California Dyslexia Guidelines

California Department of Education
Sacramento, 2017

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Notice

The guidance in *California Dyslexia Guidelines* is not binding on local educational agencies or other entities. Except for the statutes, regulations, and court decisions that are referenced herein, the document is exemplary, and compliance with it is not mandatory. (See *Education Code* Section 33308.5.)

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A MESSAGE FROM THE

State Superintendent of Public Instruction

I am pleased to present *California Dyslexia Guidelines,* which was written in response to the passage of Assembly Bill 1369, Chapter 647, Statutes of 2015, and which added sections 56334 and 56335 to California's *Education Code*. The purpose of these guidelines is to assist regular education teachers, special education teachers, and parents in identifying, assessing, and supporting students with dyslexia.

The work of the California Department of Education was accomplished with the invaluable contributions of a broad range of stakeholders who provided their expertise in the many topic areas addressed in the guidelines. These guidelines draw on both current research and the collective professional wisdom and experience of the members of the Dyslexia Guidelines Work Group, which met in a series of seven meetings from April 2016 through March 2017.

The ability to read is a fundamental skill in modern society. It is the foundation on which we can build lifelong learning. When we learn to read, we are liberated: the entirety of the world's knowledge is available to us, and we are empowered to take control of our own education. Yet for people with dyslexia, this ability can be frustratingly out of reach. They struggle to master the code that translates groups of letters into meaningful words, sentences, passages, and books.

Over the past several decades, we have learned a great deal about dyslexia. For example, we have learned that dyslexia is a real disability that is neurobiological in nature and affects millions of people around the world. We have also learned that for most people with dyslexia, the primary problem is difficulty in being able to recognize and manipulate the smallest units of sounds, called *phonemes,* in human language. This makes it difficult to link these sounds to the letter or letters, called *graphemes,* that represent the sounds in print. Difficulty making the connections between sounds and letters leads to problems with reading words, sentences, and passages fluently.

We have learned how to identify people with dyslexia at a very early age and later in life. And we have learned that early identification and intervention is very important.

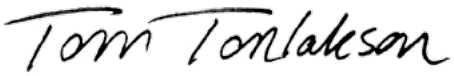
We have also learned how to teach people with dyslexia to read fluently and with comprehension. Extensive research has shown us that reading instruction for students with

dyslexia must teach phonemic awareness—the ability to recognize and manipulate phonemes in words. Students must be taught how to link these phonemes to letters and how to blend sounds and segment words when reading and spelling—a method of teaching early reading known as "phonics." This reading instruction must also teach vocabulary, fluency, and reading comprehension strategies.

Additionally, we have learned that effective reading programs for students with dyslexia incorporate multisensory techniques to explicitly and systematically teach all of the skills mentioned above, so that each new skill builds logically and coherently on the skills that were taught before.

Perhaps most importantly, we have learned that there is hope for people with dyslexia—but to translate that hope into reality takes a concerted and relentless effort.

The purpose of California's dyslexia guidelines is to provide educators, parents, and other stakeholders with a road map for supporting students with dyslexia in California's public schools.



Tom Torlakson
State Superintendent of Public Instruction

Acknowledgments

The development of California's dyslexia guidelines involved the many people who participated in the Dyslexia Guidelines Work Group from 2016 to 2017. The California Department of Education extends its profound gratitude to the following individuals and the organizations they represented for their generous contributions of time and expertise in writing these guidelines.

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Introduction

Educating students with dyslexia is a dynamic field of inquiry and practice; each year brings new discoveries about this condition. California's dyslexia guidelines represent a snapshot in time. They attempt to provide up-to-date information to parents, general educators, and special educators while building on hard-won knowledge confirmed over decades of research.

Although the information provided in these guidelines is not legally binding on local educational agencies, the goal in publishing *California Dyslexia Guidelines* is to create a document that provides practical resources for identifying and educating students who are struggling academically because they cannot read.

This document is structured to present technical information in an accessible format by organizing text with introductory chapter bullets, brief paragraphs, graphic elements, and relatively short chapters. Entire books have been written on many of the areas covered by these guidelines, so Web links to additional resources are provided at the conclusion of every chapter for readers who want to know more about specific topics.

The California Department of Education believes that the following principles are essential to educating students with dyslexia. These principles form the foundation of the guidelines and inform the perspective from which the guidelines were written:

- Students with dyslexia need a knowledge-based and active system of support that includes families, educators, and other professionals.
- Learning needs related to dyslexia exist on a continuum; therefore, systems of support must be designed to meet the diversity of students' needs.
- An educational system should address the needs of individual students within an integrated and tiered system of support.
- Students who have dyslexia are "general education students" first, can be educated in general education classrooms, and benefit from a wide variety of supports. Those supports must include a comprehensive, evidence-based approach to reading and language instruction that is implemented by trained educators. Required supports may include various accommodations and assistive technology. Students with dyslexia sometimes require special education.
- An interdisciplinary team approach is most effective when it takes advantage of everyone's expertise and includes all team members in decision making, problem solving, and instructional leadership.

- Guiding principles for educating students with dyslexia must be anchored in programs that are evidence based, whenever possible, and that incorporate structured literacy instruction that is comprehensive, systematic, explicit, cumulative, and multisensory.

With these principles in mind, and the content provided in the following chapters, California's dyslexia guidelines seek to improve the academic outcomes for all students with dyslexia in all education settings.

CHAPTER 1

A Twenty-First-Century Definition of Dyslexia

This chapter covers the following topics:

- **The International Dyslexia Association's definition of dyslexia**
- **The definition of dyslexia as a specific learning disability**
- **The most current description of dyslexia according to a U.S. Senate Resolution passed in 2016**
- **Online sources for more information**

The International Dyslexia Association (IDA) provides the following definition of dyslexia, which was adopted by the United States National Institutes of Child Health and Human Development (Lyon, Shaywitz, and Shaywitz 2003). This definition has been widely cited by researchers and educators, and it is currently included in many state education codes, including those of Washington, Arkansas, New Jersey, and Ohio:

> Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge. (IDA 2002)

Dyslexia may also be understood as one type of a "specific learning disability," which is defined in California's regulations pertaining to students who qualify for special education services. Title 5, *California Code of Regulations,* Section 3030(b)(10)(A) discusses specific learning disabilities and dyslexia as follows:

> Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may have manifested itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, **dyslexia,** and developmental aphasia. The basic psychological processes include attention, visual processing, auditory processing, **phonological processing,** sensory-motor skills, cognitive abilities including association, conceptualization and expression . . . Specific learning disabilities do not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of intellectual disability, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

Science continues to progress, and new knowledge about the epidemiology—the cognitive basis and neurobiology of dyslexia—is available. The following information helps to provide an understanding of dyslexia, including its basis, impact, and symptoms:

- Dyslexia is an unexpected difficulty in reading for an individual who has the intelligence to be a much better reader, due most commonly to a difficulty in phonological processing—that is, in appreciating the individual sounds of spoken language—which affects the ability of an individual to speak, read, spell, and often learn a second language.
- Dyslexia is a paradox; an individual with dyslexia may have weakness in decoding that results in difficulties in accurate and fluent word recognition and strengths in higher-level cognitive functions, such as reasoning, critical thinking, concept formation, or problem solving. These strengths reflect the "Sea of Strengths Model of Dyslexia" (Shaywitz 2003).
- Great progress has been made in understanding dyslexia on a scientific level, including the epidemiology and cognitive and neurobiological bases of dyslexia.
- Early diagnosis is especially critical for narrowing the achievement gap, which is present as early as first grade; this is accomplished by screening, followed by identification and remediation with evidence-based approaches. Early diagnosis is also critical for ensuring that students with dyslexia receive focused, evidence-based intervention leading to self-awareness, self-empowerment, and the provision of necessary accommodations for success in school and life.
- According to the IDA (2016b), dyslexia affects people from different cultural, ethnic, and socioeconomic backgrounds nearly equally.
- It has long been known that dyslexia is heritable, so it runs in families. When assessing a student for dyslexia, it is important to ask about family history.
- Dyslexia often occurs in combination with other handicapping conditions (e.g., dysgraphia, dyscalculia, oral language impairment, and attention-deficit/hyperactivity disorder [ADHD]).

MORE INFORMATION

- The IDA provides a series of Fact Sheets covering topics such as "Dyslexia Basics" and "Helpful Terminology." The organization also maintains a list of Frequently Asked Questions.
- *Dyslexia Connection*, an e-newsletter published by the IDA for parents and families, offers current information related to dyslexia.
- The Examiner, a monthly e-newsletter also published by the IDA, provides information about the IDA, dyslexia, and literacy-related events and topics in the field and around the world. Readers may subscribe to the *Examiner* free of charge.
- In September 2016, the United States Senate passed Senate Resolution 576, which called upon Congress, schools, and state and local educational agencies to "recognize the significant educational implications of dyslexia that must be addressed" and designated October 2016 as National Dyslexia Awareness Month. The full text of the resolution also provided a current definition of dyslexia.
- Links to state and federal laws and regulations about dyslexia are provided in appendix C.

This chapter covers the following topics:

- Information about dyslexia as a brain-based disorder
- The neural signatures of dyslexia
- A summary of findings of neurological research
- Online sources for more information

CHAPTER 2

The Neuroscience of Dyslexia

Dyslexia is a neurobiological disorder with brain patterns ("neural signatures") that reflect poor phonological and orthographic processing (Shaywitz et al. 1998); see chapter 3. These signatures include, but are not limited to, function and structure of the left-hemisphere language regions such as the left temporo-parietal region related to phonological processing, and the left occipito-temporal region related to orthographic processing (Linkersdörfer et al. 2012); see figure 2.1. Other brain measures that are important for communication across brain cells and regions—for example, amount of chemicals in certain parts of the brain and degree of synchronization of brain waves (neural oscillation), as well as small differences in the structure of a large number of risk genes for dyslexia (Plomin et al. 2016)—are also important differences that neuroscientists are finding in dyslexia.

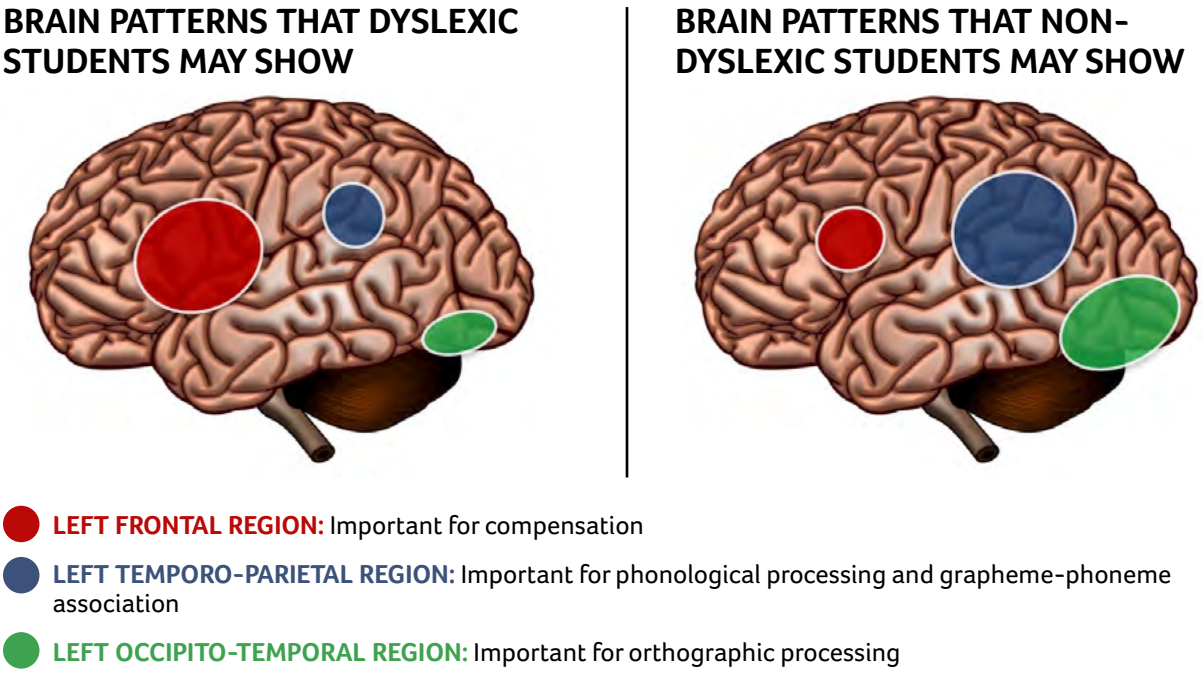

Figure 2.1. Key brain structures that are often impacted in dyslexia. Developed by and used with permission from Fumiko Hoeft.

Regardless of age, these "neural signatures of dyslexia" are often seen in students with dyslexia. Even before they are formally taught how to read, children show these unusual patterns if they are at high risk for developing dyslexia (Ozernov-Palchik and Gaab 2016). A child at high risk for dyslexia may have a related family member (e.g., a parent or sibling) with dyslexia, or the child may demonstrate weaknesses in foundational measures of reading (e.g., letter identification, letter–sound knowledge, phonological awareness, and rapid naming); see chapter 3.

These neural signatures are evident in students with dyslexia even if they speak languages and use writing systems other than English (Martin, Kronbichler, and Richlan 2016). Neural signatures for dyslexia are likely to change with reading intervention and can show a pattern that becomes similar to that seen in students without dyslexia (Barquero, Davis, and Cutting 2014). Brain patterns can also predict reading outcomes of students with dyslexia (Hoeft et al. 2011). Interestingly, students with dyslexia show these neural signatures (the left temporo-parietal dysfunction) regardless of how they are defined (i.e., whether there is a discrepancy between reading ability and cognitive measures like IQ or when looking at reading ability alone—without a discrepancy). These findings support the Individuals with Disabilities Education Act (IDEA) 2004 criteria that identification of individuals with dyslexia does not require a discrepancy between reading and other cognitive abilities, such as IQ (Tanaka et al. 2011).

On the other hand, gifted students with reading ability lower than their cognitive capacities (but still within typical range, which means that these students often end up being misidentified as not having dyslexia) also show this neural signature (left temporo-parietal dysfunction). This new and exciting evidence suggests that these gifted children with discrepantly low reading ability, albeit within the average range and not necessarily classified as poor readers, may also be identified as having dyslexia and be qualified to receive services (Hancock, Gabrieli, and Hoeft 2016).

In summary, although it is still too early to use neural signatures of dyslexia to determine an instructional plan for individual students—and brain imaging should never be prescribed as part of a psychoeducational evaluation unless it is recommended clinically and medically—neuroscience research has demonstrated the following findings:

- Neural signatures of dyslexia are reliable.
- Neural signatures of dyslexia are predictive of dyslexia risk and outcome.
- Neural signatures of dyslexia change with intervention.
- Neural signatures of dyslexia are present even in gifted students whose discrepant reading may be masked because it is within the average range, resulting in misdiagnosis as not having dyslexia.

What Does This Mean for Parents and Educators?

Neurological research shows that dyslexia is a real condition and that scientists have been able to locate unique identifiers, not only in different areas of the brain and how they function but also in variation of important chemicals in the brain and in the way brain cells communicate with each other. Scientists have also discovered that the structure of some genes out of the many genes that are likely to be important for dyslexia are different in people with dyslexia compared to those without it. Each of these many genes likely increases the chances of having dyslexia, each by a very small amount.

These exciting advances in neuroscience also show that, with appropriate reading interventions, the unique identifiers in the brain can be altered to resemble the reading patterns seen in the brain of a person who does not have dyslexia. In addition, neuroscience is showing new evidence that aligns with earlier work on the importance and possibility of earlier identification (even before a child is able to read) in individuals with a high risk for developing dyslexia, on the basis of information such as a family history of dyslexia or a weakness in critical prereading skills (e.g., letter identification, letter–sound knowledge, phonologicial awareness, and rapid naming).

MORE INFORMATION

The following articles provide more in-depth information about the neuroscience of dyslexia. Please note that some of these articles must be purchased online.

- "Neuroimaging of Reading Intervention: A Systematic Review and Activation Likelihood Estimate Meta-Analysis"
- "Neurogenetics and Auditory Processing in Developmental Dyslexia"
- "Shared Temporoparietal Dysfunction in Dyslexia and Typical Readers with Discrepantly High IQ"
- "Neural Systems Predicting Long-Term Outcome in Dyslexia"
- "Grey Matter Alterations Co-Localize with Functional Abnormalities in Developmental Dyslexia: An ALE Meta-Analysis"
- "Dyslexic Brain Activation Abnormalities in Deep and Shallow Orthographies: A Meta-Analysis of 28 Functional Neuroimaging Studies"
- "Tackling the 'Dyslexia Paradox': Reading Brain and Behavior for Early Markers of Developmental Dyslexiax"
- "Functional Disruption in the Organization of the Brain for Reading in Dyslexia"
- "The Brain Basis of the Phonological Deficit in Dyslexia Is Independent of IQ"

CHAPTER 3

Dyslexia as a Language-Learning Disability

This chapter covers the following topics:

- Dyslexia understood as a language-learning disability
- Deficits in phonological processing and their role in dyslexia
- The connection between dyslexia and delayed speech or language development
- Online sources for more information

Dyslexia is one type of a language-learning disability that negatively affects an individual's written language skills (e.g., reading and written expression). Currently, the most widely cited model used to describe what is meant by the term "language" was provided by Bloom and Lahey (1978) and Lahey (1988). In this model, language consists of three major components: form (phonology, morphology, and syntax); content (semantics); and use (pragmatics). Each of the five subcomponents refers to a specific aspect of language, and they all are interrelated.

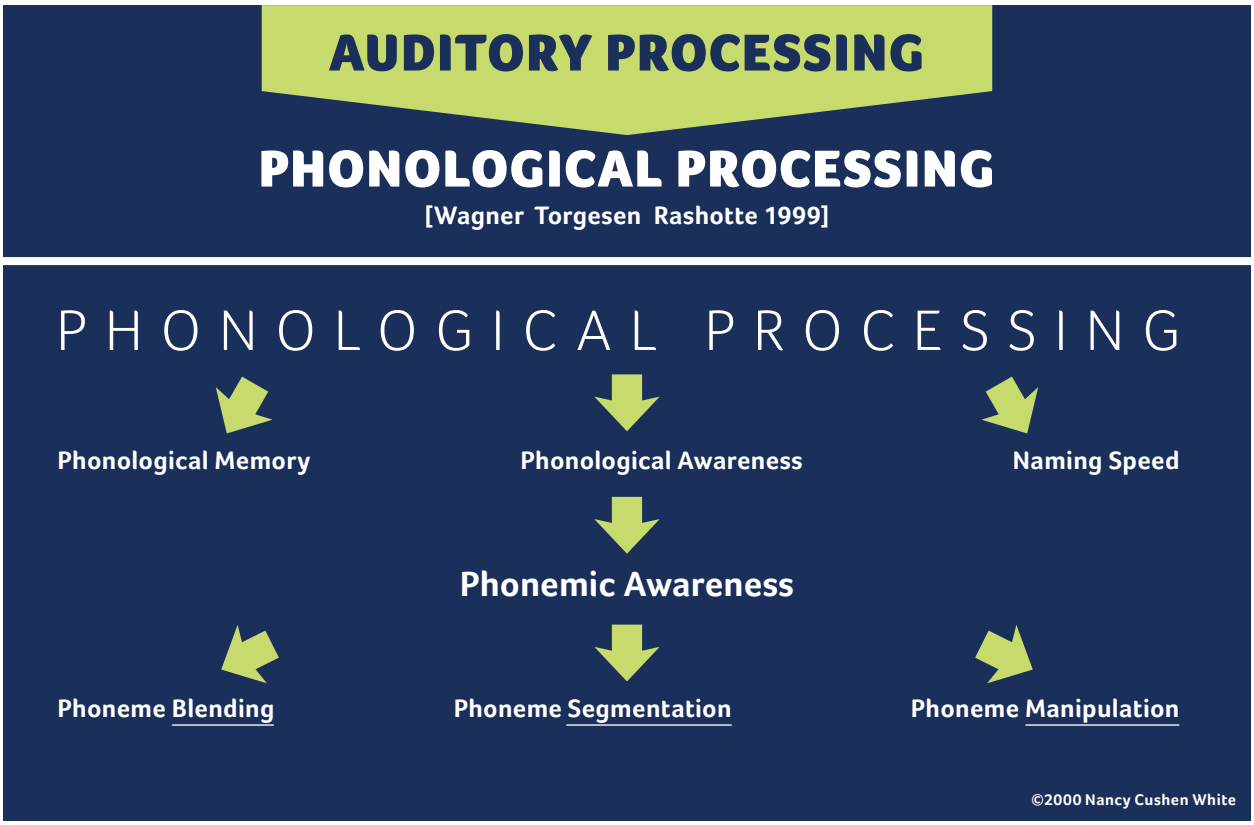

Figure 3.1. Developed by Nancy Cushen White and used with permission.

Language-Based Systems

Language *form* relates to the structure of language. "*Phonology* is the sound system of a language and the rules that govern the sound combinations. *Morphology* is the system that governs the structure of words and the construction of word forms. *Syntax* is the system governing the order and combination of words to form sentences, and the relationships among the elements within a sentence" (American Speech-Language-Hearing Association 1993).

Language *content* pertains to the meaning of language. "*Semantics* is the system that governs the meanings of words and sentences" (American Speech-Language-Hearing Association 1993). Language *use* refers to the function of language. "*Pragmatics* is the system that combines the above language components in functional and socially appropriate communication" (American Speech-Language-Hearing Association 1993). Pragmatics also includes the purposes for using language (i.e., conversational, narrative, expository, and persuasive discourse).

Dyslexia as One Type of a Language-Learning Disability

The American Speech-Language-Hearing Association has defined a language disorder as an impairment in the "comprehension and/or use of a spoken, written and/or other symbol systems." The disorder may involve (1) the form of language (phonology, morphology, and syntax); (2) the content of language (semantics); and/or (3) the function of language in communication (pragmatics), in any combination (American Speech-Language-Hearing Association 1993). Students who are identified as having both a language disorder and a specific learning disability may also be referred to as students with a language-learning disability.

Students with dyslexia represent a subgroup of students who experience difficulties in reading and written expression. Although students with dyslexia may also experience difficulty with their spoken language abilities (e.g., pronunciation of multisyllabic words), the most widely reported characteristics of dyslexia are problems in word-level reading (i.e., accurate and fluent word identification-decoding) of both real and predictable pseudo-words (i.e., nonwords)—and spelling.

Students are typically identified as having dyslexia when they exhibit a deficit that primarily affects their ability to decode (i.e., to translate graphemes, which are a letter or letters that represent a single speech sound [phoneme] into their corresponding speech sounds [phonemes] and synthesize [blend] these sounds to form words) (Paul and Norbury 2012). Dyslexia involves a specific deficit in single-word decoding that is based on a weakness in the phonological aspect of language and has only a secondary impact on reading comprehension, which distinguishes it from other types of reading disabilities (Catts and Kamhi 2005). However, spelling is almost always affected.

Some students without dyslexia may struggle to read for various reasons that have been speculated to include a lack of interest and motivation, inadequate or insufficient instruction, low general intellectual ability, less exposure to language within the home environment, or weak English language skills when learning English as a second language (Snow, Burns, and Griffin 1998). The "Simple View of Reading" (Catts, Adlof, and Weismer 2006; Gough and Tunmer 1986; Hoover and Gough 1990; Kamhi 2009) is the most prevalent view of reading researchers today and provides a useful framework for differentiating typical readers from those with dyslexia and other types of reading disabilities. It suggests that reading is dependent on both efficient word recognition and language comprehension abilities.

Another type of reading disability is one that is described as a "specific reading comprehension deficit," which is primarily characterized by accurate word identification (decoding) but poor reading comprehension. These comprehension deficits are often related to problems with morphology, syntax, and semantics, in addition to phonology.

Dyslexia and Phonological Processing

The majority of people with dyslexia have a core deficit in the phonological processing component of language. Phonological processing includes phonological memory, phonological awareness, and speed of naming (Wagner et al. 2013). Because of deficits in phonological processing, students with dyslexia have significant difficulty acquiring the sound–letter (phoneme–grapheme) and letter–sound (grapheme–phoneme) correspondences (i.e., phonics) that are the foundation for accurate and fluent spelling and decoding skills.

Phonological Awareness

Phonological awareness refers to an individual's awareness of and access to the sound structure of oral language (Mattingly 1972). It is the understanding that spoken language can be divided into smaller units (i.e., words, syllables, onset-rime and phonemes) and that those units can be identified and manipulated. Although phonological awareness is a skill of spoken language, it is an essential foundation to learning phonics, the systematic instruction of reading and spelling based on letter–sound (grapheme–phoneme) and sound–letter (phoneme–grapheme) relationships in the English language. Difficulties in phonological awareness and phonemic awareness (see below) are typically seen in students with dyslexia and affect the ability to associate letters (graphemes) with sounds (phonemes) to decode words and to associate sounds (phonemes) with letters (graphemes) to spell words.

There is a continuum of complexity within phonological awareness. On the simpler end, phonological awareness includes using rhyme in songs and nursery rhymes and recognizing that sentences are made up of a set of unique, separate units called words. More complex and later-developing phonological awareness includes understanding that words are made up of

chunks, such as syllables, and that words can be manipulated to rhyme by changing the onset (beginning consonant sound[s]) in a word. With some exceptions (e.g., book handling and print awareness), phonological awareness begins to develop early, well before children acquire other associated literacy skills. Difficulty in phonological awareness, especially phonemic awareness, is a key predictor of dyslexia.

Phonemic Awareness

Phonemic awareness is a subset of phonological awareness that refers specifically to the understanding of and ability to manipulate the discrete, individual sounds of language called phonemes—and the understanding that it is possible to create words with different meanings simply by adding, deleting, or substituting individual sounds (phonemes) within a word. Phoneme awareness is the most advanced skill under the phonological awareness umbrella and is typically not fully developed until a student is five or six years old. Examples of the manipulation of phonemes are provided below:

- Deletion of */t/* in */cart/* to pronounce */car/*
- Substitution of */ch/* in */charm/* with */f/* to produce /farm/
- Substitution of */ē/* in */feet/* with */ī/* to produce */fight/*
- Deletion of /l/ in /black/ to produce /back/

Phonemic awareness is the component of phonological processing most directly linked to acquisition of decoding and spelling skills. Rudimentary ability to blend, segment, and manipulate phonemes within words and syllables is a prerequisite for *understanding* phonics (grapheme–phoneme association for word identification and phoneme–grapheme association for spelling). These basic skills of blending, segmenting, and manipulating phonemes facilitate students' understanding of the "place value" of the sequence of graphemes and phonemes within words.

Phonological Memory

Phonological memory refers to coding information in working or short-term memory (e.g., storing a phone number temporarily in working memory as you walk toward the phone to dial the number by storing a phonological representation of the sounds of the digit names rather than a visual representation of the numbers). Phonological coding in working memory is important when attempting to decode unfamiliar words, especially multisyllabic words when intermediate phonemes and syllables need to be stored during the process of applying decoding strategies (e.g., blending the phonemes associated with the graphemes in the first syllable, then holding onto that spoken syllable as the graphemes in the next syllable are associated with their phonemes and blended into a syllable, and then blending those syllables into a word) (Wagner et al. 2013).

Rapid Naming

Rapid naming refers to the ability to quickly name digits, letters, objects, or colors. It requires efficient retrieval of phonological information from long-term memory, the same type of ability that is the foundation of word identification-decoding. Individuals who have deficits in both rapid naming and phonemic awareness appear to have greater difficulty learning to read words accurately and fluently than those who have deficits in just one of these abilities.

A significant deficit in one or more of these three aspects of phonological processing is often viewed as the primary cause of the majority of cases of dyslexia (Wagner et al. 2013). However, some students with dyslexia demonstrate average phonological processing abilities with deficits in orthographic processing (Berninger et al. 2010).

Dyslexia and Speech and Language Deficits

In addition to phonological processing deficits, students with dyslexia may have a history of delayed speech or language development. These individuals may also have a history of impairment in articulation or phonological production and/or receptive or expressive spoken language skills. Although students with dyslexia may exhibit various types of language problems in the toddler and preschool years, their language problems typically become very obvious once they begin trying to learn to read and write (Catts and Kamhi 2005). Early oral language difficulties involving the phonologic code frequently evolve into later reading problems (Goldsworthy 2003).

There is a significant amount of evidence that links early childhood spoken language problems with reading and writing difficulties in school-age children and adolescents (Nelson 2010; Paul and Norbury 2012; Wallach and Miller 1988). A strong reciprocal relationship exists between spoken language (listening and speaking) and the development of written language (reading and writing). Spoken language serves as a foundation for the development of written language skills, and written language development also positively affects spoken language development by facilitating growth in various aspects of language, including vocabulary, syntax, and comprehension.

MORE INFORMATION

- The American Speech-Language-Hearing Association published a relevant paper in 1993 titled "Definitions of Communication Disorders and Variations."

This chapter covers the following topics:

- Symptoms that are known to be indicative of dyslexia
- Characteristics of dyslexia in students from preschool through college
- Behaviors that are typical of students in each age group
- Strengths observed in students with dyslexia
- Online sources for more information

CHAPTER 4

Characteristics of Dyslexia by Age Group—Strengths and Weaknesses

Although it is common to say that someone either has or does not have dyslexia, it is important to realize that dyslexia exists on a continuum that ranges from a student being mildly affected to being severely impaired. Symptoms that are known to be indicative of dyslexia include the following characteristics:

1. **Inability to sound out new words.** A characteristic feature of dyslexia is the inability to sound out unfamiliar words. A convenient way of assessing the ability to sound out unfamiliar words is to ask the individual to decode nonwords, which by definition are unfamiliar. It is important to assess fluency as well as accuracy of pseudo-word decoding to ensure that the skill is sufficiently developed to be useful in actual reading. Although nonword decoding can be assessed only when an individual has been taught to read, letter-sound knowledge is a rudimentary skill that is predictive of subsequent nonword decoding, and it can be assessed with standardized measures in children as young as age three.

2. **Limited sight-word vocabulary.** If a sufficient number of words cannot be decoded relatively automatically (i.e., by sight), fluency for reading connected text can be limited to the point that comprehension is disrupted. A good measure of limited sight-word vocabulary is to assess the accuracy and fluency of decoding common words once children have begun to learn to read. A rudimentary skill that is predictive of subsequent word decoding but can be assessed before the onset of reading instruction is letter-name knowledge, which can be assessed using standardized measures in children as young as three years of age.

3. **Listening comprehension exceeds reading comprehension.** Individuals who unexpectedly struggle at reading words on a page often are able to better comprehend material by listening to it rather than reading it. Determining that listening comprehension exceeds reading comprehension is a useful index of the extent to which poor decoding is unexpected (Badian 1999). It also has functional significance: If a student's listening comprehension is better than his reading comprehension, assistive technology programs

that convert text to speech can be a useful accommodation to help the student succeed in situations despite his decoding difficulty (see chapter 12 for related information). If a student's listening comprehension is not better than his reading comprehension, a program that converts text to speech will be of limited value.

4. **Inadequate response to effective instruction and intervention.** It is important to rule out the possibility that the observed poor reading is caused by a lack of opportunity to learn to read. Factors that need to be taken into account include the possibility of limited exposure to reading instruction because of extensive absences from school, or exposure to poor instruction. Documenting inadequate response to effective instruction and intervention can help rule out these possibilities.

Signs of Dyslexia in Children by Age Group

Early intervention has proved to be highly beneficial for all types of disabilities. Although an official diagnosis of dyslexia may not be made until a student is reading and writing, there are many factors that parents and educators can observe, measure, and remediate long before kindergarten or first grade. For example, waiting until the student demonstrates a reading or spelling problem wastes precious time that could be spent building a foundation of oral language on which later literacy skills could be developed.

Educationally related difficulties associated with dyslexia can often manifest differently throughout a student's academic career and occur on a continuum of severity. As students are promoted through grade levels, academic demands increase, and different struggles arise that parents, teachers, and students can recognize. It is important to note that the lists included below are not exhaustive, and students with dyslexia may or may not exhibit these specific characteristics on the basis of their own unique patterns of language learning strengths and challenges.

The bulleted items shown below, which are organized by age group, list potential red flags that parents can use to monitor for dyslexia. These indicators were adapted from the University of Michigan's Clues to Dyslexia and the Yale Center for Dyslexia & Creativity's Signs of Dyslexia.

Preschool-Age Children

Indicators of dyslexia are apparent at an early age; research indicates that students exhibit difficulty with literacy skills as early as preschool. At this age, a child is actively developing phonological awareness through the language activities to which she is exposed. It is important to understand typical developmental benchmarks in the area of literacy. Children often meet some of these benchmarks and not others, especially depending on their exposure to books and literacy development activities. Preschool, frequent reading, and activities like

songs and rhymes all play a part in a child's early literacy development. Children in preschool with dyslexia may show the following signs:

- A delay in talking or speech that is difficult to understand or that sounds like "baby talk"
- Difficulty recognizing her own name in print
- Difficulty learning nursery rhymes or recognizing rhyming patterns
- A lack of interest in books
- Difficulty understanding directionality: turning books right-side up and turning pages in the correct direction
- Difficulty understanding that reading is from left to right. Some children who have had limited exposure to books, reading, or print will likely have delays here because of a lack of exposure.
- Difficulty remembering the names of letters in his name or some letters of the alphabet; difficulty with how to spell and write his name
- Delayed language and vocabulary development
- Difficulty reciting the alphabet and days of the week sequentially
- Difficulty naming things quickly or automatically
- Frustration with fine motor skills, such as coloring, pasting, and cutting with scissors
- Difficulty pronouncing familiar words
- Difficulty following multistep directions or routines
- A struggle to produce intelligible speech for an unfamiliar listener
- Difficulty learning numbers, days of the week, colors, and shapes
- Difficulty telling and retelling a story in the correct sequence
- Difficulty separating sounds in words and blending sounds to make words

It is still typical for children at this age to display the following signs and behaviors:

- Difficulty with articulating later-developing sounds, including *s, r, v, th, ch,* and consonant blends such as *sw, st,* and *str*
- Occasional lack of interest in reading with a preference for engaging in more active play
- Difficulty creating rhymes for many words
- Confusion over letter names, especially ones that look or sound similar

Students in Kindergarten Through First Grade

Formal reading instruction begins at this age. Students in kindergarten receive active instruction in developing phonemic awareness and in phonics. The ability to identify all letters

of the alphabet by name and sound at the end of the first semester of kindergarten is a key instructional goal. Simple "sounding out" instruction also begins in kindergarten. By first grade, students are actively reading longer sentences and learning more complex phonics rules. Concurrently, emphasis on standard spelling in writing is more prevalent. Students in kindergarten through first grade who have dyslexia may show the following signs:

- Inability to create a rhyme for a simple one-syllable word like "hot" or "cat"
- Inability to manipulate single sounds in words, such as in an exercise to replace the "n" sound in "can" with a "p" sound.
- Inability to separate a compound word into its two words (e.g., "rainbow" is formed with "rain" and "bow")
- Inability to separate words into their individual sounds by the end of first grade (e.g., "dog" has 3 sounds: /d/, /o/, and /g/)
- Inability to remember the names of the letters of the alphabet or consistent confusion over the letters of the alphabet
- Difficulty with letter–sound correspondences (e.g., learning the sound "duh" goes with the letter "d")
- A tendency to read words with no connection to the letters on the page
- Inability to track words with one's finger when following along with oral reading
- A heavy reliance on the pictures in a story to "read"
- Difficulty remembering basic sight words like "to," "the," "look," and "my"
- Difficulty sounding out one-syllable words (e.g., "dog," "hop," "bat")
- Complains that the student does not like to read and finds it difficult to do, or active avoidance of reading
- A tendency to make reading errors that are not connected to the sounds of the letters on the page
- Difficulty understanding segmentation

It is still typical for students at this age to display the following signs and behaviors:

- Difficulty with some of these signs through the middle of kindergarten
- Difficulty with later-developing sounds, including *v, th, ch,* and consonant blends when speaking
- Confusion over the letters "b" and "d," especially when writing
- Use of picture cues to help with unknown words when reading
- Use of phonetic spelling and a tendency to transpose letter positions in high-frequency words, such as "wiht" for "with"

- Use of consistent punctuation and difficulty making some letter formations correctly
- Boredom when listening to chapter books and a preference for picture books instead
- Preference for other activities over reading

Students in Second Grade Through Third Grade

Reading demands increase significantly during these grades. Passages and words become longer, and grammar and use of different verb tenses are more complicated; there is an increased focus on comprehending and responding to reading. Reading demands in other subjects, such as mathematics, also increase as students are expected to read directions and short word problems individually. At this age, students are expected to write one or more paragraphs with mostly standard spelling. Students in second through third grade who have dyslexia may show the following signs:

- Omission of grammatical endings in reading and writing (-s, -ed, -ing, and so forth)
- Trouble segmenting multisyllabic words or with use of segmentation strategies when reading
- Avoidance of reading aloud or frustration with reading tasks
- Difficulty applying "word attack" strategies and phonics rules to unknown words
- Use of wild guesses of words, especially words that are based on the initial letter sound and have little or no relationship to the rest of the word
- Ongoing difficulty with common high-frequency words such as "with," "this," and "for"
- Frequent confusion over words that look similar, such as "what/want" and "these/those"
- Difficulty remembering spelling words over time and learning spelling rules
- Misspellings of common high-frequency words
- Insertion of many pauses or hesitations when talking, or use of "repairs" by starting the sentence over frequently
- Trouble recalling specific words and use of many filler words, such as "stuff" or "things," instead of the proper names of objects when talking
- Requirements of extra time to formulate sentences, answer questions, or finish tests
- Difficulty telling a story in sequential order
- Difficulty remembering dates, phone numbers, names, and random facts
- Confusion over words that sound alike when speaking
- Consistent reading and spelling errors, such as letter reversals, word reversals, inversions, transpositions, and substitutions
- Difficulty learning the connection between letters and sounds

- Difficulty decoding single words
- Confusion over small words
- Transposition of number sequences and confusion over arithmetic signs
- Difficulty in learning mathematical facts, especially multiplication tables
- Difficulty remembering facts
- Reliance on guessing and use of contextual cues when reading
- Difficulty learning new vocabulary
- Reliance on memorization without comprehension
- Difficulty planning, organizing, and managing time, materials, and tasks
- Poor penmanship and difficulty using a mature pencil grasp or use of space on the page
- Poor fine motor coordination and struggle to perform sequential motor tasks
- Difficulty understanding directions
- Difficulty telling time and understanding time concepts, such as "before" and "after"
- Strong comprehension of material that is read to the student as opposed to text that she tries to read
- Below-average acquisition of reading skills
- Mispronunciation of long, unfamiliar, or complicated words
- Difficulty learning a foreign language

It is still typical for students at this age to display the following signs and behaviors:

- The need to slow down or the need for help in sounding out multisyllabic words
- Use of imprecise language, especially when the subject matter is new
- Misspellings of words that are longer or not frequently used
- Occasional omission of a word or misreading of a word when reading longer passages aloud
- The need to wait to read chapter books until the middle of third grade

Students in Fourth Grade Through Eighth Grade

Reading demands increase dramatically starting in fourth grade as the school system transitions from teaching students how to read to using reading as a tool for students to learn new information. This transition is called the move from "learning to read" to "reading to learn." Reading instruction tends to focus on comprehension strategies, fluency, and gaining new vocabulary. Writing demands also increase dramatically, and students are expected to compose multiparagraph essays. As students move into middle school, in-class reading

diminishes, and independence in reading activities is the basis of most assignments. Students with dyslexia who previously managed to struggle through reading demands often become overwhelmed by the amount of independent reading, the increase in complex vocabulary, and the speed at which reading takes place from fourth grade onward. Students in fourth through eighth grade who have dyslexia may show the following signs:

- A history of struggling to read or poor reading skills
- A demonstration of reading error patterns normally observed in younger children
- Consistent choices in independent reading that are below grade level
- Significant difficulty reading and spelling multisyllabic words, as well as frequent omissions of entire syllables and single sound errors
- A lack of awareness of word structure and knowledge of prefixes and suffixes to support reading
- Frequent errors in reading common sight words (e.g., “where,” “there,” “what,” “then,” “when,” “the,” and so forth)
- Lack of smoothness or fluency when reading aloud: the student’s reading is marked by pauses, a slow pace, multiple self-corrections, and monotone inflection
- Lack of attention to punctuation when reading aloud and the blending together of sentences or phrases without regard to meaning
- Difficulties with reading comprehension and learning new information from text because of underlying difficulties reading words
- Comprehension difficulties because the student’s reading speed is labored and the student does not recall information or is focused only on decoding words as opposed to the meaning of the text
- Difficulty learning new vocabulary
- Difficulty learning a foreign language
- Continued problems with spelling, using phonetic representation for longer words, and transposing letter places in common words
- Difficulties organizing ideas for writing
- Avoidance of reading for pleasure or reading aloud
- Poor performance on written, timed tests and better performance on oral exams
- Persistence of earlier oral language or word recall problems
- Weak decoding skills
- Below-average fluency when decoding multisyllabic words
- Difficulty with word problems in mathematics

- Difficulty recalling facts
- Below-average sight-word vocabulary
- Difficulty in learning spelling strategies, such as root words, affixes, and spelling patterns
- Reading skills that are below grade level
- A tendency to reverse letter sequences
- A tendency to spell the same word differently on the same page
- Illegible handwriting or a tendency to avoid writing
- Difficulty with nonliteral language
- Difficulty with written composition
- Difficulty with planning, organizing, and managing time, materials, and tasks

It is still typical for students at this age to display the following signs and behaviors:

- A tendency to stumble when reading new vocabulary words
- The need for explicit instruction in subject matter for full comprehension
- The need to reread a passage with a lot of information or new terms to understand it
- A tendency to forget new vocabulary, especially vocabulary associated with an academic subject
- A tendency to misspell new or multisyllabic words
- The need to use graphic organizers to develop writing ideas
- The need for adult assistance with organizing ideas in a multiparagraph essay
- The need for support to manage and organize time

Students in High School Through College

Many individuals with dyslexia go undiagnosed or are diagnosed only once in high school or college. The following items are common signs of dyslexia in young adults who have not been previously identified:

- A childhood history of reading and spelling difficulties, many of which persist
- A tendency to read with great effort and at a slow pace, although reading skills have developed over time
- An avoidance of reading for pleasure and of reading aloud
- Difficulty with notetaking in lecture-based classes
- A tendency to pause or hesitate often when speaking and the use of imprecise language, such as “stuff” and “things”

- Frequent mispronunciation of the names of people and places
- Difficulty remembering names of people and places and confusion over names that sound alike
- A tendency to struggle to retrieve words; the student has the "It was on the tip of my tongue" moment frequently
- A spoken vocabulary that is smaller than the student's listening vocabulary
- An avoidance of saying words that might be mispronounced
- The persistence of earlier oral language difficulties
- A self-image of being dumb, or a concern that the students' peers think he is dumb despite the fact that he has good grades
- Difficulty with multiple-choice tests
- Frequent sacrificing of social life for studying
- Extreme fatigue when reading
- An inability to perform rote clerical tasks well
- Difficulty with organizing projects and time management

It is still typical for students at this age to display the following signs and behaviors:

- The need for guidance on developing higher-level concepts in all areas
- The need for extra review for new, content-specific vocabulary
- The need for extra time for reading material that is informationally dense
- The need for guidance in determining good sources of information

Strengths Observed in Students with Dyslexia

Despite possible academic difficulties, individuals with dyslexia may also be gifted and talented in various areas. Dyslexia often exists in persons with aptitudes, talents, and abilities that enable them to be successful in many other domains. They often find alternative ways of gathering knowledge and innovative strategies to learn, work, and achieve in life (Yale Center for Dyslexia & Creativity 2016). For example, individuals with dyslexia may show special aptitude in certain kinds of visual spatial thinking or three-dimensional awareness and may excel in professions requiring those abilities. They may also have strong technical and mechanical aptitude. In fact, individuals with dyslexia have succeeded in a broad range of careers, including law, medicine, writing, and science (Shaywitz 2003). Listed below are strengths that students with dyslexia may exhibit (Shaywitz 2003). Again, it is important to note that the following list is not exhaustive, and students with dyslexia may or may not exhibit these specific characteristics:

- Curiosity
- An advanced maturity level
- An eagerness to embrace new ideas
- A talent at building objects
- A strong imagination
- Problem-solving abilities
- Enjoyment and skill in solving puzzles
- Ability to replicate models or three-dimensional objects
- Strong thinking skills: conceptualization, imagination, and reasoning
- Good listening comprehension
- Strength in areas that do not rely on reading
- The ability to read and to understand practiced words in a special area of interest
- A strong understanding of vocabulary through listening comprehension
- Experiential learning
- Ability to understand the "big picture" or "gist" of things

MORE INFORMATION

- The International Dyslexia Association's Dyslexia Basics provides an overview of dyslexia, including its characteristics and demographics.
- The Centers for Disease Control and Prevention (CDC) offers a Milestone Moments resource to help parents watch for important markers in their child's growth and development.
- Both the University of Michigan's Clues to Dyslexia and the Yale Center for Dyslexia & Creativity's Signs of Dyslexia provide information about the signs and strengths of dyslexia in children and students.

This chapter covers the following topics:

- **The adverse effects that dyslexia can have on students' psychological well-being**
- **Resulting problems with self-image that affect a student academically**
- **Strategies for providing psychosocial support for students with dyslexia**
- **A research article from 2016 offering more information**

CHAPTER 5

Socioemotional Factors of Dyslexia

Students with dyslexia face social and emotional challenges in addition to academic challenges. They have anxiety, depression, and other social, emotional, and mental health conditions on the order of two to five times greater than those of their peers (Wilson et al. 2009). In many cases, before entering school, children with dyslexia are described by their caregivers as eager, bright, curious, proactive, and articulate, characteristics that would seem to promote school success. Over time, the students' formerly inquisitive and proactive nature can decline and be replaced by low self-worth, frustration, despair, and self-defeating coping mechanisms. More research is showing that social and emotional factors, such as motivation and grit, play a crucial role in academic achievement above and beyond the students' general ability to learn. For this reason, it is very important to address these concerns to support a dyslexic student's social and emotional needs in addition to providing sound and effective reading intervention.

Students with dyslexia often feel anxious in situations where they worry that they will make a mistake or be ridiculed by others. This anticipation of failure can make the student even more anxious, especially in new situations, and lead to avoidance and depression (Cosden 2001). Repeated failure in school may lead to low academic self-concept and low self-esteem, which in turn may lead to behavior problems that are secondary but equally important to the learning issues (Zeleke 2004). Those with low self-esteem tend to respond less to intervention (Nelson, Benner, and Gonzalez 2003), and these characteristics may extend into adulthood (Alexander-Passe 2012). A dyslexic child may present as being unmotivated, lazy, resistant, or defiant. It is important for caregivers and teachers to understand that these behaviors may be a direct result of a dyslexic child's low self-concept and repeated feelings of failure.

Parents of students with dyslexia may have a cognitive, emotional, and behavioral profile that is similar to that of their children, which can create and intensify family stress (Bonifacci et al. 2014). The severity of stress depends on whether the student feels like he has social support, and it may be increased if he has attention-deficit/hyperactivity disorder (ADHD) as a co-occurring condition. Stress also occurs more frequently in girls.

Consequently, focusing not only on remediating literacy skills but also on students' relative strengths and on building resilience are important components of remediation and promoting positive outcomes for students with dyslexia (Haft, Myers, and Hoeft 2016); see figure 5.1. In addition, gaining access to supportive resources and building secure emotional bonds with caregivers, parents, and teachers all have an important influence on a student's motivation, resilience, and academic outcomes.

Having close relationships may provide role models and support, and they may allow the child to have more positive peer and social interactions. By creating a low-conflict environment and promoting positive teacher–student relationships, a child's teacher can play a key role in each student's successful academic outcomes regardless of academic ability (Liew, Chen, and Hughes 2010). Teachers should use active methods of teaching social skills, such as role playing (Durlak et al. 2011), maintaining an organized classroom, and keeping groups of students small (when possible) to foster closer relationships.

Cognitive and Socio-Emotional Framework of Dyslexia *(Adopted from Haft, Myers, Hoeft. Curr Opin Beh Sci 2016)*

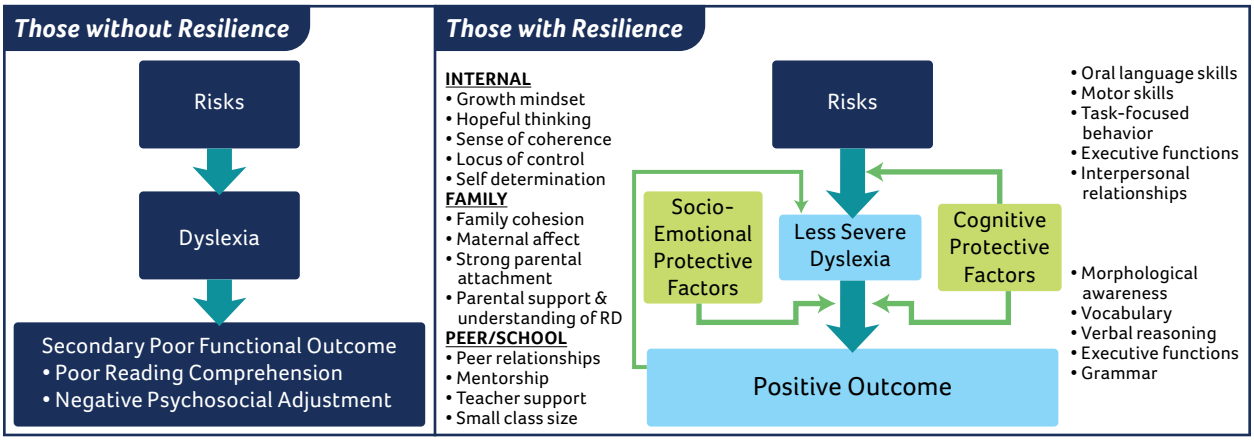

Figure 5.1. Cognitive and Socioemotional Framework of Dyslexia. The left panel shows that students at risk or those who have the diagnosis of dyslexia may face many challenges. The right panel shows some of the evidence-based protective factors that have been shown to make at-risk or dyslexia students resilient to academic and psychosocial difficulties. Part of this figure has been reprinted from *Current Opinion in Behavioral Sciences;* the specific article is "Socio-Emotional and Cognitive Resilience in Children with Reading Disabilities" (2016) by Stephanie L. Haft, Chelsea A. Myers, and Fumiko Hoeft, pp. 133–41, used with permission from Elsevier.

MORE INFORMATION

The article "Socio-Emotional and Cognitive Resilience in Children with Reading Disabilities" explores the factors that build resilience in students who have reading disabilities.

This chapter covers the following topics:

- Factors other than dyslexia that can affect students academically
- Exclusionary criteria listed in federal and California law
- Distinguishing dyslexia from other reading disabilities
- Online sources for more information

CHAPTER 6

When the Concern May Not Be Dyslexia

The term "extrinsic factors" refers to external factors that can partially or fully explain a student's academic, social, emotional, or behavioral strengths and struggles. Extrinsic factors are not suggestive of a disability, and they may include sociocultural differences, economic disadvantage, lack of instruction or inconsistent schooling, inappropriate instruction, the classroom environment, and typical second language acquisition stages. Students frequently have a wide variety of extrinsic factors that affect their lives and, consequently, their participation and progress in school. These differences must be examined at an individual level (Hamayan et al. 2007; Gaviria and Tipton 2012).

California's regulations pertinent to identification of a specific learning disability recognize the adverse impact that extrinsic factors may have on students' achievement. They define the *exclusionary criteria* under which a student may not be considered as having a specific learning disability. These criteria are academic difficulties that are primarily the result of "visual, hearing, or motor disability; intellectual disability; emotional disturbance; cultural factors; environmental or economic disadvantage; or limited English proficiency" (Title 5, *California Code of Regulations,* Section 3030[b][1][C][3]).

California *Education Code* Section 56329 says that a student cannot be determined to have a disability if the student's difficulties result from a "Lack of appropriate instruction in reading, including the essential components of reading instruction as defined in Section 6368(3) of Title 20 of the *United States Code.*" This section of federal law defines the essential components as "explicit and systematic instruction in (A) phonemic awareness; (B) phonics; (C) vocabulary development; (D) reading fluency, including oral reading skills; and (E) reading comprehension strategies."

Consequently, careful consideration of each student's background—including school history as well as environmental, cultural, and economic factors—becomes essential in the identification of a student's needs and in the selection of the most appropriate interventions. Investigation of extrinsic factors should include a review of a child's case history as well as information from parents, teachers, and other professionals involved with the student. A few extrinsic factors are discussed below.

English Learners

Extrinsic factors should be examined at the individual level given specific family, regional, and other intra- and intercultural influences that can affect students. Although a small percentage of English learners have an intrinsic disability, a vast majority of English learners struggle while learning a second language, making a detailed evaluation of this population especially critical (Hamayan et al. 2007; Gaviria and Tipton 2012); see chapter 7 for more information. The San Diego Unified School District has developed a Comprehensive Evaluation Process for English Learners that includes a list of extrinsic factors which may affect all learners (Gaviria and Tipton 2012):

- Physical and psychological factors, such as physical health, mental health, self-esteem, and life experiences
- Personal and cultural factors, such as mobility, cultural and community interactions, and family circumstances
- Language development factors, such as oral language skills, language proficiency, contexts of use, and instructional strategies
- Previous and current learning environment factors, such as educational history, opportunities to learn, and gaps in attendance and instruction.

Socioeconomic Status

To further support the consideration of these environmental factors in the academic progress of all students, studies that have investigated the progression of phonemic awareness in children found that socioeconomic status and maternal education were significantly correlated with the level of phonemic awareness of the child. These correlations were found to be much stronger than those of race or ethnicity (Lonigan et al. 1998; Fernandez-Fein and Baker 1997). Because *correlation* does not equate with *causation,* the interpretation of the test results of this population must be treated with great care. Further, a prediction of increased difficulty with learning phonemic awareness for students living in a low socioeconomic environment does not mitigate the need for effective phonemic awareness instruction as a critical foundation for learning the alphabetic principle, especially for students already known to be at risk for reading difficulties.

Motivation

Successful students typically are motivated students. If students are taught what they need to know to become competent readers and writers and how to do what is expected of them, they will be motivated to read and write. Students who *appear* to be "unmotivated" are usually those who, despite innate intelligence and consistent effort, are met with daily failure as they struggle to attain success that is never within their reach.

Motivation is a psychological factor that directly affects exposure, practice, and, consequently, the reading progress of all learners. Children who read well tend to read more and often, build their skills, and become better readers. The easier it is for a student to learn to read, the more likely it is that the student will be motivated. In contrast, children who read poorly tend to read less and irregularly, which hinders further growth of reading skills through decreased exposure and practice. Differences in exposure and practice have a profound impact on reading achievement and on achievement across all academic areas.

Distinguishing Dyslexia from Other Reading Disabilities

Many psychological processing functions and interactions can also influence the identification of specific learning disabilities, the impact of reading disabilities such as dyslexia, and educational outcomes for students with deficits in reading. In addition, it is important to note that dyslexia often coexists with other developmental difficulties and disabilities.

Several key processing functions that interact frequently in reading include language processing, processing speed, attention, and memory. To clarify how these various processing functions might be related to common reading errors and approach patterns, the following tables identify the possible impact that may be observed on reading for the processing functions of language, attention, and memory. Analysis of error and approach patterns, processing functions, and observed educational outcomes can be an important part of producing recommendations for interventions that will target the specific needs of an individual student.

Table 6.1. Relationship of error patterns to language processing deficits

ERROR PATTERNS	POTENTIAL AREA OF PROCESSING SKILL WEAKNESS LANGUAGE PROCESSING							
	Deficits in Word Identification	Challenges with Fluency	Limited Vocabulary	Semantic and/or Syntactic Challenges	Decoding Difficulties	Weak Semantic Integration	Limits to Prior Exposure to Text/Style	Reliance on Literal and/ or Flexible Thinking
Slow rate of reading and weak recall of content	X	X	X		X		X	
Sentence-level confusion of content		X		X	X	X		
Comprehension of sentences with weak recall of paragraphs				X		X	X	
Recall stronger from initial content than later content						X		
Recall stronger from later content than beginning of reading material	X	X			X			
Recall of basic facts but weak grasp of main concepts			X	X		X	X	
Retention of main concepts but with missing details	X		X					
Understanding of content with weak inferential capability						X		X
Understanding of narrative writing but weaknesses related to expository materials			X	X		X	X	X
Difficulties with figurative language, taking perspective, and fact versus opinion			X	X		X		X
Improved recall when material read aloud	X	X			X			
Weak skills at summarizing	X	X	X	X		X		
Ability to answer questions when referencing text but inability to summarize or recall	X	X	X	X	X	X		
Weak comprehension despite good decoding			X	X		X	X	

Table developed by the Dyslexia Guidelines Work Group.

Table 6.2. Relationship of error patterns to memory deficits

ERROR PATTERNS	POTENTIAL AREA OF PROCESSING SKILL WEAKNESS MEMORY								
	Active Working Memory	Retrieval Memory	Auditory Memory Channels	Selective Memory	Convergent Memory	Memory Capacity	Memory for Detail	Memory Storage	Short-term Memory
Slow rate of reading and weak recall of content		X	X		X	X			
Sentence-level confusion of content	X								
Comprehension of sentences with weak recall of paragraphs	X	X				X		X	X
Recall stronger from initial content than later content	X			X		X			X
Recall stronger from later content than beginning of reading material		X				X		X	
Recall of basic facts but weak grasp of main concepts			X	X	X	X			
Retention of main concepts but with missing details	X	X		X		X			
Understanding of content with weak inferential capability					X				
Understanding of narrative writing but weaknesses related to expository materials	X					X		X	
Difficulties with figurative language, taking perspective, and fact versus opinion			X						
Improved recall when material read aloud	X								
Weak skills at summarizing		X			X		X	X	X
Ability to answer questions when referencing text but inability to summarize or recall		X		X			X	X	X
Weak comprehension despite good decoding			X		X			X	

Table developed by the Dyslexia Guidelines Work Group.

Table 6.3. Relationship of error patterns to attention and depth of processing deficits

ERROR PATTERNS	POTENTIAL AREA OF PROCESSING SKILL WEAKNESS ATTENTION AND DEPTH OF PROCESSING							
	Attention for Sequential Information	Weak Sustained Attention	Weak Attention Channels	Depth of Attention Process	Attention for Spatial Features	Attention Capacity	Attention for Detail	Organizational Skills
Slow rate of reading and weak recall of content		X	X				X	
Sentence-level confusion of content		X		X				
Comprehension of sentences with weak recall of paragraphs		X	X	X		X		X
Recall stronger from initial content than later content				X		X		
Recall stronger from later content than beginning of reading material	X	X				X		X
Recall of basic facts but weak grasp of main concepts			X	X		X		
Retention of main concepts but with missing details				X		X	X	
Understanding of content with weak inferential capability	X				X			X
Understanding of narrative writing but weaknesses related to expository materials	X				X	X	X	X
Difficulties with figurative language, taking perspective, and fact versus opinion				X				X
Improved recall when material read aloud				X		X		
Weak skills at summarizing	X	X		X				X
Ability to answer questions when referencing text but inability to summarize or recall	X	X	X	X		X	X	X
Weak comprehension despite good decoding			X	X		X	X	X

Table developed by the Dyslexia Guidelines Work Group.

Use of RtI^2

Parents and professionals are encouraged to consider the extent to which extrinsic factors are present and significant as well as the extent to which factors interact with each other and affect a student's achievement in school. For teams identifying reading disabilities, it is important to provide instruction and interventions that systematically rule out extrinsic factors as the primary contributors to students' difficulties. The implementation of Response to Instruction and Intervention (RtI^2) provides information about a student's progress after she has received evidence-based instruction. Such information serves to test a student's learning potential and helps inform parents and educators about the need for more targeted interventions, a change in intensity or duration of instruction, or the provision of special education services (see chapter 9 as well).

MORE INFORMATION

- Understood.org published an article to help parents distinguish dyslexia from other learning disabilities: "Dyslexia: What It Is and Isn't".

CHAPTER 7

Dyslexia in English Learners

This chapter covers the following topics:

- **The challenges of identifying dyslexia in English learners**
- **Additional steps that need to be taken to appropriately identify dyslexia in students who are English learners**
- **Definitions of English learners at various stages of second language acquisition**
- **Predictors for dyslexia shared by English learners and students for whom English is their first language**
- **Online sources for more information**

Although dyslexia is found in all student populations and in people within all cultures and languages, English learners are often identified as having dyslexia much later, if ever, in comparison to their peers (Rivera et al. 2008; Wagner, Francis, and Morris 2005). This is a significant problem for the State of California because nearly one-fourth of all English learners reside in California, and 22.8 percent of students attending public schools in California are English learners (compared to 9.2 percent of students in the United States) (Snyder and Dillow 2015). Furthermore, enrollment of English learners in public schools in the United States is outpacing the enrollment of students who are not English learners (Education Commission of the States 2013).

It is difficult to distinguish between poor English reading skills that result from dyslexia and those resulting from reduced exposure to English (Rivera et al. 2008; Klingner, Artiles, and Barletta 2006). This disparity contributes to an inequality in English proficiency and educational attainment, leading to income and health disparities for English learner populations (American Psychological Association 2012; August and Hakuta 1997; Education Commission of the States 2013; Frazier 2013).

English learners are a diverse group. For those who speak English only, there are reliable screeners to predict young students who are at risk for dyslexia or in need of early reading intervention. Extending these findings to English learners is complicated due to the variability in prior language experience, the general lack of English proficiency, the degree of linguistic variability in the 400-plus native languages spoken by English learners (Zong and Batalova 2015), and the lack of normed measures and qualified practitioners.

For these reasons, additional steps must be added to standard procedures to ensure appropriate identification of dyslexia in children who are English Learners. These steps include gathering the following information:

- **Home background:** languages spoken at home, including the language used by parents and caregivers from birth
- **Developmental history:** developmental milestones of a child in acquiring the native language and English—especially as related to the amount of exposure
- **Educational history:** all prior schooling, both in and outside the United States, with specifics of the language and literacy instruction provided (e.g., attendance in all educational settings; instructional approaches used; and the setting, which includes the size of the group or classroom)
- **English language proficiency:** English language abilities (speaking, listening, reading, spelling, and writing) assessed by using norm-referenced measures and at multiple time points

Literacy skills and schooling experiences in the first language have a strong effect on academic development in the second language (Collier and Thomas 2002). For example, English learners may be newly arrived to the United States with adequate schooling, newly arrived to the United States with limited formal schooling, or they may be long-term English learners (Freeman, Freeman, and Mercuri 2002).

- "Newly arrived with adequate schooling" are students who have lived less than five years in the United States and received adequate schooling in their native country. Although these students tend to catch up rapidly with respect to academics, they may still score low on standardized tests given in English.
- "Newly arrived with limited formal schooling" are students who have lived less than five years in the United States and have experienced interrupted or limited schooling in their native country. They present with limited native language literacy, function below grade level in mathematics, and have poor overall academic achievement.
- An English learner who is "developing normally" has been in the United States for one to five years and is making adequate progress in her English language development.
- A "long-term English learner" is defined in *Education Code* Section 313.1(a)(1) as follows:
  (a)(1) "Long-term English learner" means an English learner to which all of the following apply:
  (A) Is enrolled in any of grades 6 to 12, inclusive.
  (B) Has been enrolled in schools in the United States for six years or more.
  (C) Has remained at the same English language proficiency level for two or more consecutive prior years, or has regressed to a lower English language proficiency level, as determined by the English language development test identified or developed pursuant to Section 60810, or a score determined by the Superintendent on any successor test.
  (D) For a pupil in any of grades 6 to 9, inclusive, has scored far below basic or below

basic on the prior year's English language arts standards-based achievement test administered pursuant to Section 60640, or a score determined by the Superintendent on any successor test.
(2) A pupil for which the required testing results are not available for either subparagraph (C) or (D) of paragraph (1) shall not have that criteria applied and such pupil shall not be excluded based on that criteria.

Long-term English learners may speak English in a way that sounds fluent but may still struggle academically. They may have some adequate grades but score low on standardized tests and have trouble with state-mandated exams. These students have also had English as a Second Language (ESL) instruction, English Language Development (ELD) instruction, or bilingual instruction, but they may not have received a consistent, well-articulated program of instruction (Olsen and Jaramillo 1999; Freeman, Freeman, and Mercuri 2002).

- A student who is "at risk of becoming a long-term English learner" is defined in *Education Code* Section 313.1(b)(1) as follows:
  (b) (1) "English learner at risk of becoming a long-term English learner" means an English learner to which all of the following apply:
  (A) Is enrolled in any of grades 3 to 12, inclusive.
  (B) Has been enrolled in schools in the United States for four to five years.
  (C) Has scored at the intermediate level or below on the prior year's English language development test identified or developed pursuant to Section 60810, or a score determined by the Superintendent on any successor test.
  (D) For a pupil in any of grades 3 to 9, inclusive, has scored in the fourth or fifth year at the below basic or far below basic level on the prior year's English language arts standards-based achievement test administered pursuant to Section 60640, or a score determined by the Superintendent on any successor test.
  (2) A pupil for which the required testing results are not available for either subparagraph (C) or (D) of paragraph (1) shall not have that criteria applied and such pupil shall not be excluded based on that criteria.
  (3) The Superintendent is encouraged to revisit a score determined for any successor test pursuant to subparagraphs (C) and (D) of paragraph (1) of subdivision (a) and subparagraphs (C) and (D) of paragraph (1) of this subdivision after three years of assessment data on the successor test.

Since vocabulary knowledge and phonological awareness are associated with success in reading, young English learners who enter school with a limited vocabulary in English and limited or nonexistent literacy in their native language lack the prerequisite skills that facilitate reading development (Mather and Wendling 2012). Because language background and exposure are environmental factors, the difficulties that these young English learners

may demonstrate should not be confused with the reading difficulties of dyslexia. It is also important to remember that young English learners are often learning to read a language that they do not speak proficiently and, as result, have difficulty connecting the words they read with their meaning. According to Brice and Brice (2009), English learners often struggle with basic phonemic awareness and may experience reading difficulties because they lack English vocabulary; therefore, English learners are highly likely to experience reading difficulties because of limited English proficiency.

When extrinsic factors are ruled out (see chapter 6), and when progress monitoring and observation indicate that it is necessary, formal evaluation using norm-referenced measures should follow informal information gathering. While differentiating the challenges of English learners from signs that might indicate dyslexia can be a challenge, careful evaluation at the earliest stage possible is necessary with English learners—just as it is for native English speakers. Measures of critical foundational skills, such as phonological awareness and rapid naming (two major predictors of early reading ability and dyslexia), should be assessed in both the native and English language—because they are strong indicators of later literacy outcome (Linklater, O'Connor, and Palardy 2009), poor in bilingual children with dyslexia, and show corresponding neural deficits (You et al. 2011). Most significant, these early literacy skills transfer across languages (Shum et al. 2016; Cárdenas-Hagan, Carlson, and Pollard-Durodola 2007).

Additional considerations when evaluating English learners include the following items:

- For a student's increased comprehension, someone who is competent in the student's native language should administer the evaluation.
- Whenever possible, the language or writing system to be evaluated should be English as well as the student's native language (especially if the native language is Spanish, for which many norm-referenced tests exist).

English learners often need extra support during assessment, but these students also need extra support in oral language development as a foundation for literacy instruction and reading intervention (Cárdenas-Hagan 2011). The similarities of words in the native language and English must be explicitly taught, which can lead to expansion of oral language and vocabulary. Additional considerations are listed below:

- Explicitly teach predictable structure to help establish routines; this approach will make it easier for students to understand expectations without in-depth knowledge of English.
- Repeat, adjust speed and complexity of language in oral presentation (instructions and explanations), and provide native language support when the student does not understand or whenever needed.
- Provide extra time for English learners to process the English language and have sufficient time to respond.

MORE INFORMATION

- San Diego Unified School District published a process manual in 2012 titled *CEP-EL: A Comprehensive Evaluation Process for English Learners*.
- Brice and Brice (2009) published a study titled "Investigation of Phonemic Awareness and Phonic Skills in Spanish-English and English Speaking Kindergarten Students".
- Dr. Criselda G. Alvarado and the Bilingual Special Education Network of Texas offer additional information on the topic of Best Practices in the Special Education Evaluation of Students Who Are Culturally and Linguistically Diverse.
- In 2010 the California Department of Education published *Improving Education for English Learners: Research-Based Approaches.* This book provides information on effective, differentiated literacy instruction for English learners and on educating English learners with disabilities. The publication can be purchased through the CDE Web site at http://www.cde.ca.gov/re/pn/rc/.

This chapter covers the following topics:

- The importance of teaching from evidence-based research on dyslexia
- Standards for reading teachers that have been developed by the International Dyslexia Association (IDA)
- The types of educators who can serve students with dyslexia
- Online sources for more information

CHAPTER 8

Pre-Service and In-Service Preparation for Educators

Although the problems experienced by students with dyslexia may originate with neurobiological differences, the most effective treatment for these students and for those who struggle with related reading and language problems is skilled teaching. For that reason, it is critical that educators receive accurate and current information about evidence-based instructional strategies.

Effective classroom instruction informed by reliable research can prevent or reduce the severity of reading and language problems (IDA 2010). Teachers must be taught to identify the characteristics of high-quality research and to distinguish between research that is trustworthy and research that is weak and ill-informed (Lyon 2002, 2016). Both special and general educators must be prepared with evidence-based research about *how* children learn, *why* some children have difficulties, and *how* the most effective instructional approaches can be identified and implemented (Lyon 1997, 2002).

Learning to teach reading, oral language, and written expression is a complex undertaking. The competence and expertise of teachers can be cultivated with training that emphasizes the study of reading development, language structure, and individual patterns of language, learning strengths, and weaknesses. In addition, to learn to use instructional strategies effectively, teachers need supervised practicum opportunities, especially if they are responsible for teaching students with dyslexia.

The Need for Standards

According to the IDA, "Although programs that certify or support teachers, clinicians, or specialists differ in their preparation methodologies, teaching approaches, and organizational purposes, they should ascribe to a common set of professional standards for the benefit of the students whom they serve. Compliance with these standards should assure the public that individuals who teach in public and private schools, as well as those who teach in clinics, are prepared to implement scientifically based and clinically proven practices" (IDA 2010).

To that end, the IDA (2010) developed professional *Knowledge and Practice Standards for Teachers of Reading* that provide recommendations for classroom educators and for dyslexia specialists. These standards include both content knowledge and information about the application of the standards.

The standards for classroom educators cover the following topics:

Section I: Knowledge and Practice Standards

A. Foundation Concepts about Oral and Written Language

B. Knowledge of the Structure of Language

C-1. Structured Language Teaching: Phonology

C-2. Structured Language Teaching: Phonics and Word Recognition

C-3. Structured Language Teaching: Fluent, Automatic Reading of Text

C-4. Structured Language Teaching: Vocabulary

C-5. Structured Language Teaching: Text Comprehension

C-6. Structured Language Teaching: Handwriting, Spelling, and Written Expression

D. Interpretation and Administration of Assessments for Planning Instruction

E. Knowledge of Dyslexia and Other Learning Disorders

Section II: Guidelines Pertaining to Supervised Practice of Teachers Who Work in School Settings

Spear-Swerling and Brucker (2004) suggest that if pre-service teachers were given the opportunity to acquire basic foundational knowledge of English language structure, they would have the opportunity to develop expertise in individual interventions and implementation of instructional strategies during in-service staff development. Again, a critical element in the education of both pre-service and in-service teachers is the need for the opportunity to practice the acquired conceptual and foundational knowledge under supervised conditions (Ness and Southall 2010; Spear-Swerling and Brucker 2004).

The Need for a Variety of Engaged Educators

There is a great need for all educators and related service providers to be prepared to meet the needs of students with dyslexia, including speech-language pathologists, school psychologists, school counselors, school administrators, and paraprofessionals. This preparation should be provided both at the pre-service and in-service levels. There needs to be a commitment on the part of university teacher preparation and educational credentialing programs to prepare individuals to directly address the needs of students with dyslexia in the classroom. Appropriate recognition and treatment of dyslexia are the responsibility of all educators and support personnel in a school system, not just the reading or special education teacher.

Speech-language pathologists (SLPs). These professionals receive pre-service training that prepares them to support students with dyslexia and other types of language-based reading disabilities. According to the American Speech-Language-Hearing Association (2001) position statement, SLPs have a major role and responsibility to play in supporting both spoken language skills (listening and speaking) and written language skills (reading and writing) in individuals. SLPs receive specific pre-service training that prepares them to be supportive team members in the prevention, identification, assessment, and intervention of students with reading disabilities, including dyslexia, through direct intervention and collaboration with other educators.

School psychologists and school counselors. Regarding students with dyslexia and other learning challenges, the role of school psychologists and school counselors is a critical yet often unrecognized one. Wilson and Colmar (2008) suggest that school counselors are important professionals in advising students with dyslexia who exhibit poor self-esteem, behavior challenges, and a lack of interest in school. They also state that school counselors and school psychologists are often unaware of the research-based practice for reading intervention and, consequently, are not prepared to fully understand the challenges experienced by individual students who are struggling to learn to read. Wilson and Colmar (2008) recommend that school counselors learn about the elements of phonological and phonemic awareness and phonics in addition to the socioemotional needs of these students.

School administrators. Crawford and Torgesen (2006) identified strong leadership as a significant trait in the successful schools of Florida's Reading First project. The elements identified in their study highlight the areas of focus for the preparation of school principals. They include deep knowledge of students and reading programs, the use of data, and addressing the needs of teachers; these elements should be a major focus of both pre-service and continuing in-service preparation of school principals. In other words, the principal is the instructional leader when it comes to reading instruction and reading interventions.

Paraprofessionals. There is limited research on the effectiveness of paraprofessionals at identifying and teaching struggling readers and students with other learning challenges (Lane et al. 2007; Walker and Smith 2015). Nevertheless, it is recognized that there is potential benefit for preparing paraprofessionals if they receive extensive training in using research-based reading interventions (Samson, Hines, and Li 2015).

MORE INFORMATION

- Both the IDA and the International Multisensory Structured Language Education Council (IMSLEC) accredit training courses that incorporate evidence-based curricula for teaching reading and written expression to students with dyslexia. The IDA maintains lists of University Programs Accredited by IDA and Independent Teacher Training Programs Accredited by IDA.
- The Center for Effective Reading Instruction (CERI) was founded by the IDA and offers accredited independent teacher training programs. Visit the CERI Web site for additional information about the purpose of the center and its teacher training programs.
- The Florida Center for Reading Research at Florida State University provides resources and materials to educators. In addition, the center has partnered with the University of Oregon and RMC Research Corporation to create the National Comprehensive Center to Improve Literacy for Students with Disabilities.

This chapter covers the following topics:

- The need for early identification and intervention for students with dyslexia
- The importance of universal screening when students are in general education classrooms
- The use of a Multi-tiered System of Support and Response to Intervention and Instruction
- The essential components of reading, writing, and spoken language to be screened and comprehensively assessed
- Assessing English learners for dyslexia
- Collecting information about a family history of dyslexia
- Online sources for more information

CHAPTER 9

Screening and Assessment for Dyslexia

As of 2015, 41 percent of fourth-grade students in California were reading below basic achievement levels compared with 32 percent nationally, according to the National Assessment of Educational Progress (National Center for Education Statistics 2015). For the same year, 80 percent of fourth-grade students with disabilities in California were reading below basic achievement levels; nationally, that figure was 67 percent (National Center for Education Statistics 2015).

The reasons for this overall lack of proficiency in reading achievement are complex, with various contributing factors involved. One of the greatest contributing factors to lower achievement scores in reading is the lack of early and accurate identification of students with dyslexia. According to a study published in The Journal of Pediatrics, the achievement gap between students with dyslexia and typical readers is evident as early as first grade (Ferrer et al. 2015). Not only does this gap persist into adolescence, but the trajectories of the comparison data of the two populations never converge. The researchers noted that the differences between the two groups "are not so much a function of increasing disparities over time but instead because of differences already present in first grade between typical and dyslexic readers" (Ferrer et al. 2015). The study underscores the importance of early identification of students with dyslexia and concludes by saying that "Implementing effective reading programs as early as kindergarten or even preschool offers the potential to close the achievement gap" (Ferrer et al. 2015).

Dyslexia can have a range of severity and may look different at various stages of life and education. For this reason, some people are not identified as having dyslexia until they are teenagers or adults, and some are never identified. When screening for or attempting to identify individuals with dyslexia, it is important to look at multiple symptoms and indicators as opposed to only a single symptom or indicator. This is true for the following reasons:

- No single symptom or indicator is perfectly predictive of dyslexia because of measurement error (Francis et al. 2005). This problem is reduced when multiple symptoms or indicators are assessed.
- The way in which dyslexia expresses itself reflects the actions and interactions of multiple risk and protective factors that can be genetic and environmental (Pennington 2006).
- The unique learning histories of individual readers can affect the presence of a specific indicator. For example, an individual who has been remediated intensively may become relatively accurate at decoding individual words but lack the fluency required for successful comprehension.
- At the college level, it is not unusual to have a student with a history of dyslexia who has responded successfully to intervention and is able to decode words with sufficient accuracy. However, the student may continue to struggle with spelling, writing, or reading difficult material fluently.

Key Definitions

Screening. Screenings are conducted with all students in their general education classrooms as part of the typical instruction. Screenings may include checklists, work samples, curriculum-based assessment tools, and informal or formal standardized achievement tools. The use of a schoolwide, multi-tiered system of support (discussed later in this chapter) may assist educators in determining whether individual students require more intensive interventions. A screening is not a diagnostic assessment.

Assessment. Assessments gather data through observation, interviews, and formal and informal testing. Assessments are initially conducted with individual students (with parental consent) to determine whether the student may need special education. Assessments at public schools are conducted by professionals such as school psychologists, special educators, pediatricians, speech-language pathologists, and reading specialists.

Progress monitoring. As interventions are implemented in a student's education, their effectiveness in facilitating the student's academic progress should be monitored. The data gathered during progress monitoring should help educators determine the effectiveness and benefit of the intervention. The Center on Response to Intervention at American Institutes for Research defines this term as follows: "Progress monitoring is used to assess students' academic performance, to quantify a student rate of improvement or responsiveness to instruction, and to evaluate the effectiveness of instruction. Progress monitoring can be implemented with individual students or an entire class" (Center on Response to Intervention 2017).

Universal Screening in the General Education Setting

"Universal screening" means that *all* students are screened: the entire grade level or the entire classroom. Screening for children at risk for dyslexia is a critical first step in the identification of and effective intervention for students with dyslexia. It is important that the teacher, who knows the student well, be involved and that the screening instrument has good psychometric properties (e.g., good sensitivity and specificity) and has been shown to be effective. Screenings should be conducted as outlined below:

- Who is responsible for universal screening? General education teachers, reading specialists, and Response to Intervention (RtI) specialists can all administer universal screening tests. Screenings should be conducted by spring during kindergarten and continue each year as a student progresses through school. When implemented with adequate training, universal screening tools can help educators to support students' needs early. The data will then be used within the "grade-level teams" to make decisions about each student's education. Following the initial intervention and data collection, the next level of intervention includes the student's parents; specialists in learning, reading, and speech-language; and psychologists, if necessary.
- What will be used to screen students? Universal screening tools need to be evidence-based and user friendly to provide data that support early intervention. For each grade level, it is important that screenings target the following areas: phonemic awareness; letter naming; sound-symbol correspondence; single word decoding for real and pseudo-words; sight-word recognition; rapid naming for letters and numbers; spelling; listening comprehension and oral expression; reading comprehension (if applicable); oral reading fluency; and written expression, including handwriting (see appendix A for a list of screening tools).
- When will the screenings be used? Universal screening tools should be used with all students beginning in kindergarten and should continue every year.

To identify students with dyslexia as early as kindergarten, districts can implement a comprehensive, collaborative approach to screening all students through a multi-tiered system of support. When students are identified as needing more individualized instruction, the next level of instruction is delivered in a more specialized model, which could be a small-group setting, with a more highly trained professional, and by using more intensive intervention strategies. The goal of the process is to systematically identify students' learning needs through the implementation of evidenced-based instruction and assessment specifically designed for students with dyslexia. This screening can be conducted with a process involving Response to Intervention and Instruction (RtI^2) or a Multi-Tiered System of Support (MTSS) by using tools that are already in place for most California school districts. Pre- and post-assessments must be used to determine whether the provided supports are

beneficial to the student. If students are not making adequate progress in a timely manner, the team needs to reevaluate the current interventions in place.

Multi-Tiered System of Support

In a "Dear Colleague" letter presenting guidance on dyslexia, the federal Office of Special Education and Rehabilitative Services (OSERS) defined a multi-tiered system of support as a "school-wide approach that addresses the needs of all students, including struggling learners and students with disabilities, and integrates assessment and intervention within a multilevel instructional and behavioral system to maximize student achievement." The letter also notes that MTSS "may be used to identify children suspected of having a specific learning disability" by providing an instructional framework through which schools can "identify students at risk for poor learning outcomes, including those who may have dyslexia; monitor their progress; provide evidence-based interventions; and adjust the intensity and nature of those interventions depending on a student's responsiveness." The letter also states that "Children who do not, or minimally, respond to interventions must be referred for an evaluation to determine if they are eligible for special education and related services" (OSERS 2015).

In California, MTSS is defined as "an integrated, comprehensive framework that focuses on [the Common Core State Standards], core instruction, differentiated learning, student-centered learning, individualized student needs, and the alignment of systems necessary for all students' academic, behavioral, and social success" (California Department of Education [CDE] 2016b). California has a long history of providing numerous systems of support, including interventions within the RtI^2 processes; supports for special education, Title I, and Title III; and support services for English learners, American Indian students, and those in gifted and talented programs. MTSS offers the potential to create needed systematic change through intentional design and redesign of services and supports that quickly identify and match the needs of all students (CDE 2016b).

Response to Intervention and Instruction

The Individuals with Disabilities Education Act was amended in 2004 to include alternative means of identifying students for a specific learning disability besides the traditional IQ-achievement discrepancy model. One alternative, "Response to Intervention," is designed to be a collaborative, comprehensive, multi-tiered system for identifying students who are struggling academically and providing them with appropriate interventions before referral for special education.

The National Research Center on Learning Disabilities (2006) defines Response to Intervention as "an assessment and intervention process for systematically monitoring student progress and making decisions about the need for instructional modifications or

increasingly intensified services using progress monitoring data." Whether referred to as Response to Intervention and Instruction, a Multi-tiered System of Support, or tiered or leveled intervention, the goal of the process is to systematically identify student learning needs through the implementation of evidenced-based instruction and assessment.

In California, the Department of Education expanded the term Response to Intervention to include the word "instruction" in order to emphasize the full spectrum of instruction, from general to intensive. Response to Instruction and Intervention is defined as "a systematic, data-driven approach to instruction that benefits every student. RtI² integrates resources from general education . . . and special education through a comprehensive system of core instruction and tiered levels of interventions to benefit every student" (CDE 2016c).

Venn Diagram of MTSS and RtI²

The following figure displays similarities and differences between California's MTSS and RtI² processes. Both rely on RtI²'s data gathering through universal screening, data-driven decision making, and problem-solving teams, and both are focused on the Common Core State Standards. However, the MTSS process has a broader approach, addressing the needs of all students by aligning the entire system of initiatives, supports, and resources and by implementing continuous improvement processes at all levels of the system.

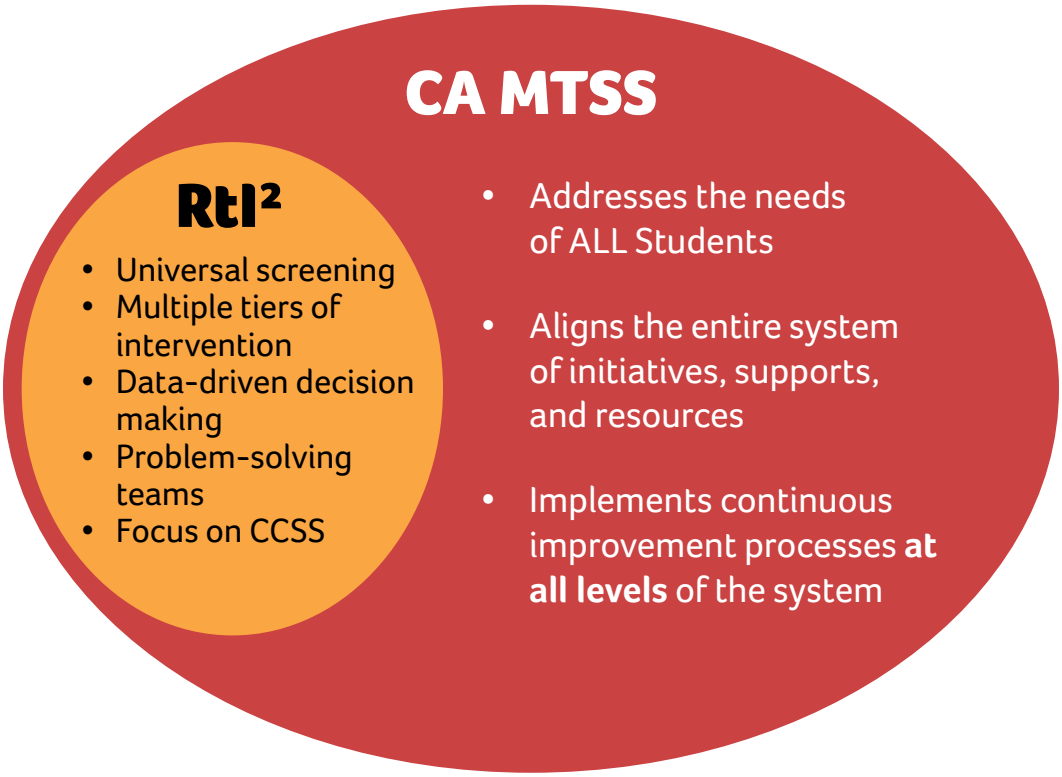

Figure 9.1. Similarities and differences between California's MTSS and RtI² processes. This figure is also viewable through the California Department of Education Web site.

With regard to the assessment and identification of students with dyslexia, the assessments administered through a tiered intervention process can be completed in the general education setting, before referral for a special education assessment, to determine whether a student may meet eligibility criteria for special education services under the category of a specific learning disability (SLD). The assessment process within a tiered intervention system may resemble that proposed by Ogonsky (2008):

Tier 1 Universal Screening. A universal screening applies to all students. All students should be screened in kindergarten and no later than first grade. Subsequently, students should participate in high-quality, research-based reading instruction in the general education setting.

Tier 2 Progress Monitoring: Targeted Small-Group Intervention. Students with targeted skill needs in the areas of reading, spelling, and writing (approximately 15 percent of the student population) receive more intensive instruction—for example, small-group instruction in up to three of the foundational reading skills, three to five days per week, 20 to 40 minutes per session, in addition to core curriculum instruction (National Association of Elementary School Principals 2011). The ideal educator-to-student ratio is one educator to five students.

A reasonable duration for the intervention would be four to eight weeks. These students are then assessed in targeted areas one to two times a week with materials that are at their instructional level. Tier 2 and Tier 3 interventions are sometimes provided by other professionals, such as speech-language pathologists, RtI intervention specialists, reading specialists, or paraprofessionals. If a student has been referred to Tier 2 interventions because of her dyslexia screening, it is important that the student receive an evidence-based, multisensory, direct, explicit, structured, and sequential approach to instruction (see chapter 11). In addition, evidence-based techniques and strategies designed to target specific language deficits (e.g., phonological awareness) may be implemented.

Tier 3 Individualized Intervention with Intensified Progress Monitoring. Students with the most intensive needs (approximately 2 to 5 percent of the student population) receive even more intensive instruction (e.g., instruction that focuses on fewer skills and provides extended daily sessions in addition to core curriculum instruction) over a period of four to eight weeks. The ideal educator-to-student ratio is one to three. Student progress in targeted areas is documented and monitored three times a week with materials that are appropriate for their instructional level. The decision to make a special education referral is the responsibility of the individualized education program (IEP) team or intervention team and the parents or guardians of the student.

The continuous monitoring of the data in reading, writing, and spelling helps school teams to determine whether students are responding to the instruction and intervention provided.

Students who are not showing growth may require instructional adjustments beyond the core curriculum and may need special education services. School teams may then decide to refer these students for formal psychoeducational assessment to determine whether they meet the eligibility criteria for special education under the category of "specific learning disability." It should be noted, however, that RtI^2 cannot be used to delay or deny a timely initial evaluation to determine whether a child is a student with a disability and, therefore, eligible for special education and related services (OSERS 2011).

Progress Monitoring

All teachers need to be informed about the progress monitoring tools they are required to use or they choose to use. Particularly, teachers must understand these aspects of progress monitoring:

- Patterns of strengths and weaknesses
- The specific components of a skill that are assessed (regardless of the name or label of the subtest) and how each skill is assessed
- How the outcome measure is related to what is being taught in the classroom
- What a line on a graph indicating progress means specifically (not generally) for the student
- What a line on a graph indicating regression means specifically (not generally) for the student

Screening and Assessment by Skill Area

Table 9.1 provides a graphic way of listing the essential skills that can be tested when determining whether a student might be at risk for dyslexia.

Table 9.1. Essential components of reading, writing, and spoken language for screening and comprehensive assessment

SKILL	DEFINITION AND EXAMPLES	HOW IT LOOKS IN DYSLEXIA
ESSENTIAL FOR ASSESSMENT		
Phonological Awareness including Phonemic Awareness	***Phonological Awareness*** refers to an individual's awareness of and access to the sound structure of oral language. It is the understanding that spoken language can be divided into smaller units (i.e., words, syllables, onset-rime, and phonemes) and that those units can be identified and manipulated. Students are initially more proficient with perceiving these larger units (e.g., words) than individual sounds (e.g., phonemes). Rhyming is also a task of phonological awareness. **Examples:** ***Rhyming.*** Tell me a word that rhymes with /top/. *(/hop/, /mop/).* ***Syllable Blending.*** Blend these syllables to pronounce a whole word: /ta/ /ble/ *(/table/)* ***Phonemic awareness*** is a subset of phonological awareness that refers specifically to the understanding of and ability to manipulate the discrete, individual sounds of language called phonemes. The critical phonemic awareness skills that serve as a foundation for beginning reading are segmentation, blending, and manipulation. **Examples:** ***Phoneme Segmentation.*** Pronounce all the phonemes (speech sounds) in /cat/: *(/k/ /a/ /t/).* ***Phoneme Blending.*** Blend these phonemes (speech sounds) to pronounce a whole word: /b/ /l/ /a/ /s/ /t/: *(/blast/).* ***Phoneme Isolation.*** Identify the initial, final, and medial sounds in words. What is the last phoneme (sound) in /dog/? *(/g/)* ***Phoneme Deletion.*** Say /skip/ without /k/. *(/sip/)*	Difficulty in phonological awareness, especially phonemic awareness, is one of the best predictors of dyslexia and a key predictor of early literacy acquisition. Rudimentary ability to blend, segment, and manipulate phonemes within words and syllables is a prerequisite for *understanding* phonics (grapheme–phoneme association for word identification and phoneme–grapheme association for spelling). These basic skills of blending, segmenting, and manipulating phonemes facilitate students' understanding of the "place value" of the sequence of graphemes and phonemes within words. However, there are some students with dyslexia who do not necessarily have poor phonological awareness. There is a stronger neurobiological (genetic) basis than environmental basis to phonological processing.
Rapid Naming: Letters, Numbers, Colors, Objects	The ability to quickly name (label) common objects, colors, digits, and letters presented visually. Rapid naming of digits and letters is more closely associated with learning to read; however, for younger students who do not yet know letter or number names, assess naming for objects, colors, shapes, etc. Phonological processing is required for rapid naming but additionally requires executive functioning, attention, and fluency, among other abilities.	A strong predictor of dyslexia and early literacy acquisition—but less so than phonemic awareness or alphabet knowledge. It is likely that those with difficulties in both phonemic awareness and rapid naming have more severe forms of dyslexia.

Table 9.1. (*continued*)

SKILL	DEFINITION AND EXAMPLES	HOW IT LOOKS IN DYSLEXIA
Alphabet Knowledge	Ability to name individual letters.	One of the best predictors of dyslexia and a key predictor of early literacy acquisition.
Grapheme–Phoneme and Phoneme–Grapheme Association	***Grapheme–Phoneme Association*** is the ability to associate graphemes with the phonemes they spell. **Examples:** <h> spells /h/ as in /house/. <ee> spells /ē/ as in /feet/. ***Phoneme–Grapheme Association*** is the ability to associate phonemes with the graphemes that spell them. **Examples:** /ch/ is spelled with <ch> as in /chair/. /oi/ is spelled with <oi> as in /boil/.	Difficulties in grapheme–phoneme and phoneme–grapheme association are hallmark signs of dyslexia. There is a direct relationship between difficulties in phonological processing and development of grapheme–phoneme and phoneme–grapheme associations.
Single Word Decoding of Real Words and Predictable Nonwords	***Decoding of real words*** is the ability to use systematic decoding strategies to accurately identify and pronounce real words through grapheme–phoneme association. ***Decoding of nonwords (pseudo-words)*** is the ability to automatically identify (pronounce) predictable pseudo-words correctly when presented with a list. **Examples:** <op> <mest> <plig> <greb>.	Dyslexia involves a specific difficulty in word and nonword (pseudo-word) decoding that is based on a weakness in the phonological aspect of language. There is a direct relationship between difficulties in grapheme–phoneme and phoneme–grapheme associations and these decoding abilities.
Reading Comprehension	The understanding of what is read aloud or silently. Should consider both narrative and expository texts and assess both literal (explicit) and inferential (implicit) understanding. A variety of types of assessments (e.g., multiple-choice, open-ended, closure) should be considered since each type measures different skills within reading comprehension.	Students with dyslexia may have difficulty in reading comprehension with strengths in listening comprehension. The challenges with reading comprehension may be the result of deficits related specifically to reading (e.g., inaccurate word identification-decoding, limited syntactic awareness, limited morphological awareness, etc.).
Oral Reading Fluency	The accuracy, speed, and prosody (intonation and meaningful phrasing) of a student's reading of text at an instructional level.	Many students with dyslexia have difficulty with reading fluency due to a number of factors (e.g., poor decoding; limited awareness of syntax, including grammar; an underlying processing speed deficit). In adults with dyslexia, students who have been successfully remediated, and in students using efficient compensatory strategies, the rate aspect of reading fluency may remain as a difficulty (unexpectedly slower rate with intact accuracy and comprehension).

Table 9.1. (*continued*)

SKILL	DEFINITION AND EXAMPLES	HOW IT LOOKS IN DYSLEXIA
Encoding (Spelling)	Both the ability to spell individual words in isolation and in the context of written expression must be assessed. Individual words are dictated and the student writes words on paper. Students may also be asked to spell predictable pseudo-words, which removes visual memory from the task. Spelling accuracy must also be assessed within context of students' independent written expression.	Spelling is most often impaired in students with dyslexia because spelling (encoding) and reading (decoding) have a reciprocal relationship. For adults with dyslexia, students who have been successfully remediated, and in students using efficient compensatory strategies, spelling deficits are easier to identify than reading deficits.
ADDITIONAL MEASURES ESSENTIAL FOR COMPREHENSIVE ASSESSMENT		
Phonological Memory	Also known as verbal short-term memory, phonological memory is the capacity to store small amounts of phonological information for brief periods of time. It is distinguished from verbal working memory, verbal long-term memory, or spatial short-term memory. **Examples:** Memory for Digits: Repeating a sequence of digits such as "seven, five, three, nine" presented orally. Nonword Repetition: Repeating a nonword (simulates pronunciation of an unfamiliar word or a word from a foreign language).	Many students with dyslexia have difficulty with phonological memory. However, poor phonological memory not only predicts long-term phonological memory and decoding, but it also predicts vocabulary acquisition and oral language comprehension.
Oral Language (Receptive, Expressive)	Oral language is the system through which we use spoken words to express ourselves (expressive language—speaking), and understand others (receptive language—listening). Oral language is the foundation of written language.	Some students with oral language (speaking and listening) deficits may also have dyslexia; however, there are many students with dyslexia with average to superior oral language skills. Strong abilities in oral language may lessen the effects of dyslexia so that symptoms are less severe. Expressive language issues sometimes seen in students with dyslexia can include difficulty with specific word retrieval and oral fluency. Receptive language issues seen in some students with dyslexia can include difficulty with being able to accurately recall and retell a story or a list of words presented verbally.

Table 9.1. (*continued*)

SKILL	DEFINITION AND EXAMPLES	HOW IT LOOKS IN DYSLEXIA
Syntactic Processing	The ability to combine and manipulate the order of words or the smallest meaningful chunks within a word (morphemes) in order to construct sentences. **Example.** One hears the sentence "The boy being pushed by the girl is sad." Chooses the appropriate picture to match the sentence. In this case, the correct picture could show a sad-looking boy on a swing being pushed by a girl. An incorrect picture could show a sad-looking girl on a swing being pushed by a boy.	Students with dyslexia do not typically have difficulty with syntactic processing. Problems with awareness and understanding of syntax often affect language comprehension (e.g., listening, reading).
Morphological Processing	Morphological processing is the ability to take the smallest meaningful units (chunks) within a word and manipulate them to form other words. Manipulation of morphemes can create words that differ in several ways: ▪ different part of speech (derivational) happy ➔ happiness finish ➔ finite ➔ infinite ➔ finality ▪ grammatical change (inflectional) small ➔ smaller ➔ smallest march ➔ marches ➔ marched boy ➔boys	Students with dyslexia do not typically have difficulty with morphological processing. However, some students with dyslexia do lack morphological awareness.
Orthographic Processing	Orthography is the writing system of a language (i.e., spelling) and includes conventions, punctuation, and capitalization. Knowledge of orthography is stored in memory in the form of rules and representations of words or parts of words—and used to read and spell words.	Orthographic processing is one of several cognitive factors, along with phonological processing, that contribute to the ability to read words.
Handwriting	The process of writing consists of text generation and transcription skills; transcription skills can further be broken down into handwriting and spelling. Handwriting for written expression requires the integration of orthographic knowledge (see above) with the physical act of letter formation. It is often assessed by the quality of the written letters (e.g., consistency and accuracy of letter formation, size, spacing, alignment—ability to anchor letters on lined paper) and also by fluency (e.g., writing letters of the alphabet or copying text under timed conditions). **Example.** There is no consensus on how handwriting is best assessed. Methods of assessment range from measuring fluency (e.g., having children copy a sentence containing all of the letters of the alphabet as many times as possible in one minute) to careful examination of handwriting quality.	Handwriting (automatic letter formation) has been shown to be causally related to quality of written expression (e.g., text length and text quality), especially for younger children.

Table 9.1. (*continued*)

SKILL	DEFINITION AND EXAMPLES	HOW IT LOOKS IN DYSLEXIA
Written Composition, Writing Mechanics, and Writing Fluency	Broadly defined, **written expression** includes a complex set of abilities (e.g., idea generation; organization of ideas; ability to generate topic sentences, supporting sentences, and concluding sentences; and editing and revision; mechanics—capitalization, punctuation, handwriting and keyboarding). Additional factors to assess include vocabulary, spelling, grammar, and syntax (e.g., sentence structure). **Writing fluency** is the ability to smoothly and effortlessly compose written texts.	Although students with dyslexia often have poor written expression, writing mechanics, and writing fluency, currently there is no established evidence that these are important signs of dyslexia. These are seen in students with dysgraphia (writing disorder) and are a highly comorbid condition (coexisting) in students with dyslexia.

Source: Dyslexia Guidelines Work Group.

Comprehensive Language-Literacy Assessment of Individual Students for Dyslexia

It is important not to delay evaluating a student who may be at risk of dyslexia to determine eligibility for special education. The student who has demonstrated processing deficits (e.g., phonological processing [i.e., phonological awareness, phonological memory, rapid naming]; orthographic processing; processing speed) and who is experiencing difficulties in reading, spelling, and written expression in comparison with his age, grade level, or intellectual peers can be considered at risk of dyslexia.

Within the general education classroom, instruction should meet the following standards:

- It should be appropriate (e.g., explicit, systematic, cumulative, simultaneous, multisensory) and implemented with fidelity.
- It should be delivered within a comprehensive model of multi-tiered interventions.
- It should also include ongoing, documented progress monitoring.

When a student has demonstrated limited or slower-than-expected progress, additional assessment is needed. An evaluation for dyslexia includes assessment in written language areas (e.g., reading, spelling, handwriting, written expression) that are characteristic of dyslexia: letter identification; letter–sound (grapheme–phoneme) associations; word identification-decoding of real and pseudo-words; reading fluency (i.e., accuracy, automaticity, *and* prosody); reading comprehension (sentence and passage levels); spelling (real and pseudo-words); and written expression (sentence and passage levels). The evaluation should include reading comprehension and written expression because they require higher-level organization, memory, and integration of skills for functional use and application.

Since oral language is the foundation for building literacy skills, a comprehensive language-literacy evaluation should also include assessment of oral language skills (e.g., comprehension and production of spoken language in the areas of phonology, morphology, and syntax [form], semantics [content], and pragmatics/discourse [use]).

To make an accurate identification of dyslexia, the evaluator or evaluation team must also consider a student's developmental and medical history (including vision and hearing screenings as well as medications), family and school history, teacher reports, self-reports, parent reports, social and emotional status, and current classroom performance.

It is important for educators and parents to recognize that dyslexia is only one type of a reading disability, and it is one that has a specific definition describing the types of difficulties experienced by the student (see chapter 1). In addition, students may have difficulty with oral language, reading, and spelling but not meet the criteria for dyslexia (see chapter 6). This statement does not diminish the fact that a student may be experiencing difficulties.

When assessing to determine whether a student has dyslexia, the various components of the definition of dyslexia must be considered and evaluated. Because dyslexia occurs on a continuum, patterns of processing strengths and weaknesses and patterns of academic (written) language strengths and weaknesses vary from student to student. Further, some students may even appear to have acquired average or above-average phonological processing abilities, either naturally or with instruction, but still have dyslexia.

Regarding the definition of dyslexia, there are four areas that must be evaluated. Assessing these four areas may take place in the general education classroom; however, the same information will be relevant when investigating whether a student is eligible for special education.

To be identified as having dyslexia, the following areas should be assessed:

1. Difficulties with accurate and fluent word recognition, and poor spelling and decoding abilities

Within general education, these abilities would be assessed by way of skill surveys and criterion-referenced measures. The student's performance levels would be compared with age- or grade-level expectations. During an assessment to determine eligibility for special education, students are typically evaluated by using nationally norm-referenced, standardized tests of academic achievement as well as informal measures. These informal measures are typically administered by special education teachers, but some of the measures may be administered by other professionals, including speech-language pathologists and psychologists.

2. Deficits in the phonological component of language

Within general education, these skills may be evaluated by any of a number of phonological processing (phonological memory, phonological awareness, phonemic awareness, and naming speed) skill surveys. Many schools are using these surveys as a portion of their benchmark progress testing.

During an assessment to determine eligibility for special education, students may be assessed for a phonological processing deficit by using standardized tests and measures. These assessment measures are typically administered by a speech-language pathologist or a psychologist, but credentialed special education teachers are also qualified to administer some of these measures.

3. Difficulties that are unexpected in relation to other cognitive abilities

Within general education, educators must informally make the determination that a student's reading difficulties are unexpected. For example, this determination might be documented by comparing the student's skill levels in mathematics, or by noting a strong vocabulary (oral or listening or both) and listening comprehension skills.

During an eligibility assessment for special education, school psychologists administer a variety of tests to determine the student's level of intellectual ability. These standardized, norm-referenced tests assess verbal and nonverbal abilities, memory, processing speed, cognitive efficiency, and a variety of cognitive processing areas. In California, assessment of students who are identified as African American must consider issues of potential cultural bias and use alternate assessment methods to evaluate intellectual ability.

4. Difficulties that are unexpected in relation to the provision of effective classroom instruction

In both general education and during an assessment to determine eligibility for special education, the quantity and quality of instruction must be considered. Additionally, the student's attendance at school and the provision of appropriate instruction in reading and spelling skills need to be taken into consideration. When determining special education eligibility, it is also important to ensure that remediation and interventions have been attempted within the general education classroom.

Screening and Assessment of English Learners

Because dyslexia is defined as a reading disability in relationship to oral language skills, if a student speaks a language other than English at home, her English language proficiency level should be considered when an assessment in English is being conducted. State and federal law require that local educational agencies administer a state test of English language

proficiency (ELP) to eligible students in kindergarten through grade twelve. Educators should consider the student's results on the California English Language Development Test (CELDT) or the English Language Proficiency Assessments for California (ELPAC).

The California Department of Education is transitioning from the CELDT to the ELPAC as the state ELP assessment by 2018. The ELPAC will be aligned with the 2012 California English Language Development Standards and will consist of two separate ELP assessments: one for the initial identification of students as English learners, and a second for the annual summative assessment to measure a student's progress in learning English and to identify the student's level of ELP.

Although dyslexia is found in all student populations and in people of all cultures and speakers of all languages, English learners are often identified as having dyslexia much later, if ever, in comparison to their peers. Educators should also bear in mind that many English learners may have difficulty reading in a second language or a language in which they may not be totally proficient, such as English, but few of these learners may actually have a disability. For this reason, the provision of targeted interventions is important, and documentation of intervention history and progress is essential when determining disability status or whether a student is at risk for dyslexia.

In addition, California *Education Code* Section 56320 requires that testing and assessment materials and procedures used for the purposes of assessment and placement of students with exceptional needs be provided in the student's native language or mode of communication, unless it is clearly not feasible to do so. Bilingual students should be assessed in both languages before determining that a specific learning disability or a speech or language disorder is present.

When evaluating English learners with standardized assessment tools, evaluators should also bear in mind that there is evidence that some of the variance in test scores predicted by "ethnicity" actually relates to level of acculturation, literacy, or quality of education (Strauss, Sherman, and Spreen 2006). Consequently, it is important to carefully consider the extent to which each English learner being evaluated is properly represented in the normative sample of the standardized assessment tool selected. Standardized assessments do not typically provide detailed information on how minority groups are defined, even though the method by which race, culture, or ethnicity is determined may influence the composition of test norms. For this reason, minority groups defined by self-identification, observed physical differences, or rating scales reflecting degree of acculturation will necessarily differ to some extent.

Family History of Dyslexia

Information should be collected as to family history of dyslexia and other learning disabilities. It has long been known that dyslexia is heritable and runs in families. Family history of dyslexia

is now considered to be a significant risk factor (Snow, Burns, and Griffin 1998). If a child has a parent with dyslexia, the risk is four times greater than for the general population (Snowling and Melby-Lervåg 2016).

Most likely because dyslexia involves a large number of risk genes, each one having a very small effect on the overall presentation of dyslexia (Plomin et al. 2016), genetic testing is currently unable to determine the likelihood of developing dyslexia. Measurement of family history in English learners and immigrants is also challenging because literacy skills and educational attainment may be difficult to track in family members; may be driven by extreme environmental factors (e.g., wars or displacements); may not be assessed in the same way that western cultures assess them; and may not be disclosed for cultural reasons (Paradis, Emmerzael, and Duncan 2010).

Often, however, family history is a helpful indicator of dyslexia risk that is easy to obtain (Scarborough 1989). In the absence of a formal diagnosis, families can complete one of several screeners for children and adults that will provide an estimate of dyslexia, risk for developing dyslexia, and familial risk (see appendix A).

MORE INFORMATION

- The California Department of Education's Diagnostic Centers are the Department's foremost providers of specialized services and assistance to special education students, their families, and local educational agencies. Established more than 50 years ago, the Diagnostic Centers provide high-quality assessments to hundreds of students each year, as well as professional development opportunities for families and educators throughout the state. The Diagnostic Centers are located in Fremont, Fresno, and Los Angeles, and their services are provided at no charge to the local educational agency or family.
- The Center for Parent Information and Resources provides guidance on Evaluating Children for Disability, which includes a description of the process for assessing students for special education as well as related federal requirements. Similar guidance is available from the Learning Disabilities Association of America.
- The What Works Clearinghouse offers a practice guide titled *Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades*. This guide offers evidence-based practices.
- The OnHand Schools Web site provides a discussion about the differences between RtI and MTSS as well as a visual depiction of what MTSS comprises.

- For a more detailed discussion of the differences and similarities between RtI² and MTSS, see the Definition of MTSS on the California Department of Education Web site. The site also provides information about the core components of MTSS and the implementation of RtI².
- For more information about using RtI² to identify students with specific learning disabilities, refer to *Determining Specific Learning Disability Eligibility Using Response to Instruction and Intervention (RtI²)* (CDE 2009).
- In November 2015, the National Center for Education Evaluation and Regional Assistance released a large study of students and school districts on the effectiveness of RtI. Titled *Evaluation of Response to Intervention Practices for Elementary School Reading*, the study raises questions about the benefits of RtI, particularly for students in first grade and those who receive special education.
- The *Alabama Dyslexia Resource Guide*, Appendix A, provides examples of dyslexia screening tools. The guide was published by the Alabama State Board of Education in 2016.
- The California Department of Education's English Language Proficiency Assessments for California (ELPAC) Web page provides additional information about the department's transition from the California English Language Development Test to the English Language Proficiency Assessments for California.

CHAPTER 10

Special Education and 504 Plans

This chapter covers the following topics:

- **Determining whether a student is eligible to receive special education**
- **Federal guidance on use of the word "dyslexia" in individualized education programs**
- **Information about 504 plans**
- **Online sources for more information**

A student who has dyslexia does not necessarily need special education and is not automatically eligible to receive it. California law states that "A pupil shall be referred for special educational instruction and services only after the resources of the regular education program have been considered and, where appropriate, utilized" (*Education Code* Section 56303). A student who is identified by an individualized education program (IEP) team as a child with a disability as required by law is eligible to receive special education under the federal Individuals with Disabilities Education Act. There are 13 categories of qualifying disabilities, one of which is "specific learning disability." Dyslexia is grouped under this category (Title 20, *United States Code,* Section 1401[3][A] and *Education Code* Section 56026).

Special education provides specifically designed instruction and related services, at no cost to the parent, to meet the unique educational needs of individuals with exceptional needs whose educational needs cannot be adequately met with accommodations and modifications within the general education instructional program. Special education provides a full continuum of program options to meet the educational and service needs of individuals with exceptional needs in the least restrictive environment. This instruction can include a special education classroom, resource specialist program, general education setting, pull-out program, home instruction, and instruction in a hospital or institution (*Education Code* sections 56031, 56040.1, and 56361).

Determining a Specific Learning Disability

California has regulations that guide the process for determining whether a student has a specific learning disability:

1. The student has a severe discrepancy between intellectual ability and achievement in oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematical calculation, or mathematical reasoning. The decision as to whether or not a severe discrepancy exists shall take into account all relevant material which is available on the pupil (Title 5, *California Code of Regulations [CCR]* 3030[b][10][B]).

2. The student does not achieve adequately for his age or meet state-approved grade-level standards in one or more specified areas when provided with learning experiences and instruction appropriate for the student's age or state-approved grade-level standards, even when educators use processes based on the student's response to scientific, research-based intervention (5 *CCR* 3030[b][10][C][1] and [2][i]), such as RtI² or MTSS; see chapter 9.
3. The student exhibits a pattern of strengths or weaknesses in performance, achievement, or both, relative to age, state-approved grade-level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments (5 *CCR* 3030[b][10][C][2][ii]).

As noted in chapter 9, many of the assessment tools and techniques used to identify a student as having dyslexia may also be used to help determine whether the student meets the criteria for a specific learning disability.

The school team should partner with families to address the student's academic concerns regardless of the eligibility decision that is made. The provision of specific intervention to address an identified need may be addressed through a general education problem-solving process (e.g., as part of a schoolwide RtI² approach or MTSS). Furthermore, some students not found eligible for special education may be provided accommodations through a 504 plan.

Use of the Term "Dyslexia" in Documentation

In October 2015, the federal Office of Special Education and Rehabilitative Services (OSERS) published a Dear Colleague letter offering guidance to state and local agencies on the "unique educational needs of children with dyslexia, dyscalculia, and dysgraphia" (OSERS 2015). Although these conditions fall under the special education eligibility criteria of specific learning disabilities, the purpose of this letter was "to clarify that there is nothing in the IDEA that would prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in IDEA evaluation, eligibility determinations, or IEP documents."

The Dear Colleague letter also notes that "there could be situations where the child's parents and the team of qualified professionals responsible for determining whether the child has a specific learning disability would find it helpful to include information about the specific condition (e.g., dyslexia) in documenting how that condition relates to the child's eligibility determination." The letter also says that "OSERS further encourages States to review their policies, procedures, and practices to ensure that they do not prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in evaluations, eligibility, and IEP documents."

504 Plans

Section 504 of the Rehabilitation Act of 1973 specifies that a child who has a disability and is attending an elementary or secondary school is entitled to accommodations that will support their academic success. This legislation defines "disability" in broad terms, and often students who do not qualify for an IEP may be eligible to receive a 504 plan. A 504 plan will define the accommodations that a student needs to receive equal access to public education and services, but it will not specify "specialized instruction." An IEP should be developed for students who require specialized instruction; however, 504 plans can specify "teaching strategy accommodations." Such teaching strategy accommodations for a student with dyslexia might include these elements:

- Individual or small-group instruction
- Written materials that are read to the student by the teacher
- Provision of outlines, study guides, or organizers

504 plans for students with dyslexia may include other types of accommodations, such as the following items:

- Audio recordings of books
- Text-to-Speech technology
- Recordings of lectures
- Use of highlighters to organize written information

Parents who are interested in having a 504 plan developed for their child should contact their local school district and request the district's 504 plan procedures.

MORE INFORMATION

- In December 2016, the U.S. Department of Education, Office for Civil Rights, published a *Parent and Educator Resource Guide to Section 504 in Public Elementary and Secondary Schools*. This guide addresses numerous topics, including the evaluation and placement of students under Section 504 and the differences between Section 504 and the Individuals with Disabilities Education Act.
- The U.S. Department of Education Web site also includes Frequently Asked Questions About Section 504 and the Education of Children with Disabilities.
- Information contrasting IEPs and 504 plans is available at Understood.org, a consortium of nonprofit organizations that work to support parents of children with learning and attention issues.

- Understood.org also provides information about the evaluation process.
- In 2013, the California Legislative Analyst's Office published an Overview of Special Education in California.
- Disability Rights California provides information about the IEP process.
- The California Department of Education's Parents' Rights Web page provides a brief summary of procedural safeguards for students with disabilities who receive special education services.

CHAPTER 11

Effective Approaches for Teaching Students with Dyslexia

This chapter covers the following topics:

- **The importance of using evidence-based strategies**
- **The principles and content of Structured Literacy instruction**
- **The use of accommodations when educating students with dyslexia**
- **The use of progress monitoring data to inform the planning of subsequent instruction**
- **Online sources for more information**

California *Education Code* Section 56335(a) defines educational services for students with dyslexia as follows: " 'educational services' means an evidence-based, multisensory, direct, explicit, structured, and sequential approach to instructing pupils who have dyslexia." In the context of educating students with dyslexia, each of these terms has a specific meaning, defined below, and together constitute approaches called "Structured Literacy."

Not all students who have dyslexia will require special education. The California *Education Code* definition of educational services for students with dyslexia, presented above, appears in California's statutes on special education—but it applies to educational services for all students who have dyslexia, whether in general education classrooms or in special education. The California statute also states, "If a pupil who exhibits the characteristics of dyslexia or another related reading dysfunction is not found to be eligible for special education and related services pursuant to subdivision (a), the pupil's instructional program shall be provided in the regular education program" (*Education Code* Section 56337.5).

Evidence-Based Instruction

Federal law provides a definition of "evidence-based" as "an activity, strategy, or intervention that—(i) demonstrates a statistically significant effect on improving student outcomes or other relevant outcomes based on—(I) strong evidence from at least one well-designed and well-implemented experimental study; (II) moderate evidence from at least one well-designed and well-implemented quasi-experimental study; or (III) promising evidence from at least one well-designed and well-implemented correlational study with statistical controls for selection bias; or (ii)(I) demonstrates a rationale based on high-quality research findings or positive evaluation that such activity, strategy, or intervention is likely to improve student outcomes or other relevant outcomes; and (II) includes ongoing efforts to examine the effects of such activity, strategy, or intervention" (Title 20, *United States Code,* Section 7801[21][A]).

Teachers must be familiar with evidence-based strategies that have proven to be effective in supporting students with dyslexia. Evidence from decades of scientific research has shown that with appropriate, intensive instruction, students with all but the most severe reading disabilities can be effectively taught in the early grades so that they stay on track toward academic success (Lyon 2002, 2016). According to researchers at the National Institutes of Child Health and Human Development, for 90 to 95 percent of poor readers, prevention and early intervention programs that combine instruction in phonemic awareness, phonics, fluency development, and reading comprehension strategies—*provided by well-trained, linguistically informed teachers*—can increase reading skills to average reading levels or above (Lyon 1997). The use of evidence-based strategies can provide students with the education they need in general education settings so that only the most severe cases will need special education services.

Principles of Structured Literacy Instruction: *How* Structured Literacy Is Taught

In 2016 the International Dyslexia Association (IDA) Board of Directors identified "Structured Literacy" as a term that encompasses approaches to reading instruction that conform with IDA's *Knowledge and Practice Standards for Teachers of Reading.* Although there are many approaches with different names that fall under the "Structured Literacy" umbrella—for example, Orton-Gillingham, Simultaneous Multisensory, Explicit Phonics—all have common content (*what* is taught) and principles of instruction (*how* it is taught).

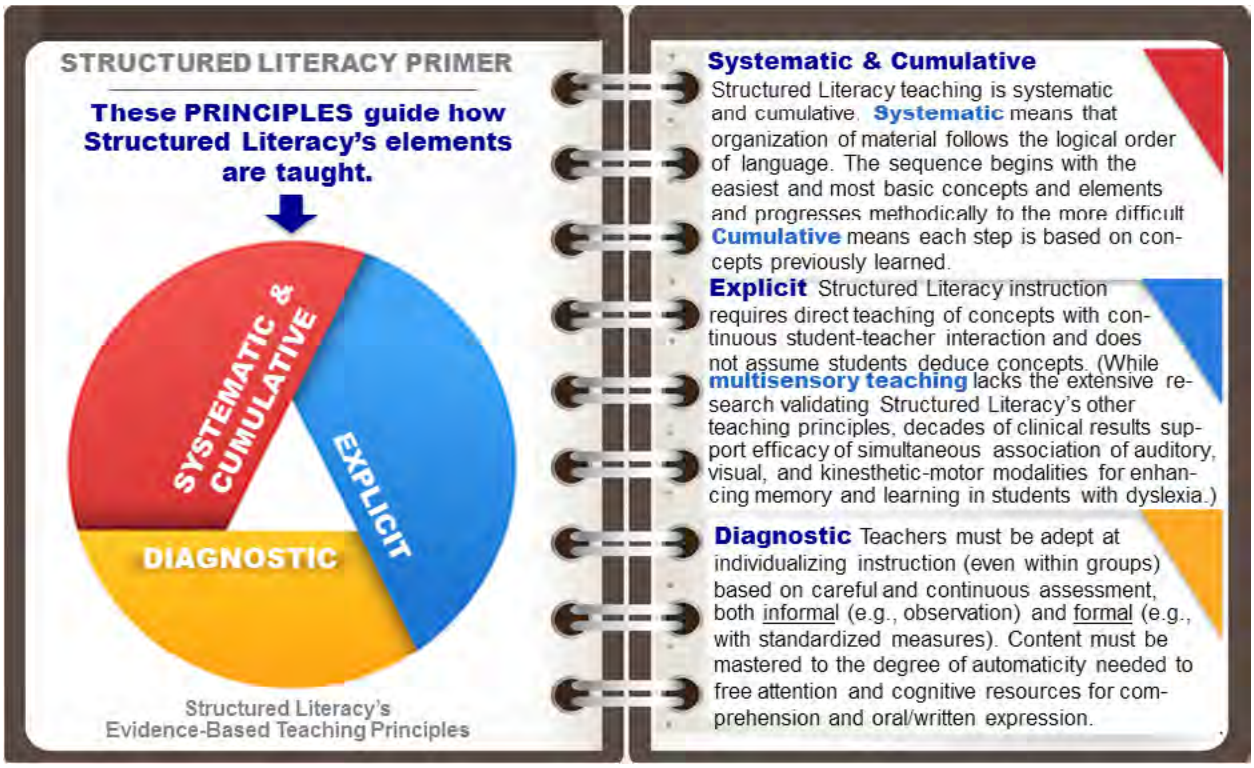

Figure 11.1. Principles that guide how structured literacy is taught. This infographic was created by Carolyn D. Cowen and is posted on the IDA Web site. Used with permission.

Simultaneous Multisensory (Multimodal). Simultaneous multisensory (multimodal) approaches incorporate two or more modalities simultaneously. The nature of every oral and written language task requires integration of at least two sensory pathways:

- Copying: visual to kinesthetic-motor (for writing)
- Silent reading: visual to auditory (inner)
- Oral reading: visual to auditory to kinesthetic-motor (for speech)
- Speaking: auditory (inner) to kinesthetic-motor (for speech)

Mappings between orthography and phonology allow novel words to be decoded and provide a foundation for acquisition of more automatic reading skills (Ehri 2000). Although numerous studies have found that explicit teaching of language structure is effective for teaching reading and spelling to students with dyslexia (Berninger and Wolf 2016; Washburn, Joshi, and Binks Cantrell 2011; Moats 2006, 2010; Henry 2010), no controlled experiments have compared instructional approaches with and without a multisensory component. However, since every language task requires the integration of at least two modalities, it would be very difficult to design a study that isolated a single multisensory (multimodal) component.

Research *has* shown that dyslexia is almost always the result of deficits in multiple processes and that weak phonological processing is the most important causal factor (Peterson, Pennington, and Olson 2013). The relative contribution of each neurocognitive process to difficulty with reading and spelling varies among individuals, and even within individuals, over time (Manis et al. 1999).

Simultaneous multisensory (multimodal) instruction purposefully integrates visual, auditory, and kinesthetic-motor pathways to support memory and learning of both oral and written language skills. Comprehensive instructional approaches that integrate the teaching of listening, speaking, reading, and written expression are incorporating simultaneous multisensory (multimodal) strategies that strengthen connections and enhance memory.

Direct and Explicit. All concepts are directly and explicitly taught to students with continuous student–teacher interaction. Learning is never assumed. All concepts, skills, and procedures are deliberately taught and practiced with teacher guidance and feedback. The goal of instruction is always independent and functional use.

Structured. Instruction follows step-by-step procedures for introducing, reviewing, and practicing concepts, always with the goal of independent functional use. Teachers must individualize instruction (even within groups) based on careful and continuous assessment using both informal (e.g., observation) and formal (i.e., standardized) tools.

Sequential and Cumulative. Presentation of concepts and skills follows the logical order of the structure of the language. Instruction is scaffolded and begins with teaching of the simple, most basic language concepts and elements and progresses systematically to more difficult and complex concepts and elements. Instruction in every lesson moves from teaching of skills to functional use and application of skills. New concepts are related to previously taught concepts, skills, and information—and presented in anticipation of future learning. Content must be mastered to the degree of automaticity needed to free attention and cognitive resources for comprehension and oral and written expression.

Content of Structured Literacy Instruction: *What* Is Taught

The content of effective teaching emphasizes the structure of language at all levels, including the speech sound system (phonology); the writing system (orthography); the meaningful parts of words (morphology); structure of sentences (syntax); meaning relationships among words, phrases, clauses, and sentences—and their referents (semantics); and the organization of spoken and written discourse (pragmatics) (IDA 2010). Instructional strategies for teaching this content emphasize planning, organization, attention to task, task analysis, critical thinking, and self-management (IDA 2010). The content and principles of instruction that are components of Structured Literacy approaches are essential for students with dyslexia but can also be useful to students without disabilities. Evidence-based key elements of Structured

Literacy work together as evidence-based instructional principles guide the teaching of Structured Literacy content.

It is important to consider the content of instruction while tailoring teaching to the individual needs of the struggling reader. This will take into account developmental stage, cognitive abilities, and the results from both informal and formal assessments. Educators and parents should teach to the intellect of struggling students by providing them with strategies for figuring out what may be difficult for them to memorize by rote. Accessing higher-level thinking and reasoning abilities of students with dyslexia may provide valuable opportunities for practice with use of potential strengths in analysis, conceptualization, creativity, imagination, visualization, and novel thinking (Shaywitz 2003).

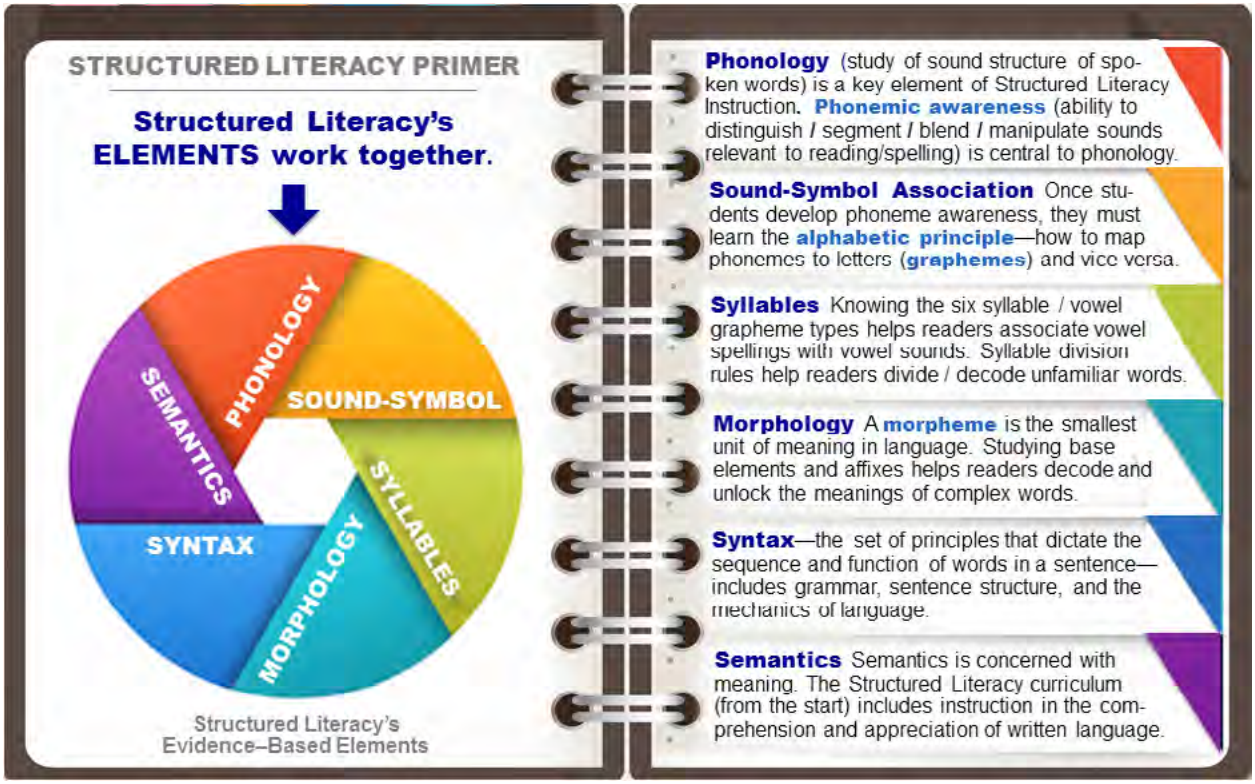

Figure 11.2. The elements of structured literacy work together. This infographic was created by Carolyn D. Cowen and is posted on the IDA Web site. Used with permission.

Phonology. Phonology is the study of the sound structure of spoken words within a single language (e.g., English). Within phonology, the phoneme awareness skills of blending, segmenting, and manipulation of speech sounds within words (or syllables) are a bridge to phoneme–grapheme and grapheme–phoneme associations (phonics).

Orthography. Orthography is the conventional spelling system of a language—the graphemes that represent the phonemes in English words. Orthographic processing, or

coding, is the ability to use orthographic knowledge (letters–symbols) to read and spell words. Orthographic awareness, the sensitivity to the constraints on how letters in written words are organized, contributes to learning letter–sound associations (Black 2016).

Students must learn to associate the sounds (phonemes) with the letters (graphemes) that represent them, and then form the letter or letters (grapheme) that spell that phoneme. When encoding (spelling) words, segmentation of each syllable into its individual phonemes—in correct sequence—is a prerequisite. This is a two-way street, wherein students also must be able to identify a letter or letters (grapheme), associate the grapheme with the sound (phoneme) it represents, and then blend the individual phonemes into a syllable or word. When decoding (reading) a word, phoneme blending is a prerequisite.

For spelling English words, there are additional considerations. When choosing the spelling for a phoneme with multiple spellings, English spelling conventions and meanings of words both play an important role (e.g., *play* versus *plate; grown* versus *groan*). In addition, suffix adding conventions, morphology, and etymology have significant influence on the spelling of English words.

Phonics. At least rudimentary understanding of phoneme blending, phoneme segmentation, and phoneme manipulation is a prerequisite to learning the alphabetic principle (phonics). Phoneme–grapheme association (encoding) and grapheme–phoneme association (decoding) require mapping of phonemes to their spellings and mapping of spellings (graphemes) to their pronunciations.

Syllables. Reading instruction includes the teaching of basic syllable types and syllable division conventions. A syllable is a unit of pronunciation that includes one vowel phoneme—with or without surrounding consonant phonemes. All syllables that end in a vowel phoneme are open syllables.

The six basic syllable types, each type based on its vowel grapheme—vowel spelling—within each syllable, were regularized by Noah Webster to justify his division of syllables in his 1806 dictionary.

However, English is a morphophonemic language that is stress-based, so pronunciation of polysyllabic words is primarily determined by placement of stress:

finite, infinite, infinity, finish, define, definition

All of the words listed above derive from the same base element (i.e., <*fine*>) and illustrate the important point, *"We never know the pronunciation of a base until it lands in a word."*

In English, spoken language syllable divisions often do not coincide with the conventions for dividing written words into syllables. Awareness of syllables is an important consideration in reading instruction. The number of vowel phonemes in a word usually indicates the

number of spoken syllables. The recognition of the type of vowel grapheme and the vowel phoneme associated with that vowel grapheme expedites accurate identification and correct pronunciation of longer, unfamiliar words—especially critical content words in academic text. Knowledge of syllable types (vowel graphemes—vowel spellings) helps students accurately read longer words because it allows them to systematically divide longer words into manageable "chunks" instead of attempting to read them letter by letter. The goal is to help students decode (read and pronounce) a word correctly so that it will be recognized and will trigger meaning association. These spelling conventions were invented to help readers decide how a word is pronounced, and they help students to know how to spell words—although knowledge of syllables alone is not sufficient for being a good speller. The six syllable types (labeled according to vowel grapheme) are listed below:

SYLLABLE TYPE	VOWEL GRAPHEME	VOWEL GRAPHEME CODE	EXAMPLE
1. Closed syllable	vowel-consonant	v_	cast, blond, strum
2. Vowel-consonant-silent e		v_e	tame, bone, theme, bite, mule, flute
3. R-controlled	vowel-r	vr	smart, scorch, term
4a. Open syllable—vowel at the end of a stressed syllable—v'/	stressed	v'/	ro' dent, cu' cum ber
4b. Open syllable—vowel at the end of an unstressed syllable—v/'	unstressed	v/'	po lite', a bout'
5. Double vowel Vowel team	vowel-vowel	vv	cream, join
6. Final stable syllable (FSS)			
consonant-le	consonant-le	_le	pur/ple
FSS that include suffixes			
		ture	pic<u>ture</u>
		cious	spa<u>cious</u>
		tion	in<u>vention</u>
		sion	inva<u>sion</u>
		cian	electri<u>cian</u>
		cient	profi<u>cient</u>

Morphology. Morphology is the study of meaningful elements within words (morphemes). Students are taught to spell and learn the meanings of morphemes—prefixes, base elements, and suffixes (both inflectional and derivational)—with the goal of improved word identification, spelling, and vocabulary. Morphological awareness allows students to recognize patterns among related words (e.g., *<u>sc</u>ience, con<u>sc</u>ious, con<u>sc</u>ientious; **<u>fin</u>**ish, **<u>fin</u>**ite, in**<u>fin</u>**ite,*

fin*al, de****fine****; de****cide****, de****cis****ion, con****cise****, in****cis****or, inde****cis****ive*) based on their spellings, even when the pronunciation of the morphemes may vary. Morphological awareness is associated with improved word identification, vocabulary, spelling, and reading comprehension (Berninger et al. 2010; Carlisle and Fleming 2003; Carlisle 2004; Henry 2010; Moats 2006, 2010; Nagy 2005; Nagy, Berninger, and Abbott 2006).

Syntax ➔ Grammar ➔ Sentence Structure. Syntax refers to word order and the rules that govern the sequencing of words within phrases, sentences, and paragraphs. Acceptable word order is taught explicitly through the study of grammar, sentence structure, and English language conventions. Knowing the parts of speech and their functions supports written expression and reading comprehension. The mechanics of language, punctuation, and capitalization are also critical components that must be directly taught and practiced with guidance. Syntax, grammar, and sentence structure are critical for learning to read with prosody (chunking words into meaningful phrases) to support reading comprehension and for construction of sentences in written expression.

Semantics/Comprehension. Semantics is the subcomponent of language that refers to word meanings and the meaning of groups of words (e.g., phrases, clauses, sentences, and paragraphs). Relationships between words, phrases, clauses, and sentences are explicitly taught:

- Individual words
- Morphology
- Syntax—to read with prosody
  - words ➔ words
  - words ➔ phrases
  - phrases ➔ clauses
  - clauses ➔ sentences
  - sentences ➔ paragraphs

Professionals Who Can Support Students with Dyslexia

No single discipline "owns" dyslexia. The level of training and experience required for professionals who teach students with dyslexia will depend on the student, the instructional approach, and the severity of the dyslexia. There are multiple factors to consider (e.g., level of support needed by the student and the stage of development in oral language, reading, spelling, and written expression achievement). Teachers need to be trained at a level that ensures their ability to deliver instruction with fidelity and with the intensity required by an individual student, small groups of students, or a classroom. Examples of various trained professionals who may support students with dyslexia include the following persons:

- General education teachers
- Credentialed reading specialists
- Speech-language pathologists
- Special education teachers
- Assistive technology specialists with expertise in learning disabilities

The two IDA fact sheets listed below may be helpful in determining which professional is most appropriate for supporting a specific student with dyslexia:

- Evaluating Professionals Fact Sheet
- Helpful Terminology Fact Sheet

Accommodations

The word "accommodation" is not defined in federal or California law, but in general, accommodations are tools or teaching strategies that provide students who have disabilities with equal access to instruction. Accommodations help students with disabilities to participate fully in school, and they allow these students to demonstrate learning without being impeded by disabilities. Accommodations may be employed both for instruction and testing. They enable students with disabilities to demonstrate knowledge, skills, and abilities without lowering learning or performance expectations and without changing the complexity of the target skills being taught or the test construct being measured.

Below are some examples of accommodations grouped by task for students with dyslexia:

- Accommodations for homework assignments may include reducing homework, allowing students to dictate their answers, allowing typewritten work, and allowing extended time to complete assignments.
- Accommodations for mathematics may include the student's use of a calculator or graph paper and the teacher breaking assignments into smaller steps.
- Accommodations for reading may include providing the student with access to audiobooks and text-to-speech software; the teacher not calling on a student with dyslexia to participate in oral reading, unless the student volunteers; and allowing extra time to complete reading assignments.
- Accommodations for spelling may include the teacher reducing the number of items on spelling lists, providing access to spell-check and word prediction software, and not deducting points for spelling errors.
- Accommodations for testing may include providing students with dyslexia with extra time, allowing students to give answers orally, and providing a quiet testing area.

- Accommodations for writing may include providing a student with a scribe, providing access to speech-to-text software, and offering written or digital copies of notes; minimizing the need to copy from the board; and providing graphic organizers.

Students who are unable to use traditional print materials to access their curriculum may need specialized formats, such as large print, audio recordings, or digital text. These specialized formats are called "accessible educational materials," or AEM. The California Department of Education's Clearinghouse for Specialized Media and Technology produces accessible versions of textbooks, workbooks, and literature books adopted by the State Board of Education. The Understood.org Web site also offers information on Common Modifications and Accommodations, and additional resources are listed in the "More Information" section at the end of this chapter.

Use of Assistive Technologies

For more information on the use of assistive technology in educating students with dyslexia, see chapter 12 and appendix B of these guidelines.

Progress Monitoring

Teachers who are implementing interventions should immediately and consistently evaluate their progress monitoring data to inform the planning of subsequent instruction. Educators who are implementing interventions should administer a pre-assessment before the use of the intervention and a post-assessment after the prescribed intervention. Specific intervention periods should be determined by the educational team, and progress should be evaluated on a regularly determined schedule. The following questions should be considered:

1. Did the strategy help the student in achieving the academic goal?
2. Did the accommodation allow the student to produce or access grade-level products and materials?
3. Will the strategy or accommodation need to be included in the student's academic portfolio in the future?

Clear intervention and progress tracking plans should be developed by the Student Support Team or the educators implementing the Multi-Tiered System of Support with beginning and ending dates. The team will need to reconvene to review data and determine whether the student is making adequate progress. Analysis of results of daily instructional responses and progress-monitoring assessment is useful only to inform planning of subsequent lessons. Analysis of progress-monitoring results must be considered as related to each individual student. Sometimes a student may need more time—more intense practice—with content or use of a strategy before progress will be evident. Interventions need to be adjusted based on the level of success demonstrated by the student.

Increased Academic Demands

As academic demands increase, different challenges arise. Students are expected to transition to analytical problem solving and critical thinking. As instruction and guided practice with functional use of skills may continue as needed, some students will require accommodations and compensatory strategies (e.g., textbooks in audio format and other forms of assistive technology) to keep up with increased reading and written expression requirements.

Increased complexity and volume of reading requirements may require text in audio format or text-to-speech software to provide access and to allow students to comprehend material independently and without undue stress or fatigue. Additionally, the goal of written assignments moves from demonstrating mastery of spelling, grammar, and structure to the more complex application of knowledge and analytical skills. Spelling and grammar-check programs, word prediction, speech-to-text, and structured writing programs may be used to help a student circumvent the challenges of dyslexia and demonstrate his mastery and knowledge. Over time, students with dyslexia will have different needs for remediation, accommodations, and compensatory strategies as demands and expectations change (see chapter 13).

MORE INFORMATION

- The IDA offers guidance on Effective Reading Instruction for students with dyslexia; the guidance defines Structured Literacy and its main components. The IDA Web site also provides an infographic that explains Structured Literacy and other Infographics that may be of interest to people who seek more information about dyslexia.
- The IDA also developed a document titled *Framework for Informed Reading and Language Instruction: Matrix of Multisensory Structured Language Programs*. This document provides a table of multisensory, structured language programs that have been effective over many years in teaching students to read.
- The International Multisensory Structured Language Education Council (IMSLEC) maintains a list of accredited training courses. The list of states indicates the location of the headquarters for the training courses; therefore, courses that are taught in California but originate in another state would not be listed under California.
- A wealth of information about evidence-based practices, including practices pertaining to literacy, is available at the What Works Clearinghouse.
- Bright Solutions for Dyslexia, Inc. offers additional Classroom Accommodations for Dyslexic Students.

- The GreatSchools Web site provides an article titled "Accommodations, Modifications, and Alternate Assessments: How They Affect Instruction and Assessment."
- The California Assessment of Student Performance and Progress (CAASPP) System provides a full range of assessment supports for all students, including those who are English learners and students with disabilities. These supports ensure that assessments meet the needs of all students. Teachers are encouraged to review these supports early in the school year and provide opportunities for students to experience these supports throughout the year in classroom instruction and assessment. Additional information is posted on the Student Accessibility Supports page of the California Department of Education (CDE) Web site.
- The CDE Web site also includes a list of Universal Tools, Designated Supports, and Accommodations for the California Assessment of Student Performance and Progress for 2016–17.
- In 2016, the Smarter Balanced Assessment Consortium published a *Usability, Accessibility, and Accommodations Guidelines* document that includes many resources to help educators understand the Smarter Balanced approach to assessment accessibility and the implementation of universal tools, designated supports, and accommodations available for Smarter Balanced assessments.
- In 2001, the American Speech-Language-Hearing Association (ASHA) published a position statement titled Roles and Responsibilities of Speech-Language Pathologists with Respect to Reading and Writing in Children and Adolescents.
- The ASHA Web site also provides information and resources on Written Language Disorders.

CHAPTER 12

Assistive Technology

This chapter covers the following topics:

- **The ways in which assistive technology can be used to help students with dyslexia**
- **Examples of commonly used assistive technologies for students with reading difficulties**
- **Information about assistive technology assessments**
- **Online sources for more information**

California *Education Code* Section 56020.5 defines an assistive technology device as "any item, piece of equipment, or product system, whether acquired commercially without the need for modification, modified, or customized, that is used to increase, maintain, or improve functional capabilities of an individual with exceptional needs. The term does not include a medical device that is surgically implanted, or the replacement of that device."

Simply put, assistive technology is anything that can help a person with a disability work around his challenges so he can learn, improve, and function better in his environment. Training on assistive technology for the student, family, and appropriate teachers is a very important part of the process. This chapter addresses frequently asked questions about assistive technology.

How can assistive technology help a student?

Assistive technology can eliminate barriers to learning and help a student become more productive and successful. It helps her keep up with the curriculum, read grade-level text independently, and work around the challenges of dyslexia. Instead of worrying about her weaknesses, the student can now focus on her strengths. Assistive technology can also reduce the amount of time she spends on schoolwork. As a result, she is likely to become more confident and less stressed.

How do parents and educators know whether assistive technology will benefit a student?

Every student is different, with a unique level of motivation and readiness to use technology. Assistive technology can help with some challenges, but not with others. It never replaces good instruction and may not always provide a perfect solution. That is why trial use and training are crucial to the process of discovering if and what tools work for a student.

Will assistive technology prevent a student from learning how to read or spell?

No. As a result of using assistive technology, a student may actually develop a love of reading while building her vocabulary, decoding skills, fluency, comprehension, and confidence. Assistive technology is not a substitute for good teaching or remediation. It simply gives a student access to the curriculum while the student continues to build skills through quality instruction.

Will assistive technology cure a student's dyslexia?

There is no "cure" for dyslexia. Through appropriate and effective teaching strategies and programs, a student with dyslexia will continue to grow and develop skills. Assistive technology will not make a student's dyslexia go away; however, it provides a way around a student's challenges so that he can experience less frustration, develop a love of learning, and keep up with his intellectual and scholastic growth.

What are some examples of commonly used tools for dyslexia and other learning disabilities?

There are a variety of technologies that can help students with dyslexia. Assistive technology comes in many types and platforms and does not have to be expensive, complicated, or "high-tech." It may be a simple, inexpensive low-tech tool such as a reading ruler or pencil grip, or it could be a more complex high-tech item such as text-to-speech software or a smart pen. A student can benefit from technology in a variety of ways. For example, she may have specialized software on her personal computer, or she might use iPad, Android, or Google Chrome applications.

There are a variety of tools for reading, writing, spelling, organization, executive function, mathematics, and so forth. Common tools include, but are not limited to, the following items:

Audiobooks—Human or computerized voice narrations without text. If a student requires audiobooks for equal access to the curriculum because he has a print (reading) disability, he qualifies for a paid membership at Learning Ally at the school district's expense.

E-text and Text-to-Speech (TTS)—Software, applications, or devices that let a student see and hear digital or electronic text at the same time. Experts such as Montali and Lewandowski (1996) think that the combined use of vision and hearing makes a student a better reader. They believe this multisensory approach improves a student's reading and comprehension (Montali and Lewandowski 1996). It is *not* cheating. A student who has a print (reading) disability qualifies for a free membership to Bookshare. Additionally, the premium version of Read&Write for Google Chrome is available to teachers free of charge.

Graphic organizers—Tools that allow students to brainstorm and organize their thoughts visually in a Web format to prepare for writing. Graphic organizers often include templates to provide structure and prompts for students who have difficulty knowing what to write or how to get started.

Low-tech options—Examples include reading rulers, handwriting tools, highlighting tape, fidgets, and more.

Smart pens—Pens that combine a camera and an audio recorder. A student can record notes with minimal writing so that she can focus on listening and processing information in the moment. She can listen to the recording again and again, as needed.

Speech-to-Text—Voice recognition tools that convert speech dictation into text to make writing easier.

Spell checkers—Designed to recognize and correct flexible and phonetic spelling in the context of a student's sentence (e.g., <skool> for <school> and <two> for <too>).

Word prediction (WP)—As a student types, word prediction software selects several word choices on the basis of the context of the sentence. This technology is designed to recognize creative or phonetic spelling. It gives a student the freedom to write without getting bogged down with handwriting, typing speed, spelling, or word retrieval difficulties. Word prediction software will read words and sentences aloud so the student can self-correct. Many word prediction programs also include a speech-to-text option.

When students with dyslexia take the state's Smarter Balanced assessments, are assistive technologies available to the students?

California's Smarter Balanced assessments have different levels of support for various student needs. These supports are embedded in the test itself and include the following items:

- **Universal tools (U),** which are available to *all* students on the basis of student preference and selection
- **Designated supports (D),** which are available to *all* students when determined for use by an educator or team of educators (with parental and student involvement, as appropriate) or specified in the student's individualized education program (IEP) or Section 504 plan.
- **Accommodations (A),** which must be permitted on California Assessment of Student Performance and Progress tests to all eligible students if specified in the student's IEP or Section 504 plan.

For more detailed information, as well as a complete list of supports, visit the Matrix One: CAASPP Web page on the California Department of Education Web site.

How do parents and educators know which tool is right for a student?

Not every tool is right for every student. It is important to consider a student's motivation, readiness to use technology, preferences, and learning style. By identifying the supports a student needs, parents and educators will be able to search for tools that meet those needs. This process is called "feature matching." After identifying potential tools, it is important to give students time to learn, practice, and use a tool before adopting it for use. Many tools are available as trial downloads or "lite" versions, so that it is possible to try them before purchasing them. Additionally, students can explore their use of tools with an assistive technology specialist at one of California's Assistive Technology Centers. Information about these centers, including their locations, is available through the Assistive Technology Network Web site. General information about the Assistive Technology Network is available through the Ability Tools Web site.

Well-written individualized education program goals and objectives, or a carefully developed 504 plan, should inform the selection of assistive technologies to meet student needs. By identifying the technology features needed to address a student's challenges, parents and educators can select the appropriate tools or products to maximize each student's chances of success.

Is assistive technology expensive?

There are many free and low-cost assistive technology options. Many software companies offer free-trial periods to help a student decide whether the tool is right for her. In addition, there are many "lite" versions of Android, iPad, and Google applications that allow a student to use a limited version of the technology before deciding whether to purchase it. Sometimes the lite version is all the student will need. In addition, some companies offer free tools to teachers for classroom use.

Who is responsible for funding assistive technology?

If a student requires assistive technology to access the general curriculum, to receive a free appropriate public education (FAPE) through special education, or to remain in the least restrictive environment (LRE), the cost of the item cannot be a factor in determining the need for assistive technology. Under the Individuals with Disabilities Education Act, the school district is responsible for the purchase and training in the use of assistive technology. Students who have a 504 plan may also be considered for assistive technology as a reasonable accommodation.

How and when should the use of assistive technology begin?

It is never too early to introduce assistive technology to a student. If the student is struggling despite the use of interventions and strategies, assistive technology may help him experience more success. It can help a student to develop independence, bolster self-esteem, and reduce time and stress spent on schoolwork. Once in high school, a student should also explore, try out, and use the tools he will need for college.

Under the Individuals with Disabilities Education Act, IEP teams are required to consider the use of assistive technology devices and services as a special factor when they develop, revise, and review a student's IEP. If the IEP or 504 plan team agrees that assistive technology is necessary but cannot identify tools or services to meet the student's needs, the next step is to perform an assistive technology assessment.

What is an assistive technology assessment?

An assistive technology assessment is a collaborative process that takes place when the IEP or 504 plan team requires more information to identify appropriate tools for a student. The assessment should include comments from the student, the student's parents, a person knowledgeable about the student's deficit areas, and someone knowledgeable about assistive technology tools relevant to the student's challenges. Some school districts have their own assistive technology specialists; others contract with outside professionals. The student should be assessed in her customary environment, with homework needs equally considered. To identify which tools best address the student's needs, the team should consider the following: the student's preferences, strengths, and challenges; the environments in which the student will use the technology; and the specific tasks the student has difficulty achieving because of her learning disability. Once information is gathered, potential tools have been identified, and trial periods have been conducted, the resulting data will guide the recommendations. There are many forms and templates available to assist with this process and the related documentation.

What are assistive technology services?

The Individuals with Disabilities Education Act defines an assistive technology service as "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device." These services are very important to the successful outcome of assistive technology use: an assessment leads to the proper identification and recommendation of tools, which leads to the appropriate acquisition of tools.

The service most crucial to student success, however, is training. Most breakdowns in the use of assistive technology occur when training is not conducted properly. Training should

include basic tool use and strategies on how to apply the tool to the student's identified challenges. In addition to training the student, it is important to include the parents, teachers, and any other pertinent providers. Technical assistance, maintenance, and repair issues must also be addressed.

One way to ensure that all service needs are met is to create an implementation plan that clearly delineates timelines, tasks, and the people responsible for meeting the timelines and tasks. Not only can an implementation plan prevent important services from falling through the cracks, it can also ensure that the student has access to the curriculum in a timely manner. For example, a plan can ensure that the student receives his e-text or audiobooks at the same time that his peers receive their textbooks.

MORE INFORMATION

- Title 20 of the *United States Code* presents the federal government's definitions of "assistive technology device" and "assistive technology service."
- Wrightslaw maintains a Web page on Assistive Technology that includes information about assistive technology devices and services, Universal Design for Learning (UDL), and the National Instructional Materials Accessibility Standard (NIMAS).
- For more information on accessible reading materials, visit the National Center on Accessible Educational Materials.
- The AdLit.org Web site offers an article titled "Adolescent Literacy: What's Technology Got to Do With It?" The article discusses ways in which technology tools can help struggling students and those with disabilities improve their reading and learning skills.
- The Montgomery County (Maryland) Public Schools Web site offers information and resources on accessible technology to help educators learn about assistive technology strategies and products.
- Wikispaces provides a Free Technology Toolkit for UDL in All Classrooms; the site offers access to a wide range of assistive technology applications that are available free of charge.
- Ability Tools, which is California's Assistive Technology Act Program, provides Californians of all ages with access to a wide variety of assistive technology services.
- In 2009, the Wisconsin Assistive Technology Initiative released its fifth edition of Assessing Students' Needs for Assistive Technology: *A Resource Manual for School District Teams*.
- Appendix B of this document provides a list of assistive technology resources by task.

CHAPTER 13

Information for Parents and Guardians

This chapter covers the following topics:

- **An overview of literacy goals and expectations as a student progresses from preschool through high school**
- **Age-appropriate steps parents can take to support their student's academic progress in literacy**
- **Home-based activities that parents can engage in with their student, grouped by academic skill set**
- **Online sources for more information**

Discovering that a student has dyslexia can be overwhelming for parents. It is natural for parents and guardians to feel concern about the future of their child and about finding appropriate and effective resources to help. The educational world is filled with jargon and acronyms. If parents are faced with terminology they do not understand, it is their right to have the terminology explained to them in "real-world terms" by the educational professionals with whom they are working. Parents should remember that children with dyslexia are very capable of succeeding in school and can achieve success in a wide variety of professions. Although there is no cure for dyslexia, there are many effective approaches for educating children with dyslexia (see chapter 11).

What Do People with Dyslexia Say They Need?

An extensive study of adults with dyslexia regarding their experience as children revealed important common ideas about what a child with dyslexia may need from his family and teachers. According to this study, "participants recognized the importance of being self-aware of dyslexia. This acceptance of their disability enabled them to identify and use personal strengths in their quest for success. Recognizing personal strengths, having a positive support system, and developing compensatory strategies were all building blocks related to success for the adult with dyslexia" (Nalavany, Carawan, and Rennick 2011).

Participants stated that the following were most important to them:

- Support in exploring, developing, and understanding their strengths
- Support and understanding of the extra time and work traditional academic tasks can require
- Support in helping others, including teachers and peers, to understand dyslexia as a challenge that does not solely define a person
- Support in developing strategies for organization and time management
- Support using alternative methods to access information

Literacy Expectations by Grade—and How Parents Can Support Their Students

Students with dyslexia are very capable of succeeding in school and in a wide variety of professions. This section of the guidelines provides information about typical academic expectations held by schools for students at progressive age levels. This chapter also discusses ways in which parents can support their children through understanding of the children's academic needs and by working with both their children and school staff members to access all appropriate resources that may be available. Home-based activities to support students in learning to read can begin as early as preschool and continue through high school. Such activities are also described in this chapter.

Preschool: Literacy Expectations and Goals

Preschool-age children are actively developing phonological awareness through the language activities to which they are exposed. Instruction is embedded in games, songs, and arts and crafts. Children at this age focus on recognizing and writing their name, learning letter names and sounds, rhyming words, building vocabulary, and adding detail to their verbal descriptions. Invented spelling is also introduced and accepted. It is important to be aware of developmental benchmarks in the area of literacy while also understanding that typically developing children will meet some of these benchmarks at slightly different times.

Parents can support a child in preschool in the following ways:

- Read aloud books with rhyme patterns and repetitive text.
- Use songs, chants, and nursery rhymes.
- Engage a child in conversation with questions.
- Encourage fine motor development.

Kindergarten: Literacy Expectations and Goals

Kindergarten has a more rigorous academic focus than it did 20 years ago, and the expectations of students in kindergarten often take parents by surprise. Literacy goals for this grade include mastery of letter names and sounds; recognizing simple sight words (usually a list is provided by the school); sounding out simple, three-letter words known as consonant-vowel-consonant words; understanding one-to-one correspondence when reading; writing personal information; and using standard and invented spelling to write narrative or informative sentences.

Kindergarten is an important time of foundational learning. Students in kindergarten learn the expectation and culture of the classroom—essentially, they learn how school works while also

gaining the beginning phonics and phonological awareness skills needed for reading. A positive kindergarten experience can lay the foundation for a student's positive outlook on school.

Parents can support a student in kindergarten in the following ways:

- Continue to read aloud.
- Play games that build sight-word recognition (e.g., sight-word bingo).
- Demonstrate word attack strategies when reading; include a student in daily household tasks.
- Engage in question-based discussion.
- Seek specific input on activities from the classroom teacher.

Home-based activities for students in kindergarten are listed below. They are grouped by academic skill sets.

Kindergarten: Letter Recognition and Names—Tips and Activities

- Start with lowercase letters and move to uppercase letters when students have mastered or mostly mastered the lowercase letters. Students will see more lowercase letters in their reading and writing activities in the classroom.
- There are different opinions regarding the order in which letters should be introduced, but it is generally recommended to choose letters that commonly occur in simple words and avoid introducing letters that look similar. For example, do not introduce b/d/, b/p, n/u, m/n, p/q, or j/g at the same time.
- Focus on three to four unknown letters at a time (called target letters) rather than trying to master the entire alphabet at one time. If a student is struggling to identify letters by name, focus on two letters at a time.
- Write each target letter on a large index card along with a few known letters. Have the student follow games like Simon Says or Twister with the letters (e.g., "Simon Says jump up and down holding the letter 't' "). As the student's letter knowledge grows, the number of letters used in the game can grow.
- Use alphabet puzzles.
- Using fun, highly tactile materials such as shaving cream or sand, have students use their fingers to write and say the letters they are learning.
- On a whiteboard, write the letters students are learning and give the students different colored pens. Ask students to circle, underline, or trace a specific letter with a specific color, or allow them to choose. Have students name the letter as they do this.
- Go on letter hunts in the community; have students look for letters on signs, menus, and license plates.

- Introduce computer programs that emphasize letter recognition; the PBS KIDS Web site has many good ones.
- Use flash cards to reinforce letter knowledge, but only for short periods of time and only in addition to other fun activities.

Kindergarten: Letter Sounds—Tips and Activities

- Focus on no more than one to three letter sounds at a time. If the student is struggling to acquire sound–symbol association, focus on one letter at a time.
- Start with letter sounds that resemble the letter name and are common in simple words that the student will be asked to sound out—such as s, t, p, m.
- Avoid teaching letters with similar sounds at the same time.
- Teach only the short sound for the vowels at this time: "a" as in apple, "e" as in elephant, "i" as in iguana, "o" as in octopus, and "u" as in umbrella.
- Play "I Spy" with letter sounds, looking for an object that starts with a target sound.
- Use the game ideas above and substitute letter sounds for letter names.
- Associate letter sounds with hand movements and visuals of memorable animals. There are a variety of suggestions available through the Internet; look for a suggestion that works for the student.
- Have the student draw pictures that start with a target letter sound, or hunt for pictures that begin with the target letter sound in a magazine to create a collage. Review and label the pictures to connect the sound to the printed letter.
- Computer games that emphasize sound–symbol association are engaging. The PBS KIDS Web site offers many such games free of charge.

Kindergarten: Sounding Out Simple Words—Tips and Activities

- Once some letter sounds are mastered, students can begin to use the sounds in simple, three-letter words called "consonant-vowel-consonant" (CVC) words, such as 'cat,' 'map,' and 'hat.'
- Use letter tiles to have students sound out words with sounds they know (e.g., "M-A-P"). For early readers, only change the initial sound at first: "M-A-P" becomes "T-A-P" becomes "L-A-P." Pseudo-words are okay! Once the student becomes comfortable, change the ending sound. For more advanced work, change the medial vowel from time to time as well.
- Find simple decodable books (books with words that can be mostly sounded out) that have a few words on each page. Encourage students to sound out decodable words and then reread the sentence with fluency.

- Help students practice writing simple CVC words by exaggerating the sounds. Use fun colors and materials for writing. Use the progression above, changing the initial sound first.
- Continue to read to students, having them track the words that you read with their fingers. Ask them to help you sound out simple CVC words encountered in the book.
- Consistency is more important than the length of time spent on these activities. Engage students in these activities for 15 minutes each day, if possible, but follow the students' lead for duration.

Kindergarten: Sight Words—Tips and Activities

Sight words are also called high-frequency words. These are words that are very common in print, and one goal for early readers is to learn to recognize these words automatically (on sight). Fry Word Lists are often used for this activity.

Kindergarten programs have different targets for students to meet in terms of the number of sight words that students should know by the end of the school year. Common targets are 20 to 50 words by the end of kindergarten and 100 or more words by the end of first grade.

- Flash cards work well for this activity, but only focus on three or four words at a time. When using flash cards, intersperse new, unknown sight words two at a time with known sight words. This ensures that what is known is practiced and what is new is not overwhelming.
- A book word hunt: Obtain used picture books and have the student hunt for one or two target sight words by circling them as she finds them in the print. Go back and read the story to the student, having the student read the circled target sight words as you come to them.
- Practice spelling target sight words aloud and have the student write them in the air with her finger.
- If the student recognizes a simple sight word on one page but not on another, complete a book word hunt together; focus on only one word at a time, and use the flash card as a reminder guide on each page.

Kindergarten: Comprehension—Tips and Activities

- Check for basic understanding with simple, surface-level questions that can easily be found in the text. These questions usually start with 'Who,' 'Where,' or 'What.'
- Move to questions that ask for deeper explanation. These questions usually start with 'How' or 'Why.'
- Use drama, art, and puppets to have students retell a familiar story, with a focus on the beginning, middle, and ending. When a student can do this with a familiar story, move to a story that is new to him.

- Continue to use prediction to discuss what will happen next. Add the question: "Why do you think this will happen?" Encourage a student to refer to something that has already happened in a story as a clue to the next event, or to use her knowledge of something from another story or her own life as a clue for possible future events in the story you are reading. This skill of offering "proof" for ideas and predictions will be built on extensively as the student moves through different grades.

Kindergarten: Writing—Tips and Activities

- It is important for students to have a good pencil grasp and to create letters in the correct formation—generally from the top downward. Fun and clear handwriting programs that use easily remembered visual and verbal cues to help students remember the correct formation are very beneficial. One such program is Handwriting Without Tears.
- Invented spelling (spelling words as they sound phonetically such as 'fon' for 'phone') based on the student's limited phonics knowledge is the norm in kindergarten, and most kindergarten teachers do not correct this. Check with the student's teacher about classroom expectations regarding invented spelling.
- Praise all efforts to write down ideas.
- Continue to label the environment with printed words.
- Correct spelling should focus only on correct CVC word representation and very common high-frequency words (e.g., 'is', 'the', 'my').

First Grade: Literacy Expectations and Goals

Students in first grade actively read simple stories and add to their bank of sight words. At this grade level, students learn more complex phonics rules and are asked to apply them to longer sentences. Many students in first grade can smoothly read text that is well known to them, but most students will still read word by word. Students are also expected to use their beginning reading skills to access some information in other subjects, especially as first grade draws to an end. Writing in first grade focuses on the basic mechanics of a sentence, and it is likely to involve an increased emphasis on standard spelling. Additionally, writing at this grade level builds from the construction of single sentences to the formation of a set of related sentences that focus on one idea.

Parents can support a child in first grade in the following ways:

- Continue to read aloud.
- Play games that build sight-word recognition (e.g., sight-word bingo).
- Demonstrate word attack strategies when reading; include a student in daily household tasks.

- Engage in question-based discussion.
- Seek specific input on activities from the classroom teacher.

Home-based activities for students in first grade are listed below. They are grouped by academic skill sets.

First Grade: Reading—Tips and Activities

- Review kindergarten skills and activities.
- Encourage the student to read aloud for five to 10 minutes a day.
- Encourage the student to correct her own errors by asking, "Does that make sense?" Then have her reread the sentence again.
- Practice the 100 most common sight words to ensure that the student reads these automatically.
- Correct a student's reading errors in a neutral tone. If a student struggles to sound a word, have him reread the sentence in which the word appears (from the beginning of the sentence) after he knows the correct word.
- If the student is reluctant to attempt to read, read to the student and encourage her to follow along with her finger to build one-to-one correspondence. Allow the student to read the words that she can, and use repetitive and rhyming books to increase her confidence.
- Request activities and suggestions for books that target the student's needs. Many programs use phonics readers that target progressively challenging phonics skills called "consumables," which are paper copies of short stories that focus on one phonics skill at a time and are not meant to be reused.
- Ask about potential accommodations in the classroom to support the student's access to other curricula. Such accommodations might include having directions and word problems read to the student; seating him near a capable, helpful peer or close to the teacher; giving him extra time to complete assignments, tasks, and activities; or reducing the amount of homework so that time can be spent on other literacy activities without overwhelming the student.
- Inquire about reading intervention programs in the school and screening for dyslexia (see chapter 9).
- Keep the focus on the "whole child." Spend time and energy developing the student's other skills, talents, and interests so that the student's sense of herself and her abilities does not rest solely on her literacy skills.

First Grade: Writing—Tips and Activities

- Review kindergarten activities and suggestions.
- Encourage the student to write without stopping to ask for the correct spelling of every word.
- Use a word wall or word bank of vocabulary needed for the assignment or for words that the student frequently forgets.
- Allow the student to type to create sentences, especially if he has difficulty with letter formations.
- Inquire about intervention programs for the student's writing needs.
- Inquire about accommodations to assist the student with writing assignments. At this age the most important accommodation is the request not to penalize the student's grades for spelling errors on assignments in other subject areas, such as a written response to a mathematical problem.

Second Grade and Third Grade: Literacy Expectations and Goals

Reading demands increase significantly during second and third grade, and both oral and independent reading are used in reading instruction. Passages and words become longer, syntax is more complicated, and students need to have a large reserve of words that they can recognize on sight to increase their fluency and comprehension. During this time, there is an emphasis on breaking longer words into parts and reading quickly with appropriate intonation. There is also an increased focus on comprehending and responding to reading, both orally and in writing. Reading demands in other subjects also increase, as students are expected to read directions and short word problems individually in areas such as mathematics, social science, and science. If a student is struggling with reading, this is often the age at which avoidance of work begins; somatic symptoms such as stomachaches, headaches, and other complaints are also present when the student faces literacy work.

Students in both second and third grade are asked to write formally about what they read. In second grade, students are expected to write one or more paragraphs with mostly standard spelling. The process of writing multiparagraph essays begins in third grade. In some schools, third grade is also the time for instruction in cursive writing. Parents may wish to discuss a student's needs with the teacher. There are good methods available to teach cursive writing. In addition, there are common alternatives, such as keyboarding and allowing students to print letters. It is up to the parent, the student, and the staff at the student's school to select the appropriate option for the student.

Parents can support a student in second grade or third grade in the following ways:

- Help the student select reading material at her instructional reading level.

- Listen to the student read aloud.
- Engage the student in a discussion about what he read and thought, focusing on comprehension questions that ask "Why?" and "How do you know?"
- Guide the student through the writing and revision process.

Home-based activities for students in second grade and third grade are listed below. They are grouped by academic skill sets.

Second Grade and Third Grade: Reading—Tips and Activities

- Encourage the student to read independently for 15 to 20 minutes each day at his reading level. The student's teacher will be able to tell you what the reading level is and make appropriate recommendations.
- Provide the student with high-interest material at her reading level. The student's teacher can direct you.
- If the student is a reluctant reader, use high-interest magazines written for students to engage the student in shorter readings that have interesting photos and layouts.
- Continue to read with the student as a way to monitor his progress and as a means of providing good reading role models.
- Review the 300 most common sight words, and help the student to learn to recognize those words automatically by sight by the end of third grade.
- Ask the student to circle the two hidden words in compound words as you read. Old or used books are good for this type of activity.
- Use a pencil to underline or "scoop" compound or longer words into syllable parts; this can help the student to break apart those words and see the syllables.
- Inquire about accommodations to support the student's access to information in the classroom when reading delays affect independence.
- If the student is struggling to decode multisyllabic words, explicitly teach prefixes and suffixes as if they were sight words. This will help the student "see" those word parts and begin to recognize them instantly.

Second Grade and Third Grade: Fluency—Tips and Activities

- For reading longer passages, try a high-contrast bookmark or tracker that is a dark, solid color.
- To increase reading fluency and appropriate intonation, have the student silently read a short passage and then read it aloud two times. You can also simultaneously read the same passage along with the student to model pacing and intonation.

- Highlight or mark punctuation in text that requires a stop when reading, and show the student how to attend to punctuation marks.
- Explicitly teach as sight words content vocabulary that the student will need to know in order to be successful in other areas (e.g., mathematics vocabulary).

Second Grade and Third Grade: Comprehension—Tips and Activities

Discuss the books and stories the student reads and ask questions about character motivation (e.g., "Why did that character choose to do that?"), what she liked or didn't like about the story, and why.

Second Grade and Third Grade: Writing—Tips and Activities

- Clap out syllables to help the student "hear" how to break apart longer words before he writes them.
- Help the student write down her ideas before she begins writing.
- Provide sentence starters, or the first two words in a sentence, to help the student begin to write. These writing supports also help teach the structure of a paragraph.
- Provide graphic organizers to help the student plan the details and sequence of his writing. Many resources are available through the Internet free of charge.
- Provide a model of what a written paragraph looks like.
- Encourage the student to revise her writing.
- Allow the student to write his thoughts, correct the errors, and then have the student revise his writing by incorporating the corrections.
- Use a computer to revise text.
- Use a word wall or word bank of vocabulary needed for the assignment or for words that the student frequently forgets.

Fourth Grade to Eighth Grade: Literacy Expectations and Goals

Reading demands during the later elementary grades increase dramatically starting in fourth grade as the school system transitions from teaching reading to using reading as a tool for students to learn new information. This is often referred to as a shift from "learning to read to reading to learn." Reading instruction tends to focus on comprehension strategies, fluency, and gaining new vocabulary. Writing demands also increase dramatically, and students are expected to compose multiparagraph essays with an emphasis on generating detail and organizing evidence garnered from independently read reference material. Students who relied on reading guidance and cues offered by group reading in third grade begin to experience increased stress and failure with the move to "reading to learn." Because reading is done

independently much of the time, it also becomes easier to hide struggles. Students with dyslexia learn early to look as if they are reading or writing even when they are not. A student may use excuses such as "It's boring," "I already finished," or "I have no homework" to avoid work and struggles with literacy. Maintain communication with the student's teacher about her classroom work and homework.

As students move into middle school, in-class reading diminishes and independence in reading activities becomes the basis of most assignments. The development of the formal essay structure with a thesis statement and supporting detail is a key focus in writing. Students are expected to plan their time to complete long-term projects and to incorporate a variety of media into their work and presentations. Students with dyslexia who previously managed to struggle through reading and writing demands often become overwhelmed by the amount of independent reading, the increase in complex vocabulary, and the speed at which reading and writing takes place in middle school. Additionally, the rotation between teachers may increase stress and impede communication about the student's progress in the area of literacy.

Parents can support a student in fourth grade through eighth grade in the following ways:

- Provide a homework routine and location.
- Guide and teach time-management and planning skills.
- Assist with and support the use of literacy technology to increase engagement and ease of writing.
- Encourage reading for pleasure with both books and age-appropriate magazines.
- Discuss content with students by focusing on key ideas.
- Maintain communication with the student's teachers.

Home-based activities for students in fourth grade through eighth grade are listed below. They are grouped by academic skill sets.

Fourth Grade to Eighth Grade: Reading—Activities and Tips

- Review the literacy activities for students in previous grade levels.
- Continue to read with and to the student.
- If the student's reading fluency is low, the best interventions are frequent reading at the independent to instructional level and practice of oral reading on the same passage.
- Even if the student cannot read well, it is important for him to keep reading as many different types of printed materials at his reading level as possible. This will increase the student's reading skill and add to his vocabulary.

Fourth Grade to Eighth Grade: Writing—Activities and Tips

Review the recommendations for previous grade levels.

Fourth Grade to Eighth Grade: Organization—Activities and Tips

- Assist the student in developing organizational strategies and an organized tracking system for work. Most students require this support, but students with dyslexia may require more support, and they may need this assistance for a longer period of time than their peers to encourage organizational skills.
- Use a scheduling system that works for the student, and help her create a plan each day.
- Use a timer for periods of 10 minutes during homework. This will help the student stay on task, and he can also begin to internalize how long 10 minutes is.
- Set up a regular time and place for homework.
- Discuss classroom accommodations on the basis of the student's needs that will support her independence in completing work.
- Help the student understand her learning needs.
- Focus on the whole child by encouraging the student to develop other talents, skills, and interests.

Middle School and High School: Literacy Expectations and Goals

In middle school and high school, a student's school work is almost completely independent in terms of reading and writing, although students will have group projects with peers as well. At this time, students who were getting by in elementary school by memorizing words—basically reading by sight—are overwhelmed by the large increase in vocabulary and the length and amount of reading material. They fall behind in work and sometimes stop completing work altogether because they feel defeated. It is not uncommon to see previously average students begin to fail in middle school. If educators and parents question the student, he may be reluctant to admit that he is struggling with reading and will become defensive or use comments that deflect from the issue so that adults and peers do not discover the source of his academic decline.

Many individuals with dyslexia go undiagnosed until high school or college, when the extent of academic and organizational demands can prevent the type of achievement experienced at previous grade levels. Students in high school and college are expected to become increasingly independent in time management and in determining the direction of their education. Students are expected to demonstrate advanced skills in research, including the ability to determine relevant information, prioritize information, and provide supporting evidence from a wide variety of resources that are found, read, and annotated independently. Students are also expected to write lengthy compositions under time pressure.

Parents can support a student in middle school or high school in the following ways:

- Ensure access to a library and other sources of reference information.
- Assist with and support the use of technology to increase access and ease.
- Engage in discussion about key concepts and ideas.
- Help the student study for tests by encouraging review or partner practice.
- Encourage and practice self-advocacy skills for seeking help and accommodation.
- Review the warning signs of dyslexia and previous literacy and organizational supports.
- Access all tutoring and support services available to the student.
- Consider calling a Student Study Team (SST) meeting to review the student's academic history and current needs and to put a plan in place to support her success.
- Discuss with the school's SST team the guidelines for screening and assessment for dyslexia.
- Help the student understand his learning needs, and provide him with the language necessary to advocate on his own behalf with teachers.
- If needed, explore alternative methods of accessing printed information, such as audiobooks and speech-to-text software (see chapter 12 and appendix B).
- Continue to foster the student's development of interests and talents in other areas.

What Does It Mean to Be an Advocate for a Student?

Parents and guardians are a student's first teacher and most important advocate. Being an advocate for the student means giving a voice to the student's needs when she is unable to either understand or express those needs herself. It means helping her obtain the resources required to meet her unique needs.

Successful People with Dyslexia

Dyslexia does not have to limit a student's career goals or aspirations; individuals with dyslexia have many strengths and accomplish amazing things. They can become doctors, lawyers, writers, politicians, finance professionals, scientists, entrepreneurs, artists, entertainers, athletes, and more. The Yale Center for Dyslexia & Creativity maintains an Index of Successful Dyslexics to showcase successful people who had or have dyslexia.

MORE INFORMATION

- Appendix F of the Alabama State Department of Education's Dyslexia Resource Guide provides frequently asked questions to assist parents in talking with their children about having dyslexia.
- The UCSF Dyslexia Center, part of the University of California, San Francisco, provides information about dyslexia evaluation and care, research being conducted at the center, related resources, and contact information.
- Some students may find it intimidating or overwhelming to navigate the school system and the resources available there. The California Department of Education (CDE) and other state agencies help to fund parent resource centers that provide support and information for parents of students who are academically challenged. Information about these centers is available through the CDE's California Parent Organizations Web page.
- The CDE's Family Involvement & Partnerships Web page offers additional resources and support for parents, guardians, and families of students with disabilities.

CHAPTER 14

Frequently Asked Questions

This chapter covers the following topic:

- Questions frequently asked by parents and educators

Q: I am a teacher and suspect that one of my students may be displaying signs of dyslexia. What should I do? Is it all right to alert the parents about my concerns?

A: According to federal "child find" requirements, educators who suspect that a student has dyslexia must refer the student for assessment. Federal regulations say that each state must have in effect policies and procedures to ensure that all children with disabilities residing in that state, including children with disabilities who are homeless children or are wards of the state, and children with disabilities attending private schools, regardless of the severity of their disability, and who are in need of special education and related services, are identified, located, and evaluated (Title 34, *Code of Federal Regulations,* Section 300.111[a]). Child find must also include children who are suspected of having a disability and being in need of special education, even if a child is advancing from grade to grade (Title 34, *Code of Federal Regulations,* Section 300.111[c]).

A child's parent or a public agency may initiate a request for an initial evaluation to determine whether the child has a disability. The initial evaluation must be conducted within 60 days of receiving parental consent for the evaluation (Title 34, *Code of Federal Regulations,* Section 300.301[b] and [c]).

Early identification of and intervention with students who show the warning signs of dyslexia are critical for achieving better outcomes. Parents are an important component of the school team, and they should be included in discussions regarding potential learning issues involving their child.

Q: I am a speech-language pathologist at a school. What role should I play in helping to identify and assess a student who may have dyslexia?

A: According to a 2001 position statement issued by the American Speech-Language-Hearing Association, speech-language pathologists have a major role to play in supporting spoken and written language skills in students. Speech-language pathologists receive pre-service training that prepares them to be team members in preventing, identifying, assessing, and providing interventions for students with dyslexia.

In addition, a history of Specific Language Impairment (SLI) or weaknesses in receptive vocabulary creates an increased risk for dyslexia (Snowling, Bishop, and Stothard 2000). Given this increased risk, speech-language pathologists who have identified a student with SLI or receptive vocabulary weaknesses should be included as members in multidisciplinary teams that work to determine whether a student is also at risk for dyslexia.

Q: Is an outside diagnosis of dyslexia necessary for a student to become eligible for special education services or a 504 plan?

A: No, an outside diagnosis is not required for a student to become eligible for special education services or a 504 plan. California regulations guide the process for determining whether a student is eligible for special education or a 504 plan (see chapter 10). If the parents or guardians disagree with an assessment obtained by the public education agency, they have the right to obtain, at public expense, an independent educational assessment—also known as an independent educational evaluation—of the student from qualified specialists (*Education Code* Section 56329[b]). If the parents or guardians obtain an independent education evaluation at public expense or share with the public agency an evaluation obtained at private expense, the results of the evaluation must be considered by the public agency, if it meets agency criteria, in any decision made with respect the provision of a free appropriate public education to a child (Title 34, *Code of Federal Regulations,* Section 300.502[c]).

Q: Do all students with dyslexia require an individualized education program (IEP)?

A: No, not all students who have dyslexia require an IEP or will qualify for one. For more information, see chapter 10.

Q: My student's reading is slow but accurate. However, his spelling is extremely poor. Is the school required to consider deficits in spelling in assessing for special education eligibility? Could he still be dyslexic?

A: California law defines a specific learning disability as a "disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or perform mathematical calculations" (*Education Code* Section 56337[a]).

Education Code Section 56337.5 also states that a pupil who is assessed as being dyslexic, and who meets the eligibility criteria specified in Section 56337 and in Title 5, *California Code of Regulations,* Section 3030(b)(10)(B) for specific learning disability, is entitled to special education and related services (*Education Code* Section 56337.5[a]).

According to the International Dyslexia Association (IDA), "Almost all people with developmental reading or language disabilities have great difficulty spelling . . . people with the condition known as dyslexia are noted to have 'conspicuous' problems with spelling and writing. People can also have specific spelling disabilities—that is, they can be poor spellers, even though they are adequate readers (IDA 2000).

It should also be noted that "While reading accuracy is critical early on, the ability to read fluently gains in importance as the child matures. *A child who reads accurately but not fluently is dyslexic*" (Shaywitz 2003).

Q: A student struggles with reading and spelling. Can a school district delay assessment of the student for a specific learning disability to first see how he or she responds to RtI?

A: No, a school district cannot delay or deny assessment of a student for a suspected disability because of implementation of Response to Intervention (RtI). In a Dear Colleague letter, the federal Office of Special Education and Rehabilitative Services (OSERS) reminded schools that a parent may request an initial evaluation at any time to determine whether a child has a disability. The use of a Multi-Tiered System of Support (MTSS), such as RtI, may not be used to delay or deny a full and individual evaluation of a child suspected of having a disability (OSERS 2015).

Q: The IEP team states that its members cannot use the terms "dyslexia," "dysgraphia," or "dyscalculia" in students' IEPs. Is this correct?

A: In a Dear Colleague letter, the federal Office of Special Education and Rehabilitative Services (OSERS) clarified "that there is nothing in the IDEA that would prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in IDEA evaluation, eligibility determinations, or IEP documents" (OSERS 2015). The letter further encouraged states "to review their policies, procedures, and practices to ensure that they do not prohibit the use of the terms dyslexia, dyscalculia, or dysgraphia in evaluations, eligibility, and IEP documents. "In ensuring the provision of free appropriate public education," OSERS encouraged state educational agencies "to remind their LEAs of the importance of addressing the unique educational needs of children with specific learning disabilities resulting from dyslexia, dyscalculia, and dysgraphia during IEP Team meetings and other meetings with parents under IDEA" (OSERS 2015).

Q: I'm a teacher and would like to receive training on how to use evidence-based, multisensory, direct, explicit, structured, and sequential approaches when teaching students with dyslexia. Where can I receive this type of training?

A: The International Dyslexia Association (IDA) Web site includes information about Knowledge and Practice Standards for Teachers of Reading. Additionally, the IDA has created The Center for Effective Reading Instruction, which provides two levels of Structured Literacy certification (see chapter 8).

The Every Student Succeeds Act, which was signed into law in 2015 by President Barack Obama, also created the Comprehensive Literacy Center. This center is slated to open in 2017, and its purpose is to support parents and educators in helping students who are having difficulties learning literacy skills because of a disability. Additional information is available from the National Center for Learning Disabilities.

Q: Do other disabilities or disorders coexist with dyslexia?

A: Yes, the following disabilities and disorders have a significant rate of co-occurrence with dyslexia: attention-deficit/hyperactivity disorder (ADHD); speech-language impairment; dysgraphia; and dyscalculia. The most common comorbid condition appears to be ADHD. Estimates suggest that 15 percent to 40 percent of children with dyslexia are also diagnosed with ADHD, and 25 percent to 40 percent of children with ADHD are also diagnosed with dyslexia (Semrud-Clikeman et al. 1992; Willcutt and Pennington 2000).

Q: What are accessible educational materials (AEM), and how can they benefit a student with dyslexia?

A: Students who are unable to use traditional print materials to access their curriculum may need specialized formats, such as large print, audio recordings, or digital text. These specialized formats are called "accessible educational materials," or AEM (see chapter 11). Federal regulations require the state educational agency to "ensure that all public agencies take all reasonable steps to provide instructional materials in accessible formats to children with disabilities who need those instructional materials at the same time as other children receive instructional materials" (Title 34, *Code of Federal Regulations,* Section 300.172).

As noted on the California Department of Education (CDE) Web site, "The federal Individuals with Disabilities Education Act (IDEA) requires a district to provide accessible instructional materials to students who need them for participation and achievement. While SBE-adopted materials are available in accessible formats from the CDE, a district utilizing non-adopted materials will need to obtain digital files and have them converted to accessible formats, such as braille and large-print books." Additional information is provided on the CDE's Instructional Materials Implementation Web page.

APPENDIX A

Assessment Tools

Please note that the California Department of Education does not endorse the use of any product. Also, this appendix is not intended to provide a comprehensive list of assessment tools; it is a sample list of assessment tools that professionals may wish to consider using when assessing students with dyslexia.

1. **Universal screeners**

   Shaywitz DyslexiaScreen

2. **Adult dyslexia screener**

   Adult Reading History Questionnaire (ARHQ)

3. **Formal language-literacy assessment measures**

   Assessment of Literacy and Language (ALL)
   Grade Range: Prekindergarten–first grade

   Clinical Evaluation of Language Fundamentals—5 (CELF-5)
   Age Range: 5:0–21:11

   Comprehensive Assessment of Spoken Language-2 (CASL-2)
   Age Range: 3:0–21:11

   Comprehensive Test of Phonological Processing-2 (CTOPP-2)
   Age Range: 4:0–24:11

   Gray Oral Reading Test-5 (GORT-5)
   Age Range: 6:0–23:11

   Oral and Written Language Scales-II (OWLS-II)
   Age Range: 3:0–21:11

   Peabody Picture Vocabulary Test-4 (PPVT-4)
   Age Range: 2:6–90+

   Rapid Automatic Naming/Rapid Automatic Stimulus (RAN/RAS)
   Age Range: 5:0–18:11

   Receptive One Word Picture Vocabulary Test-4 (ROWPVT-4)
   Age Range: 2:0–80+

The Phonological Awareness Test (TOPA)
Age Range: 5:0–9:11

Test de Vocabulario en Imagenes Peabody (TVIP)
Age Range: 2:6–17:11

Test of Adolescent and Adult Language-4 (TOAL-4)
Age Range: 12:0–24:11

Test of Auditory Processing Skills-3 (TAPS-3)
Age Range: 4:0–18:11

Test of Early Reading Ability-3 (TERA-3)
Age Range: 3:6–8:6

Test of Integrated Language and Literacy Skills (TILLS)
Age Range: 6:0–18:11

Test of Language Development-Primary-4 (TOLD-P:4)
Age Range: 4:0–8:11

Test of Language Development-Intermediate-4 (TOLD-I:4)
Age Range: 8:0–17:11

Test of Pragmatic Language-2 (TOPL-2)
Age Range: 6:0–18:11

Test of Written Language-4 (TOWL-4)
Age Range: 9:0–17:11

Woodcock-Muñoz Language Survey—Third Edition (WMLS III)

Woodcock Reading Mastery Test-III (WRMT-III)
Age Range: 4:6–79:11

Word Test-3
Age Range: 6:0–11:11; Grade Range: First grade–sixth grade

4. Informal assessment measures: skills surveys and criterion-referenced measures

- Skill surveys, such as those provided within the curriculum or *Assessing Reading: Multiple Measures*
- Informal reading inventories, such as the *Texas Primary Reading Inventory (TPRI); Qualitative Reading Inventory; Basic Reading Inventory;* or *Ekwall/Shanker Reading Inventory*
- *Dynamic Indicators of Beginning Early Literacy (DIBELS)* or *AIMSweb*
- *Predictive Assessment of Reading (PAR)*

- Informal spelling inventories, such as *Words Their Way* and the *Wilson Assessment for Decoding and Encoding (WADE)*
- Criterion-referenced measures
- Curriculum-based reading measures
- Dynamic assessment
- Writing samples

5. During an eligibility assessment for special education, students are typically evaluated with nationally norm-referenced, standardized tests of academic achievement in addition to evaluation with informal measures.

Woodcock-Johnson, Tests of Achievement, Fourth Edition (WJ-IV)

Weschler Individual Achievement Test, Third Edition (WIAT-III)

6. Instruments for assessing accurate and fluent word recognition and poor spelling and decoding abilities are listed below.

Commonly used standardized measures of reading:

Gray Oral Reading Tests-5 (GORT-5)
Age Range: 6:0–18:11

Gray Silent Reading Test (GSRT)
Age Range: 7:0–25:0

Gray Diagnostic Reading Tests-2 (GDRT-2)
Age Range: 6:0–13:11

Nelson-Denny Reading Test
Age Range: 9:0–16:11

Process Assessment of the Learner (PAL-II)—Diagnostics for Reading and Writing

Test of Irregular Word Reading Efficiency (TIWRE)
Age Range: 3:0–94

Test of Silent Word Reading Efficiency (TOSWRE)
Age Range: 6:6–17:11

Test of Word Reading Efficiency-2 (TOWRE-2)
Age Range: 6:0–24:11

Woodcock-Johnson-IV (WJ-IV)—List reading skills subtests in version IV
Age Range: 2:0–80+

Woodcock Reading Mastery Tests-III (WRMT-III)
Age Range: 5:0–75+

7. Commonly used standardized measures of spelling

Process Assessment of the Learner-II (PAL-II)—Diagnostics for Reading & Writing
Grade Range: Kindergarten–sixth grade

Test of Early Written Language-3 (TEWL-3)
Age Range: 4:0–10:11

Test of Written Language-4 (TOWL-4)—Spelling subtest
Age Range: 9:0–17:11

Test of Written Spelling-5 (TWS-5)
Age Range: 6:0–18:0

Wide Range Achievement Test-4 (WRAT-4)
Age Range: 5:0–94

Wechsler Individual Achievement Test-III (WIAT-III)—List subtests
Age Range: 4:0–50:11

Woodcock-Johnson-IV (WJ-IV)—Spelling and spelling of sounds subtests
Age Range: 2:0–80+

Word Identification and Spelling Test (WIST)
Age Range: 7:0–18:11

8. Instruments for assessing for phonological processing

- *Comprehensive Test of Phonological Processing-2 (CTOPP-2)*
  Age Range: 4:0–24:11
- *Kaufman Test of Educational Achievement-II (KTEA-II)*
  Age Range:4:6–90+
- *Lindamood Auditory Conceptualization Test-3 (LAC-3)*
  Age Range: 5:0–18:11
- *Process Assessment of the Learner (PAL-II)*—Test Battery for Reading and Writing
  Grade Range: Kindergarten–sixth grade
- *Test of Phonological Awareness-2+ (TOPA-2+)*
  Age: 5:0–8:11; Grade Range: Kindergarten–third grade
- *The Phonological Awareness Test-2 (PAT-2)*
  Age Range: 5:0–9:11; Grade Range: Kindergarten–fourth grade

APPENDIX B

Assistive Technology Resources

Please note that the California Department of Education does not endorse the use of any product. This appendix is not intended to provide a comprehensive list of assistive technology resources. It is the responsibility of a student's education team to explore and try out the tools to determine the best match for a student.

Low-Tech Tools

Reading rulers, highlighting tape; alternate pens, pencils, fidgets, and so forth:

- Nasco
- Therapy Shoppe
- Amazon

Spelling Tools

- Ginger Software
- Grammarly
- American WORDSPELLER and Phonetic Dictionary

Reading Tools

- Bookshare
- Learning Ally
- Kurzweil Education
- Snap&Read Start-to-Finish Books
- Texthelp (Read&Write and Fluency Tutor)

Writing/Notetaking Tools

- Co:Writer Universal
- WordQ and SpeakQ
- Clicker
- Kidspiration/Inspiration
- Livescribe Smartpens
- Sonocent AudioNotetaker

Assessment Tools

The following tools can help determine which type of reading and writing assistive technology best fits a student's needs:

- Universal Protocol for Accommodations in Reading
- DeCoste Writing Protocol

Applications for iPad and Google Chrome

- Apps for Dyslexia and Learning Disabilities
- OT's with Apps & Technology
- Digital Learning Tools from Common Sense Education
- iPad Apps for Learners with Dyslexia or Reading and Writing Difficulties

APPENDIX C

Legal Citations

This appendix provides a compilation of state and federal statutes and regulations that refer to dyslexia, a thumbnail description of each citation, and active links to the citations.

Federal Statutes

United States Code, Title 20, Chapter 33, Section 1401(30). For purposes of finding a child eligible for special education, this federal statute identifies dyslexia as a specific learning disability.

United States Code, Title 20, Chapter 33, Section 1414(b)(6). When assessing for a specific learning disability, a local educational agency (LEA) does not have to consider whether a child has a discrepancy between achievement and intellectual ability. The LEA may use a process that determines whether the child responds to scientific, research-based intervention as a part of the evaluation procedures.

Federal Regulations

Code of Federal Regulations, Title 34, Section 300.8. For purposes of finding a child eligible for special education, this federal regulation identifies dyslexia as a specific learning disability.

Code of Federal Regulations, Title 34, Section 300.307. A state must adopt criteria for determining whether a child has a specific learning disability.

Code of Federal Regulations, Title 34, Section 300.308. The determination of whether a child has a specific learning disability must be made by the child's parents and a team of qualified professionals.

Code of Federal Regulations, Title 34, Section 300.309. A determination of whether a child has a specific learning disability may be made if the child does not achieve adequately for the child's age or meet state standards; does not make sufficient progress to meet standards; or exhibits a pattern of strengths and weaknesses.

Code of Federal Regulations, Title 34, Section 300.310. The child must be observed in his learning environment to document his academic performance and behavior.

Code of Federal Regulations, Title 34, Section 300.311. This federal regulation outlines the elements that documentation must include when determining the eligibility for special education of a child who is suspected of having a specific learning disability.

California *Education Code*

Education Code Section 44227.7. This California statute encourages institutions of higher education to emphasize in training programs the recognition of and teaching strategies for specific learning disabilities.

Education Code Section 52853(a)(3). This California statute requires school site councils to develop school plans that include staff development programs that may include the use of program guidelines.

Education Code Section 56245. This California statute encourages the inclusion in local in-service training programs a component on the recognition of and teaching strategies for SLD.

Education Code Section 56334. This California statute adds the term "phonological processing" to Title 5, California Code of Regulations, Section 3030(b)(10) (see full text of the regulatory section below). It implements Assembly Bill 1369, Statutes of 2015.

Education Code Section 56335. This California statute mandates the development of this document, California's dyslexia guidelines, and the provision of technical assistance. It implements Assembly Bill 1369, Statutes of 2015.

Education Code Section 56337. For purposes of finding a child eligible for special education, this California statute identifies dyslexia as a specific learning disability. It brings the two federal statutes (listed above) into California state law.

Education Code Section 56337.5. This California statute makes reference to program guidelines that were written for students with specific learning disability, pursuant to Assembly Bill 3040, Statutes of 1990.

Education Code Section 56341. This California statute states that for a pupil suspected of having a specific learning disability, at least one member of the individualized education program team shall be qualified to conduct individual diagnostic exams of children, such as a school psychologist, speech-language pathologist, or remedial reading teacher. At least one member of the team shall observe the pupil in her learning environment.

California Regulations

Title 5, *California Code of Regulations*, Section 3030(b)(10). For purposes of finding a child eligible for special education, this California regulation identifies dyslexia as a specific learning disability and provides the standards for determining whether a student has a specific learning disability.

Glossary

assistive technology. Anything that can help a person with a disability work around her challenges so that she can accomplish, increase, maintain, or improve her ability to function inside and outside the classroom. Please also see the legal definition of this term in *Education Code* Section 56020.5.

decoding. A skill that refers to translating letters into their corresponding speech sounds and synthesizing these sounds to form words.

discourse. Connected language beyond the single word and sentence levels. The four major types of discourse are *conversational* (informal dialogue), *narrative* (stories), *expository* (informational), and *persuasive* (opinion-based).

English learner. A K–12 student who, based on an objective assessment, has not yet fully developed listening, speaking, reading, and writing proficiencies in English sufficient for participation in the regular school program and who requires support in English language development.

evidence-based. Federal law defines this term as "an activity, strategy, or intervention that (i) demonstrates a statistically significant effect on improving student outcomes or other relevant outcomes based on—(I) strong evidence from at least 1 well-designed and well-implemented experimental study; (II) moderate evidence from at least 1 well-designed and well-implemented quasi-experimental study; or (III) promising evidence from at least 1 well-designed and well-implemented correlational study with statistical controls for selection bias; or (ii)(I) demonstrates a rationale based on high-quality research findings or positive evaluation that such activity, strategy, or intervention is likely to improve student outcomes or other relevant outcomes; and (II) includes ongoing efforts to examine the effects of such activity, strategy, or intervention" (Title 20, *United States Code*, Section 7801[21][A]).

504 plan. A plan developed to ensure that a child who has a disability identified under the law and is attending an elementary or secondary educational institution receives accommodations for academic success and access to the learning environment.

fluency. With respect to reading, *fluency* refers to the ability to read a text accurately, quickly, and with appropriate expression and intonation.

free appropriate public education (FAPE). A special education term meaning student services are provided under public supervision and direction while meeting standards and remaining compliant with IEP guidelines.

general education. The program of education that typically developing children receive on the basis of state and federal laws and regulations.

graphemes. The smallest units of a writing system of a language. A grapheme is a printed letter or group of letters that represent a sound (*phoneme*) in a syllable or word.

individualized education program (IEP). A plan developed by a multidisciplinary IEP team to ensure that a child who has a disability identified under law and is attending an elementary or secondary educational institution receives a free appropriate public education in the least restrictive environment.

Individuals with Disabilities Education Act (IDEA). The federal special education law with which local educational agencies must comply.

least restrictive environment (LRE). The idea that students with an IEP will be educated in a learning environment that maximizes their achievement.

morphology. The system of language governing the structure of words and the construction of word forms. A *morpheme* is the smallest meaningful unit of language. Morphemes may be "free" (words that can stand alone) or "bound" (affixes or word elements that cannot stand alone, such as prefixes and suffixes).

orthography. The conventional spelling system of a language. Letters (*graphemes*) are used to spell words.

phoneme segmentation. The process of breaking down (*segmenting*) syllables and words into individual phonemes.

phoneme synthesis. The process of blending individual speech sounds to form syllables and words.

phonemes. The smallest units of spoken language (i.e., individual speech sounds in syllables and words).

phonemic awareness. A subset of phonological awareness referring specifically to the understanding of and ability to manipulate the discrete, individual speech sounds of a language (*phonemes*).

phonics. The instruction of reading based on letter–sound (grapheme–phoneme) association and phoneme-to-print association. Phonics involves the understanding that letters represent sounds that form words (i.e., the alphabetic principle). For phonics instruction to be successful, students need a strong foundation in phonological and phonemic awareness.

phonological awareness. An individual's awareness and access to the sound structure of oral language. Phonological awareness is the understanding that spoken language can be divided into smaller units (i.e., words, syllables, onset-rime, and phonemes) and that those units can be identified and manipulated.

phonological coding. The ability to produce, discriminate, and manipulate the sound structure of a language.

phonological memory. The ability to code information in working or short-term memory for storage and subsequent retrieval.

phonological processing. The ability to process phonological material (e.g., perceive, integrate, store, retrieve, segment, and manipulate speech sounds). Phonological processing deficits impair an individual's ability to segment the written word into its underlying components. Three major types of phonological processing that relate to literacy development are phonological awareness, phonological memory, and rapid naming.

phonology. The speech sound system of a language and the rules that govern the sound combinations. Phonemes are individual speech sounds (e.g., /s/ is the first sound pronounced in the word *sun*). Phonemes are combined to form syllables and words in spoken language.

pragmatics. The system of language that combines other components of language form and content in functional and socially appropriate communication. Pragmatics pertains to use of language in social interactions or discourse.

pseudo-words. Nonsense words or nonwords that resemble real words in terms of orthographic and phonological structure but don't actually exist in a language (e.g., *nimby, motab*).

rapid naming. The ability to efficiently retrieve phonological information from permanent (long-term) memory—for example, quickly naming digits, letters, objects, or colors.

Response to Intervention (RtI). A multi-tiered approach to the early identification and support of students who have learning and behavioral needs. The RtI process begins with high-quality instruction and universal screening of all children in the general education classroom.

screener. An academic screener is a brief informal assessment typically conducted in the general education setting.

semantics. The system of language that governs the meanings of words and sentences. Semantics pertains to both the meaning of individual words and the meaning of groups of words used to form phrases, clauses, sentences, paragraphs, and so forth.

special education local plan areas (SELPAs). Geographical regions in California comprising consortiums of school districts and county school offices of sufficient size and scope to provide for all special education service needs of children residing within a region's boundaries. SELPAs were first mandated by California law in 1977. Each SELPA must develop a local plan describing how it will provide special education services.

specific learning disability (SLD). A disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, that may have manifested itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations; this includes conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The basic psychological processes include attention; visual processing; auditory processing; phonological processing; sensory-motor skills; and cognitive abilities, including association, conceptualization, and expression.

supplementary aids and services. A term used to refer to services and supports that are provided in all educational settings (special and general education).

syntax. The system of language governing the order and combination of words to form sentences and the relationships among the elements within a sentence. Syntax pertains to word order in phrases, clauses, and sentences that are spoken or written.

text structure. The organization of connected text or discourse (sentences in paragraphs).

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