If children do not receive sufficient instruction in critical skills, they may fail in the initial stages of learning to read. For example, research demonstrates that an important link exists between phonemic awareness and early reading. If children do not develop the critical skill of phonemic awareness by first grade, their reading in all of the following grades is affected. Finally, low-achieving students often do not read enough to become better readers (Blachman, Tangel, & Ball, 2004).

Although students with reading problems are a challenge to teach, they still must be provided with the best instruction possible. Many of the suggestions provided in this book can help youngsters with reading problems break the cycle of reading failure and help them learn to love reading.

The Social Environment

Successful interactions with friends provide students with many satisfactions and opportunities to gain confidence in themselves. Many students with reading problems, however, also have social difficulties. These students have difficulty making friends, have problems interacting with others, and do not understand the nuances of social situations. A sizable body of evidence shows that social unpopularity tends to accompany school failure. Poor achievers often are rejected or ignored by classmates and are uninvolved in extracurricular activities (Lavoie, 2007).

When children develop typically, they learn social skills in a casual and informal manner. Through many incidental experiences, they learn appropriate ways of acting with people—what to say, how to behave, and how to give and take in a social situation. Students with reading and social problems, however, may not be sensitive to social nuances, and they may be unaware of how others interpret their behavior. Further, in contrast to normal achievers, low-achieving students tend to overestimate their own popularity. They seem unable to recognize their own social shortcomings and have difficulty relating to peers in a social setting.

Often, students with reading and social problems may be unable to accommodate themselves to another person's point of view. Their chances for successful social interaction with peers are reduced because they fail to consider the needs of other people. See Table 2.1, which offers suggestions for teaching social skills.

The Cultural Environment

The number of students in U.S. schools who come from diverse cultural and linguistic populations is rapidly increasing. Many students come from homes in which a language other than English is spoken; these students are English language learners (ELLs). They are not proficient in understanding and using oral English. ELL students are discussed in greater detail in this chapter under the section on language factors.

The population of North America is a composite of hundreds of different ethnic and cultural traditions. In today's society, ever-changing patterns of immigration and

---

TABLE 2.1 Strategies for Teaching Social Skills

◆ **Role-Playing.**   Involve the students in role-playing games, in which one person is made to adopt the viewpoint of another person, to improve social relationships.
◆ **Social Autopsies.**   Have students analyze the social dilemmas in which they find themselves. To teach social behavior on the playground, teach it on a playground. To teach appropriate social behavior on the school bus, teaching it on the bus.
◆ **Social Skills Instruction.**   Teach students how to make friends, give compliments, join group activities, and accept thanks.
◆ **Social Stories.**   Social stories are stories about problematic social situations. Social stories offer a way for students to discuss the "how and what" of social situations. For example, a "comic strip" situation might allow students to discuss the "how and what" of a social situation. (See The Gray Center for Social Learning and Understanding at www.thegraycenter.org.)

movement occur as new groups of people add their cultural riches to the schools. A few decades ago, Americans assumed that everyone would be assimilated into the "melting pot" of the dominant culture. Now we try to value and maintain diverse cultural traditions. One of the greatest challenges schools face is providing an excellent education to students of all cultures, whatever their geographical origin, socioeconomic status, or language.

Because significant numbers of U.S. families live below a specified poverty level, teachers need to be aware of the possible effects of poverty on students' academic performance. A recent study shows that poverty can take a toll on the brain development of children, leading to learning disabilities as well as behavior and emotional problems (Action for Children, 2008). Although individuals with incomes below the poverty level come from diverse backgrounds, they tend to have certain similarities. Parents are likely to have less energy to devote to their children's development if they are necessarily concerned with basic survival needs. Often, children from these families must care for themselves at a young age and may come to school with relatively limited background experiences (Ortiz, 1997). Cultural differences, particularly those arising from a culture of poverty, may lead to intense suspicion and discomfort toward individuals perceived to be in the dominant culture (Lerner & Johns, 2012).

These generalizations do not, of course, hold true for all low-income students. In many poor families, education is cherished, the values of the school are upheld, and family members are encouraged to read and achieve. The opportunity to progress from poverty to economic security is a fundamental promise of democratic nations.

Emotional Factors

Failing readers, particularly if they have a long history of failure, often have accompanying emotional problems that impede reading. Emotional problems tend to increase as a youngster moves up through the elementary years and enters adolescence.

Sometimes it is hard to determine whether a reading problem is the result of an underlying emotional disorder or if emotional problems have developed because of a reading disability. Often, a constructive approach is to help the student experience success in reading, and this success in turn becomes a kind of therapy. A therapeutic approach to the teaching of reading can build confidence, establish self-esteem, and capture the pupil's interest. However, students with severe emotional disorders may need psychotherapy or counseling (Silver, 2006).

Students react to having reading problems in different ways. Although some failing readers seem to have little evidence of emotional reactions, many display a variety of emotional reactions.

One helpful informal assessment measure that can be used by teachers is the sentence completion activity. The sentence completion activity is a series of beginning sentence fragments that the student completes, such as "I like _____." In finishing these sentences, students often provide insights into their thoughts and feelings. The activity can be administered orally or in writing. A sample sentence completion form is given in Figure 2.3. In interpreting results, however, bear in mind that it is

FIGURE 2.3 Sample Sentence Completion Form

1. I like _____.
2. Eating _____.
3. I am happiest when _____.
4. School is _____.
5. My greatest fear is _____.
6. I wish I could _____.
7. There are times _____.
8. My mother _____.
9. My father _____.
10. Sometimes I wish _____.
11. I sleep _____.
12. When I dream _____.
13. I want to _____.
14. One thing that bothers me is _____.
15. Sometimes I hope _____.
16. I think I will never _____.
17. Other people are _____.
18. One thing I don't like is _____.
19. I feel sorry for people who _____.
20. My mind _____.
21. Most of the time _____.
22. I try to _____.

only an informal measure. Although it may suggest ideas about student attitudes, these hypotheses should be verified through interview, observation, and perhaps the administration of formal measures.

Occasionally, teachers may need to refer a student to mental health specialists (such as psychiatrists, psychologists, or social workers) for further evaluation and possible psychotherapy or counseling. Such referrals are needed when emotional problems are so severe that they interfere with reading progress to the extent that the student achieves little growth over an extended period of instruction.

Intelligence and Intellectual Factors

A student's intelligence may provide an estimate of his or her ability to learn. Teachers have long noted a variation in their students' response to reading instruction: One student grasps the lesson quickly, another student learns the lesson in an unusual or

unique way, and a third student has great difficulty catching on. This variation is often attributed to "intelligence" (Morris et al., 2012).

Definitions of Intelligence

Views about intelligence and its measurement have undergone many changes over the years. As generally used, *intelligence* refers to an individual's cognitive or thinking abilities or to the child's potential for acquiring school skills. In fact, most intelligence tests have been validated by comparing them with school performance.

A person's intelligence cannot be observed directly, so what is called intelligence is inferred through the student's responses in a test situation. The intelligence quotient (IQ) is a score obtained on an intelligence test, and it is a measure of performance on the intelligent test questions in relation to peers of the same age.

Current theories about intelligence suggest that several components make up the factor called *intelligence*. A student may exhibit a high capacity in one component, such as verbal abilities, and low aptitude in another, such as spatial abilities. Different tests of intelligence are based on different components of intelligence. For example, the Wechsler Intelligence Scale for Children, 4th Edition (WISC-IV), provides scores on four major components: verbal comprehension, perceptual reasoning, working memory, and processing speed. The Kaufman Assessment Battery for Children, 2nd Edition (KABC-II), divides intelligence into sequential and simultaneous processing. Another theory of intelligence proposed by Gardner (1999) is that of multiple intelligences. Gardner proposes that people have many different intelligences. Gardner suggests eight types of intelligence: linguistic, musical, logical-mathematical, spatial, bodily kinesthetic, sense of self, sense of others, and naturalistic.

Cultural Bias in the Measurement of Intelligence

Intelligence tests have been criticized because of cultural bias. Studies show that there are race and class differences in IQ scores: Students from middle-class homes tend to score higher than children from lower-class homes. Also, intelligence test items may not match the experiences that minority and lower-class children have in their cultural environment.

Using Intelligence Tests to Determine the Existence of a Reading Disability

A reading disability is sometimes measured in terms of the difference between the student's expected reading level (usually a student's grade placement) and the student's actual reading level. Another method uses intelligence test scores to determine whether a student has a reading disability. Using this method, teachers can determine whether a significant discrepancy exists between the student's potential for reading achievement (as measured by an intelligence test) and the student's actual reading performance as measured by a standardized reading achievement test. A large gap, or discrepancy,

between reading potential and reading achievement indicates a reading disability, because the student has the potential to read much better.

In calculating a discrepancy, an intelligence test, such as the WISC-IV scale, is used to measure potential and a standardized reading test is used to measure current reading achievement. (The WISC-IV and other tests of intelligence are discussed in Chapter 4.) In calculating a discrepancy, one must (1) determine a reading expectancy level and (2) compare the expected reading level to current reading achievement.

Harris and Sipay (1985) developed a method for calculating a student's reading expectancy age (REA). This method uses a mental age (MA) to calculate whether a reading problem exists. The MA is obtained by multiplying the student's IQ by his or her chronological age (CA) and dividing the product by 100, as in the following formula:

$$MA = \frac{IQ \times CA}{100}$$

Express the MA and CA in tenths rather than years and months.
Once you obtain the MA, you can calculate the reading expectancy age (REA):

$$REA = \frac{2MA + CA}{3}$$

To convert the REA to a reading expectancy age (REG), subtract 5.2 from the REA.

For example, Marion is 10.0 years old, and she has an IQ of 120. Her MA is 12.0 years. The REA formula indicates she has a reading expectancy age of 11.3 and a reading expectancy grade of 6.1 (11.3 − 5.2). If Marion's current level of reading is 3.0, she would have a discrepancy of 3.1 years.

$$REA = \frac{2(12.0) - 10.0}{3} = 11.3$$

$$REG = 11.3 - 5.2 = 6.1$$

Reading Expectancy – Reading Achievement = Discrepancy

$$6.1 - 3.0 = 3.1$$

Table 2.2, based on the Harris and Sipay formula, helps avoid doing these calculations. If you know the IQ and CA of a student, the reading expectancy grade can then be found by noting the intersection of the CA with IQ. For students over 15 years of age, use 15.0 as the chronological age. If the CA and IQ fall between two values on a table, use the closest value. For convenience, the expectancy grade level, rather than age, is reported directly.

Concerns About Using Intelligence Tests to Determine a Reading Disability

Educators have many concerns about using intelligence tests to measure the discrepancy between intellectual ability and achievement as a means of determining a reading

TABLE 2.2 Reading Expectancy Grade Levels

	IQ Score															
	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145
6–0	—	—	—	—	—	—	—	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6
6–3	—	—	—	—	—	—	1.0	1.2	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9
6–6	—	—	—	—	—	1.1	1.3	1.5	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.2
6–9	—	—	—	—	1.1	1.3	1.6	1.8	2.0	2.2	2.4	2.7	2.9	3.1	3.4	3.6
7–0	—	—	—	1.1	1.3	1.6	1.8	2.0	2.3	2.5	2.7	3.0	3.2	3.4	3.7	3.9
7–3	—	—	1.1	1.3	1.6	1.8	2.0	2.3	2.5	2.8	3.0	3.2	3.5	3.7	4.0	4.2
7–6	—	1.0	1.3	1.6	1.8	2.0	2.3	2.6	2.8	3.0	3.3	3.6	3.8	4.0	4.3	4.6
7–9	1.1	1.3	1.5	1.8	2.0	2.3	2.6	2.8	3.1	3.3	3.6	3.8	4.1	4.4	4.6	4.9
8–0	1.2	1.5	1.7	2.0	2.3	2.5	2.8	3.1	3.3	3.6	3.9	4.1	4.4	4.7	4.9	5.2
8–3	1.4	1.7	2.0	2.2	2.5	2.8	3.0	3.3	3.6	3.9	4.2	4.4	4.7	5.1	5.3	5.5
8–6	1.6	1.9	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.4	4.7	5.0	5.3	5.6	5.8
8–9	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2
9–0	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5
9–3	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8
9–6	2.4	2.7	3.0	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.6	5.9	6.2	6.5	6.8	7.2
9–9	2.6	2.9	3.2	3.6	3.9	4.2	4.6	4.9	5.2	5.5	5.8	6.2	6.5	6.8	7.2	7.5
10–0	2.8	3.1	3.5	3.8	4.1	4.5	4.8	5.1	5.5	5.8	6.1	6.5	6.8	7.1	7.5	7.8
10–3	3.0	3.3	3.7	4.0	4.4	4.7	5.0	5.4	5.7	6.1	6.4	6.8	7.1	7.4	7.8	8.1
10–6	3.2	3.6	3.9	4.2	4.6	5.0	5.3	5.6	6.0	6.4	6.7	7.0	7.4	7.8	8.1	8.4
10–9	3.4	3.8	4.1	4.5	4.8	5.2	5.6	5.9	6.3	6.6	7.0	7.3	7.7	8.1	8.4	8.8
11–0	3.6	4.0	4.3	4.7	5.1	5.4	5.8	6.2	6.5	6.9	7.3	7.6	8.0	8.4	8.7	9.1
11–3	3.8	4.2	4.6	4.9	5.3	5.7	6.0	6.4	6.8	7.2	7.6	7.9	8.3	8.7	9.0	9.4
11–6	4.0	4.4	4.8	5.2	5.5	5.9	6.3	6.7	7.1	7.4	7.8	8.2	8.6	9.0	9.4	9.8
11–9	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.3	7.7	8.1	8.5	8.9	9.3	9.7	10.1
12–0	4.4	4.8	5.2	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.2	9.6	10.0	10.4
12–3	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.9	8.3	8.7	9.1	9.5	9.9	10.3	10.7
12–6	4.8	5.2	5.6	6.0	6.5	6.9	7.3	7.7	8.1	8.6	9.0	9.4	9.8	10.2	10.6	11.0
12–9	5.0	5.4	5.8	6.3	6.7	7.1	7.6	8.0	8.4	8.8	9.2	9.7	10.1	10.5	11.0	11.4
13–0	5.2	5.6	6.1	6.5	6.9	7.4	7.8	8.2	8.7	9.1	9.5	10.0	10.4	10.8	11.3	11.7
13–3	5.4	5.8	6.3	6.7	7.2	7.6	8.0	8.5	8.9	9.4	9.8	10.2	10.7	11.1	11.5	12.0
13–6	5.6	6.0	6.5	7.0	7.4	7.8	8.3	8.8	9.2	9.6	10.1	10.6	11.0	11.4	11.9	12.4
13–9	5.8	6.3	6.7	7.2	7.6	8.1	8.6	9.0	9.5	9.9	10.4	10.8	11.3	11.8	12.2	12.7
14–0	6.0	6.5	6.9	7.4	7.9	8.3	8.8	9.3	9.7	10.2	10.7	11.1	11.6	12.1	12.5	13.0
14–3	6.2	6.7	7.2	7.6	8.1	8.6	9.0	9.5	10.0	10.5	11.0	11.4	11.9	12.4	12.8	13.3
14–6	6.4	6.9	7.4	7.8	8.3	8.8	9.3	9.8	10.3	10.8	11.2	11.7	12.2	12.7	13.2	13.6
14–9	6.6	7.1	7.6	8.1	8.6	9.1	9.6	10.0	10.5	11.0	11.5	12.0	12.8	13.0	13.5	14.0
15–0	6.8	7.3	7.8	8.3	8.8	9.3	9.8	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.8	14.3

Age (row label, left margin)

disability (Fletcher, Coulter, Reschly, & Vaughn, 2004). The questions being asked include the following:

◆ How useful is the IQ score in measuring an individual's intelligence?
◆ Do children who are poor readers have similar characteristics, whether they have a high or a low IQ score?
◆ Are IQ scores good predictors of reading achievement?

Based on these concerns, the most recent special education law, IDEA-2004, permits schools to use another method to determine eligibility for learning disabilities services. Schools can use a response-to-intervention method to determine eligibility for learning disabilities rather than the IQ-discrepancy formula. (See Chapters 1, 6, and 8 for a discussion of response-to-intervention.) When determining whether a child has a learning disability, schools can provide intervention to an at-risk child to determine if the child responds to instruction using scientific, research-based instructional materials.

Language Factors

Language is recognized as one of the greatest of human achievements, more important than all the physical tools invented in the last 10,000 years. Language permits human beings to speak of things unseen, recall the past, and verbalize hopes for the future. People communicate with each other through a communication process. One person sends a message; the other person receives the message (Figure 2.4).
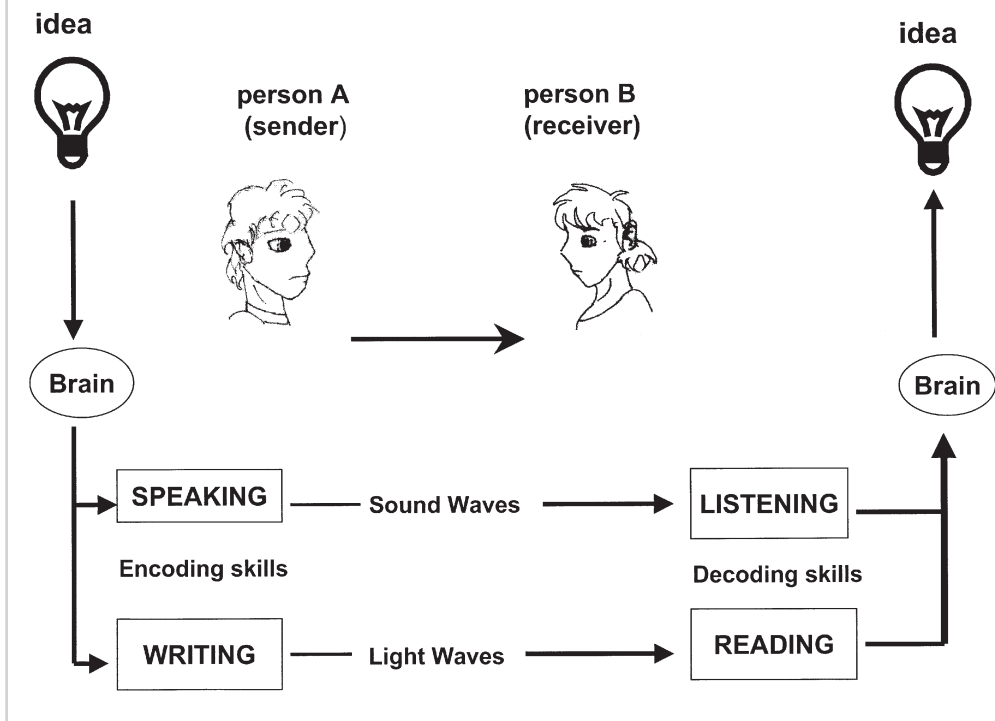
Students' ability to express and receive thoughts through oral language provides the foundation for reading; in other words, reading is based on language development. It is therefore not surprising that reading is an integral part of the language system of literate societies. Some students with reading problems have underlying problems with language. This section describes many different components of language.

Oral and Written Language

Language is an integrated system linking the oral language forms of listening and talking to the written language forms of reading and writing. As children mature, language plays an increasingly important part in the development of thinking and the ability to grasp meaning. Words become symbols for objects, classes of objects, and ideas.

As children gain competence using language in one form, they also build knowledge and experience with the underlying language system, and this learning carries over to learning language in another form. Oral language provides a knowledge base for reading and writing. Similarly, practice in writing improves both reading and oral language. Oral language problems can contribute to reading disability. About 8% of children fail to develop speech and language at the expected age (Tallal, Miller, Jenkins, & Merzenich, 1997). Children who have delayed speech and language development often experience problems in reading.

FIGURE 2.4 The Communication Process

idea   idea

person A
(sender)

person B
(receiver)

Brain   Brain

SPEAKING — Sound Waves → LISTENING

Encoding skills   Decoding skills

WRITING — Light Waves → READING

Receptive and Expressive Language

An important distinction needs to be made between receptive language (understanding through listening or reading) and expressive language (using language in speaking and writing). Usually, people's receptive abilities exceed their expressive ones; that is, they understand more words than they use in speech and can read more words than they can write.

At times a student may appear to have poor language abilities because he or she engages in little conversation or gives one-word replies to questions. However, oral expressive language can be influenced by a student's comfort level. Therefore, teachers must consider the student's language abilities in both receptive and expressive language.

Systems of Oral Language

Linguists identify four different systems involved in oral language: phonology (the sounds of language), morphology (meaningful elements within words), syntax (the grammatical aspects of language), and semantics (the vocabulary of language). Students with reading problems may exhibit difficulties in one or more of these linguistic systems.

Phonology.   Phonology refers to the sound system of a language. Oral language consists of a stream of sounds, one after the other. Each individual sound is called a *phoneme*. Important differences exist in the ways speakers of different languages think about phonemes. For example, in English the *b* and *v* sounds are two different phonemes, or sounds. In Spanish, they are simply variations on one phoneme. These differences make the mastery of English difficult for students whose native language is not English, just as Spanish or French is difficult for native English speakers.

Young children may have difficulty producing certain speech sounds. Typically children do not complete full articulation development until about the age of 8. Consonant sounds that are acquired later include /r/, /l/, /ch/, /sh/, /j/, /th/ (as in *the* and *thigh*), /s/, /z/, /v/, and /zh/ (as in *pleasure*). Young children who have not mastered these sounds in speech may have difficulty distinguishing them in reading.

Phonological or phonemic awareness is developed as children learn to recognize that words are made up of phonemes, or sounds. This ability is closely related to success in beginning reading (see Chapter 7). Auditory discrimination, or the ability to hear distinctions between phonemes (for example, to recognize that *big* and *pig* are different), is another problem area for some struggling readers (Wiig & Semel, 1984).

As discussed in Chapter 8, the phonics system in English, which links spoken sounds and written letters, is not completely regular. For example, the letter *c* represents two different sounds, as in the words *city* and *cat*. Although the English alphabet has only 26 letters, the average American English dialect contains 46 sounds.

Morphology.   The morphological system refers to meaningful units, or morphemes, that form words or word parts. For example, the word *walked* contains two morphemes: *walk* and *ed*, a morpheme that signals the past tense. Other examples of morphemes are *s* (games) and *re* (rewind). Many students with reading problems have difficulties recognizing morphemes. The ability to recognize different morphemes when they appear in print is called *structural analysis* (see Chapter 8).

Syntax.   Syntax, also known as grammar, governs the formation of sentences in a language. For example, in English, a well-formed sentence has a subject and a verb (e.g., Jane walks). Further, sentences are combined by using conjunctions, such as *Jane walks and runs*.

Children do not acquire syntactic ability passively; rather, they construct syntactic rules for themselves. For example, a young child who says "he goed" for the past tense of *go* is using the rule that the past tense is formed by the addition of *ed*, even though the child is overgeneralizing this rule. Although most basic syntactic structures are acquired by the age of 6, some growth in syntax continues through the age of 10. Development of the ability to understand complex or difficult sentence patterns may continue even throughout the high school years. Because syntactic abilities continue to develop through the school years, teaching sentence comprehension is important to reading instruction. Table 2.3 presents examples of difficult sentence types.

TABLE 2.3   Difficult Sentence Types

Category	*Example*
Passive sentence	Juan was surprise by the teacher.
Out-of-order time sequence	Move a yellow bead, *but first* move a red one.
	Move a yellow bead, *after* you move a red one.
Relative clause construction	Juan, *who is in the second grade*, is learning to read.
	The man, *who is standing on the corner*, is nice.
Appositives	Mr. Smythe, *the postman*, is very nice.
Complement structure	The fact *that Steve is silly* worries Meg.
	Steve's *being silly* worries Meg.
	Steve asked Meg what was worrying her.
Delayed reference in sentences	Juan promised Meg *to go*.
	Juan asked Leia *what* to feed the doll.
Anophoric, or reference, sentences	Jake saw Melody and *he* said hello.
	Jake saw Melody and said hello.
Sentence connectives	*If you don't* do this, I will go.
	Unless you do this, I will go.

Semantics.   The semantic system refers to the acquisition of vocabulary or word meanings. Compared with other languages, English has an extremely large vocabulary. The complexity and rich variety of English words makes the mastering of English vocabulary a lifelong task. Because vocabulary is highly related to reading achievement, limited vocabulary development can seriously hamper reading.

Speech Problems and Language Disorders

Reading is an integral part of the language system. Underlying problems with language can affect the ability to read. Two types of language problems are speech problems and language disorders.

Speech Problems.   Children display three kinds of speech problems: articulation problems (the inaccurate production of sounds), voice disorders (improper pitch or intonation), and stuttering (breath or rhythm problems). Although low-achieving readers have a somewhat higher incidence of speech problems, these problems do not necessarily lead to reading problems. Nevertheless, students who exhibit speech difficulties should be referred to a speech-language specialist for further evaluation and, if needed, therapy. If a speech problem is noted, hearing acuity should be tested, because sometimes a hearing impairment is the cause of a speech problem. Students with speech problems can be embarrassed when asked to read orally, and therefore oral reading should be avoided for them.

Language Disorders.   Language disorders refer to the slow or atypical development of receptive and expressive oral language. The child with a language delay is slow

at talking and poor in vocabulary development and may have difficulty learning to formulate sentences. Language delay is often a forerunner of later difficulty in reading. If a reading teacher suspects an underlying language disorder, a speech-language specialist can provide further evaluation and treatment.

Rapid Automatized Naming (RAN).   Some children with language delays have difficulty with rapid automatized naming (RAN); that is, they cannot quickly and automatically name objects and are slow with word finding. For example, when given the task of naming pictures as they are shown, these children cannot rapidly produce the names of the pictures. A slowness in word finding and naming is an accurate predictor of later reading disabilities. Slowness in naming is probably due to memory retrieval problems that make accessing verbal and phonological information difficult (de Jong & Vrielink, 2004; German, 2001).

English Language Learners (ELLs)

English language learners (ELLs) are students whose native language is not English and who are learning English as a second language. Today, one in five students speaks a language other than English in his or her home. ELL students often have difficulty with reading because they are not yet proficient with the English language (August & Shannahan, 2006; Genesee, Lindholm-Leary, Saunders, & Christian, 2006; Sullivan, 2011).

Chapter 14 covers in greater detail the growing number of students in the United States and Canada who are ELL students and are learning English as a second language. Teaching strategies for instructing ELL students also are explored.

Reading in English poses a serious hurdle for ELL students. They may acquire the ability to use spoken English, but becoming proficient in the written language, reading, and writing often takes many years. ELL students are often identified as having learning disabilities (Sullivan, 2011).

Physical Factors

This section describes a variety of physical factors that affect reading problems.

Hearing Impairment

Because the ability to acquire reading skills may be severely affected by even moderate or temporary hearing loss, students should be screened for auditory acuity, or the ability to hear sounds. Auditory acuity is different from the ability to work with or distinguish words.

Hearing loss has several causes: childhood diseases, such as scarlet fever, meningitis, mumps, or measles; environmental conditions, such as repeated exposure to loud noises; congenital conditions, such as the malformation of or an injury to the hearing mechanism; temporary or fluctuating conditions, due to allergies, colds, or even a buildup of wax in the ears; maternal prenatal infections, including rubella; middle-ear infection or problems; and the use of certain medications, such as aminoglycosides and some diuretics.

Screening for Hearing Impairment.   Auditory acuity is measured in two dimensions: frequency and intensity. Frequency refers to the ability to hear different pitches, or vibrations of a specific sound wave. The pitches are actually musical tones; the higher the tone, the higher the frequency. Because different sounds of the spoken language have different frequency levels, a person may be able to hear sounds clearly at one frequency but not at another.

Intensity refers to the loudness of a sound and is measured in decibels; the louder the sound, the higher the intensity, or decibel level. How loud does a sound (or decibel level) have to be before a person should be able to hear it? A person who can hear soft sounds at 0 to 10 decibels has excellent hearing. Students who cannot hear sounds at 30 decibels are likely to encounter some difficulty in learning.

If an auditory screening indicates a hearing problem, students should be referred to an audiologist (a nonmedical specialist in hearing) or to an otologist or an otolaryngologist (medical specialists in hearing). Although the audiometer is a good device for screening, only a specialist trained in measuring and treating hearing difficulties can make a final determination of the extent and nature of a possible hearing impairment.

Alleviating Hearing Problems.   Medical specialists can also take measures to alleviate a student's hearing problem. Sometimes, medication or tubes in a child's ear can alleviate clogged passages and improve hearing. Other children may need to be fitted with hearing aids.

Sometimes students pass the audiometric screening test yet still have hearing problems. One student, for example, had a sporadic hearing loss resulting from allergies, but because her visits to the pediatrician came after the allergy season, the hearing problem went undetected for years. Although the hearing problem was eventually cleared up, she missed some important early language growth, and her difficulties in reading continued into the later grades. Thus, if a teacher suspects a hearing loss, the student should be referred to a professional for continued monitoring.

Even moderate loss in the ability to hear may substantially affect the ability to read. A hearing loss impedes communication with teachers and peers, and so the student has difficulty functioning in class. Students may have difficulty learning phonics because they do not hear certain sounds. A low-frequency hearing loss (500–1500 Hz) may cause difficulty with vowel sounds; high-frequency losses (2000–4000 Hz) may cause difficulty with consonant sounds that continue, such as /s/, /z/, /j/, /v/, /th/, /sh/, and /ch/.

The most devastating effect of a hearing loss is that it prevents normal language development. When children cannot hear adequately, they are deprived of the communication necessary for normal language acquisition and growth. Their vocabulary, grammar, and verbal thinking processes often remain poorly developed, and their language skills may be inadequate to acquire higher-level reading skills.

Visual Impairment

The ability to see clearly is critical to the reading process. However, the relationship between reading and vision is complicated. A particular visual impairment may impede

reading in one individual, but another person with a similar problem may be able to read effectively.

Types of Vision Problems.   Several types of visual impairment are of concern to the reading teacher. These impairments include myopia, hyperopia, astigmatism, binocular vision problems, and color perception.

Myopia, or nearsightedness, is the inability to see objects at a distance. Myopia is caused by an elongated eyeball that focuses visual images in an improper way. Although the problem of myopia is not highly related to reading difficulty, a student with myopia could have difficulty seeing objects such as writing on the blackboard (Lerner & Johns, 2012). A substantial portion of the population is myopic; the condition often begins between the ages of 9 and 12. Myopia is usually correctable with eyeglasses.

Hyperopia, or farsightedness, is the inability to see objects clearly at nearpoint (that is, 13 inches or less). In children, it is often caused by an eyeball that is too short to permit focusing. Children are typically hyperopic until they reach the age of 7 or 8; thus, primary-grade textbooks generally contain large print. If hyperopia is a continuing problem, it can be corrected with lenses. Because reading is done at nearpoint, hyperopia can affect the ability to read.

An astigmatism is the blurring of vision because of irregularities in the surface of the cornea. This condition is generally correctable with lenses.

Binocular difficulties refer to the inability to focus both eyes on the same object, one of the most complicated of the visual functions. Both eyes focus together easily on an object that is far away, but as that object moves closer, the eyes must turn inward to maintain their focus. If the eyes cannot focus together, a double image may result. This condition is not tolerated well by the brain, and the image of one eye may be suppressed, possibly leading to a deterioration of that eye. In severe cases, the eyes appear to be crossed. Binocular vision problems may blur vision and also cause the reader to become easily fatigued; thus, they can interfere with reading.

Unfortunately, binocular vision is not as easily correctable as other visual problems. Three strategies used to correct binocular problems are surgery (often used to correct a cross-eyed condition), corrective lenses in eyeglasses, and visual exercises to strengthen eye muscles. Opinions differ among eye specialists about the value of visual exercises as a treatment in overcoming binocular difficulties (American Academy of Pediatrics, 1992; Solan, 2004).

Screening for Visual Impairment.   Students with reading problems should be screened for possible visual difficulties. An adequate visual screening should at least test nearsightedness, farsightedness, and binocular visual functioning. As with the hearing tests that are used by the reading teacher, visual tests given by schools or teachers are intended only for screening purposes. Students who do poorly on a visual screening test should be referred to an ophthalmologist (a physician who specializes in eye problems) or to an optometrist (a nonmedical eye specialist) for further testing. Vision tests that can easily be administered by a teacher include the Keystone Telebinocular Vision Tests and the Orthorater instruments.

Gender Differences

More boys than girls are identified as having reading disabilities. In fact, about four times more boys are in special reading programs (Shaywitz, 2003), yet research sponsored by the National Institute of Child Health and Human Development (NICHD) shows that as many girls as boys may have reading disabilities, but the girls are not being identified. Girls with a reading disability are considered an underserved population (National Reading Panel, 2000).

Several reasons have been suggested for more boys than girls being identified with reading disabilities:

◆ Boys mature physically later than girls. At the age of beginning reading instruction, boys may not have developed certain skills that aid in reading, such as the ability to pay attention and the ability to manage pencils and books.
◆ The school environment may affect boys and girls differently. Most primary-grade classrooms in the United States are taught by female teachers, and boys may have more difficulty relating to them. In addition, rewards tend to be given for being neat and quiet in the primary grades, and these qualities are more characteristic of girls than boys.

The fact is that more boys are placed in special reading classes. Teachers must make these students feel welcome and happy in the reading environment.

Other Physical Problems

Good physical health is also an important basic condition for learning. The pupil who is listless, tires easily, and cannot maintain attention may have an underlying medical problem. Prolonged illness, especially if accompanied by high fevers and long periods of absence from school, can also contribute to a reading problem.

General Health and Nutrition. Nutrient deficiency in infancy or early childhood has been shown to result in anatomical and biochemical changes in the brain. Early malnutrition impairs growth, both of the body in general and of the central nervous system in particular. Other health concerns include nutrition problems, rheumatic fever, asthma, lack of sleep, biochemical imbalances, and endocrine problems. A general physical examination is often recommended as part of a complete assessment for reading problems.

Injuries and Illnesses That Affect the Brain. Concussions, or swelling of the brain, can affect cognitive functioning. Concussions are often caused by injuries. If a brain injury results in unconsciousness, a student has experienced a concussion. In addition, some illnesses, such as spinal meningitis and brain tumors, can destroy cognitive functioning.

Summary

Numerous factors are associated with reading disabilities. Experts recognize today that a student's reading problem can be linked to intrinsic neurological and cognitive factors.

Neurological and cognitive factors within the student affect reading achievement. Considerations include differentiated instruction, working memory, and cognitive strategy instruction.

Environmental factors include the home, school, cultural, and social environments. The home is the child's first environment, where the critical learning of the early years occurs. The school environment is another important system for the student, one that is often difficult for students with reading problems. Students with reading disabilities tend to have difficulty in their social environments. The cultural environment is another system that affects attitudes and interest in reading. Methods of assessing environmental systems include several systems of observation.

Emotional problems can influence reading achievement. Among the emotional problems exhibited by poor readers are emotional blocks, hostility, aggressiveness, learned helplessness, low self-esteem, depression, and anxiety. Emotional factors may be informally assessed using the sentence completion activity.

Intelligence refers to the potential for learning. Current views of intelligence divide intelligence into several components. Intelligence tests measure scholastic aptitude. Although much of what is called intelligence is inherited, a child's intelligence can be dramatically influenced by environmental conditions. In general, the child's experiences and environment, including teaching, can make a significant difference.

Physical factors are also related to reading disability. Hearing impairment, including a mild or temporary hearing loss, can affect language learning and learning to read. The audiometer is used to screen for hearing loss. Visual impairment is also related to reading disability. Visual problems include myopia, hyperopia, astigmatism, poor binocular vision, and perhaps color sensitivity. Teachers can screen for visual impairment. Other physical factors, such as general health and nutrition or neurological conditions, are related to reading disabilities. Reading difficulties are identified more frequently in boys than girls; however, research shows that as many girls may have reading difficulties but are just not identified.

References

Action for Children. (2008). *Child poverty in North Carolina: A preventable epidemic*. Raleigh, NC: Author. Retrieved from http://www.ncchild.org

Allington, R. L. (1986). Policy constraints and effective compensatory reading instruction: A review. In J. Hoffman (Ed.), *Effective teaching of reading. Research and practice* (pp. 261–289). Newark, DE: International Reading Association

American Academy of Pediatrics. (1992). *Learning disabilities, dyslexia, and vision*. *American Academy of Pediatrics*, 90, 124–126.

Bender, W. (2006). *Differentiating instruction for students with learning disabilities*. Arlington, VA: Council for Exceptional Children.

Blachman, B., Tangel, D., & Ball, E. (2004). Combining phonological awareness and word recognition instruction. *Perspectives: The International Dyslexia Association, 24*(9), 12–14.

Critchley, M. (1970). *The dyslexic child*. Springfield, IL: Charles C. Thomas.

de Jong, P., & Vrielink, L. (2004). Easy to measure: Hard to improve (quickly). *Annals of Dyslexia, 54*(1), 39–64.

Díaz-Rico, L. (2012). *A course for teaching English learners.* Boston: Pearson Education.

Fletcher, J., Coulter, W., Reschly, D., & Vaughn, S. (2004). Alternative approaches to the definition and identifying of learning disabilities: Some questions and answers. *Annals of Dyslexia*, *54*(2), 304–321

German, D. (2001). *Its on the tip of my tongue*. Chicago, IL: Word Finding Materials Inc. Word Finding Materials.

Harris, A., & Sipay, E. (1985). *How to Increase Reading Ability: A Guide to Developmental Reading*. New York: David McKay.

Hinshelwood, J. (1917). *Congenital word-blindness*. London: H. K. Lewis.

Hotz, R. L. (2008, May 2). How alphabets shape the brain. *Wall Street Journal*, Science, p. A10.

Krawiec, N., & Montague, M. (2012, Spring). A focus on cognitive stratgegy instruction. *Current Practice Alerts, TeachingLD.Org*, *19*, 1-4.

Lavoie, R. (2007). *The motivation breakthrough*. New York: Touchstone (Simon & Schuster).

Lerner, J. W., & Johns, B. (2012). *Learning disabilities and related mild disabilities: Characteristics, teaching strategies, and new directions*. Florence, KY: Cengage Learning

Morgan, W. P. (1896, November). A case of congenital word blindness. *British Medical Journal*, *2*, 1378.

Morris, R., Lovett, M., Wolf, M., Sevci, R., Steinbach, R., Frijters, J., & Shapiro, M. (2012, March/April). Multiple-component remediation for developmental reading disabilities: IQ, socioeconomic status, and race as factors in remedial outcome. *Journal of Learning Disabilities*, *452*, 99–127.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Report of the subgroups* (National Institute of Health Pub. No. 00–4754). Washington, DC: National Institute of Child Health and Human Development.

Ortiz, A. (1997). Learning disabilities occurring concomitantly with linguistic differences. *Journal of Learning Disabilities*, *30*, 221–232.

Orton, S. (1937). *Reading, writing and speech problems in children*. New York: Norton.

Schuchardt, K., Maehler, C., & Hasselhorn, M. (2008). Working memory deficits in children with specific learning disorders. *Journal of Learning Disabilities*, *41*(6), 514–523.

Shaywitz, S., Morris, R., & Shaywitz, B. (2008). The education of dyslexic children. From childhood to young adulthood. *The Annual Review of Pychology*, *50*, 451–475.

Silver, A. (2006). *The misunderstood child*. New York: Three Rivers Press.

Siok, W. T., Niu, Z., Jin, Z., Perfetti, C. A., & Tan, L. H. (2008). A structural–functional basis for dyslexia in the cortex of Chinese readers. *Proceedings of the National Academy of Sciences of the USA*, *115*(14), 5561–5565.

SLD evaluation: Linking cognitive assessment data to learning disabilities. *LDA Newsbriefs*, *33*(3), 1, 8–9.

Solan, H. (2004). Learning-related vision problems: How visual processing affects reading efficiency. *Learning Disabilities: A Multidisciplinary Journal*, *13*(1), 25–32.

Stanovich, K. E. (1993–1994). Romance and reality. Distinguished educator series. *The Reading Teacher*, *47*, 280–291.

Sullivan, A. (2011). Disproportionality in special education identification and placement of English language learners. *Exceptional Children*, *77*(3), 317–334.

Swanson, H. L., & O'Conner, R. (2009, November/December). The role of working memory and fluency practice on the reading comprehension of students who are dysfluent readers. *Journal of Learning Disabilities*, *42*(6), 529–548.

Tallal, P., Miller, S., Jenkins, W., & Merzenich, M. (1997). The role of temporal processing in developmental language-based learning disorders: Research and clinical implications. In B. Blachman (Ed.), *Foundations of reading acquisition and dyslexia* (pp. 49–60). Mahwah, NJ: Lawrence Erlbaum.

Tomlison, C. (2001). *How to differentiate instruction in mixed ability classrooms*. Alexandria, VA: Association for Curriculum and Development.

U.S. Census Bureau. (2010). *Income, poverty, and health insurance coverage in the United States*. Washington, DC: Author.

MyEducationLab™

Go to topic 1: Reading Instruction and topic 11: Reading Difficulties & Intervention Strategies in the MyEducationLab (www.myeducationlab .com) for *Reading Problems: Assessment and Teaching Strategies*, where you can:

◆ Find learning outcomes for reading instruction and reading difficulties and intervention strategies, along with the national standards that connect to these outcomes.

◆ Complete Assignments and Activities that can help you more deeply understand the chapter content.

◆ Apply and practice your understanding of the core teaching skills identified in the chapter with the Building Teaching Skills and Dispositions learning units.

◆ Examine challenging situations and cases presented in the Iris Center Resources.

◆ Access video clips of CCSSO National Teachers of the Year award winners responding to the question, "Why Do I Teach?" in the Teacher Talk section.

◆ Practice targeting instruction and making content accessible for all students with A+RISE activities.

◆ Strengthen your understanding and usage of the English language in writing with the Grammar Tutorial.

◆ Gain experience in choosing appropriate literature and integrating the best titles into language arts instruction with the Children's and Young Adult Literature Database.

◆ Track the month-by-month literacy growth of five second graders with the Literacy Portraits.

◆ Create, update, and share quality lesson plans with the Lesson Plan Builder.

◆ Access state licensure test requirements, overviews of what the tests cover, and sample test items in the Certification and Licensure section.

◆ Check your comprehension of the content covered in the chapter with the Study Plan. Here you will be able to take a chapter pretest, receive feedback on your answers, and then access personalized Review, Practice, and Enrichment exercises to enhance your understanding of chapter content. After you complete the exercises, take a posttest to confirm your comprehension.

Overview of Reading and Reading Problems

Teaching reading IS rocket science.

– Louisa Moats, 1999

Introduction

The purpose of this book is to assist all teachers who work with children who have reading problems. We provide many instructional strategies and assessment tools to help teachers understand reading problems and instruct students in their struggle to read. To do something well, people must enjoy doing it, and so we offer guides for teachers to inspire a love of reading. We include many references to children's literature and instructional materials that will help students realize the wealth of information and enjoyment that reading offers. Many struggling readers have learned from the strategies we present in this book. We hope that the students you teach also will benefit from them.

Who has a reading problem? To answer this question, we relate the stories of several students who were brought to our reading center because they were encountering difficulty in reading. Strategy Snapshot 1.1 describes five students who have reading problems.

Strategy Snapshot 1.1

Children With Reading Problems

Each student with a reading problem is unique. The causes and characteristics of the reading problem are different for each student. To illustrate these variations, we describe five students who were in our reading clinic.

Jason.   Jason's mother began to suspect that her son was not developing in a normal fashion during his early years. He was later than other children in sitting by himself, in crawling, and in walking. He was slow to talk, and his speech was difficult to understand. Jason's concerned parents took several measures to help him, including obtaining speech therapy, participating in a motor training program, and delaying his entrance to school by enrolling him in a preschool program for an extra year. These steps did not eliminate Jason's problems. At the age of 11, when he was in the fifth grade, Jason entered our reading center. By this time, he was falling behind his classmates, both socially and academically. While the rest of the class read from a literature series, Jason was struggling with an easy-to-read book.

Diane.   Diane was born to a substance-addicted mother. At age 8, she was brought to our reading center by her grandmother. Diane was identified by her school as a special education student, and she had extreme difficulty reading even the simplest material. Her teachers were confounded and frustrated with her poor achievement in reading and by her lack of self-discipline. They had given up even attempting to teach Diane to read.

Ilya.   Ilya was a child in a family of struggling Russian immigrants. He did not go to kindergarten because his parents were unable to help him. Ilya was intelligent and able, but he was not proficient in English. By the time he entered the reading center at the end of first grade, he was a half a year behind his classmates.

Gail.   Gail's mother became concerned when her daughter's once-excellent grades began to fall in fourth grade. She was having difficulty in science and social studies. Gail was confused by the difficult words, sentences, and concepts in her textbooks.

Roy.   Roy was an adolescent who was classified as a special education student by his school. He had many learning problems. He could not do his homework. Despite his teacher's best efforts, he entered high school at a second-grade reading level. He came to the reading center when he was unable to pass the written examination for a driver's license. For Roy, coming for assistance was a desperate cry for help before he completed high school.

Reflective Questions:
  1. In what ways are these five children different?
  2. In what ways are these five children similar?

Students who have serious difficulty in learning to read face many adverse consequences. For many, the situation is heartbreaking. Reading problems can be devastating for students and their families. In school, these children are forced to face their inadequacies day after day. As failing students, they are often rejected by teachers and peers. In their academic classes, students with reading problems are assigned textbooks that they cannot read, and they are given homework they cannot do. A common consequence is that the failing student turns to misbehavior, or the student may simply give up, displaying a trait called "learned helplessness." It is not surprising that poor readers often suffer from low self-esteem. As these children mature, they often find that the doors to personal enrichment and career opportunities are closed to them.

Educators, parents, physicians, and psychologists, as well as society in general, share a concern about individuals who do not learn to read. However, the primary responsibility for reading instruction belongs to teaching professionals. The teacher is the coordinator and deliverer of instructional services, the person most able to help poor readers. Throughout our nation, hundreds of thousands of classroom teachers, reading teachers, and special education teachers assist these students, helping them read better and enjoy reading.

Reading Problems: A National Dilemma

Although teaching is a personal activity, professionals should recognize the overall situation of reading problems in our nation. What are the costs of reading problems from a national perspective? If children in a modern society do not learn to read, they cannot succeed in life. Without the ability to read, opportunities for academic and occupational success are severely limited. Society suffers when citizens cannot read adequately. People with low reading levels comprise many of those who drop out of high school, the unemployed, the poor, and those convicted of crimes. The problems of the nation's schools, the growth of poverty, and the loss of family values all show an association with poor reading.

A few generations ago, people managed to get along reasonably well in the business and social worlds without literacy skills, but this is no longer possible in today's world. Students face more mandatory tests required by federal, state, and local laws than ever before. Periods of compulsory education are longer, and students need diplomas and degrees to obtain jobs. These hurdles, as well as the necessity of filling out application forms and taking licensing examinations, make life for the poor reader uncomfortable and, indeed, full of impassable barriers.

It is said that the "Children must learn to read so that later they can read to learn." The ability to read is a basic requirement for all academic subjects. Failure in school subjects can often be traced to inadequate reading skills. Poor reading leads to many kinds of problems. Poor readers have fewer opportunities for gainful employment. Youth who drop out of high school have twice the unemployment rate, they have few opportunities for continued training, and they often lack the qualifications for postsecondary school or college (Cameto, Knokey, & Sanford, 2013; Wagner, Newman, Cameto, Levine & Garza, 2006).

National Reading Levels

How serious are problems of illiteracy in the United States? National longitudinal studies show that more than 17.5% of the nation's schoolchildren, or about 1 million children, will encounter reading problems in the crucial first 3 years of their schooling (Lerner & Johns, 2012; Lyon, 2003; National Reading Panel, 2000). Accumulating evidence shows that many U.S. schoolchildren are not mastering essential reading skills. The National Assessment of Education Progress (NAEP) is a national test that follows student learning. NAEP (2011) results show that more than 67% of fourth-grade students performed below proficient reading levels. These problems persisted in eighth grade, with 76% of students reading below proficiency levels. More than 10% of fourth-grade children could not even participate in the NAEP test because of their severe reading difficulties. According to the NAEP reports (2011), 26% of fourth graders are unable to read at even a basic level. Among 17-year-olds, only 33% were able to understand complex information, and only 3% were reading at the highest level of understanding (NAEP, 2011; National Reading Panel, 2000). Moreover, reading books is on a decline. Only 57% of Americans read a book in 2002 (National Endowment for the Arts, 2004). Overall, the statistics about illiteracy are dismal. Studies from the National Longitudinal Transition Study (Wagner et al., 2006) show that the following:

◆ Eighty-five percent of delinquent children and 75% of adult prison inmates are illiterate.
◆ Ninety million adults are, at best, functionally literate.
◆ The cost to taxpayers of adult illiteracy is $224 billion a year in terms of welfare payments, crime, job incompetence, lost taxes, and remedial education.
◆ U.S. companies lose nearly $40 billion annually because of illiteracy.
◆ Adults on the lowest level of the literacy scale comprise 44% of the population and are more likely to live in poverty than adults at higher levels of literacy.

SAT and ACT Reading Scores Hit New Low

The SAT scores in the areas of reading and writing fell in 2011, according to the College Board officials (2013). In fact, the reading and writing scores on the SAT were the lowest ever recorded. The reading scores in 2011 fell to 497 from 500 in 2010. These data indicate that many students are not ready for college. This is the lowest score since 1972 (Banchero, 2011). *Education Week* reported a 3-point decline in critical reading for the year 2011 (Adams, 2011). The ACT reported that only 25% of all high school graduates who took the exam were ready for college (Banchero, 2011).

Reading Needs in Today's World

In today's world, high technology and automation have spurred a demand for highly trained people. Because jobs rapidly become obsolete, the process of retraining is a necessity. Workers in every occupation will have to retrain themselves to prepare for new jobs many times during their work careers. The ability to read efficiently is a key tool for retraining and maintaining employment.

With fewer jobs available for unskilled and semiskilled workers, they are likely to end up being chronically unemployed. Moreover, the lack of reading skills among large numbers of young adults threatens to divide society deeply between the highly literate and a low-income, low-achieving underclass unequipped for educational and professional advancement.

Recent Influences on the Teaching of Reading

Recent events and movements have an influence on the teaching of reading. These include current laws, important national studies, and contemporary philosophies about teaching. In this section, we describe several of these influences: (a) response-to-intervention (RTI), (b) the National Reading Panel and the components of reading, (c) differentiated instruction, (d) common core standards, and (e) the influence of social media.

Response-to-Intervention

Response-to-intervention (RTI) offers a relatively new approach to instruction and assessment in reading, as well as in other academic subjects. RTI is advocated by the U.S. Department of Education in the Individuals with Disabilities Act (IDEA) of 2004 and in the regulations for this law (2006). RTI is an instructional method for all students in general education and requires that schools use an evidence-based or research-based instructional method that is supported by research. An underlying assumption of RTI is that students will learn to read and reading problems will be resolved by using an evidence-based method of reading instruction.

Evidence-based instruction is described in the No Child Left Behind (NCLB) Act of 2001 as instructional programs that apply rigorous, systematic, and objective

procedures to obtain valid knowledge that is relevant to the development of instruction. According to NCLB, evidence-based programs have to be objective, valid, reliable, systematic, and research based.

In the classical approach to reading assessment, an evaluation of a student encountering a reading difficulty is the initial step to determine the nature of the student's reading problem. (See Chapter 4 and Chapter 5.) RTI differs from the classical approach to reading assessment. It first provides instruction, and an assessment or evaluation occurs only if the student does not respond successfully to the intervention or instructional method after several levels or tiers of instruction. Each tier of intervention provides increasing levels of intensity of instruction taught in smaller groups (Fuchs & Fuchs, 2006; Hughes & Dexter, 2011). The underlying expectation of RTI is that the evidence-based instruction will reduce the prevalence of reading failure.

There are a number of models or versions of RTI, as well as suggested numbers of tiers or levels of instruction for RTI. A common approach, however, is to use three tiers of instruction, which are described here (Division for Learning Disabilities, 2007).

The RTI process begins with Tier 1, which is high-quality instruction (or evidence-based intervention) that is given to all students in the general education class. Students who do not respond adequately to the high-quality instruction in the general education class go to Tier 2. In Tier 2, students are taught with the evidence-based program but with increasing intensity, in a smaller group of children, and with the use of supplemental programs. Students who do not respond successfully in Tier 2 go to Tier 3. In Tier 3, children are taught with the evidence-based program with even greater intensity in even smaller groups, and more instructional and behavioral supports (Division for Learning Disabilities, 2007).

Tiers of Intervention.   As noted, the RTI model highlights the concept of tiers of intervention. Different models of RTI use different numbers of tiers (or levels of intervention). Many schools use three tiers of intervention, which are described here (Division for Learning Disabilities, 2007).

◆ **Tier 1.** Tier 1 intervention is high-quality instruction delivered to all students in the general education classroom. High-quality instruction uses a method that is judged as a scientifically based or evidence-based program.
◆ **Tier 2.** Tier 2 is for students who are not progressing (responding) adequately in Tier 1. Students in Tier 2 are given additional high-quality instruction in a smaller group and supplemental instructional programs. Students who respond positively to the intervention in Tier 2 return to the general education class. Students who do not respond to Tier 2 intervention go into Tier 3.
◆ **Tier 3.** In Tier 3, students are given even more intensive intervention using evidence-based methods in smaller groups, more instructional and behavioral supports, supplemental instructional programs, and more probes of progress. Students who respond adequately to this intervention go back to Tier 2 and eventually to Tier 1. Students who do not respond adequately may be recommended for a comprehensive evaluation or assessment.

The three tiers of intervention are illustrated in Figure 1.1.

Additional information about teaching strategies for RTI is provided in Chapter 6, Providing Instruction and Intervention Strategies.

It is significant to note that the Office of Special Education Programs (OSEP) released a memo clarifying that RTI cannot delay timely initial evaluations for special education services (OSEP, 2011). Parents have expressed concern that RTI is slowing down the initial evaluation of their children. The Department of Education explains that although RTI can be part of the comprehensive evaluation of a student, it cannot be used to delay the initial evaluation or to stand as the entire evaluation.

The National Reading Panel and the Components of Reading

The National Reading Panel, a commission of reading scholars, was assigned by Congress to conduct an evidence-based assessment of the research literature on reading and its implications for reading instruction. Finding that over 100,000 research studies on reading had been published since 1966, the National Reading Panel established stringent criteria for the inclusion of research studies in its evidence-based assessment (National Reading Panel, 2000). To order a free copy of the National Reading Panel report, go to www.nationalreadingpanel.org.

As shown in Figure 1.1, the two major components of reading are word recognition and reading comprehension. Word recognition has the subcomponents of phonological awareness and fluency. Reading comprehension includes the subcomponents of vocabulary and enjoyment of reading. Each of these components of reading is discussed in this book (see Table 1.1). The National Reading Panel (2000) concluded that instructional reading programs must include these components to be considered evidence-based reading programs:

1. Phonemic awareness
2. Phonics

FIGURE 1.1 Components of Reading
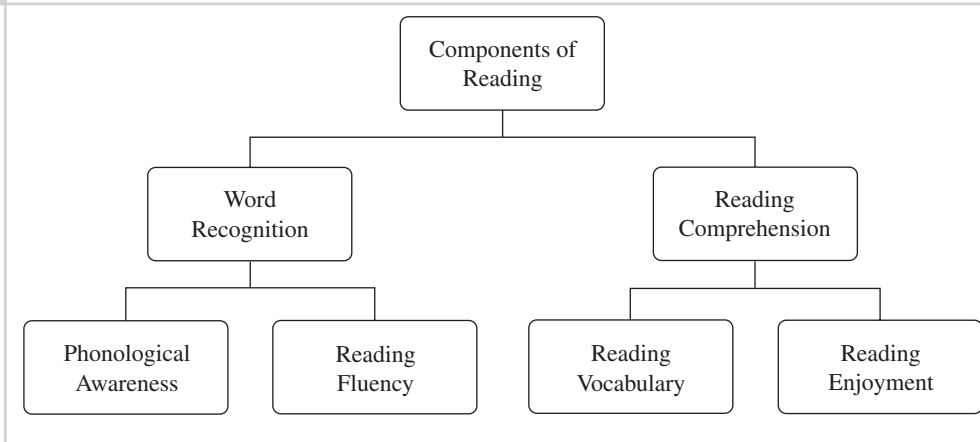
TABLE 1.1   Components of Reading

Component	Chapter
Word Recognition	Chapter 8: Improving Word Knowledge: Word Recognition
Reading Comprehension	Chapter 11: Comprehension of Narrative Text
	Chapter 12: Comprehension of Informational Text
Phonological Awareness	Chapter 7: Early Literacy
Reading Fluency	Chapter 9: Improving Word Knowledge: Fluency
Reading Vocabulary	Chapter 10: Vocabulary Development and Listening Comprehension

3. Fluency
4. Vocabulary
5. Text comprehension

Differentiated Instruction

Differentiated instruction offers another approach for reading assessment and instruction. Differentiated instruction proposes that teaching should be geared to each student's way of learning and interests. Instead of using a standardized approach for all students, the specific needs and characteristics of each individual student are taken into consideration. One of the biggest mistakes teachers make is to treat everyone equally when it comes to learning. Children process information differently from one another: Some form images, others form words, and still others form sentences. Differentiated instruction takes each student's individual needs into account (Tomlinson & Inbeau, 2010). The basic underlying beliefs for differentiated instruction include the following ideas:

◆ No two children are alike.
◆ No two children learn in an identical way.
◆ It is not possible to treat everyone the same when it comes to learning.
◆ An enriched environment for one student is not necessarily an enriched environment for another.

In the general education classroom, there will be differences among students in their prior knowledge about a subject, in the skills they already possess, in their motivation to learn, and in their proficiency with English. When teachers take such differences into account, they can make adaptations to the curriculum and use a variety of teaching and learning strategies. Teachers can provide tasks at varied levels of difficulty, give students varying degrees of support, arrange groups to meet student

needs, and vary time allotments for different students (Bender, 2006; Tomlinson, Brimijoin, & Navaez, 2008; Tomlinson & Inbeau, 2010; Tomlinson & McTighe, 2006).

Differentiated instruction offers a way to understand each child. This approach emphasizes that children do not respond to a one-size-fits-all curriculum; instead, they need teaching that responds to their personal talents, interests, strengths, proclivities, and cognitive ways of processing information. Children process information differently from one another. Differentiated instruction takes the child's individual needs into account in planning instruction (Tomlinson, 2003). Table 1.2 summarizes considerations in differentiated instruction.

In many ways, differentiated instruction is similar to basic ideas in teaching special education students, especially students with learning disabilities. Special education seeks to find the way to teach each unique, exceptional student. However, differentiated instruction applies to *all* children in the classroom (Tomlinson, 2003; Tomlinson & Inbeau, 2010; Tomlinson & McTighe, 2006).

Differentiated instruction for teaching reading requires that the implementation looks different for each student and each assignment. In teaching reading, teachers should:

1. Use diagnostic assessments to determine individual student readiness. Informal or formal assessments can be used. For example, the teacher can give a pretest, question students about their background knowledge, or use a KWL chart to discover what students already know, what they want to know, and what they have learned about a topic. (See Chapter 12 for a discussion of KWL charts.)

2. Determine individual student interest. For example, use an interest inventory and/or include students in the planning process. Teachers can ask students to tell what specific interests they have and use these interests to develop lessons.

3. Identify student learning styles and environmental preferences. Use a learning style inventory, ask students how they learn best, and observe student activities. To identify environmental preferences, determine if students work best in large or small groups. What environmental factors might inhibit student learning?

TABLE 1.2 Considering Differentiated Instruction

- Know the student's interests. Try to use those interests in teaching the student and incorporate them into the curriculum.
- Know the student's learning preference. How does the student like to learn—visually, auditorily, or by doing things such as building something or creating art?
- Know the student's learning pace or rate. Does the student like to do things quickly? Does the student need extra time to process what is being learned?
- What are the student's personal interests? How can these interests be incorporated into the curriculum?
- What talents does the student have—athletics, music, debate, playing chess, art? How can they be brought into curriculum?
- What is the student's level of English proficiency? Is the student an English language learner (ELL)? Can the student's facility with a native language be used in instruction?

Common Core Standards

The Common Core State Standards Initiative is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO). The standards were developed in collaboration with teachers, school administrators, and experts to provide a clear and consistent framework to prepare our children for college and the workforce (CCSSO, 2013).

These standards define the knowledge and skills students should have within their K–12 education careers so that they will graduate high school and be able to succeed in entry-level, credit-bearing academic college courses and in workforce training programs.

Characteristics of the standards are as follows:

◆ Are aligned with college and work expectations;
◆ Are clear, understandable, and consistent;
◆ Include rigorous content and application of knowledge through high-order skills;
◆ Build upon strengths and lessons of current state standards;
◆ Are informed by other top-performing countries so that all students are prepared to succeed in our global economy and society; and
◆ Are evidence-based.

Reading Common Core Standards

◆ The standards establish a "staircase" of increasing complexity in what students must be able to read so that all students are ready for the demands of college- and career-level reading no later than the end of high school. The standards also require the progressive development of reading comprehension so that students advancing through the grades are able to gain more knowledge from whatever they read.
◆ Through reading a diverse array of classic and contemporary literature as well as challenging informational texts in a range of subjects, students are expected to build knowledge, gain insights, explore possibilities, and broaden their perspective. Because the standards are building blocks for successful classrooms, but recognize that teachers, school districts, and states need to decide on appropriate curriculum, they intentionally do not offer a reading list. Instead, they offer numerous sample texts to help teachers prepare for the school year and allow parents and students to know what to expect at the beginning of the year.
◆ The standards mandate certain critical types of content for all students, including classic myths and stories from around the world, foundational U.S. documents, seminal works of American literature, and the writings of Shakespeare. The standards appropriately defer the many remaining decisions about what and how to teach to states, districts, and schools.

Social Media and Reading

Social media today has an influence on even very young children. Four-year-old Bradley was observed in a barber's chair, waiting for his haircut. Most 4-year-olds are fidgety and apprehensive when getting a haircut, but Bradley was smiling and happily anticipating his mohawk-style haircut. When the barber finished and handed him a mirror, Bradley flashed a big smile. Bradley's mother came up and clicked a photo with her cell phone. Bradley admonished her with the words, "Don't put that picture on your Facebook."

Children today are actively participating in blogs, YouTube, Facebook, Twitter, and other social network media. How does social media affect learning, reading, and writing? Advocates of social learning point out that we are all social beings, so social learning is a more natural way of learning. It certainly provides an alternative to the traditional structured learning. Many children are learning reading and writing skills through Facebook. They may have as many as 1,000 Facebook friends. The question teachers have to ask is how to harness this social media interaction to improve reading skills (Herff Jones Achievement Series, 2011).

Some school districts ban the use of Facebook and other social media sites. The reasoning is that students post inappropriate information about fellow students on Facebook that can be harmful. Other school districts stress that it is important to teach safe behavior and educate minors to participate in online activities responsibly, ethically, and safely. These school districts believe that there are many educational benefits for teacher–student communication through social media. They provide a means for giving out assignments, offering homework support, and engaging in one-on-one learning. Several suggestions for using social media such as Facebook in teaching reading are as follows:

◆ Have students share book reports and recommend books.
◆ Develop a book club.
◆ Create a forum to share opinions about characters in a book.
◆ Create a forum to share opinions about favorite authors.
◆ Have students express and organize ideas with "mind maps" to expand literacy.
◆ Have students explore the use of social "clouds" through wordle (www.wordle .net). For example, students can try making a collage with reading words.
◆ Send homework assignments to students.

Key Elements of Teaching Reading

In this section, we briefly review some of the key elements of teaching reading. Each of these elements is discussed in greater detail in specific chapters of this book.

Early Literacy

The young child learns many concepts as an emergent reader. In the early stages of literacy development, young children develop facility with oral language, concepts about

print, alphabet knowledge, awareness of phonemic sounds in language, letter–sound correspondence, and beginning reading vocabulary. Such knowledge is usually learned in the preschool and kindergarten years, but students with reading problems may still be mastering emergent literacy skills long after these ages. Early literacy is discussed in detail in Chapter 7.

Word Recognition

To read any text, students must recognize the words written on the page. Several strategies are used to recognize words, including (1) phonics (ability to match letters with their sound equivalents), (2) structural analysis (ability to recognize the parts of unknown words, such as prefixes and affixes), and (3) context clues (skills in recognizing clues in the sentences to help recognize a word). Accurate word recognition is often difficult for struggling readers. Word recognition accuracy is discussed in Chapter 8.

Reading Fluency

In addition to recognizing words accurately, students need to read them quickly and fluently, otherwise reading will be labored and not enjoyable, and students will lose the meaning of the text. Reading fluency is recognized today as the "missing ingredient" in instruction for struggling readers. Fluency is discussed in Chapter 9.

Reading Comprehension

Comprehension is the essence of the reading act. The many levels of comprehending include drawing on background experiences, literal comprehension, higher-level comprehension, and the ability to study and learn from text. To comprehend material effectively, readers require some background knowledge. The background that students already have enables them to build bridges to new reading experiences and connect what they read to what they know.

The different levels of comprehension are strongly related:

Literal comprehension, or understanding the information stated directly in the text, is one type of comprehension. However, even here, the good reader picks and chooses, remembering the most important facts. Readers are likely to focus on facts that are familiar to them.

Higher-level comprehension. Formulating the central thought of a passage is considered part of higher-level comprehension. The main thought constructed is a little different for each of us. We actively participate in the reading process by constructing meaning.

Another form of higher-level thinking consists of the *inferences* or the implied information we draw from the text. The experienced reader will draw many inferences.

Critical or evaluative thinking is also a part of higher-level comprehension. As you read, you develop a point of view and evaluate the information in light of your thinking and experiences.

In school, students are often called on to study (gain information) from their textbooks. The use of books, manuals, directions, and many other materials continues throughout adult life. Thus, the ability to study is important in school and daily life.

Students with reading problems need work in many areas of comprehension and studying. As mentioned earlier, they do not construct meaning effectively in their minds, for example, the way we did when we constructed a central thought for this section of the chapter.

In addition, low-level readers are particularly at risk in content-area subjects, such as science, social studies, and health. In these areas, the reading is *expository*, or focuses on giving information rather than telling a story.

This book deals with two types of comprehension. *Narrative comprehension* involves reading and understanding material such as stories and novels and is discussed in Chapter 11. *Informational comprehension* involves reading and understanding material that conveys information, such as science or social studies textbooks. The comprehension and study of informational materials is also covered in Chapter 12.

Reading Vocabulary

To read a text effectively, the reader must understand its sentence structures and word meanings, yet readers can certainly read something without understanding every word. In fact, using the comprehension processes, readers are able to increase their vocabulary as they read.

For effective reading, students need a knowledge of word meanings and language. As one reads, the reader also acquires new word meanings and gains experience with language. The more students read, the more word meanings and language they acquire. Thus, teachers need to encourage students with reading problems to read as much as possible.

The language we understand is the natural limit of our reading ability. Meaning vocabulary is an extremely important factor in reading, particularly in intermediate and upper grades. Students with reading problems lag behind their average-achieving peers in both language development and meaning vocabulary. Many motivating ideas to help build the language and vocabulary of low-achieving readers are provided in Chapter 10.

Reading–Writing Connection

The inclusion of writing as a part of reading may seem strange, yet, as we read, we mentally construct thought. In other words, we compose, or write, in our minds. As we read, we are constructing our own meaning. We are always composing, so reading actually involves "writing."

Reading a passage involves composing in our minds. However, when students actually take pencil in hand and write down their thoughts, they learn even more

about reading. Trying to spell gives them insights into sound–symbol relationships, or phonics. When students create their own writing, it shows them that somebody actually writes what is read and that they can write, too. Thus, students acquire a sense of control over reading. Chapter 13 discusses the reading–writing connection.

Enjoyment and Appreciation

People do what they enjoy and appreciate. For the reading act to be complete, the reader's interest must be engaged. Suggestions for helping students with reading problems enjoy reading are found throughout this book. Many different strategies and materials are given that you can use to motivate your students.

Summary

Teachers bear the primary responsibility for instructing students who have reading problems. Reading problems are associated with difficulties in life, including poverty, unemployment, and problems with the law. Because they lack skills, individuals with reading problems often are unable to train for jobs in an increasingly technological society.

A substantial portion of the U.S. school population has reading problems. Some students receive help through Title I programs, some students receive special education services through the provisions of IDEA, and some receive services through state or locally funded programs. Many students with reading problems, however, receive no special help.

Response-to-intervention (RTI) is a relatively new approach to teaching reading and other academic skills in schools. This approach is a tiered approach in which students are taught with evidence-based materials in Tier 1 (the general education class); students who do not respond to instruction in Tier 1 go to Tier 2, where evidence-based instruction is given more intensively and in smaller groups. Students who do not respond well in Tier 2 go to Tier 3. In Tier 3, the evidence-based program is taught to children with greater intensity and in even smaller groups.

The National Reading Panel (2000) concluded that instructional reading programs have to include these components to be considered evidence-based reading programs: phonemic awareness, phonics, fluency, vocabulary, text comprehension.

The Common Core State Standards Initiative is a state-led effort coordinated by the NGA Center and the CCSSO that aims to provide a consistent framework that will prepare all students for college and the workforce.

Differentiated instruction looks at each student in terms of different traits and attributes and teaches each child in light of the student's strengths and weaknesses.

Several elements are key in reading. They include early literacy skills, word recognition skills, reading fluency, reading vocabulary, comprehension, the reading–writing connection, and the enjoyment and appreciation of reading.

References

Aaron, P., Joshi, R., Gooden, R., & Bentum, K. (2008). Diagnosis and treatment of reading disabilities based on the component model of reading. *Journal of Learning Disabilities*, *41*(1), 67–84.

Aaron, P. G., Joshi, R. M. M. & Williams, K. A. (1999). Not all reading problems are alike. *Journal of Learning Disabilities*, *32*(2), 120–127.

Aaron, P., & Kotvah, H. (1999). Component model-based remedial treatment of reading difficulties. In I. Lundberg, E. Tonnessen, & I. Austad (Eds.), *Dyslexia: Advances in theory and practice* (pp. 221–244). Boston: Kluwer.

Adams, C. (2011, September 14). SAT scores fall as number of test-takers rises. *Education Week*, 1–3.

Banchero, S. (2011). SAT reading, writing scores hit low. *Wall Street Journal. Retrieved from http://online.wsj .com/article/SB10001424053111904491704576571060049856724.html*.

Bender, W. (2006). *Differentiating instruction for students with learning disabilities*. Arlington, VA: Council for Exceptional Children.

Blackorby, J., & Wagner, M. (1997). The employment outcomes of youth with learning disabilities. In D. Gerber & D. Brown (Eds.), *Learning disabilities and employment* (pp. 57–74). Austin, TX: ProEd.

Cameto, R., Knokey, A., & Sanford, C. (2011, Spring/Summer). Participation in postsecondary education of young adults with learning disabilities: Findings from NLTS2. *Learning Disabilities: A Multidisciplinary Journal*, 45–54.

College Board. (2013). SAT trends 2011. Retrieved from http://research.collegeboard.org/programs/sat/ data/archived/cb-seniors-2011/tables

Council of Chief State School Officers, (2013). Common Core Standards Initiative. Retrieved from http:// www.ccsso.org/Resources/Programs/The_Common_Core_State_Standards_Initiative.html

Division for Learning Disabilities. (2007). *Thinking about response to intervention and learning disabilities: A teacher's guide*. Arlington, VA: Council for Exceptional Children.

Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly*, *41*(1), 93–99.

Fuchs, D., Mock, D., Morgan, P., & Young, C. (2003). Responsiveness to intervention: Definitions, evidence, and implications for the learning disabilities construct. *Learning Disabilities Research & Practice*, *18*, 157–171.

Gerber, P., & Brown, D. (1997). *Learning disabilities and employment*. Austin, TX: ProEd.

Gersten, R., & J. A. Dimiro. (2006). Rethinking special education for students with reading difficulties. *Reading Research Quarterly*, *4*(1), 99–108.

Hennesy, N., Rosenberg, D., & Tramaglini, S. (2003). A high school model for students with dyslexia: Remediation to accommodation. *Perspectives: The International Dyslexia Association*, *29*(2), 38–40.

Hughes, C. A., & Dexter, D. D. (2011). Response to intervention: A research-based summary. *Theory into Practice*, *50*, 1–8.

Herff Jones Achievement Series. (2011, September). The educational promise of social media [White paper]. Retrieved from http://www.herffjones.com/network

Individuals with Disabilities Education Improvement Act (IDEA) of 2004. Public Law 108–446.

Lee, J., Grigg, W., & Donahue. (2007). *The nation's report card*. NCES-2770-496. Washington, DC: National Center for Educational Statistics, Institute for Education Sciences, U.S. Department of Education.

Lerner, J. W., & Johns, B. (2012). *Learning disabilities and related mild disabilities: Characteristics, teaching strategies, and new directions*. Florence, KY: Cengage Learning.

Levine, M. (2002). *A mind at a time*. New York: Simon and Schuster.

Lyon, G. R. (2003). Reading disabilities. What can be done about it? *Perspectives: The International Dyslexia Association*, *29*(2), 17–19.

Moats, L. (1999). *Teaching reading is rocket science. What expert teachers of reading should know and be able to do*. Washington, DC: American Federation of Teachers.

National Assessment of Educational Progress (NAEP). (2011). *The nation's report card*. U.S. Department of Education.

National Endowment for the Arts. (2004). *Reading at risk: A survey of literacy reading in America*. Washington, DC: Author.

National Reading Association. (2006). *New roles in response to intervention: Creating success for schools and children*. Newark, DE: Author.

National Reading Panel. (2000). *Teaching children to read: An evidence based assessment of the scientific research literature on reading and implications for reading instruction*. Washington, DC: National Institute of Child Health and Human Development.

Office of Special Education Programs, Department of Education. (2011, January 21). Memo: A response to intervention (RTI) process cannot be used to delay or deny an evaluation for eligibility under the Individuals with Disabilities Act (IDEA). Retrieved from http://www.ldanatl.org/news/osep-012111-rtimemo.pdf

Slavin, R. (2008). What works? Issues in synthesizing educational program evaluations. *Educational Researcher 57*(1), 5–14.

Smith, S. (1991). *Succeeding against the odds: Strategies and insights from the learning disabled child*. Los Angeles: Jeremy P. Tarcher.

Stecker, P. M. (2007). Tertiary intervention. *Teaching Exceptional Children, 39*(95), 50–57.

Tomlinson, C., Brimijoin, K., & Navaez, L. (2008). *Differentiated schools: Making revolutionary changes in teaching and learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Tomlinson, C. A., & Inbeau, M. B. (2010). Leading and managing a differentiated classroom. Alexandria, VA: Association for Curriculum and Development.

U.S. Department of Education. (2006, August 14). Regulations for the Individuals with Disabilities Education Improvement Act. *Federal Register*.

U.S. Department of Education. (2007). *Twenty-Eighth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC: U.S. Department of Education.

Wagner, M., Newman, L., Cameto, R., Levine, P., & Garza, N. (2006). *An overview of findings from Wave 2 of the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

Zirkel, P., & Krohn, N. (2008). RTI after IDEA: A survey of state laws. *Teaching Exceptional Children, 40*(3), 71–73.

MyEducationLab™

Go to topic 1: Reading Instruction and topic 12: Progress Monitoring in the MyEducationLab (www.myeducationlab.com) for *Reading Problems: Assessment and Teaching Strategies*, where you can:

◆ Find learning outcomes for reading instruction and progress monitoring, along with the national standards that connect to these outcomes.

◆ Complete assignments and activities that can help you more deeply understand the chapter content.

◆ Apply and practice your understanding of the core teaching skills identified in the chapter with the Building Teaching Skills and Dispositions learning units.

◆ Examine challenging situations and cases presented in the Iris Center Resources.

◆ Access video clips of CCSSO National Teachers of the Year award winners responding to the question, "Why Do I Teach?" in the Teacher Talk section.

◆ Practice targeting instruction and making content accessible for all students with A+RISE activities.

◆ Strengthen your understanding and usage of the English language in writing with the Grammar Tutorial.

◆ Gain experience in choosing appropriate literature and integrating the best titles into language arts instruction with the Children's and Young Adult Literature Database.

◆ Track the month-by-month literacy growth of five second graders with the Literacy Portraits.

◆ Create, update, and share quality lesson plans with the Lesson Plan Builder.

◆ Access state licensure test requirements, overviews of what the tests cover, and sample test items in the Certification and Licensure section.

◆ Check your comprehension of the content covered in the chapter with the Study Plan.

Here you will be able to take a chapter pretest, receive feedback on your answers, and then access personalized Review, Practice, and Enrichment exercises to enhance your understanding of chapter content. After you complete the exercises, take a posttest to confirm your comprehension.

Chapter 6 also describes recent interventions designed specifically for addressing RTI components.

Chapters 7 through 13 provide in-depth information about language processes, including early literacy, word recognition, fluency, vocabulary development, comprehension of narrative and informational text, and writing. Each chapter includes special tools for assessment in these areas followed by principles of teaching and practical instructional strategies.

Chapter 7 includes a section on word recognition and the Common Core State Standards initiative. It also addresses RTI and offers strategies that are appropriate for all three tiers.

Chapter 8 discusses fluency with regard to both the Common Core State Standards and RTI. It also includes a case study describing the assessment and instruction of a third grader who experienced problems with fluency.

Chapter 9 includes instructional practices for improving word recognition and discusses the importance of fluency to successful reading.

Chapter 10 discusses the development of oral and reading vocabulary and its relationship to reading and writing. A new emphasis is the development of academic vocabulary and support for English learners in vocabulary development.

Chapter 11 presents strategies to support comprehension of narrative text, with a specific emphasis on mega-strategies that provide for integration of strategies to support comprehension before, during, and after reading. This chapter also provides a case study of a student who read below his chronological grade level in narrative text.

Chapter 12 relates comprehension of informational text to the Common Core State Standards and RTI. It also provides a case study of a student who read well below his chronological grade level in expository text.

Chapter 13 focuses on the integration of reading and writing, with an emphasis on the changes in writing instruction needed to align effectively with the Common Core State Standards.

Chapter 14 presents guidelines, strategies, and materials that have proven effective for teaching in multicultural, multilingual, and multiage instructional settings.

Chapter 15 provides ideas for instructional options for students with special needs.

Chapter 16 discusses current trends in the roles of reading specialists or literacy coaches as aligned with recent changes in educational law and policies, as well as the collaborative nature of assessment and instruction in schools.

New to this Edition

Key changes to the seventh edition include:

◆ Discussion of the transition from No Child Left Behind to Race to the Top and the American Recovery and Reinvestment Act of 2009.
◆ Case studies for Chapters 8, 11, and 12.
◆ Procedures for monitoring students' progress to meet RTI requirements.

◆ Impact of the Common Core State Standards initiative on literacy instruction and assessment.
◆ Changes in procedures for identifying students who are qualified for additional support services.
◆ Strategies to meet the needs of English learners, especially in the areas of vocabulary development and academic vocabulary development.
◆ Integration of technology into literacy instruction and assessment.
◆ Collaboration between reading specialists/literacy coaches and general education teachers.
◆ Changing roles of reading specialists/literacy coaches.
◆ A continuing discussion of specific reading skills, including word recognition skills, fluency, vocabulary development, comprehension of narrative and informational text, and the integration of reading and writing.

MyEducationLab™

MyEducationLab is an online homework, tutorial, and assessment product designed to improve results by helping students quickly master concepts, and by providing educators with a robust set of tools for easily gauging and addressing the performance of individuals and classrooms.

MyEducationLab engages students with high-quality multimedia learning experiences that help them build critical teaching skills and prepare them for real-world practice. In practice exercises, students receive immediate feedback so they see mistakes right away, learn precisely which concepts are holding them back, and master concepts through targeted practice.

For educators, MyEducationLab provides highly visual data and performance analysis to help them quickly identify gaps in student learning and make a clear connection between coursework, concept mastery, and national teaching standards. And because MyEducationLab comes from Pearson, it's developed by an experienced partner committed to providing content, resources, and expertise for the best digital learning experiences.

In *Preparing Teachers for a Changing World*, Linda Darling-Hammond and her colleagues point out that grounding teacher education in real classrooms—among real teachers and students and among actual examples of students' and teachers' work—is an important, and perhaps even an essential, part of training teachers for the complexities of teaching in today's classrooms.

In the MyEducationLab for this course educators will find the following features and resources.

Advanced Data and Performance Reporting
Aligned to National Standards

Advanced data and performance reporting helps educators quickly identify gaps in student learning and gauge and address individual and classroom performance. Educators

easily see the connection between coursework, concept mastery, and national teaching standards with highly visual views of performance reports. Data and assessments align directly to national teaching standards, including the International Reading Association (IRA) Standards for Reading Professionals 2010, and support reporting for state and accreditation requirements

Study Plan Specific to Your Text

MyEducationLab gives students the opportunity to test themselves on key concepts and skills, track their own progress through the course, and access personalized Study Plan activities.

The customized Study Plan is generated based on students' pretest results. Incorrect questions from the pretest indicate specific textbook learning outcomes the student is struggling with. The customized Study Plan suggests specific enriching activities for particular learning outcomes, helping students focus. Personalized Study Plan activities may include eBook reading assignments and review, practice, and enrichment activities.

After students complete the enrichment activities, they take a posttest to see the concepts they've mastered or areas where they still may need extra help.

MyEducationLab then reports the Study Plan results to the instructor. Based on these reports, the instructor can adapt course material to suit the needs of individual students or the entire class.

Assignments and Activities

Designed to enhance students' understanding of concepts covered in class, these assignable exercises show concepts in action (through videos, cases, and/or student and teacher artifacts). They help students deepen content knowledge and synthesize and apply concepts and strategies they have read about in the book. (Correct answers for these assignments are available to the instructor only.)

Building Teaching Skills and Dispositions

These unique learning units help students practice and strengthen skills that are essential to effective teaching. After examining the steps involved in a core teaching process, students are given an opportunity to practice applying this skill via videos, student and teacher artifacts, and/or case studies of authentic classrooms. Providing multiple opportunities to practice a single teaching concept, each activity encourages a deeper understanding and application of concepts, as well as the use of critical thinking skills. After practice, students take a quiz that is reported to the instructor gradebook and performance reporting.

IRIS Center Resources

The IRIS Center at Vanderbilt University (http://iris.peabody.vanderbilt.edu), funded by the U.S. Department of Education's Office of Special Education Programs (OSEP), develops training enhancement materials for preservice and practicing teachers. The Center works with experts from across the country to create challenge-based

interactive modules, case study units, and podcasts that provide research-validated information about working with students in inclusive settings. In your MyEducationLab course we have integrated this content where appropriate.

Teacher Talk

This feature emphasizes the power of teaching through videos of master teachers, with all telling their own compelling stories of why they teach. Each of these featured teachers has been awarded the Council of Chief State School Officers Teachers of the Year award, the oldest and most prestigious award for teachers.

A+RISE Activities

A+RISE activities provide practice in targeting instruction. A+RISE®, developed by three-time Teacher of the Year and administrator Evelyn Arroyo, provides quick, research-based strategies that get to the "how" of targeting instruction and making content accessible for all students, including English language learners.

A+RISE® Standards2Strategy™ is an innovative and interactive online resource that offers new teachers in grades K–12 just-in-time, research-based instructional strategies that:

◆ Meet the linguistic needs of English language learners (ELLs) as they learn content
◆ Differentiate instruction for all grades and abilities
◆ Offer reading and writing techniques, cooperative learning, use of linguistic and nonlinguistic representations, scaffolding, teacher modeling, higher-order thinking, and alternative classroom ELL assessment
◆ Provide support to help teachers be effective through the integration of listening, speaking, reading, and writing along with the content curriculum
◆ Improve student achievement
◆ Are aligned to Common Core Elementary Language Arts standards (for the literacy strategies) and to English language proficiency standards in WIDA, Texas, California, and Florida.

Grammar Tutorial

The Grammar Tutorial provides content extracted in part from *The Praxis Series™ Online Tutorial for the Pre-Professional Skills Test: Writing*. Online quizzes built around specific elements of grammar help students strengthen their understanding and proper usage of the English language in writing. Definitions and examples of grammatical concepts are followed by practice exercises to provide the background information and usage examples needed to refresh understandings of grammar, and then apply that knowledge to make it more permanent.

Children's and Young Adult Literature Database

The Children's and Young Adult Literature Database offers information on thousands of quality literature titles, and the associated activities provide experience in choosing appropriate literature and integrating the best titles into language arts instruction.

Literacy Portraits

Year-long case studies of second graders—complete with student artifacts matching each video clip, teacher commentary, and student and teacher interviews—track the month-by-month literacy growth of five second graders. Students will meet English-learner Rakie, struggling readers Rhiannon and Curt-Lynn, bilingual-learner Michael, and grade-level-reader Jimmy, and travel with them through a year of assessments, word-study instruction, reading groups, writing activities, buddy reading, and more.

Course Resources

The Course Resources section of MyEducationLab is designed to help students put together an effective lesson plan; prepare for and begin a career; navigate the first year of teaching; and understand key educational standards, policies, and laws.

It includes the following:

◆ The **Lesson Plan Builder** is an effective and easy-to-use tool that students can use to create, update, and share quality lesson plans. The software also makes it easy to integrate state content standards into any lesson plan.

◆ The **Certification and Licensure** section is designed to help students pass licensure exams by giving them access to state test requirements, overviews of what the tests cover, and sample test items.

The Certification and Licensure section includes the following:

  ◆ **State Certification Test Requirements:** Here, students can click on a state and be taken to a list of state certification tests.

  ◆ Students can click on the **Licensure Exams** they need to take to find:
    ◆ Basic information about each test
    ◆ Descriptions of what is covered on each test
    ◆ Sample test questions with explanations of correct answers

  ◆ **National Evaluation Series™** (NES) by Pearson: Here, students can see the tests in the NES, learn what is covered on each exam, and access sample test items with descriptions and rationales of correct answers. Students can also purchase interactive online tutorials developed by Pearson Evaluation Systems and the Pearson Teacher Education and Development group.

  ◆ **ETS Online Praxis Tutorials:** Here students can purchase interactive online tutorials developed by ETS and by the Pearson Teacher Education and Development group. Tutorials are available for the Praxis I exams and for select Praxis II exams.

◆ The **Multimedia Index** aggregates resources in MyEducationLab by asset type (for example, video or artifact) for easy location and retrieval.

Visit www.myeducationlab.com for a demonstration of this exciting new online teaching resource.

Support Materials for Instructors

The following resources are available for instructors to download on www.pearsonhighered.com/educators. Instructors enter the author or title of this book,

select this particular edition of the book, and then click on the "Resources" tab to log in and download textbook supplements.

Instructor's Resource Manual and Test Bank (0-13-283791-9). The Instructor's Resource Manual and Test Bank include key points, topics for discussion, activities, assignments, short-answer questions, and multiple-choice questions. It also provides several case studies with accompanying questions.

PowerPoint™ Presentation (0-13-283790-0). Designed for teachers using the text, the PowerPoint™ Presentation consists of a series of slides that can be shown as is or used to make handouts. The presentation highlights key concepts and major topics for each chapter.

MyEducationLab Correlation Guide (0-13-338652-X). This guide connects chapter sections with appropriate assignable exercises on MyEducationLab.

CourseSmart ebook and Other eBook Options Available

CourseSmart is an exciting new choice for purchasing this book. As an alternative to purchasing the printed book, you may purchase an electronic version of the same content via CourseSmart for reading on PC or Mac, as well as Android devices, iPad, iPhone, and iPod Touch with CourseSmart Apps. With a CourseSmart eBook, readers can search the text, make notes online, and bookmark important passages for later review. For more information or to purchase access to the CourseSmart eBook, visit http://www.coursesmart.com. Also look for availability of this book on a number of other eBook devices and platforms.

Acknowledgments

Joyce Holt Jennings
JoAnne Schudt Caldwell
Janet W. Lerner