The background of the entire page is a dense, overlapping field of light-colored wooden alphabet blocks. The blocks are scattered in various orientations, creating a textured, three-dimensional effect. The letters are in a simple, sans-serif font. The overall color palette is muted, consisting of various shades of beige, tan, and light brown.

Nebraska Department of Education
Office of Special Education

Technical Assistance Document
for

DYSLEXIA

January 2016



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INTRODUCTION

The Nebraska Department of Education recognizes the importance of learning to read for students throughout the state. Understanding the specific needs of all of our students is paramount to providing appropriate instruction for children to progress in reading development.

Dyslexia is a type of specific learning disability and students with dyslexia may have difficulty with several skills including oral language, reading, spelling and writing.

The purpose of the Nebraska Department of Education 2015 Technical Assistance Document for Dyslexia is to provide information, resources, guidance and support to schools, families and caregivers in understanding the specific learning disability of dyslexia. This technical assistance document is a starting point and includes additional resources for educators to access when they suspect a student may have dyslexia. Recognizing that Nebraska school districts have autonomy in selecting assessments, diagnostic tools and instructional programs, the Nebraska Department does not endorse any specific assessments or programs.

For information on verifying students with a specific learning disability for the purpose of receiving specially designed instruction, please refer to the Verification Guidelines for Children with Disabilities (Disability Category: Specific Learning Disability, 2015) and 92 NAC 006.04K (2014).

The following goals are embedded within this document:

1. Build an understanding of **dyslexia** as a specific learning disability that may have a significant impact on learning.
2. Dispel long-held misconceptions relating to **dyslexia**.
3. Identify evidence-based practices that guide effective instruction and supports for children verified with the specific learning disability of **dyslexia**.
4. Provide a list of resources for informed study that will guide instructional decision-making relating to **dyslexia**.

One thing we know for certain about dyslexia is that it is one small area of difficulty in a sea of strengths. Having trouble with reading does not mean that you'll have trouble with everything. In fact, most children with dyslexia are very good at a lot of other things.

Dr. Sally Shaywitz, M.D. - Overcoming Dyslexia (2003)

This document was developed by staff at the Nebraska Department of Education Special Education Office and a private contractor. Additionally, input was obtained from the Nebraska Dyslexia Association and from the Nebraska Association of Special Education Supervisors (NASES).

DYSLEXIA: A DEFINITION

The National Institutes of Health (NIH), the International Dyslexia Association (IDA), the Nebraska Dyslexia Association (NDA), and others have adopted and support the following definition:

Dyslexia is a specific learning disability that is neurological 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 the growth of vocabulary and background knowledge.

Analysis of the definition

Dyslexia is....

a specific learning disability....

The broad term "learning disability" does not specify the area of learning difficulty well enough to determine effective interventions and practices for students in the classroom.

neurological in origin....

The brain of a child with dyslexia is structurally and functionally different from the brain of a child who does not have dyslexia. These neurological differences may negatively impact abilities relating to phonological processing, rapid naming, word recognition, reading fluency and reading comprehension (Shaywitz, et.al, 2006).

characterized by difficulties with accurate and/or fluent word recognition....

A child with dyslexia has difficulty with consistency in accurate word identification. Reading rate and expression may be negatively impacted which may affect the skill of reading fluency, the ability to read quickly, accurately, and with good comprehension (National Reading Panel, 2000).

a deficit in spelling and decoding abilities....

A child with dyslexia does not intuitively learn to decode and spell words. Therefore, direct, explicit, and systematic instruction in the application of phonics rules governing decoding and spelling is necessary for effective learning of printed language (Torgeson, et.al, 1999).

A deficit in the phonological component of language....

Children with dyslexia have a core deficit in these phonological processing skills (Torgesen, et.al, 1996):

-Phonological awareness: This is usually the most pronounced deficit and refers to the understanding and awareness that spoken words consist of individual sounds (i.e., phonemes) and combinations of speech sounds (i.e., syllables and onset-rime units such as ight, right, tight, etc). Two important phonological awareness activities are blending (i.e., combining phonemes to form words) and segmentation (i.e., breaking spoken words down into separate and discreet sounds or phonemes). Torgesen (1997) relates that phonological awareness is more closely related to success in reading than intelligence.

-Phonological memory: The ability to temporarily store bits of verbal information and retrieve it from short-term memory (Shaywitz, 2003).

-Rapid automatic naming (RAN): The ability to accurately and quickly retrieve the name of a letter, number, object, word, picture, etc., from long-term memory. RAN is a skill predictive of efficacy in reading fluency, comprehension, and rate (Neuhaus, et.al, 2001).

often unexpected in relation to other cognitive abilities....

A child with dyslexia exhibits reading difficulties in spite of demonstrated cognitive abilities in other areas. A key concept in dyslexia is *unexpected difficulty* in reading in children who otherwise possess the intelligence, motivation, and reading instruction considered necessary for the development of accurate and fluent reading (Shaywitz, 2003).

reduced reading experience that can impede the growth of vocabulary and background knowledge....

Lyon et.al. (2003) highlight impeded growth of vocabulary and background knowledge as a secondary consequence of dyslexia. Because a child with dyslexia does not read as much as his/her peers, word and background knowledge does not keep pace with expectations for age and grade level. Without adequate reading experiences, vocabulary development, and background knowledge, reading comprehension is ultimately impaired.

SECONDARY CONCERNS

- **READING COMPREHENSION AND FLUENCY.** Comprehension is the primary goal of literacy instruction. Fluency is the part of the reading process that leads to effective and efficient reading. Reid Lyon (2002) considered reading comprehension and fluency a “downstream consequence of dyslexia” because his study demonstrated that children with persistent reading difficulties did not keep pace with their grade level peers in word knowledge and background information. He predicted therefore that without early and effective reading intervention and instruction, children with dyslexia would struggle with skills in reading comprehension and fluency.
- **ELECTIVE INDEPENDENT READING.** The stress of early and persistent reading difficulties seriously affects the amount of time children elect to read. A study on the comparative analysis of words read by students with varying levels of reading skill demonstrated that students with reading difficulties tended to read less than those who were not identified as having reading difficulties. Anderson, et.al, (1988) contrasted words read by students at the 50th percentile (average) in 5th grade to those words read by students in the 10th percentile. Students at the 50th percentile read approximately 600,000 words during the school year while students at the 10th percentile read approximately 50,000 words during the same period of time. Large differences in independent reading practice emerged as early as the beginning of first grade according to a study conducted by Allington (1984). In addition to directly affecting the development of reading fluency, these practice differences have a significant impact on the development of other critical skills such as vocabulary, reading comprehension, and conceptual knowledge (Cunningham & Stanovich, 1998). This latter type of knowledge and skill is critically important for comprehension of text in upper elementary, middle, and high school (RAND, 2002).
- **INTEREST IN SCHOOL.** Motivation and interest in school can be adversely affected by repeated failure in reading activities within the classroom. Torgeson (as cited in Sedita, 2011, p. 532) states that “even technically sound instructional techniques are unlikely to succeed unless we can ensure that, most of the time, students are engaged and motivated to understand what they read.” It is not surprising that children with reading difficulties become disinterested in school when reading activities assume such an integral part of the learning process (Rimrod & Lipkin, 2011).
- **ACADEMIC SUCCESS.** Research has demonstrated that children who read well in the early grades experience more academic success in later years of schooling, and those who struggle with reading fall behind and generally stay behind when it comes to overall academic achievement (Snow, et.al, 1998).

- **SELF-ESTEEM.** Studies demonstrate that children with dyslexia are highly vulnerable to feelings of low self-esteem. They grow to distrust their intelligence and their confidence. They begin to feel inferior as they continually self-assess against the reading progress of their grade level peers (Glazzard, 2010). If children repeatedly meet with failure and frustration, feelings of incompetence prevail and ultimately impact self-esteem (Ryan, 2004a). A developing child's sense of self is closely associated with how well they are coping with school-based academic tasks. If aware of not doing well in school, feelings of despair and hopelessness lead to considerably lowered self-esteem (Martin & Dowson, 1992).
- **ANXIETY, ANGER, & DEPRESSION.** Children with dyslexia may become fearful of environments where repeated failure is experienced. As a result of reading difficulties, these children often develop varying degrees of anxiety, anger, frustration, and depression. These conditions can lower a child's ability to fully engage in the learning process and may limit their ability to fully attend to classroom instruction.
- **SOCIAL AND EMOTIONAL DEVELOPMENT.** Children with dyslexia are at risk of failure, not only academically, but also socially and emotionally. The frustration of prolonged failure on a range of reading tasks results in feelings of insecurity and lack of confidence. This can lead to profound effects upon social skills, friendship patterns, acceptance, and adjustment. These tensions can cause undue stress and insecurity and often lead to devastating social and emotional results. Children with dyslexia tend to be sensitive to peer comments as well as to negative reactions from adults – parents, teachers, and others. Feelings of shame, inadequacy, helplessness, and hopelessness can become serious barriers to positive emotional development in children with dyslexia (Ryan, 2004b).

CHARACTERISTICS OF DYSLEXIA

The following information is adapted from the *Great Schools* website
www.greatschools.org/gk/articles/brain-research/

Current Brain Research, Reading, and Dyslexia

Perhaps the best-known scientists in the field of research relating to dyslexia are medical doctors, Sally and Bennet Shaywitz, co-directors of the National Institutes of Child Health and Human Development's Yale Center for the Study of Learning and Attention. They have been studying learning for more than twenty years and have a gift for translating brain science into information that is understandable and useful. As pediatricians and parents, they share a passion for the research that shapes and guides educational practice for both children and young adults. Using methods ranging from longitudinal population studies to high-tech brain imaging, the Shaywitzes have been responsible for major changes in the way dyslexia is viewed by professionals and parents.

Their work with functional magnetic resonance imaging (fMRI) has shown that dyslexia is neurobiologically based. Their continuing study of a broad sample of schoolchildren has determined that dyslexia and reading problems occur equally among boys and girls, though boys are identified more often. Their studies also reveal that reading disabilities are pervasive over time. Their research on reading extends from epidemiology and developmental issues through cognitive and neurolinguistic mechanisms to neurobiologic mechanisms.

The Connecticut Longitudinal Study, begun in 1983, has tracked the reading performance and ability of more than 400 students who came from a broad range of backgrounds with a wide variation in abilities. The Shaywitzes studied everything from prenatal care to educational experiences in order to see how children learned to read and what factors contributed to reading problems. The study determined that reading problems occurred in 1 out of 5 children (e.g. 20%), and that the deficit in reading difficulties occurs at the linguistic and phonologic level.

The Shaywitzes and many other researchers have advanced the phonologic model of dyslexia. Numerous studies have shown that reading difficulties result from children's inability to recognize and break up phonemes, the tiny sounds that make up language, and further, to connect those sounds to written letter forms. The Shaywitzes explained that phonology (e.g., the mapping of sounds to letters) is what takes reading out of the realm of pure memory and allows readers to decode words they don't yet know.

While phonological deficits had been identified as the chief cause of reading disabilities, it took functional magnetic resonance imaging (fMRI) studies to make the disability of dyslexia visible. fMRIs measure and record the level of blood oxygenation in areas of active brain tissue. The fMRI technique has many advantages. It is non-

invasive; it can be done repeatedly and often; it uses no radioactive isotopes (as did earlier PET scans); and it is safe for use with children.

Bennett Shaywitz and his fellow researchers theorized that while good readers used the front and back of the brain for phonological processing tasks, readers with dyslexia use only the front of their brain. This was discovered by asking study participants to perform visual, spatial, orthographic (letter-related), phonological (sound-related), and semantic (word meaning) tasks and then monitoring the areas of the brain used in such tasks. This seminal research has shed important light on the nature of the disability of dyslexia.

Besides illustrating functional organization of the brain in subjects with dyslexia, fMRI can be used to track the effects of educational intervention. In an effort to explore these effects, the Shaywitzes are currently working on research that measures the efficacy of specific reading interventions. The treatment plan includes systematic, intensive, individualized, and explicit instruction with pre and post fMRIs used to measure effect over time. This study is ongoing and will continue to guide educational decision-making in providing evidence-based practices in reading instruction and remediation strategies for children with dyslexia.

While fMRIs are not yet available for general public use, there are other more accessible and usable ways to predict, prevent, and work with children identified as having reading problems. Dr. Sally Shaywitz was a member of the team responsible for the seminal research and publication of the National Research Council's "Preventing Reading Difficulties in Young Children." She is currently a member of the National Reading Panel created by the Director of the National Institute of Child Health and Human Development (NICHD) to study the effectiveness of various approaches and strategies for teaching children how to read.

Citing the National Research Council publication, Dr. Shaywitz outlined the following steps in reading development which are generally achieved in grades K-3:

- Print awareness
- Recognition of letter shapes and names
- Know that spoken words come apart into small sounds
- Know that sounds are represented by letters
- Blend sounds together
- Develop automaticity, fluency
- Develop comprehension strategies

Known risk factors for preschoolers include:

- Heredity
- Late talking
- Difficulty learning and recognizing rhyme
- Pronunciation problems
- Difficulty finding the right word in speech
- Difficulty learning letters

Dr. Shaywitz discussed ways in which phonemic awareness could be developed and measured. Further she has recommended important components that may be used in kindergarten screenings. A very important part of her work relates to the importance of reading instruction that is **sequential, systematic, direct, explicit, multisensory, and supportive.**

It is important to recognize that evidence-based practices must inform instructional decision-making relative to all students. Aspects of evidence-based reading approaches are addressed in Section VII: Effective Instruction and Intervention.

The population of individuals with the specific learning disability of dyslexia is *heterogeneous*. This means that a hard and fast learning profile for children with dyslexia does not exist. Every child is unique and different in how he or she learns and progresses through a continuum of skills. The significance of dyslexia depends on the severity of the condition and the effectiveness of instruction and intervention. Children with dyslexia have serious difficulties learning to read despite normal intelligence, opportunities to learn to read, and nurturing home support and good educational experiences.

There is considerable evidence that suggests that reading problems associated with dyslexia are phonologically based (Shaywitz, et.al, 2006; Blachman, 1997; Foorman, 2003; Stanovich & Siegel, 1994). Students with dyslexia have difficulty developing phonemic awareness: the understanding that spoken words are comprised of a combination of discrete sounds. Phonemic awareness problems make it difficult to link speech sounds to letters which in turn, leads to slow, labored reading characterized by frequent starts and stops and multiple mispronunciations. Students with dyslexia also experience comprehension problems largely related to the struggle in identifying words and interrupting their ability for comprehension and understanding of read material.

In addition to deficits in reading, students with dyslexia may experience deficits in the area of spoken language (Berninger & May, 2011). As spoken language demands increase with age and grade level, students with dyslexia may have increasing frustration as they struggle to keep pace. They may have difficulty with expressive (the ability to communicate meaningfully through the use of oral language) and receptive language (the ability to listen and derive meaning and appropriate interpretation from that which is spoken). Language is the underpinning for much of the academic learning that takes place in schools. It is not surprising that a student with language disorders is likely to have difficulty meeting demands of the school curriculum (Catts & Kamhi, 2005; Berninger & May, 2011). Consider the magnitude of the challenge for a student who struggles with issues related to both dyslexia and language disorders: Effects from this combination reach well beyond the classroom.

Students with dyslexia often experience difficulties with elements of written expression, grammar, sentence structure, spelling, punctuation, sequencing, handwriting, and merely getting a written assignment started (Catts, et.al, 2005). Additionally, their slow information processing speed adds to the complexity of dealing with words. Often one of the most taxing dilemmas is getting their thoughts on paper. Written assignments often show:

- lack of logical and sequential progression
- erratic structure
- irregular and inappropriate use of punctuation, or lack thereof
- poor grammar and sentence structure
- erratic and irregular spelling errors
- jumbled thoughts even at the sentence level
- one sentence constituting a paragraph
- redundancies and repetitions for lack of expanded vocabulary and concept

Writing seems to be hampered by problems with basic spelling and grammar. A long time is spent trying to get the spelling correct and there is a tendency to use the words they feel they can spell, rather than the vocabulary they know. They can also have a tendency to add or omit words, or modify the meaning of words or sentences by imposing their own idiosyncratic spelling pattern.

Written activities can often be a source of frustration for students with dyslexia. This frustration can result in loss of motivation and diminished confidence in their ability to succeed in the area of written language.

Dyslexia can affect an individual's self-image. Students with dyslexia often feel as though they are "dumb," less capable, or unworthy. After experiencing continuous stress in academic endeavors involving reading and writing, it is not surprising that a student may become discouraged about their ability to achieve in school.

Some of the most common characteristics associated with dyslexia are listed below. The list is not exhaustive and it's important to note that not all characteristics typify all students with dyslexia. These characteristics may change over time depending on grade level and/or state of reading skill acquisition (Chall, 1983).

- **Perception:** Students may have perceptual problems or difficulties recognizing, discriminating, and interpreting visual and auditory stimuli (Mammarella & Pazzaglia, 2010; Mercer & Pullen, 2009).
- **Attention:** Students may have difficulty selecting and focusing attention on the most relevant stimuli essential for learning (Obrzut & Mahoney, 2011; Sinclair, et al., 1984; Smith, 2004). If a student cannot manage his/her attention, interfering information will adversely impact learning (Screieivasan & Jha, 2007).

- **Memory:** Students may have deficits in memory, especially working memory. Working memory is the ability to temporarily hold and manipulate information for tasks performed on a daily basis. Many authorities associate deficits in working memory with reading (Berninger et al, 2010; Swanson, 2011), mathematics (Alloway & Passolunghi, 2011; Berg & Hutchinson, 2010), and written language disorders (Alamargot, et al, 2011; Bourke & Adams, 2010). Working memory capacity is a good predictor of a student's ability to retrieve information that is critical for learning to occur.
- **Processing Speed:** Some students do not process information effectively and efficiently. Information processing speed distinguishes students with SLD from their peers without disabilities. Students with SLD have deficits in both the speed and the capacity of visual and auditory information processing (Geary, et al, 2012; Kail, 1994; Weleir, et al, 2003). Naming speed is a second core deficit in dyslexia (Vukovic & Siegel, 2006) and it influences reading and mathematical fluency (Donlam, 2007).
- **Metacognition:** Metacognition is the ability to adjust behavioral and environmental functioning in response to changing academic demands (Zimmerman, 1986). It is the knowledge of one's own cognitive processes and the understanding of the products related to them; it is "thinking about thinking." Metacognition also includes knowledge of the relationship between a task and strategy and when, where, and why a specific strategy is used (Reid & Lienemann, 2007). Students with dyslexia may demonstrate inadequate metacognitive awareness and are therefore less likely to use task-appropriate metacognitive strategies. Metacognitive strategies include a systematic rehearsal of steps or conscious selection among strategies to successfully complete a task. They are used to monitor and evaluate progress during task execution. Metacognition is vital to academic success (Rosenzweig, et al, 2011; Sideridis, et al, 2006).
- **Language:** Language delay and inappropriate use of language are problems some students may exhibit. Students may have problems in phonology (sounds), semantics (vocabulary), syntax (grammar), morphology (prefixes and suffixes), and pragmatics (social language). These problems may be far-reaching in terms of effects on social and emotional adjustment and academic achievement (Berninger & May, 2011; Morin & Franks, 2010; Steele & Watkins, 2010).
- **Academic:** Academic deficits for students with dyslexia are well-established by third or fourth grade due to the shift from "learning to read" to "reading to learn" (Bernstein & Waber, 1991). From this point forward, curricula emphasize fluency and comprehension rather than more basic word recognition skills. Not surprisingly, it is around this time that children with dyslexia begin to show noticeable academic problems, even if they had done well in the earlier grades. Beyond third grade, students are also expected to be able to incorporate cause/effect sequences, goal setting/planning, and conclusions that relate to final events of the reading (Westby & Watson, 2004). Working memory deficits may impede students from monitoring what

they read as they are more susceptible to distraction by word details as they read longer text—failing to “remember” main ideas and concepts (McInnes, et al, 2003).

Social Issues: Some students with dyslexia have deficits in the area of social competence that are exhibited in a variety of social skill difficulties. They may misread social cues, be unaware of how their behaviors impact others, and may misinterpret the feelings of others. These social incompetencies may affect both the student's social and academic performance. Social skill deficits often increase the possibility of potential unfavorable consequences such as school dropout (Elbaum & Vaughn, 2003; Elksnin & Elksnin, 2004; Kavale & Forness, 1996; Lane & Menzies, 2010).

ASSOCIATED CONDITIONS

In addition to the aforementioned characteristics, it is important to be aware of additional concerns or associated conditions that may occur concomitantly with the disability of dyslexia.

- **Attention Deficit Hyperactivity Disorder (ADHD):** ADHD is a problem with inattentiveness, over-activity, impulsivity, or a combination of these (Barkley, 2006; PubMed Health, 2012). Students with ADHD may display a broad variation in the degree of symptoms, in the age of onset, in the cross-situational pervasiveness of those symptoms, and in the extent to which other disorders occur with ADHD (Barkley, 2006; Dietz & Montague, 2006). ADHD can make it difficult to stay focused during reading and other activities.
- **Emotional Disturbance:** Students with dyslexia may exhibit emotional and behavioral issues related to pronounced deficits in social skills, self-concept, academic achievement, management of emotions, and social information processing. The following is adapted from a list included on the Dyslexia Center of Utah website <http://dyslexiacenterofutah.org/dyslexia/emotional-effects/>. Emotional effects of dyslexia may include:
 - Depression
 - Negative and self-critical thoughts
 - Inability to maintain a positive affect about academic performance
 - Feelings of helplessness and hopelessness
 - Anxiety - student becomes fearful of school and seeks to avoid it. Anxiety triggered from thoughts of school is discomforting.
 - Paying attention, focus and concentration, and ability to stay on task is negatively impacted by anxiety and frustration with thoughts of school
 - Feelings of “dumb” or “stupid” – children of all ages can be aware that they are not learning as easily and quickly as peers. They expect to be able to read, write, and spell. They become frustrated when faced with tasks that continually challenge their abilities.
- **Speech and Language Impairment:** Students with dyslexia may have significant difficulties with syntax, phonological and morphological skills, as well as associated deficits in semantics and pragmatics. There is a close relationship between oral language and written language. Often poor academic performance is the result of the interplay between language deficits (both oral and written) and academic deficits. The role that oral and written language plays in reading and other academic areas is well documented (Benner, et al., 2009; Goran & Gage, 2011; Kaderavek, 2011; Miller & McCardle, 2011; Troia, 2011).
- **Dysgraphia:** Dysgraphia expresses itself primarily through writing or typing, although in some cases it may also affect eye–hand coordination, direction- or sequence-oriented processes such as tying knots or carrying out a repetitive task. In dyslexia,

dysgraphia is often multifactorial, due to impaired letter writing automaticity, finger motor sequencing challenges, organizational and elaborative difficulties, and impaired visual word form which makes it more difficult to retrieve the visual picture of words required for spelling (Nicolson & Fawcett, 2011).

- **Dyscalculia:** Children with dyscalculia have difficulty with math computation and application processes. Some signs of dyscalculia may be difficulty understanding math concepts; completing word problems; performing math operations; recognizing patterns and sequencing; organizing information; or simply number recognition. Research shows that 50-60% of students with dyslexia also have math difficulties. For some the language of math, rather than the concepts, presents the greatest challenge (Chinn & Ashcroft, 2007). Students with dyscalculia have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Dyslexia and dyscalculia can co-exist or they can exist independently of one another.
- **Central Auditory Processing Disorder:** Auditory processing disorder affects the ability to process information taken in through hearing. It is often noted as a listening disability (Chermak & Musiek, 1992). Children with auditory processing disorder often have trouble recognizing the difference between letters like *b* and *d* and sounding out new words. They may struggle to understand what people are saying. Reading can also be difficult because one aspect of reading involves connecting sounds with letters. Children with dyslexia may have auditory processing problems and may develop their own logographic cues to compensate for this deficit. Some research suggests that auditory processing skills could be the primary shortfall in dyslexia (King, et.al, 2003).
- **Visual Processing Disorder:** Visual processing disorder refers to a reduced ability to make sense of information taken in through the eyes. This is different from problems involving sight or sharpness of vision. Difficulties with visual processing affect how visual information is interpreted or processed in the brain. A child with visual processing problems may have 20/20 vision but may have difficulties discriminating foreground from background, forms, size, movement, direction, and position in space. The child may be unable to synthesize and analyze visually presented information accurately or fast enough. Visual processing disorders, together with Central Auditory Processing Disorders, frequently result in dyslexia and challenges in academic performance and achievement (Valdois, et.al, 2004).
- **Executive Function Skill Deficit:** Executive function describes a set of cognitive abilities that control and regulate higher order thinking ability and behaviors. It is necessary for goal-directed behavior and includes the ability to initiate and stop actions; monitor and change behavior as needed; and plan future behavior when faced with novel tasks and situations. Executive function allows one to anticipate outcomes and adapt to changing situations. The ability to form concepts and think abstractly are often considered components of executive function (Brosnan, et.al, 2002). Executive function is vital for successful adaptation and performance in real-life situations. It

helps one organize and apply that which is in the working memory. If there is a weakness in the executive functioning, along with difficulties with short-term memory in relation to storing and retrieving information, then the ability to connect the visual and auditory representation of the phoneme and grapheme is further impeded by knowing how to apply that information in sequence and in relation to reading (Cartwright, 2012).

DEBUNKING THE MYTHS – With Fact

Myth #1: Writing letters and words backwards are the most prominent signs of dyslexia.
Fact: Writing letters and words backwards may occur in any child prior to 2nd grade or the age of eight or nine. Dyslexia does not cause children to see letters, numbers, and words backwards or inverted. However, some children with dyslexia may confuse letters, misread words, or have difficulty forming letters as a result of the lack of phonological skills (Moats, 1999).

Myth #2: If given enough time, children will outgrow dyslexia.
Fact: Dyslexia is neurological in origin and is a lifelong learning disability. There is no evidence that indicates that dyslexia can be outgrown. There is, however, strong evidence that children with reading problems show a continued persistent deficit rather than merely learning to read later than their peers (Francis, et.al, 1996). Evidence indicates that without early effective intervention and reading instruction, children with dyslexia continue to experience reading problems into adolescence and adulthood (Shaywitz, 2003).

Myth #3: Dyslexia is more prevalent in boys than in girls.
Fact: Longitudinal research shows that girls and boys are equally affected by dyslexia (Shaywitz, et. al, 1990). There are many possible reasons for over-identification of males by schools, including behavioral acting out and difficulty assimilating compensatory strategies (Shaywitz, 1996).

Myth #4: An individual with dyslexia will never learn to read.
Fact: This is simply not true. The earlier children who struggle are identified and provided systematic, explicit, and intense instruction, the less severe their problems are likely to be (Torgesen, 2002). With provision of intensive instruction, even older children with dyslexia can become accurate, albeit slow readers (Torgesen, et. al, 2001)

Myth #5: Dyslexia is rare.
Fact: The National Center for Learning Disabilities projects that one in five (or 15-20% of any given population) has a specific learning disability. Of students identified with specific learning disabilities, 70-80% have deficits in reading. The International Dyslexia Association (IDA) further notes that the most common type of reading, writing, and/or spelling disability is dyslexia. These numbers quickly dispel the myth that dyslexia is rare.

Myth #6: There is a test to determine if an individual has dyslexia.
Fact: There is no single test for dyslexia. A comprehensive evaluation must be administered to support the conclusion of dyslexia. Areas of assessment, determined by the multidisciplinary team, may include phonological processing, oral language, alphabet knowledge, decoding, word recognition, reading fluency, reading comprehension, spelling, written expression, and cognitive functioning.

Myth #7: Dyslexia is a general “catch-all” term.

Fact: *Dyslexia is a specific term for a learning disability that is neurological in origin and is specific to print language. The research-based definition of dyslexia recognized by the International Dyslexia Association (IDA) and supported by the National Institutes of Health (NIH) provides clear delineation of the characteristics of dyslexia.*

Myth #8: Dyslexia is caused by poor teaching and exposure to the whole word method of reading instruction.

Fact: *Poor instruction does not cause dyslexia but can exacerbate reading difficulties experienced by children with dyslexia. Conversely, effective reading instruction promotes reading success and alleviates many difficulties associated with dyslexia. Studies have shown that whole word methods of teaching reading are generally the least successful for students with reading disabilities (Moats, 1999). Teaching directly, explicitly, and systematically about letters, sounds, syllables, words, sentences, and discourse is the most effective approach in teaching students with dyslexia.*

Myth #9: Dyslexia is a medical condition and only medical professionals can diagnose dyslexia.

Fact: *Though dyslexia is a medical condition, it becomes an educational issue when it significantly impacts the student’s achievement. The school multidisciplinary team determines what tests and assessments are necessary to complete a thorough evaluation.*

Evaluation may include medical professionals as part of the multidisciplinary assessment process, but the majority of assessments and tests are administered by educators who are trained in and knowledgeable of the instruments and procedures for identifying characteristics of dyslexia. To be eligible for special education services under the Individuals with Disabilities Education Act (IDEA), multidisciplinary team findings must demonstrate that the disability of dyslexia has a significant impact on student performance.

Myth #10: Dyslexia cannot be diagnosed until 3rd grade.

Fact: *Early intervention is critical to the success of a student with dyslexia. Assessments of phonemic awareness; letter knowledge and speed of naming; and sound-symbol association can be completed as early as kindergarten. Success, or lack thereof, in these specific skill areas often predicts reading ability in the first and second grades.*

Myth #11: If students with dyslexia would just try harder, they would succeed.

Fact: *Dyslexia is the result of a neurological difference beyond the control of the student. Motivation is not usually the primary problem associated with reading difficulties but may become a secondary problem due to repeated stress and failure in academic areas relating to reading.*

Myth #12: Dyslexia is caused by brain damage.

Fact: *The exact causes of dyslexia are not completely clear. However, brain imaging studies show significant differences in the way the brain of the child with dyslexia develops and functions (Shaywitz, et.al, 2001). The neurological differences associated with dyslexia are genetic rather than the result of brain injury, damage, or disease.*

INDICATORS

Common Indicators Associated with Dyslexia

If the following behaviors are unexpected for an individual's age, educational level, or cognitive ability, they may be risk factors associated with dyslexia. These stages are best thought of as a continuum of skills and while most individuals likely relate to one or two of these characteristics, it does not mean that the individual has dyslexia. A student with dyslexia exhibits several of these behaviors that persist over time and have significant impact on his/her learning. A **family history** of dyslexia may be present; in fact, recent studies reveal that the whole spectrum of reading disabilities is strongly determined by genetic predispositions and inherited aptitudes (Olson, et.al, 2014).

Preschool

At this stage, students are developing the oral language base necessary for learning to read. Signs that may indicate possible difficulties with reading skill acquisition include:

- Delays in learning to talk
- Difficulty in rhyming (i.e., “boo – moo – too,” “cat – mat – pat,” etc.)
- Poor auditory memory for nursery rhymes, chants, finger plays, songs, etc.
- Difficulty in adding/expanding vocabulary
- Inability to recall the right word (word retrieval) when speaking
- Persistent ‘baby talk’
- Trouble learning the names of letters and numerals
- Difficulty remembering and ordering the letters in his/ her name
- Does not participate or enjoy following along when books are read aloud
- Difficulty following simple one-step directions

Parents are encouraged to contact the school district if several of these signs are noted in the early literacy development of their child.

Kindergarten and First Grade

At this stage, most children are developing basic word recognition skills through the use of word attack strategies and contextual cues. Students with dyslexia will show some of the following characteristics:

- Difficulty remembering the names and shape of letters
- Difficulty recalling their letters and their corresponding sound
- Difficulty identifying and manipulating sounds in syllables (i.e., “pal” sounded out as /p/ /a/ /l/; rearranging those letters to create another word, “lap” sounded out /l/ /a/ /p/; etc.)
- Difficulty breaking words into smaller parts called syllables (i.e., “bathroom” into “bath” – “room,” or “pumpkin” into “pump” - “kin,” etc.)

- Difficulty using the decoding process to sound out and read single words in isolation
- Difficulty spelling words phonetically (e.g., the way they sound) or remembering letter sequences in very common words seen often in print (i.e., “sed” for “said,” etc.)
- Mispronunciation of words (i.e., “pusgetti” for “spaghetti,” or “mawn lower” for “lawn mower,” etc.)
- Crayon and pencil grip tends to be awkward, tight, or fist-like
- Difficulty with spatial orientation (i.e., up/down, over/under; before/after; around/through, etc.)
- Difficulty acquiring new vocabulary and using age appropriate grammar

Second and Third Grade

For a child with dyslexia, many of the previously described behaviors may continue to be problematic in addition to the following:

- Difficulty recognizing common sight words (i.e., “to,” “said,” “the,” “been,” etc.)
- Difficulty decoding one syllable words
- Difficulty recalling the correct sounds for letters and letter patterns in reading
- Confusion with visually similar letters/numerals (i.e., b/d/p; w/m; h/n; f/t; 6/9)
- Difficulty connecting speech sounds with appropriate letter or letter combinations and omitting letters in words for spelling (i.e., “after” spelled “eftr,” or “always” spelled “aways,” etc.)
- Confusion of auditorily similar letters (d/t; b/p; f/v)
- Reads slowly with many word inaccuracies (i.e., reads “saw” for “was,” reads “go” for “gone,” etc.)
- Reading and spelling errors that involve difficulties with sequencing and monitoring sound/symbol correspondence such as omissions (trip/tip), additions (sip/slip), substitutions (rib/fib) and transpositions (stop/spot)
- Tends to read without expression
- Does not observe punctuation when orally reading (i.e., a period at the end of a sentence means a brief stop; a comma in a sentence means a slight pause; etc)
- Difficulty decoding unfamiliar words in sentences using knowledge of phonics
- Reliance on picture clues, story theme, and guessing at words
- Difficulty with skills in writing (i.e., correct formation of letters/numerals; spelling, handwriting, written expression, etc.)
- Difficulty putting ideas on paper
- Omission of grammatical endings in reading and/or writing (-s, -ed, -ing, etc.)
- Difficulty remembering spelling words over time and applying spelling rules

Fourth through Sixth Grade

At this stage, children progressing in the normal range will have mastered basic reading skills and are expected to learn new information from their group and independent reading activities. Students with dyslexia will continue to have significant difficulties with developing word recognition skills and may experience difficulty coping with more advanced expectations for reading to succeed in the grade level curriculum.

For the child with dyslexia, many of the previously described behaviors may continue to be problematic along with the following:

- Frequent misreading of common sight words (i.e., where, there, what, then, when, etc.)
- Difficulty reading aloud (e.g., fear of reading aloud in the presence of peers or others)
- Avoidance of reading for pleasure
- Acquisition of higher level vocabulary reduced due to reluctance to read independently for enjoyment
- Difficulty understanding concepts and relationships
- Difficulty reading and spelling multisyllabic words, often omitting entire syllables as well as making single sound errors
- Difficulty with reading comprehension and learning new information from text due to underlying word recognition problems
- Use of less complicated/descriptive words in writing because of the spelling challenge larger words present (i.e., uses "big" rather than "enormous," uses "bad" rather than "horrible," etc.)
- If oral language problems exist affecting vocabulary knowledge and grammar, difficulties in comprehension of text may be evident
- Comprehension relies more on listening ability than reading ability
- Spelling and punctuation are weak
- Difficulty organizing writing elements
- Lack of awareness of word structures (prefixes, roots, suffixes)
- In reading, when challenged by an unfamiliar work, chooses to skip it in context or takes so much time phonetically decoding the word that reading comprehension is sacrificed

Middle and High School

Students in this age range are expected to analyze and synthesize information in written form as well as acquire factual information. Although many individuals with dyslexia may have compensated for some of their difficulties with reading, others many continue to have problems with automaticity and word identification.

Many of the previously described behaviors continue to be problematic along with the following:

- Reads so slowly that meaning is lost
- Persistent phonological weakness

- Continued difficulty with word recognition which significantly affects acquisition of knowledge and ability to analyze written material
- Spelling and writing continue to be affected
- Difficulty keeping up with assignments due to increased expectations and volume of reading and written assignments
- Frustration with the amount of time required and energy expended for reading
- Difficulty with written assignments
- Continued avoidance of independent reading activities that expand knowledge, understanding, and vocabulary
- Extreme difficulty learning a foreign language
- Tends to procrastinate in tasks related to reading and/or writing
- Difficulty with note taking in class
- Exhibits difficulty outlining and/or summarizing

Postsecondary

Some students will not be identified as having dyslexia prior to entering college. The early years of reading difficulties evolve into slow and labored reading fluency. Many students will experience extreme frustration and fatigue due to the increased demands of reading.

Many of the previously described behaviors may remain problematic along with the following:

- Difficulty pronouncing names of people and places or parts of words
- Difficulty remembering names of people and places
- Difficulty with word retrieval
- Difficulty with spoken vocabulary
- Difficulty completing the reading demands for multiple course requirements
- Difficulty with note-taking
- Difficulty with written product assignments
- Difficulty remembering sequences (e.g., mathematical and/or scientific formulas)
- Mounting frustration and doubt due to slow rate of progress in reading and written activities
- Confidence affected

SCREENING, PROGRESS MONITORING AND EVALUATION

The U.S. Department of Education's Institute of Education Sciences convened a panel to look at the best available evidence and expertise, and formulated specific and coherent evidence-based practices to help primary grade students overcome reading difficulties. The first recommendation made by the panel was: **Screen all students for potential reading problems at the beginning of the year and again in the middle of the year** (Institute of Education Sciences, 2014).

Screening: A process using instruments designed to be relatively quick and accurate; time and cost efficient; objective and requiring no professional judgment; valid; and capable of categorizing students, particularly individuals at risk, with relative accuracy. Ideally, screening results should be immediately available and should be simple, clear, and uncomplicated to interpret. Screening is applied to all students and allows for efficient observation with relative accuracy. Screening is repeatable and may be administered multiple times throughout the course of the school year to monitor student progress. Screening helps identify those students who may not be making expected grade level progress and who may need additional supports. If screening is uniformly applied to all students, it is considered "universal" and parent consent is not necessary. Universal screening is a critical first step in identifying students who are at risk for experiencing reading difficulties and who might need more or different instruction.

Screening should take place at the beginning of each school year in kindergarten through grade 2. Schools should use measures that are efficient, reliable, and reasonably valid. For students who are at risk for reading difficulties, progress in reading and reading related-skills should be monitored on a monthly or even weekly basis to determine whether students are making adequate progress or need additional support. Because available screening measures, especially in kindergarten and grade 1, are imperfect, schools are encouraged to conduct a second screening mid-year.

Progress Monitoring: In addition to universal screening instruments, progress monitoring is another process for assessing student growth. Progress monitoring is a scientifically-based practice used to assess students' academic performance and evaluate the effect of instruction on student progress. Progress monitoring can be implemented with an entire class or with selected students. When progress monitoring is implemented effectively, the benefits are great. Some benefits include:

- accelerated learning because students are receiving more appropriate instruction;
- informed instructional decision-makings;
- documentation of student progress for accountability purposes;
- more efficient communication with families and other professionals about students' progress;
- teachers maintain higher expectations for students; and
- fewer Special Education referrals.

Overall, the use of progress monitoring results in more efficient and appropriately targeted instructional techniques and goals, which together move all students to faster attainment of important standards of achievement.

Evaluation: Evaluation is a multi-faceted process for determining whether a child meets the verification criteria for inclusion in special education and related services. Evaluation encompasses a variety of assessment activities including, but not limited to, observation and interview; screening and assessment; and formal testing by a professional trained in administering and interpreting psychometric results. The culmination of the evaluation process is a written report that includes evidence of whether or not specific criteria are met for verification. The criteria for verification of a specific learning disability are outlined in the *Nebraska Department of Education Verification Guidelines, Disability Category: Specific Learning Disability* (2015) <http://www.education.ne.gov/sped/technicalassist.html>, and Rule 51 92 NAC 006.04K (2014) <http://www.education.ne.gov/sped/regulations.html>.

INSTRUCTION AND INTERVENTION

Instruction

“Evidence-based” What does it mean?

Evidence-based means that a particular collection of instructional practices has a proven record of success. There is reliable, trustworthy, and valid evidence that when the practices are implemented with fidelity with a particular group of children, the children can be expected to make adequate gains in reading achievement. The concept of evidence-based becomes complicated when professionals attempt to define the types of evidence that are reliable and trustworthy indicators of effectiveness. Therefore, five criteria, agreed upon by educators, are used to determine when a practice may be considered as **evidence-based**. These criteria are enumerated under **evidence-based practices** in the Glossary, Appendix D, p. 85.

There are few instructional tasks more important than teaching children to read. Effective reading instruction that leads to high achievement for ALL students is an attainable goal through the implementation of **evidence-based instructional practices** that promote quality learning (National Clearinghouse for Comprehensive School Reform, 2001).

As this goal is pursued, it is important to recognize that there is no single instructional program or method that is effective in teaching all children to read. Rather, successful efforts to improve reading achievement emphasizes the implementation of **evidence-based practices** that promote high rates of achievement when used by teachers who are professionally prepared to teach children with diverse learning needs and who incorporate instructionally sound practices (Bond & Dykstra, 1997; National Clearinghouse for Comprehensive School Reform, 2001).

Teachers are the key to implementation of **evidence-based practices** that lead to student learning. Time and again, research has confirmed that regardless of the quality of a program, resource, or strategy, it is the teacher and the learning environment he or she creates within the classroom that make the difference (Bond & Dykstra, 1997). This evidence underscores the need to join practices grounded in sound and rigorous research with highly trained and skillful teachers.

What are “Evidence-based Programs?”

The search for the best **evidence-based programs** for teaching reading has had a long history. U.S. federally funded investigations examined popular approaches to teaching beginning reading and included examinations of basal reading, phonics, language experience, and linguistics approaches. The collection of 27 studies

comparing different methods and materials found as many differences between and among teachers using the same program as there were between and among teachers using different programs, leaving the authors unable to identify the best **evidence-based program**. Instead, the results led the authors to conclude, “children learn to read by a variety of materials and methods....No one approach is so distinctly better in all situations than the others that it should be considered the *best* and the one to be used exclusively” (Bond & Dykstra, 1997, p. 416). Following this research, a national study team found that no reading programs had uniformly positive effects, and no programs had uniformly negative or neutral effects (National Clearinghouse for Comprehensive School Reform, 2001). The sum of these studies indicated that no program worked in every case in every situation. Attempts to find the best **evidence-based program** for large-scale implementation was complicated by factors such as the diversity of student needs; teacher competence and teaching style; and classroom conditions that exist in any school or group of schools (Allington, 2001; Stahl, et.al, 1998).

In contrast to the issues related to the inability to identify the best **evidence-based program**, examination and research of **best practices** led to highly consistent results when such studies were rigorously designed and systematically analyzed. Although findings failed to show superiority of any “one” program, evidence strongly indicated relationships between particular practices and high student achievement. The National Reading Panel (National Institute of Child Health and Human Development [NICHD], 2000) took a similar approach in its studies of effective instruction of reading, examining evidence related to practices in phonemic awareness, phonics, fluency, vocabulary, and comprehension instruction. The panel found 22 phonics programs that were effective. The research supported and continues to support the conclusion that it is **evidence-based practices** and not specific reading programs that are effective (NICHD, 2000).

Comprehensive research studies (Gambrell & Mazzoni, 1999; Guthrie & Alvermann, 1999; Kamil, Mosenthal, Pearson, & Barr, 2000; NICHD, 2000; Pressley, Wharton-McDonald, Hampson, & Echevarria 1998; Taylor, Pressley, & Pearson, 2002) indicate widespread agreement concerning the particular literacy practices in which effective teachers routinely engage children. The following ten instructional practices are representative of the current state of literacy knowledge and provide an effective template for understanding best **evidence-based practices** in reading instruction:

1. Provide **direct instruction** in decoding and comprehension. Balance direct instruction, guided instruction, and independent learning.
2. Integrate a comprehensive **word study/phonics program** into reading/writing instruction.
3. Structure **sufficient time for reading instruction** in the classroom.
4. Work with students in **small groups** while others read and write about what they have read.
5. Use **assessment techniques that inform instructional decision-making**.

6. Teach reading for authentic purposes - **literacy development**, reading for information, reading to perform a task or activity, reading for pleasure.
7. Incorporate **high-quality literature**.
8. Use multiple texts and programs that **link and expand instructional concepts**.
9. Balance **discussions on learning objectives** – teacher-led and student-led.
10. Build a **reading community** within the classroom that emphasizes important concepts and builds skills and background knowledge.

When considering school or district-wide adoption of a new reading program, the International Reading Association recommends teachers and administrators consider the following questions as they review the curriculum materials:

- Does the reading program provide **direct, systematic, and explicit instruction** in the strategies that have been proven to translate to high rates of achievement in reading?
- Does the reading program provide a variety of strategies and activities consistent with **diverse learning needs** within the classroom?
- Does the reading program have **screening and assessment tools** designed to assist in identifying students who are not attaining prescribed benchmarks in grade level reading?
- Does the reading program provide high-quality literary materials that are **diverse in level of difficulty, genre, topic, and cultural representation** to meet individual student needs and interests?
- Can the reading program be **implemented with fidelity**?
- What **professional development** will be necessary for **effective implementation** of the reading program?

The Seminal Work of the National Reading Panel **(1997-2000)**

In 1997, the Secretary of Education and the Director of NICHD convened a national panel to assess the effectiveness of different approaches used to teach children to read. The Panel was made up of 14 people, including leading scientists in reading research, representatives of higher education, teachers, educational administrators, and parents. In 2000 the National Reading Panel concluded its work and submitted its reports before the U.S. Senate Appropriations Committee's Subcommittee on Labor, Health and Human Services, and Education.

The National Reading Panel's analysis of the research findings made it clear that the best approach to reading instruction was one that incorporated:

- ⇒ **Explicit instruction in phonemic awareness**
- ⇒ **Systematic phonics instruction**
- ⇒ **Methods to improve fluency**
- ⇒ **Ways to enhance comprehension**

A summary of the National Reading Panel's findings follow in **Table 2**. Table 2 is adapted from the National Institute of Child and Human Development (www.nichd.nih.gov)

Table 2

Concept	Description	Finding
Phonemic awareness	Means knowing that spoken words are made up of smaller parts called phonemes. Teaching phonemic awareness gives children a basic foundation that helps them learn to read and spell.	The panel found that children who learned to read through specific instruction in phonemic awareness improved their reading skills more than those who learned without attention to phonemic awareness.
Phonics instruction	Phonics teaches students about the relationship between phonemes and printed letters and explains how to use this knowledge to read and spell.	The panel found that students show marked benefits from explicit phonics instruction, from kindergarten through sixth grade. (Although ideally most children will master phonics in the early grades, those still struggling in later grades may need explicit phonics instruction as intervention).
Fluency	Fluency means being able to read quickly and accurately and to express certain words properly—putting the right feeling, emotion, or emphasis on the right word or phrase. Teaching fluency includes (1) guided repeated oral reading, in which students read out loud to someone who corrects their mistakes and provides them with feedback, and (2) independent silent reading, in which students read silently to themselves.	The panel found that reading fluently improved the students' abilities to recognize new words; read with greater speed, accuracy, and expression; and better understand what they read. Evidence showed that repeated oral reading improved fluency and that reading practice also helped. However, the panel noted that independent silent reading should not be substituted for instruction.
Comprehension: Vocabulary instruction	Teaches students how to recognize words and understand them.	The panel found that vocabulary instruction and repeated contact with vocabulary words are important. Techniques such as pre-teaching vocabulary and learning to use the words in context are helpful in learning word meanings.
Comprehension: Text comprehension instruction	Teaches specific plans or strategies that students can use to help them understand what they are reading.	The panel identified seven ways of teaching text comprehension that helped improve reading strategies in children who didn't have learning disabilities. For instance, creating and answering questions and cooperative learning helped to improve reading outcomes.
Comprehension: Teacher preparation and comprehension strategies instruction	Refers to how well a teacher knows things such as the content of the text, comprehension strategies to teach the students, and how to keep students interested.	The panel found that teachers were better prepared to use and teach comprehension strategies if they themselves received formal instruction on reading comprehension strategies. They also found that teaching students to use strategies in combination was more beneficial than simply teaching individual strategies.
Teacher education in reading instruction	Involves how much teacher education influences how effective teachers are at teaching children to read.	In general, the panel found that studies related to teacher education were broader than the criteria used by the panel. Because the studies didn't focus on specific variables, the panel could not draw conclusions. Therefore, the panel recommended more research on this subject.
Computer technology in reading instruction	Examines how well computer technology can be used to deliver reading instruction.	Because few studies focused on the use of computers in reading education, the panel could draw few conclusions. However, the panel noted that all of the 21 studies on this topic reported positive results from using computers for reading instruction.

Intervention

Learning to read is shaped by a multitude of factors. Six interrelated factors provide insight into the specialized, additional supports called **interventions** that are key in teaching a child with dyslexia to read. Those factors include:

1. **What** is taught
2. **How** reading is taught
3. **Implementation fidelity** of evidence-based reading practices
4. **Expertise of teacher(s)**
5. **Communication and coordination** among all professionals
6. **Family engagement** in the child's education

Discussion of these factors follows:

1. What

Given the centrality and importance of a school-wide evidence-based core reading curriculum (e.g. reading program), it is necessary that every classroom teacher be prepared to teach the fundamentals of reading through evidence-based practices integrated within the curriculum (Allington & McGill-Franzan, 1999). The evidence-based core curriculum is the first step in the prevention of reading difficulties in children. The classroom teacher's knowledge, skill, and expertise is equally powerful. It is critical that all teachers at all grade levels understand the course of literacy development and the importance of instructional practices that play a crucial part in optimizing literacy development in all students. The reading curriculum, the teacher(s), and the quality of professional development provided for teachers are central to achieving the goal of primary prevention of reading difficulties in children.

Professional development in the aspects of the core reading curriculum is a critical component for effective implementation. Supervised, relevant, and clinical experience provides guidance, coaching, and feedback and is important in a teacher's ability to integrate, synthesize, and apply new knowledge and skills in practice. Novice teachers benefit from peer-mentors who have demonstrated records of success in implementing evidence-based reading practices. Professional development in evidence-based reading practices is best conceived as a continuous process of growth and development of classroom teachers.

As would be expected, an important component in many of the guidelines for effective professional development of teachers is increased content and pedagogical knowledge. Both the National Staff Development Council (2001) and the United States Department of Education (1998) state that in-service education for teachers should be designed to broaden and deepen pedagogical and content knowledge, and application of skills.

The National Reading Panel (2000) has reflected a focused and persistent effort to contribute reliable, valid, and trustworthy information to the body of knowledge that is leading to better scientific understanding of reading development and reading instruction. In carrying out the Congressional charge, the National Reading Panel was able to develop and apply a methodologically rigorous research review process and protocol. Many of the research findings inspire conversation focused on opportunities for professional development for teachers in research-based instructional practices in reading. The following is adapted from the Executive Summary of that body of research.

The Panel addressed the evidence about effectiveness of different types of reading instruction and reached a series of positive conclusions on how and what to teach to ensure positive literacy growth in students. The following areas were intensively studied and may be considered as potential areas for professional development in content and pedagogical knowledge for classroom teachers:

- **Alphabetics**
 1. Phonemic awareness - letter knowledge, concepts of print
 2. Phonics instruction - the alphabetic code and decoding
- **Fluency** - automatic reading of text
- **Comprehension** – the essence of reading
 1. Vocabulary instruction
 2. Text comprehension instruction
 3. Teacher preparation and Comprehension Strategies Instruction
- **Teacher Education and Reading Instruction**

An executive summary of The Report of the National Reading Panel (2000) and individual subgroup reports provides a complete and extensive description of the aforementioned areas and includes a robust literature review in support of the findings. The summary can be found at <http://www.nichd.nih.gov>

The information that follows is adapted from the Executive Summary of the National Reading Panel Report (2000) and seeks to detail the areas of research and respective findings.

Alphabetic

Phonemic Awareness

Correlational studies have identified phonemic awareness and letter knowledge as the two best school- entry predictors of how well children will learn to read during their first 2 years in school. This evidence suggests the potential instructional importance of teaching phonemic awareness to children. Many experimental studies have evaluated the effectiveness of phonemic awareness instruction in facilitating reading acquisition. Results provide a scientific basis documenting the efficacy of phonemic awareness instruction. There is currently much interest in phonemic awareness programs among teachers, principals, and publishers. State adoption committees have prescribed the inclusion of phonemic awareness training in reading instruction materials approved for use in schools.

Phonemes are the smallest sound units constituting spoken language. English consists of about 44 phonemes. Phonemes combine to form syllables and words. A few words have only one phoneme, such as “a” or “oh.” Most words consist of a blend of phonemes. Phonemes are different from graphemes, which are units of written language and which represent phonemes in the spellings of words. Graphemes may consist of one letter, for example, P, T, K, A, N, or multiple letters, CH, SH, TH, -CK, EA, IGH, each symbolizing one phoneme.

Phonemic awareness refers to the ability to identify and manipulate phonemes in spoken words. The following tasks are commonly used to assess children’s phonemic awareness or to improve their phonemic awareness through instruction and practice:

1. Phoneme isolation, which requires recognizing individual sounds in words. For example, “Tell me the first sound in paste.” (/p/)
2. Phoneme identity, which requires recognizing the common sound in different words. For example, “Tell me the sound that is the same in bike, boy, and bell.” (/b/)
3. Phoneme recognition in a sequence of three or four words. For example, “Which word does not belong? bus, bun, rug.” (rug)
4. Phoneme blending, which requires listening to a sequence of separately spoken sounds and combining them to form a recognizable word. For example, “What word is /s/ /k/ /u/ /l/?” (school)
5. Phoneme segmentation, which requires breaking a word into its sounds by tapping out or counting the sounds or by pronouncing and positioning a mark for each sound. For example, “How many phonemes are there in ship? ” (three: /ssh/ /ī/ /p/)

6. Phoneme deletion, which requires recognizing what word remains when a specified phoneme is removed. For example, “What is smile without the /s/?” (mile)

Phonemic awareness is thought to contribute to helping children learn to read because the structure of the English writing system is alphabetic. While most English words have prescribed spellings that consist of graphemes, symbolizing phonemes in predictable ways, being able to distinguish the separate phonemes in pronunciations of words so that they can be matched to graphemes is a difficult task indeed. This is because spoken language is seamless; there are no breaks in speech signaling where one phoneme ends and the next one begins. Rather, phonemes are folded into each other and are co-articulated. Discovering phonemic units requires instruction that is direct and explicit in order to learn how the system works.

Instruction in phonemic awareness is not synonymous with phonics instruction. Phonics involves teaching students how to use grapheme-phoneme correspondences to decode or spell words. Phonemic awareness instruction does not qualify as phonics instruction when it teaches children to manipulate phonemes in speech, but it does qualify when it teaches children to segment or blend phonemes with letters. Knowledge of phonemic awareness is necessary for successful phonics instruction and must be explicitly and directly taught.

KEY FINDINGS of Phonemic Awareness:

1. The results clearly showed that phonemic awareness instruction is effective in teaching children to attend to and manipulate speech sounds in words.
2. Findings of the meta-analysis revealed not only that phonemic awareness can be taught but also that phonemic awareness instruction is effective under a variety of teaching conditions with a variety of learners.
3. The meta-analysis showed that teaching children to manipulate the sounds in language helps them learn to read.
4. Phonemic awareness instruction produced positive effects on both word reading and pseudoword reading, indicating that it helps children decode novel words as well as remember how to read familiar words.
5. Phonemic awareness instruction could be expected to benefit children's reading comprehension because of its dependence on effective word reading.
6. Teaching phonemic awareness was found to help children learn to spell.

Phonics Instruction

Phonics instruction is critically important and should be explicitly and systematically taught. Several different instructional approaches are noted: Synthetic phonics, analytic phonics, embedded phonics, analogy phonics, onset-rime phonics, and phonics through spelling. Although these explicit and systematic phonics approaches all use a planned, sequential introduction of a set of phonic elements with teaching and practice of those elements, they differ across a number of other features. Those features are delineated in **Table 3**.

Table 3: Phonics Instruction Approaches

Phonics Instruction Approach	Significant Features
Analogy Phonics Instruction	Teaching unfamiliar words by analogy to known words. Example: Reading “stump” by analogy to “jump” or reading “drift” by analogy to “lift”.
Analytic Phonics Instruction	Teaching students to analyze letter-sound relations in previously learned words to avoid pronouncing sounds in isolation. Teaching students to identify words by beginning, medial, and ending sounds and context clues. Example: pet, park, push, pen
Embedded Phonics Instruction	Teaching skills by embedding phonics instruction in actual text reading, a more implicit approach. Example: letter-sound correspondences taught as embedded features of text.
Phonics Instruction through Spelling	Teaching students to segment words into phonemes and to select letter for those phonemes (i.e., teaching students to spell phonemically).
Synthetic Phonics Instruction	Teaching students explicitly to convert letters into sounds (phonemes) and then blend the sounds systematically into recognizable words.

The hallmarks of systematic phonics programs are that children receive explicit, systematic instruction in a set of pre-specified associations between letters and sounds, and they are taught how to use them to read, typically in texts containing controlled vocabulary. However, phonics programs vary considerably in exactly what and how children are taught.

Systematic phonics instruction contributes to the process of learning to read words in various ways by teaching readers the use of the alphabetic system. Alphabetic knowledge is needed to decode words, to retain sight words in memory, and to call on sight word memory to read words by analogy. In addition, the process of predicting words from context benefits from alphabetic knowledge. Word

prediction is made more accurate when readers can combine context cues with letter-sound cues in guessing unfamiliar words in text.

Many mental processes are active when readers read and understand text. Readers draw on their knowledge of language to create sentences out of word sequences. They access background knowledge to construct meaning from the text. They retain this information in memory and update it as they interpret more text. Readers monitor their comprehension to verify that the information makes sense.

A central part of text processing involves reading the words. Four different ways are distinguished in the research:

1. **Decoding:** Readers convert letters into sounds and blend them to form recognizable words; the letters might be individual letters, or digraphs such as TH, SH, OI, or phonograms such as ER, IGH, OW, or spellings of common rimes such as -AP, -OT, -ICK. Ability to convert letters into sounds comes from readers' knowledge of the alphabetic system.
2. **Sight:** Readers retrieve words they have already learned to read from memory.
3. **Analogy:** Readers access words they have already learned and use parts of the spellings to read new words having the same spellings (e.g., using – "ottle" in bottle to read the new word, throttle).
4. **Prediction:** Readers use context cues, their linguistic and background knowledge, and memory for the text to anticipate or guess the identities of unknown words.

Text reading is easiest when readers have learned to read most of the words in the text automatically by sight because little attention or effort is required to process the words. When written words are unfamiliar, readers may decode them or read them by analogy or predict the words, but these steps take added time and shift attention at least momentarily from the meaning of text to figuring out the words. Students with dyslexia have difficulty remembering letter names and sounds and require direct, multisensory instruction of the sound-symbol system.

Readers need to learn how to read words in the various ways to develop reading skill. The primary way to build a sight vocabulary is to apply decoding or analogizing strategies to read unfamiliar words. These ways of reading words help students build familiarity with words so that recognition of the words becomes automatic.

KEY FINDINGS of Phonics Instruction:

1. The meta-analysis concluded that systematic phonics instruction produced gains in reading and spelling not only in the early grades (kindergarten and 1st grades) but also in the later grades (2nd through 6th grades) and among children having difficulty learning to read.

2. Systematic synthetic phonics instruction had a positive and significant effect on the reading skills of students with disabilities. These children improved substantially in their ability to read words and showed significant gains in their ability to process text as a result of systematic phonics instruction.
3. Findings provided converging evidence that explicit, intensive, and systematic phonics instruction is a valuable and essential part of any successful classroom reading program.

Fluency

Fluent readers can read text with speed, accuracy, and proper expression. Fluency depends upon well-developed word recognition skills, but such skills do not inevitably lead to fluency. It is generally acknowledged that fluency is a critical component of skilled reading. That neglect has started to give way as research and theory have reconceptualized this aspect of reading. The National Reading Panel provided evidence that supports the effectiveness of various instructional approaches intended to foster this essential skill in successful reading development.

There is common agreement that fluency develops from reading practice. What researchers have not yet agreed upon is what form such practice should take to be most effective. For example, one approach is to have students read passages orally with guidance and feedback. Programs in this category include **repeated reading, paired reading, shared reading, and assisted reading**, to note the most familiar approaches.

Another, less explicit, but widely used approach is to encourage students to read extensively on their own and with minimal guidance and feedback. Programs in this category include efforts to increase the amount of independent or recreational reading. Sustained independent reading is not effective for students with dyslexia. The National Reading Panel concluded there is insufficient support from empirical research to suggest that independent, silent reading can be used to help students improve their fluency (NICHD, 2000, Hasbrouck, 2006).

Guided, repeated, oral reading procedures were found to be effective in improving reading fluency and overall reading achievement. Guided oral reading led to the conclusion that such procedures had a consistent and positive impact on word recognition, fluency, and comprehension as measured by a variety of test instruments and at a range of grade levels.

KEY FINDINGS of Fluency:

1. A review of the literature and the research data indicate that classroom reading practices that encourage repeated oral reading with feedback and guidance leads to meaningful improvements in reading expertise for students—for good readers as well as those who are experiencing difficulties.

2. This study found that increasing reading fluency was a critical skill needed for effective reading. Word recognition accuracy is not the end point of reading instruction. Fluency represents a level of skill beyond word recognition accuracy, and reading comprehension may be aided by reading fluency. Skilled readers read words accurately, rapidly and efficiently. Children who do not develop reading fluency, no matter how bright they are, will continue to read slowly and with great effort.
3. The results of this study indicate that teachers should assess fluency regularly. Both informal as well as standardized assessments of oral reading accuracy, rate and comprehension are valuable in helping teachers make informed decisions with regard to instructional practice.

Comprehension

Comprehension is critically important to the development of children's reading skills. Comprehension has come to be viewed as the "essence of reading," essential not only to academic achievement but to life-long learning. As the National Reading Panel began its analysis of the research on reading comprehension, three predominant themes emerged: (1) vocabulary learning and instruction - reading comprehension is a cognitive process that integrates complex skills and cannot be understood without examining the critical role of vocabulary learning and instruction; (2) text comprehension - defined as intentional thinking during which meaning is made through interaction between the reader and the text; and (3) teacher preparation that equips teachers to facilitate the complex processes tied to the development of reading comprehension. Each of these themes will be independently addressed.

Vocabulary Learning and Instruction

Five main methods of teaching vocabulary were identified:

1. Explicit Instruction: Students were given definitions or other attributes of words to be learned.
2. Implicit Instruction: Students were exposed to words or given opportunities to do a great deal of reading.
3. Multimedia: Vocabulary was taught by going beyond text to include other media such as graphic representations, or hypertext.
4. Capacity: Practice was emphasized to increase capacity through making reading automatic.
5. Association: Learners were encouraged to draw connections between what they do know and words they encounter that they do not know.

The results of the vocabulary instruction yielded these outcomes:

- a. Computer vocabulary instruction showed positive learning gains over traditional methods.
- b. Vocabulary instruction led to gains in comprehension.

- c. Vocabulary was learned incidentally in the context of storybook reading or from listening to the reading of others.
- d. Repeated exposure to vocabulary was important for learning gains. The best gains were made in instruction that extended beyond single class periods and involved multiple exposures in authentic contexts beyond the classroom.
- e. Pre-instruction of vocabulary words prior to reading facilitated both vocabulary acquisition and comprehension.
- f. The restructuring of the text materials or procedures facilitated vocabulary acquisition and comprehension. For example, substituting easy for hard words.

KEY FINDINGS of Vocabulary Learning and Instruction:

1. There is a need for direct instruction of vocabulary required for a specific text.
2. Repetition and multiple exposures to vocabulary are important. Students should be given words that will be likely to appear in many contexts.
3. Learning in rich contexts is valuable for vocabulary learning. Vocabulary words should be those that the learner will find useful in many contexts. When vocabulary words are derived from content learning materials, the learner will be better equipped to deal with specific reading matter in content areas.
4. Vocabulary tasks should be restructured as necessary. It is important to be certain that students fully understand what is asked of them in the context of reading, rather than focusing only on the words to be learned. Restructuring seems to be most effective for low-achieving or at-risk students.
5. Vocabulary learning is effective when it entails active engagement in the learning tasks.
6. Computer technology can be used effectively to help teach vocabulary.
7. Vocabulary can be acquired through incidental learning. Much of a student's vocabulary will have to be learned in the course of doing things other than explicit vocabulary learning. Repetition, richness of context, and motivation may also add to the efficacy of incidental learning of vocabulary.
8. Dependence on a single vocabulary instruction method will not result in optimal learning. A variety of methods were used with emphasis on multimedia aspects of learning, richness of context in which words to be learned, and the number of exposures to words that readers receive.

Text Comprehension Instruction

Comprehension is a complex process. Reading comprehension is the construction of the meaning of a written text through a reciprocal interchange of ideas between the reader and the message in a particular text.

In the cognitive research of the reading process, reading is purposeful and active. A reader reads to understand what is read and to put this understanding to use. A reader can read a text to learn, to find out information, or to be entertained. These various purposes of understanding require that the reader use knowledge of the

world, including language and print. This knowledge enables the reader to make meanings of the text, to form memory representations, and to use them to communicate information with others about what was read.

Readers normally acquire strategies for active comprehension informally. Comprehension strategies are specific procedures that guide students to become aware of how well they are comprehending as they attempt to read and write. Explicit or formal instruction of these strategies is believed to lead to improvement in text understanding and information use. Instruction in comprehension strategies is carried out by a classroom teacher who demonstrates, models, and guides the reader in strategy acquisition and use.

The eight kinds of text instruction that are effective and most promising for classroom instruction are:

1. Comprehension monitoring in which the reader learns how to be aware of his or her understanding during reading and learns procedures to deal with problems in understanding as they arise.
2. Cooperative learning in which readers work together to learn strategies in the context of reading.
3. Graphic and semantic organizers that allow the reader to represent graphically (write or draw) the meanings and relationships of the ideas that underlie the words in the text.
4. Story structure from which the reader learns to ask and answer who, what, where, when, and why questions about the plot and, in some cases, maps out the time line, characters, and events in stories.
5. Question answering in which the reader answers questions posed by the teacher and is given feedback on the correctness.
6. Question generation in which the reader asks himself or herself what, when, where, why, what will happen, how, and who questions.
7. Summarization in which the reader identifies and verbalizes or writes the main or most important ideas that integrate or unite the other ideas or meanings of the text into a coherent whole.
8. Multiple-strategy teaching in which the reader uses several of the procedures in interaction with the teacher over the text. Multiple-strategy teaching is effective when the procedures are used flexibly and appropriately by the reader or the teacher in naturalistic contexts.

KEY FINDINGS of Text Comprehension Instruction:

1. Comprehension instruction can effectively motivate and teach readers to learn and use comprehension strategies to their benefit.
2. These strategies yield increases in measures of transfer such as recall, question answering and generation, and summarization of texts.

3. These comprehension strategies, when used in combination, show general gains on standardized comprehension tests.
4. Teachers can learn to teach students to use comprehension strategies in natural learning situations. Furthermore, when teachers teach these strategies, students can improve their reading comprehension.
5. Strategy instruction is the active involvement of motivated readers who read more text as a result of the instruction.
6. The Panel regards this development as the most important finding of the Panel's review because it moves from the laboratory to the classroom and prepares teachers to teach strategies in ways that are effective and natural.

In addition to the aforementioned areas of study, the National Reading Panel also conducted research on teacher preparation and ongoing professional development in the areas of reading instruction. The results concluded that appropriate teacher education and support did, in fact, produce higher achievement in student reading performance when teachers were afforded high quality and continuous professional development in the area of reading instruction.

School-wide Evidence-based Core Reading Program

“Teaching reading is rocket science” (Moats, 1999). It requires strategic planning, guided by a scientific knowledge base. An evidence-based core reading program is a valuable tool for teachers, as it provides a scope and sequence of skills to be taught and strategies to effectively teach reading skills in order to maximize student learning.

The core reading program calls for school-wide implementation with fidelity. Fidelity, an often misinterpreted term, means providing explicit instruction in all five elements of reading development: phonemic awareness, phonics, fluency, vocabulary, and comprehension being true to the scientific research results of the National Reading Panel.

When selecting a core reading program, schools must carefully review the scope and sequence of skills to be taught to ensure that the program explicitly addresses the elements of reading instruction and has evidence of success in experimental studies. No one program will teach all children to read. However, a research-based core program should enable at least 80% of students to meet grade level reading standards.

Ideally, all teachers in a school would use the same core reading program. Using the same core reading program provides students a consistent progression of skill development and ensures a sequence of skill acquisition from one grade level to the next. Communication among teachers increases because teachers within and across

grade levels use common language when planning effective instruction and problem-solving.

After reviewing a school's core reading program and analyzing student data, the school may recognize that there is a need to supplement the core program with other strategies and/or materials in order to make the instruction more explicit in teaching the five elements of reading. For many students, the school-wide reading program will be sufficient to learn to read. For some, however, specialized additional supports will be required in order for those targeted students to achieve important outcomes.

Multi-Tiered Systems of Support/Response to Intervention (MTSS/RtI)

MTSS/RtI is an educational service delivery system designed to provide effective instruction for all students using a comprehensive and preventive problem solving approach. It employs a tiered method of instructional delivery, in which the core curriculum addresses and meets the needs of most students (Tier 1), additional instruction is provided for those needing supplementary intervention support (Tier 2), and intensive and individualized services are provided for the students who continue to demonstrate more intensive needs (Tier 3). At its foundation, MTSS/RtI includes measuring performance of all students, and basing educational decisions regarding curriculum, instruction, and intervention intensity on student data.

The focus of MTSS /RtI is on improved student outcomes for all students through the provision of high-quality scientifically/research-based instruction and interventions that are matched to student academic or behavioral needs. Through a multi-tiered framework, the MTSS/RtI process enables districts to provide early support and assistance to students who are struggling to attain or maintain grade level performance. MTSS/RtI provides a consistent model and procedures to make collaborative data-based educational decisions for all students. Additionally, student performance data from the MTSS/RtI process can be used as part of a comprehensive evaluation for the identification of a student with Specific Learning Disabilities (SLD).

To implement MTSS/RtI effectively, schools must first have the organizational capacity to guarantee the process can be followed. The essential components of MTSS/RtI are based on principles identified in research for an effective MTSS/RtI system and provide the overarching framework to guide the implementation of MTSS/RtI.

The essential components of a quality MTSS/RtI process include:

- Instruction and Intervention
 - Evidence-based programs and instructional delivery practices
 - Increasing intensity/precision of instruction as students' needs increase
 - Providing support to all implementers that leads to high quality instruction in all classrooms

- Assessment System
 - Use of screening data to determine which students need support
 - Progress monitoring data to determine if the support is working
 - Multiple data sources to make decisions about student progress and next steps for instruction

- Fidelity and Support System
 - Instructional data are used to inform professional development and support needs for instructional staff
 - Fidelity checks are in place to ensure integrity; instruction and interventions are implemented as planned/intended.
 - Instructional data is used to determine the type and amount of coaching needed for individual staff members

- Continuous Improvement Process
 - Using data at a systems level evaluate the implementation of MTSS/RtI and make necessary changes

- Teaming
 - All aspects of implementation of MTSS/RtI are the responsibility of leadership/implementation teams.

Using Implementation Science practices as an ongoing process is likely to ensure effective, deep implementation of an MTSS/RtI framework with fidelity.

For additional information on building and implementing an MTSS/RtI process,
please refer to:
www.education.nde/rti

2. How

A conversation with Peg Tyre from Great Schools-Great Kids adds insight into 'how' to effectively teach:

“No area of education has been as thoroughly studied, dissected, and discussed as the best way to teach students to read. Seminal research and longitudinal studies from the National Academy of Sciences and the National Institute of Child Health and Human Development, combined with MRI (magnetic resonance imaging) and computerized brain modeling from the nation’s top academic labs, provide a clear prescription for effective reading instruction....

In nearly every conversation about reading instruction, educators talk about different pedagogical approaches and different philosophies, as if one is equal to another. And perhaps because some kids seem to learn to read like they learn to run, from observation and for the sheer love of it, it can appear like almost any kind of reading instruction can work with varying levels of success — for at least some kids. But researchers say they’ve come up with a straightforward formula that, if embedded into instruction, can ensure that 90 percent of children read.

What does the research show? It turns out that children who are likely to become poor readers are generally not as sensitive to the sounds of spoken words as children who were likely to become good readers. Kids who struggle have what is called poor “phonemic awareness,” which means that their processor for dissecting words into component sound is less discerning than it is for other kids.

And here’s a critical fact you need to know: scientists have shown again and again that the brain’s ability to trigger the symphony of sound from text is not dependent on IQ or parental income. Some children learn that b makes the buh sound and that there are three sounds in bag so early and so effortlessly that by the time they enter school (and sometimes even preschool), learning to read is about as challenging as sneezing. When the feeling seizes them, they just have to do it. Other perfectly intelligent kids have a hard time locating the difference between bag and bad or a million other subtleties in language.

Many studies have shown that phonemic awareness is a skill that can be strengthened in kids. And following that instruction in phonemic awareness, about 100 hours of direct and systematic phonics instruction can usually get the job done and ensure that about 90 percent of kids have the fundamentals they need to become good readers” (Peg Tyre, www.greatschools.org/gk/.../importance-of-reading-success).

Effective Reading Instruction

The following approaches and strategies are critical in the instructional process for teaching children to read.

Effective reading instruction is...

Direct and explicit, with face-to-face interaction between teacher and student. Student attention is guided and focused as a result of teacher facilitated learning. Instruction is carefully articulated by the teacher with cognitive skills broken down into small units, sequenced deliberately, and taught explicitly (see Carnine, 2000, pp. 5-6; Traub, 1999).

Grounded in a theoretical framework, for how reading skills are acquired, where and why the process may break down, and what instructional or curricular element is needed to restart, maintain, or accelerate learning based on recent neuroscientific findings and evidence from effective reading programs. Teachers must understand how language works so that they know what practices are appropriate in the instruction of reading (Podhajski, 1999).

Standards-based, holding students with dyslexia to the same high standards of performance achieved by peers (preferably using the same curriculum and tests as grade level peers) (Marzano, et.al, 2001).

Comprehensive, and addresses all five components of the reading process, interweaving multiple components into the same lesson, and incorporating dialogue between teacher and student as well as reading and writing. For example, a teacher may use spelling activities to boost decoding skills and written responses to promote reading comprehension (Moats, 1999).

Language-based, with explicit instruction in the structure of language as well as the meaningful parts of words. Teachers use the spoken language as the basis for reading, helping students to develop their oral language skills and vocabulary while also transitioning from speech to print (Berninger, et.al, 2011).

Code-based, helping students learn to break the "code" behind reading through phonemic awareness, phonics, and fluency rather than by relying on guessing or memorization. Phonemic awareness is incorporated into all aspects of reading instruction. Phonics instruction includes lessons on word structure and origins (National Institute of Child Health and Human Development, 2000).

Intensive, giving students extra practice through daily reviews, guided and independent practice, tutoring, targeted small-group instruction, and individualized support as needed (Snow, et.al, 1998).

Multi-modal and multi-sensory, and provides opportunities for learning through many pathways for gaining skills ranging from tactile/hands-on to project-based instruction (Shaywitz, 2003).

A combination of direct instruction (e.g., teaching skills explicitly) and instruction in comprehension strategies, (e.g., how to identify the main idea in a paragraph in order to derive meaning from the text) using evidence-based practices matched to students' learning characteristics (National Reading Panel, 2000).

Diagnostic, with teachers using frequent formative assessments to ascertain whether students have mastered the material and, if not, prescribing and delivering appropriate interventions (Snow, et. al, 1998).

Guided Practice, with meaningful interaction and feedback from teacher to student. After a new skill is introduced, the teacher actively assists the student as he/she performs the skill with the guidance of the teacher. The student is engaged in a similar task to what they will complete independently later through independent practice. Guided practice involves teacher support and feedback (Foorman, et. al, 1998).

Sensitivity to Student Time Needs, to ensure that the student is accommodated with additional time as needed to complete tasks. Most students with dyslexia will require additional time to complete tasks that involves reading and writing (Shaywitz, 2003).

Personalized, with a separate learning profile developed for each student. Teachers customize their instruction to the student's learning style and strengths. Small-group strategies reduce teacher-student ratios and provide time for extra instruction and/or practice. (Some studies have suggested that small-group instruction is more effective in developing reading skills than one-on-one (Walther-Thomas, et.al, 1996).

Sequenced and segmented, with the teacher breaking down skills into component parts and providing step-by-step instructions, modeling, and support (National Reading Panel, 2000).

Scaffolded, with teacher supports provided during the learning process that is tailored to the needs of the student. Gradually, as the student becomes proficient in the skill, the supports are reduced to create a more confident and autonomous learner (National Reading Panel, 2000).

Explicitly organized, with teachers clearly stating the objective and teaching in small, sequential steps toward that objective. (Allington, 2001).

Strength-based, with intentional teaching that is receptive and responsive to a child's competencies with the purpose of enhancing new learning. The teacher has a clear sense and focus on the student's assets (e.g., logic, reasoning, visual perception, etc.) and the conditions under which his/her learning is enabled. (Cain, 2010).

Monitoring Student Progress, frequently through formative assessments and progress monitoring techniques that measure individual student achievement data to use for structured reviews (Copeland & Cosbey, 2008).

Analyzing tasks to break into sub-skills, so that students are able to experience success as they build from part to whole and acquire proficiency before moving to the next level.

Well-defined and articulated plans, for assessing student growth toward established outcomes.

These practices are known to be effective for emergent readers, but they are critical for children with dyslexia — and sometimes in higher doses and greater intensity than for other students. Moreover, the mix of these practices must be varied enough to meet each child wherever he or she stands on the continuum of reading development—from truly struggling readers who require very direct, intentional, systematic, explicit, sequential, and structured reading instruction to above-average readers who will become proficient readers no matter how they are taught.

3. Implementation Fidelity

Implementation fidelity is defined as the degree to which a program or practices are implemented as intended by the developer, including the quality of the implementation. Consistency, accuracy, and integrity are factors that impact the degree of implementation fidelity.

Two issues that relate to implementation fidelity are: a) measuring the degree to which a particular innovation is implemented as written and planned, and b) identifying the factors that facilitated or hindered implementation as planned (Cuban, 1992; Snyder et al.). Examination of these issues focuses on “why the implementation departs from the blueprint” (Cuban, 1998, p. 257) or why the implementation did not garner intended results for students. This further implies that fidelity is critical when implementing evidence-based practices that demonstrate predicted outcomes for students.

In considering application of evidence-based practices in reading instruction, implementation fidelity becomes important because it:

1. Ensures that reading instruction and practices are implemented as intended,
2. Helps link student outcomes to delivery of instruction,
3. Helps determine intervention effectiveness, and
4. Helps in instructional decision-making.

4. Teacher Expertise

The transformative power of an effective teacher is one of the most important factors in achieving critical outcomes for children. We know intuitively that highly effective teachers can have an enriching effect on the daily lives of children and their lifelong journey in learning. Years of research on teacher quality support the fact that effective teachers not only create classroom environments conducive to learning but their work actually results in increased student achievement (Jordan, et.al, 1997). Studies have substantiated that a whole range of personal and professional qualities are associated with higher levels of student achievement. For example, we know that verbal ability, content knowledge, pedagogical knowledge, certification status, ability to skillfully use a range of evidence-based practices, and enthusiasm for the subject characterize successful teachers (Darling-Hammond, 2000).

The work of Sanders and Rivers (1996) has been pivotal in reasserting the importance and quality of the teacher on student learning. Over a multi-year period, the researchers focused on what happened to students whose teachers produced high achievement over time versus those whose teachers produced low achievement results over time. In this seminal study on teacher effectiveness, children, beginning in 3rd grade, were placed with three high-performing teachers in consecutive succession of three years. Students scored, on average, at the 96th percentile on a statewide assessment at the end of the 5th grade year. When children with comparable achievement histories starting in 3rd grade were placed with three low-performing teachers for three years in a row, their average score on the same assessment was at the 44th percentile, an enormous 52-percentile point difference for children who presumably had comparable abilities and skills. Elaborating on their research, Sanders and Rivers reported:

“...the results well document that the most important factor affecting student learning is the teacher. In addition, the results show wide variation in effectiveness among teachers. The immediate and clear implication is that seemingly more can be done to improve education by improving the effectiveness of teachers than by any other single factor. Effective teachers appear to be effective with students of all achievement levels, regardless of the level of heterogeneity in their classrooms (Wright, et.al, 1997). Given results like these, it's no wonder that the researchers found that “a major conclusion is that teachers make a difference” (Wright, et.al, 1997, p. 57).

5. Communication and Coordination

In April of 2011, The Council for Chief State School Officers (CCSSO) created teaching standards driven not only by new understanding of learners and learning, but also by the new imperative that every student can and must attain high standards of achievement. Educators are being held to new levels of accountability for

improved student outcomes. The CCSSO standards embrace and describe what effective teaching that leads to improved student achievement looks like. Current research on evidence-based teaching practices is clear that delivering instruction must be tied to a new infrastructure that is based on programs and practices that translate to improved outcomes for all children.

Teaching standard #1 addresses learner performance. Within this standard the following expectation is noted: Teachers will communicate and collaborate with families, communities, colleagues, and other professionals to promote learner growth and development. Just as collaboration among learners improves their learning, we know that collaboration among teachers improves practice. The core teaching standards require transparency of practice and ongoing, embedded professional development (Council for Chief State School Officers, 2011).

The practice to include students with disabilities in the general education classroom to the greatest extent possible has brought general education and special education teachers together to work collaboratively to share decision-making in setting student goals, informing instructional practice, assuming responsibility for students, assessing student learning, solving problems together, and aligning classroom management strategies. These teachers are teams that begin to think of all students as “ours” collectively (Angle, 1996). A distinctive feature of this new collaboration which differs from earlier approaches, is that there is direct collaboration with the general education and special education teachers working together in the same classroom most of the day (Walther-Thomas, et. al, 1996).

Nicols and Sheffield (2014) identified many benefits to including children with disabilities in the general education setting. Students with disabilities who are co-taught by the general and special education teachers in a co-teaching situation experienced increased attention, reduced negative behaviors, improved social skills and self-esteem, and increased academic achievement. Participation of students with disabilities in inclusive settings has been noted to increase social peer interactions, enhance friendships, and develop social competence (Copeland & Cosbey, 2008).

Increasing numbers of students with disabilities are taught in general education classrooms. Co-teaching is a method of special education service delivery and this shared approach for children with disabilities requires communication and collaboration among all professionals (i.e., teachers, specialists, administrators, parents, etc.). Greater student outcomes are possible when communication and collaboration are valued and honored practices by those who work with students with disabilities.

6. Family Engagement

Existing research regarding the impact of family engagement on educational outcomes for children shows a positive correlation (Barnard, 2004). Barnard looked at

the association between parental involvement in elementary school and student success in high school, and concluded that early parental involvement in a child's education promotes positive long-term effects.

At the heart of parental involvement is the concept of authentic communication that is open and honest (Swick, 2003). Much research is devoted to helping teachers and parents establish positive relationships. Swick's research suggests that sharing information; empowering parents; dismantling barriers to understanding and cooperation; and recognizing parents' strengths, priorities, and perspectives are fundamental to building strong relationships between home and school.

As a parent, you are your child's best education advocate—until he's old enough and informed enough to speak for him or herself. No one knows your child better than you. You know his or her strengths and challenges, and you can help identify and advocate for the resources your child needs to succeed. Tucker (understood.org) provides tips for how to be an effective advocate for your child at school:

Study. Read. Find and attend workshops or meetings. Communicate with other parents whose children have learning and attention issues. You'll soon become familiar with the many ways that you and your child's school (teachers) can forge a positive relationship in the best interest of your child.

Build relationships. Get to know your child's teacher(s) as well as the specialists within the school setting (i.e., school psychologist, speech pathologist, etc.). Positive relationships help keep the lines of communication open and there is less chance of misunderstanding when everyone communicates openly and honestly.

Ask questions. When there is confusion, ask appropriate clarifying questions. A good strategy is to write questions down to keep a record of discussions.

Stay calm. Remember that your child's teacher(s) and the school staff are there to help and support you and first and foremost, your child.

No one knows your child as you do. It's important to be a good listener and to be receptive to the school staff's thoughts and ideas, but you are your child's first teacher and you have important insights into your child's learning.

Talk to your child about his/her disability. Understanding what your child is experiencing in school is critical to being an effective advocate. Asking your child questions will also help him or her to understand what it is he/she needs. In this way, you are helping your child learn to advocate for him/herself.

Get to know the educational jargon. As you become adept at this language, you will feel more confident in your relationship with those who work daily with your child.

Attend meetings regularly. Individualized education program (IEP) meetings and parent-teacher conferences afford opportunities to get feedback and updates on your child's progress.

Teachers and school staff work diligently to successfully engage parents in the education of their child(ren). Caring teachers:

- Help parents understand the specific learning disability of dyslexia and how it impacts their child's school performance in reading and related subjects;
- Explain dyslexia in a culturally sensitive way using language and terms that are factual,; never derogatory or critical of their child's abilities,; and emphasize strengths as well as learning challenges; and
- Reach out to parents who may not otherwise be engaged in their child's school by encouraging participation in their child's learning.

POSSIBLE ACCOMMODATIONS

For a student with dyslexia, school can be riddled with stress, frustration, failure, and underachievement. At the very moment when most students are developing coordinated literacy skills of reading, writing, and spelling, a student with dyslexia may struggle with these areas of skill development.

Research and experience have demonstrated that the education of students with disabilities can be more effective when teachers maintain high expectations for such children while ensuring their access to the general education curriculum in the regular classroom. Effective teachers will recognize the characteristics, difficulties, strengths, and weaknesses of the student with dyslexia. Teachers can implement changes in classroom instructional practices that ensure greater outcomes for struggling students.

Accommodations, by definition, are changes made to instructional materials, instruction, and modes of student performance (i.e., timing, presentation, response mode, and setting). Accommodations provide equitable access to the goals of the general education curriculum and are designed to reduce the effects of a student's disability without reducing learning goals, expectations for achievement, and curricular content.

Effective accommodations are aligned with classroom instruction; classroom assessments; and district and/or state testing. However, some accommodations appropriate for classroom use may not be considered appropriate in certain testing situations.

For NeSA testing accommodations for students with disabilities, refer to Nebraska State Department of Education guidance at:
<http://www.education.ne.gov/sped/nesa.html>

It is sometimes said that providing instructional accommodations for one student is not fair to the other students in the classroom. Rick Lavoie, long-time special education programs administrator; visiting lecturer at Syracuse, Harvard, Gallaudet; Professor at University of Alabama and Georgetown; and international speaker <http://www.ricklavoie.com/fairnessart.html> states that:

*Fairness does not mean that every student gets the same thing.
Rather, fairness means
that every student gets what he or she needs
in order to be successful.*

The International Dyslexia Association (IDA) has suggested the following framework to help guide decisions for appropriate instructional accommodations for students with dyslexia in the general education setting.

Materials

Students spend a large portion of the school day interacting with materials. Very few instructional materials are designed to give teachers direction for teaching a large class of students with diverse learning needs. Given that, this section provides material accommodations that may enhance the learning for students with unique learning needs. Frequently, paraprofessionals, volunteers, and students can help develop and implement various accommodations.

Use a tape recorder. The tape recorder can be an excellent aid in overcoming issues related to reading disabilities. Directions, stories, and specific lessons can be recorded. The student then has opportunity to replay the tape to clarify understanding of directions and/or concepts. Another possibility is to use tape recorded readings that allow the student to read printed words simultaneously along with the recording to increase word recognition; automaticity and fluency; and comprehension.

Simplify and clarify directions – both oral and written. Some directions are stated or written with so many discreet units of information that they are overwhelming. Rewriting with succinct and sequential bullet points or providing a visual list along with the oral directions can help organize information into manageable bits of information. Underlining or highlighting the significant parts of the directions is another technique that may assist with a student's understanding.

Example: Directions: This exercise will show how well you can locate conjunctions within a sentence. Read each sentence then look for the conjunctions. When you locate a conjunction, find it in the list of conjunctions under each sentence. Circle the number of your answer in the answer column.

Simplified: Directions: Read each sentence and circle all conjunctions.

Chunk assignments into smaller, more manageable tasks. For students who become overly anxious or discouraged when they hear or see large assignments involving reading, the teacher may provide discreet portions of the assignment in sequence in isolation. This technique allows the student to feel competent and successful in completing assignments in smaller chunks and progressing to completion of the entire assignment.

Reduce redundant tasks. If an assignment is designed for repetitive practice of a specific skill, the teacher may reduce the number of items a student with dyslexia must complete.

Block extraneous stimuli. Students with dyslexia are easily distracted by an abundance of information that requires reading. If a worksheet or assignment looms too large and the student becomes overwhelmed, a blank sheet of paper may be

used to cover sections of the page not being worked on at that immediate time. Line markers may also be used to assist a student with reading text and windows may be used to display individual tasks such as word decoding and math problems.

Highlight essential information. If an adolescent can read a regular textbook but has difficulty finding essential information, the teacher may highlight information.

Provide additional practice activities. Some materials do not provide enough practice for students with learning problems to acquire mastery on selected skills. Additional practice exercises may include instructional games; peer-teaching activities; self-correcting materials; tutor and one-on-one supports; computer software programs; etc.

Provide a glossary in content areas. At the secondary level, the specific language of the content areas requires careful reading. Students often benefit from a glossary of content-related terms.

Develop reading guides. A reading guide provides the student with a road map of what is written and features periodic questions to help him or her focus on relevant content. It helps the reader understand the main ideas and sort out the numerous details related to main ideas. A reading guide can be developed paragraph-by-paragraph, page-by-page, or section-by-section.

Instruction

The task of gaining students' attention and engaging them for an instructional block of time requires skilled instructional management and resourceful teaching. Some accommodations that enhance interactive instructional activities include:

Use explicit teaching practices. Many commercial materials do not cue teachers to use explicit teaching procedures; thus, the teacher often must adapt a material to include these procedures. Teachers can include explicit teaching steps within their lessons (i.e., present an advanced organizer, demonstrate the skill, provide guided practice, offer corrective feedback, set up independent practice, monitor practice, and review).

Repeat directions. Students who have difficulty following directions are often helped by asking them to repeat the directions in their own words. The student can repeat the directions to a peer when the teacher is unavailable. The following suggestions can help students understand directions: (a) if directions contain several steps, break the directions down into subsets; (b) simplify directions by presenting only one portion at a time and by writing each portion on a poster or whiteboard as well as orally stating it; and (c) when using written directions, be sure that students are able to read and understand the words as well as comprehend the meaning of each of the steps in the directions.

Maintain daily routines. Many students benefit from routines that are practiced consistently day in and day out. Predictable structure helps students with disabilities know and understand expectations.

Provide a copy of lecture notes. The teacher can give a copy of lecture notes to students who have difficulty taking notes during direct instruction.

Provide students with a graphic organizer. An outline, chart, web, or specific format can be used to help students organize important information. This strategy helps a student listen for key information and note the relationships among concepts and related information.

Use step-by-step instruction. New or difficult information must be presented in small and sequential steps. This helps students who have limited prior knowledge of a subject and who need direct and explicit instruction.

Use multisensory instructional practices. Most students thrive in an instructional environment where most of the senses are incorporated in the learning process. Examples of multisensory teaching approaches include verbal paired with visual displays (e.g., on an overhead or handout), verbal paired with tactile activity, tactile paired with visual information, etc.

Display key points in writing. Prior to teaching a concept or skill, the teacher may wish to visually post new vocabulary words, key points, or concepts. This creates a static model for children to use as they assimilate new information.

Use balanced teaching strategies. Efforts must be made to balance teaching activities with oral and visual presentation and student participatory activity. Another consideration for instructional balance would be to include all types of groupings: large, small, individual, homogeneous, and heterogeneous groups.

Encourage mnemonic strategies use. Mnemonic strategies can be used to help students remember key points or steps in a learning process. An example of a mnemonic strategy is using the word HOMES to teach the names of the Great Lakes. H is for Lake Huron, O is for Lake Ontario, M is for Lake Michigan, E is for Lake Erie, and S is for Lake Superior.

Deepen learning through planned reviews. Planned reviews of previous learning help students connect new information with prior learning. Reviews are critical in ensuring that learning shifts from short to long-term memory.

Student performance

Students with disabilities vary significantly in their response modes that require certain skills. For example, some students struggle with assignments that require oral presentation or discussion. Others have difficulty with products that require a written response. Still others may not possess the skills or abilities for performance-based responses that require developed physical capabilities. The following accommodations may be considered to enhance a student's ability to receive and/or express knowledge and skills:

Altered response mode. For students who have difficulty with fine motor tasks such as handwriting, the response mode could be altered to oral response, underlining, selecting from multiple choice items, sorting, or simple marking.

Provide an outline. This enables some students to follow the lesson successfully and make appropriate notes next to the key or main points. In addition, an outline helps students to see the organization of the material and to ask clarifying questions.

Use graphic organizers. Organizers are outlines that help students sort information into a meaningful visual format.

Priority seating. Students with learning problems can benefit by seating close to the teacher or to the presentation area away from distracting sounds, materials, or objects.

Encourage use of assignment books or calendars. These assists help students organize important information in writing. Students can write and track due dates; test dates; timelines for projects and special assignments; and daily assignments and special instructions.

Reduce note taking by providing handouts. There are a variety of handout formats that allow for active student participation in a lecture but do not require that every note be hand-written by the student during discussion. Fill-in-the-blank handouts ensure that students listen for key points but do not agonize over having to write out teacher's notes verbatim.

Use cues to denote important items. Asterisks or bullets can denote information that is critical to upcoming assessments or evaluations. This helps students spend time appropriately during study for tests or assignments.

Design hierarchical worksheets. Worksheets can be designed with problems arranged in progression from easiest to hardest. Early success often encourages students to continue to work toward the more challenging content.

Use instructional aids. Students can be provided with letter and number lines to help them form symbols correctly. Number lines, counters, and calculators also help students compute once they understand mathematical operations and concepts.

Display work samples. Samples of completed anchor assignments can be displayed to help students understand the standard expectations and to plan their assignments accordingly.

Encourage peer-mediated learning. Students of different ability levels can be paired to review notes; clarify directions or instructions; study for an assignment or test; read aloud to each other; write collaborative stories; or conduct laboratory experiments.

Encourage note sharing. For the student who struggles with note taking, lecture notes from a peer may be shared. This will allow students with note taking issues to focus more on the lesson content rather than worry about his or her efficiency to take notes and keep up with instructional pacing.

Allow TIME: Students who process information at a slower rate than peers can be provided additional work time to complete assignments. TIME is a critical factor to the success of the student who struggles in school. Teachers must be sensitive to the need for additional time for specific activities for those students with disabilities. TIME can also be altered for assessments and for some evaluations.

Provide additional practice. Student practice activities vary when it comes to mastering skills and/or content. Many students with learning difficulties need additional practice opportunities to ensure command of the content.

Allow assignment substitutions. A teacher who allows assignment substitution is one who individualizes according to the student's strengths. The student is allowed demonstrate to his or her knowledge, skills, and abilities in the area of strength rather than the area of deficit

INFORMATION FOR PARENTS

A miracle takes place every time a child learns to read. Reading does not develop naturally like seeing, hearing, and speaking. Rather, it happens very intentionally when specific skills are taught, practiced, and learned in a highly prescribed sequence that focuses on principles of printed language. To master the reading process a child must learn about:

- a. the world of letters
- b. letters that makes specific sounds
- c. individual and discreet sounds (called phonemes) that are synthesized into words
- d. words, both regular and irregular, and their word families
- e. words that have specific meanings (called vocabulary) that come together to express concepts

Parents and loved ones can contribute to a child's reading development by speaking and reading to a child beginning at birth. Children who have a frequent and direct conversation with others during their first five years (and not from television or other media) and who listen to many books being read to them, enter kindergarten with advantages that prepare their brains to learn to read. Children who have not had exposure to print (i.e., books, magazines, signs, charts, etc.) and language-rich environments in the early years can be at profound risk for academic failure before they ever reach the kindergarten door.

Somewhere around five years of age, most young brains are ready to bring all the knowledge about letters, sounds, and words together to begin to read. Children must learn that a particular sound corresponds to a particular letter or letters, which isn't always straightforward in the English language. Reading instruction that emphasizes principles of phoneme awareness and decoding (that is, systematic phonics programs) represent an important foundation for all children learning to read. There are other important areas that must also be emphasized: vocabulary knowledge, sentence structure, and knowledge about the smallest units of meaning (called morphemes – prefixes, root words, and suffixes).

Children with dyslexia have particular difficulties distinguishing the phonemes or individual sounds within words. Learning the rules for matching letters with their corresponding sounds is very challenging for them. Children with dyslexia may have difficulty acquiring the speed necessary to read for comprehension. There is good news however. Ongoing research using brain imaging technology holds promise for better understanding of how the brain of the child with dyslexia processes information.

Early identification is the key! If a child has trouble reading in the early grades, parents and teacher are more likely to detect the problem and initiate assessment, evaluation, and programming that provides the elements of effective teaching to ensure a greater level of reading success for students with dyslexia.

As children with dyslexia enter formal schooling, they are often faced with frustration as they struggle to master the reading process. This can place them at risk for developing problems far beyond reading. One study of children with dyslexia found that most of the children observed were well adjusted in preschool, but began to develop emotional problems during the early years in school as reading challenges began to surface. As frustration and failure mounted, these children began to act out and stopped trying to learn to read altogether. They were labeled “lazy” and “unmotivated.” Worse yet, these children began to internalize the negative messages and described themselves as stupid or bad. These dilemmas can turn into a fixed part of a child’s identity, undermining self-confidence and causing self-doubt in their capabilities to master the school curriculum. It is not surprising, then, that children with dyslexia are at a higher risk for emotional and behavioral problems that stem from the inability to read and keep pace with their age and grade level peers (Riddick, 2010).

As a parent of a child with dyslexia, you may find the following suggestions helpful:

1. Learn about dyslexia

Expand your knowledge by reading about this specific learning disability. Attend conferences and presentations by professionals who are current in the research on dyslexia and its effects on a child’s ability to learn to read. Seek out other parents of children with dyslexia. They may be an excellent source of information and support.

2. Talk with your child about dyslexia

Your child needs knowledge and understanding about dyslexia and most importantly, reassurance and support from you. The term ‘dyslexia’ may be confusing and may raise questions. Questions your child may ask, along with simple and straightforward answers are:

What is dyslexia?

Dyslexia means having a difficult time learning to read.

How did I get dyslexia?

You were born with it, just like you were born with.... (...freckles,dimples,brown eyes, etc.)

Is there something wrong with my brain?

No. The road your brain takes to learn how to read is different. Learning to read may be harder, and it may take longer, but you will be able to learn to read with special instruction and extra practice.

Can someone catch dyslexia?

No, dyslexia is not contagious. It is built into our brains from birth.

Does it mean I'm dumb?

No, dyslexia is a problem that intelligent people have with learning to read. It has nothing to do with how smart you are.

Will my dyslexia ever go away?

No, but you can learn to read. You are not the problem; you will learn how to handle dyslexia and be successful.

3. Embrace your child's natural intelligence

Most children with dyslexia have average or above-average intelligence that can be enhanced by parents who encourage their continual intellectual growth. Be honest with your child about his or her specific learning disability, but balance this explanation with focus on strengths as well. Explain dyslexia in understandable and age-appropriate terms while offering unconditional love and support.

4. Provide positive feedback and encouragement

No matter how well your child does in the classroom, a child with dyslexia faces daily reminders that he or she learns differently than other children in the classroom. Identify and provide specific praise for qualities such as being a good friend, being honest, and being responsible. Recognize your child's efforts, strengths, and accomplishments.

5. Collaborate with educators

- ~ Gather information about the school's responsibility for identifying and planning for your child's needs.
- ~ Act as liaison between the school and your child, adding a positive dimension that will be helpful to all.
- ~ Communicate your child's special strengths and interests as well as his or her learning needs to the teacher(s) and other professionals at school.
- ~ Develop a communication system between you and your child's teacher(s).
- ~ Establish and support a team approach for your child's learning. This approach works best when it is planned by you, your child's teacher(s), and your child if appropriate.
- ~ If your child doesn't seem to be thriving in school or seems particularly frustrated or discouraged, make an appointment with the teacher(s) and specialist(s) to problem-solve.
- ~ If your child shows signs of emotional stress, seek help. Every child has occasional low points, but if your child seems particularly angry, troubled, or depressed, you may need to contact your pediatrician or other professionals to assist you in locating appropriate resources for your child.

6. Read, Read, Read!

- ~ Share in the joy of reading. Read to your child and find books that your child can read to you. Sit together, take turns reading. Use different voices for the various characters or use role playing to act out a story of interest.

- ~ Encourage discussion – and lots of it! Revisiting words, concepts, and characters enhances a child's reading comprehension.
- ~ Re-read favorites stories and books. It is perfectly normal (and expected) that children insist on re-reading their favorite books and stories. The term given this practice is 'over learning' and is an important strategy in reading development. While re-reading may seem tedious to you, it is actually a good practice that helps build familiarity with words and concepts and strengthens memory and comprehension skills
- ~ Be a reading role model for your child. Demonstrate the importance of reading through your own daily reading activities.
- ~ Work on spelling. Point out new words, play spelling games, and encourage writing activities.
- ~ Display simple charts, clocks, and calendars so your child is encouraged to recognize and read print in addition to books and stories. This can assist your child's ability to visualize time and to plan for things to come.

7. Read aloud daily

These strategies may help guide the activity of reading aloud with your child:

A. Self-monitor. Your child will try to make words and pictures agree or match. He or she may look puzzled, may stop reading, or may start over and try again. These are signals that let you know that he or she is aware that something isn't quite right. Be careful not to "correct" too quickly. Give your child thinking and problem-solving time. After allowing sufficient time, ask probing questions such as:

"Was there something that didn't sound right?"

"What did you notice that made you stop reading?"

"Show me what's puzzling you."

B. Self-correct. Allow time for your child to fix reading errors. It's best if your child takes the first step at self-correction. He or she may reread the sentence to support attempts to figure out a hard word or difficult concept.

C. Cross-check strategies. Your child should be checking to see if his or her attempts to correct make sense. If he or she becomes frustrated and doesn't know what to do or how to correct, you may want to use one of the following prompts to help them on their way:

- Can you sound out the word?
- What else could you try?
- Do you know another word that starts like that?
- What do you think it could be?
- What word might make sense here?
- Run your finger under the tricky word and try to sound it out.
- Do the letters give you any clues?

REMEMBER: It is very important that your child does the reading work, not you. Give sufficient time for him or her to explore and try multiple strategies.

8. Encourage reading and writing

~ Maintain a “print-rich” environment in your home. Keep books and magazines in your various rooms, but particularly in your child's room. Vary print materials (i.e., newspapers, magazines, recipes, grocery lists, chore lists, “love notes,” directions on Macaroni ‘n Cheese box, etc.) to demonstrate that reading goes beyond books and stories.

~ Carry books along when you go to the dentist, doctor, or places you may have wait time.

~ Read a story or poem is a magical way to bring words, characters, and settings to life.

~ Read road signs. While you are driving, asks your child to read the road signs: Stop, Yield, One Way, Do Not Enter, street markers, or maps.

~ Encourage your child to keep a daily journal. Draw pictures, write words, sentences, paragraphs, and stories. Set an example by enjoying this activity alongside your child.

~ Reading should be a pleasure. If you are enjoying reading, our child will observe.

~ When reading with your child, make sure you are comfortable and relaxed. Make reading a part of your family's daily routine.

~ Vary the writing your child does at home for different audiences and for different purposes (i.e. thank you notes, reminders, lists, etc.).

~ Encourage creativity in writing. Write with colors, pens, markers, chalk, etc.

~ Model reading and writing for and with your child. Nothing sets a better example than you: Your child's first and foremost teacher.

9. Establish an independent reading time

Independent reading is an important activity necessary for the development of reading skills and abilities. Young children need time to browse books and print materials. More skilled readers need independent reading time to develop fluency and comprehension. Discussion about books your child reads demonstrates your interest and the importance of the independent reading process.

The amount a child reads makes a difference in the development of reading skills and abilities and also in the growth of vocabulary and general knowledge.

Independent reading from a young age will help develop your child's interests, confidence, and love of reading.

A question parents often ask: How do I know what level of book my child should be reading?

A good rule of thumb is this: If a child is unable to read five or more words on a page of a book, then it is fair to assume that the book he or she has chosen is too difficult for

them. There is nothing more disheartening and discouraging than children struggling to read a book that is too difficult for their level of reading development. If this is the case, they will spend all their time trying to read and decode the words and will fail to enjoy the actual story.

10. Assist with homework

- ~ Designate a place and time for homework activities.
- ~ Be patient and create a relaxed, stress-free environment.
- ~ Develop strategies with your child to assist with complex assignments. Break long assignments down into smaller, more manageable tasks.
- ~ Read instructions or directions aloud to provide multiple sensory input (e.g., seeing and hearing) on what is expected and “how to.”
- ~ Incorporate technology for efficient and effective learning if appropriate.
- ~ Be available to help spell words if spelling interferes with the flow of thought while writing. Serve as a scribe on lengthier assignments if handwriting is a hindrance to the process of assignment completion.
- ~ Exhibit enthusiasm and interest in what your child is learning by helping him/her complete the homework assignment.
- ~ Encourage ways of teaching and learning that optimize your child's strengths and abilities.
- ~ Model good work habits. Be close by doing your own homework exercises such as paying bills, sorting mail, making lists, etc.
- ~ Schedule breaks at regular intervals.
- ~ Limit unnecessary interruptions.
- ~ Make sure your child understands the expectations of the homework assignment. It may be helpful to review the assignment as a whole and then estimate the time it may take.
- ~ Establish good habits of using a planner to record assignments, directions, and due dates. Discuss how to seek clarification from the teacher if an assignment is confusing or unclear. Roleplay with your child on how to ask questions of the teacher or a peer.
- ~ Avoid doing the work for your child. Work together in a way that helps your child be independent while developing responsibility for classroom assignment completion.

~Let everything between you be done with love and understanding.

NOTE: *Be careful. Avoid the “homework tyrant trap.” Repeated squabbling with a child over homework assignments has potential to create an unhealthy and adversarial relationship with regard to homework time. Expecting perfection in homework completion may exacerbate a child's frustration. If daily homework is requiring an excessive amount of time, initiate a discussion with your child's teacher to determine strategies to help minimize the potential for stress and frustration during homework sessions.*

11. Monitor Self-esteem

Children with dyslexia may face emotional as well as academic challenges. Unwavering support and acceptance from you, as a parent, is critical.

Encouragement and support in developing special talents not related to reading can help build confidence and self-esteem. Be specific in helping your child set realistic goals and confront problems with honesty. Honest praise for hard work, persistence, willingness to ask for help, and accepting and learning from mistakes will emphasize the importance of traits and attitudes that can lead to long-term success.

12. Factors for Success

- ~ Ensure the presence of a consistently supportive adult in the environment.
- ~ Send “you can” messages to develop a sense of determination, capability, and confidence.
- ~ Provide TIME (time to process, organize, and complete tasks; time to be a child enjoying developmentally appropriate activities; time to enjoy hobbies and outside interests; time adjustments based on needs).
- ~ Develop a talent or special skill with an opportunity to “teach” it to others.
- ~ Provide order, structure, routines, rituals, and traditions.
 - ~ Explain all instructions clearly and simply to prevent confusion and reduce mistakes in completing assignments.
 - ~ Simplify complicated tasks by breaking them down into small, manageable, and achievable chunks.
 - ~ Provide assistance in prioritizing and sequencing tasks and events.
 - ~ Provide assistance in planning and managing time.
 - ~ Help your child develop problem-solving skills and strategies for academics as well as interpersonal relationships.
 - ~ Encourage learning-by-doing through hands-on activities.
 - ~ Provide enriching experiences such as trips to museum, concerts, zoos, galleries, vacations, etc.

REFERENCES

- Alamargot, D., Caporossi, G., Chesnet, D., & Ros, C. (2011). What makes a skilled writer? Working memory and audience awareness during text composition. *Learning and Individual Differences, 21*, 505-516.
- Allington, R.L. (1984). Content coverage and contextual reading in reading groups. *Journal of Reading Behavior, 16*, 85-96.
- Allington, R.L. (2001). *What really matters for struggling readers: Designing research-based programs*. New York: Longman.
- Allington, R. L., & McGill-Franzan, A. (1999). *Looking back, looking forward: A conversation about teaching reading in the 21st century*. Albany, NY: National Research Center on English Learning and Achievement.
- Alloway, T. P., & Passolunghi, M. C. (2011). The relationship between working memory, IQ, and mathematical skills in children. *Learning and Individual Differences, 21*, 133-137.
- Anderson, R.C., Wilson, P.T., & Fielding, L.G. (1988). Growth in reading and how children spend their time outside of school. *Reading Research Quarterly, 23*, 285-303.
- Angle, B. (1996). Five steps to collaborative teaching and enrichment remediation. *Teaching Exceptional Children, 29*(1), 8-10. EJ 529 434.
- Barkley, R.A. (2006). *Attention deficit hyperactivity disorder: a handbook for diagnosis and treatment* (3rd ed.). New York: Guilford.
- Barnard, W.M. (2004). Parent Involvement in Elementary School and Educational Attainment. *Children and Youth Services Review, 26*, 39-62.
- Benner, J. G., Mattison, R. E., Nelson, J. R., & Ralston, N. C. (2009). Types of language disorders in students classified as ED: Prevalence and association with learning disabilities and psychopathology. *Education and Treatment of Children, 32*, 631-653.
- Berg, D. H., & Hutchinson, N. L. (2010). Cognitive processes that account for mental addition fluency differences between children typically achieving in arithmetic and children at-risk for failure in arithmetic. *Learning Disabilities: A Contemporary Journal, 8*, 1-20.
- Berninger, V. W., Abbott, R. D., Swanson, H. L., Lovitt, D., Trivedi, P., Lin, S., Gould, L., Youngstrom, M., Shimada, S., & Amtmann, D. (2010). Relationship of word and sentence-level working memory to reading and writing in second, fourth, and sixth grade. *Language, Speech, and Hearing Services in Schools, 41*, 179-193.

Berninger, V. W., & May M. (2011). Scientifically-based diagnosis and treatment for specific learning disabilities involving impairments in written and/ or oral language. *Journal of Learning Disabilities*, 44, 167-183.

Bernstein, J.H., & Waber, D.P. (2003). Pediatric neuropsychological assessment. *Behavioral Neurology and Neuropsychology* (2nd ed.). NY: McGraw-Hill.

Blachman, B. (1997). Early intervention and phonological awareness: A cautionary tale. In B. Blachman (Ed.), *Foundations of reading acquisition and dyslexia: Implications for early intervention*, (pp. 409-430). Mahwah, NJ: Erlbaum.

Bond, G.L., & Dykstra, R. (1997). The cooperative research program in first-grade reading instruction. *Reading Research Quarterly*, 32, 348-427.

Bourke, L., & Adams, A. M. (2010). Cognitive constraints and the early learning goals in writing. *Journal of Research in Reading*, 33, 94-110.

Brosnan, M., Demetre, J., Hamill, S., Robson, K., Haidee, S., Cody, G. (2002). Executive functioning in adults and children with developmental dyslexia. *Neuropsychologia*, 40(12), 2144-2155.

Cain, K. (2010). *Reading development and difficulties* (1st ed.). Wiley & Sons, Ltd. West Sussex, U.K., p. 134.

Cartwright, K.B. (2012). Insights from cognitive neuroscience: the importance of executive function for early reading development and education. *Early Education and Development*, 23(1), 24-36.

Catts, H.W., Adlof, S.M., Hogan, T.P., Weismer, S.E. (2005). Are specific language impairment and dyslexia distinct disorders? *Journal of Speech, Language, and Hearing Research*, 48, 1378-1396.

Catts, H. W., & Kamhi, A. G. (2005). *Language and reading disabilities* (2nd ed.). Needham Heights, MA: Allyn & Bacon.

Chief State School Officer's Interstate Teacher Assessment and Support Consortium (InTASC), (2011). InTASC Model Core Teaching Standards: A Resource for State Dialogue. Washington, D.C. URL: <http://www.ccsso.org>.

Chall, J. (1983). *Stages of Reading Development*. New York: McGraw Hill.

Chermak, G.D., & Musiek, F.E. (1992). Managing central auditory processing disorders in children and youth. *American Journal of Audiology*, 1, 61-65.

Chinn, S., & Ashcroft, R. (2007). *Mathematics for Dyslexics Including Dyscalculia*. West Sussex, U.K.: John Wiley & Sons, Ltd.

Copeland, S. R., & Cosby, J. (2008). Making progress in the general curriculum: Rethinking effective instructional practices. *Research & Practice for Persons with Severe Disabilities*, 33/34(4-1), 214-227.

Cuban, L. (1992). Curriculum stability and change. In P. Jackson (Ed.), *Handbook of research on curriculum* (pp. 216-247). New York: Macmillan Publishing.

Cuban, L. (1998). How schools change reforms: Redefining reform success and failure. *Teachers College Record*, 99, 453-477.

Cunningham, A.E., & Stanovich, K.E. (1998). What reading does for the mind. *American Educator*, 22, 8-15.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1).

Dietz, S., & Montague, M. (2006). Attention deficit hyperactivity disorder comorbid with emotional and behavioral disorders and learning disabilities in adolescents. *Exceptionality*, 14, 19-33.

Donlam, C. (2007). Mathematical development in children with specific language impairments. In D. B. Berch & M. M. Mazzocco (Eds.), *The nature and origins of mathematical learning difficulties and disabilities*, (pp. 147-150). Baltimore: Brookes.

Elbaum, B., & Vaughn, S. (2003). Self-concept and students with learning disabilities. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of learning disabilities*, (pp. 229-241). NY: The Guilford Press.

Elksnin, L. K., & Elksnin, N. (2004). The social-emotional side of learning disabilities. *Learning Disability Quarterly*, 27, 3-8.

Foorman, B. R. (2003). *Reading Difficulties: Bringing Science to Scale*. Austin, TX: Pro Ed.

Francis, D.J., Shaywitz, S.E., Stuebing, K.K., Shaywitz, B.A., & Fletcher, J.M. (1996). Developmental lag versus deficit models of reading disability: A longitudinal, individual growth curves analysis. *Journal of Educational Psychology*, 88(1), 3-17.

Fuchs, L. S., Fuchs, D., & Compton, D. L. (2004). Monitoring early reading development in first grade: Word identification fluency versus nonsense word fluency. *Exceptional Children*, 71(1), 7-21.

Gambrell, L.B. & Mazzoni, S.A. (1999). *Emergent Literacy: What Research Reveals About Early Reading Development*. In C. Seefeldt (Ed.). *The early childhood education* (pp 80-105). NY: Teachers College Press.

Geary, D. G., Hoard, M. K., & Bailey, D.H. (2012). Fact retrieval deficits in low achieving children and children with mathematical learning disability. *Journal of Learning Disabilities, 45*, 291-307.

Glazzard, J. (2010). The impact of dyslexia on pupils' self-esteem. *Support for Learning, 25*(2), 63-69.

Goran, L. G., & Gage, N. A. (2011). A comparative analysis of language, suspension, and academic performance of students with emotional disturbances and students with learning disabilities. *Education and Treatment of Children, 34*, 469-488.

Guthrie, J., & Alvermann, D. E. (1999). *Engaged Reading: Processes, Practices and Policy Implications*. New York: Teachers College Press.

Hasbrouck, J. (2006). For students who are not yet fluent, silent reading is not the best use of classroom time. *American Educator, 2006*, 30(2).

IDA Information Services Committee (2009). FACT SHEET on Testing and Evaluation. International Dyslexia Association: 40 York Rd., 4th Floor, Baltimore, MD.

Institute of Education Sciences (2014). Improving Reading Outcomes for Students with or at Risk for Reading Disabilities: A Synthesis of the Contributions from the Institute of Education Sciences Research Centers. NCSE 20143000. www.ies.ed.gov.

Jenkins, J. R., & O'Connor, R. E. (2002). Early identification and intervention for young children with reading/learning disabilities. In R. Bradley, L. Danielson, & D. P. Hallahan (Eds.), *Identification of learning disabilities: Research to practice*, (pp. 99–150). Mahwah, NJ: Erlbaum.

Jordan, H., Mendro, R., & Weerasinghe, D. (1997). *Teacher effects on longitudinal student achievement*. Paper presented at the sixth National Evaluation Institute sponsored by CREATE, Indianapolis, IN.

Kaderavek, J. N. (2011). *Language disorders in children: Fundamental concepts of assessment and intervention*. Upper Saddle River, NJ: Pearson.

Kail, R. (1994). A method of studying the generalized slowing hypothesis in children with specific language impairments. *Journal of Speech and Hearing Research, 37*, 418-421.

Kamil, M.L., Mosenthal, P.B., Pearson, P.D., & Barr R. (Eds.), (2000). *Handbook of reading research: Volume III*, (pp. 403-422). New York: Erlbaum.

Kavale, K. A., & Forness, S. R. (1996). Social skill deficits and learning disabilities: A meta-analysis. *Journal of Learning Disabilities, 29*, 226-237.

King, W.M., Lombardino, L.J., Crandell, C.C., Leonard, C.M. (2003). Comorbid auditory processing disorder in developmental dyslexia. *Ear and Hearing: The Official Journal of the American Auditory Society*, 24(5), 448-456.

Lane, K. L., & Menzies, H. M. (2010). Reading and writing interventions for students with or at risk for emotional and behavioral disorders. *Behavioral Disorders*, 35, 82-85.

Learning First Alliance. (2000). *Every child reading: A professional development guide*. Baltimore, MD: Association for Supervision and Curriculum Development.

Lyon, G.R. (2002). Reading development, reading difficulties, and reading instruction: Educational and public health issues. *Journal of School Psychology*, 40,3-6.

Lyon, G. R. (1995). Toward a definition of dyslexia. *Annals of Dyslexia*, 45, 3-27.

Lyon, G.R., Shaywitz, S.E., & Shaywitz, B.A. (2003). A definition of dyslexia. *Annals of Dyslexia*, 53, 1-14.

Mammarella, I. C., & Pazzaglia, F. (2010). Visual perception and memory impairments in children at risk of non-verbal learning disabilities. *Child Neuropsychology*, 16, 564-576.

Martin, A., & Dowson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of Educational Research*, 79(1), 327-65.

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom Instruction That Works: Research-based Strategies for Increasing Student Achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

McCardle, P., Scarborough, H. S., & Catts, H. W. (2001). Predicting, explaining, and preventing reading difficulties. *Learning Disabilities Research and Practice*, 16, 230-239.

McInnes, A., Humphries, T., Hogg-Johnson, S., Tannock, R. (2003). Listening comprehension and working memory are impaired in attention-deficit hyperactivity disorder irrespective of language impairment. *Journal of Abnormal Child Psychology*, 31, 427-443.

Mercer, C. D., & Pullen, P. C. (2009). *Students with learning disabilities* (7th ed.). Upper Saddle River, NJ: Pearson.

Meyler, A., Keller, T.A., Cherkassky, V.L, Gabrieli, J.D., Just, M.A. (2008). Modifying the brain activation of poor readers during sentence comprehension with extended remedial instruction: A longitudinal study of neuroplasticity. *Neuropsychologia*. Vol. 46(10), 2580-2592.

Miller, B., & McCardle, P. (2011). Moving closer to a public health model of language and learning disabilities: The role of genetics and the search for etiologies. *Behavior Genetics*, 41, 1-5.

Moats, L.C. (1999). *Teaching reading is rocket science: Early interventions for children with reading problems*. Washington, DC: American Federation of Teachers.

Morin, J. E., & Franks, D. J. (2010). Why do some children have difficulty learning mathematics? Looking at language for answers. *Preventing School Failure*, 54, 111-118.

National Center for Learning Disabilities. 381 Park Avenue S., Suite 1401, New York, NY. URL: <http://www.nclld.org>.

National Clearinghouse for Comprehensive School Reform, (2001). Taking stock: Lessons on comprehensive school reform from policy, practice, and research. *Benchmarks*, 2, 1-11.

National Institute of Child Health and Human Development, (2000). *Report of the National Reading Panel*. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction (NIH Publication No. 00- 4769). Washington, DC: U.S. Government Printing Office. URL: www.nichd.nih.gov/publications/nrp/smallbook.htm.

National Reading Panel [NRP], (2000). National Institute of Child Health and Human Development [NICHD]. *Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction*. (NIH Publication No. 00-4754). Washington, DC: U.S.

National Staff Development Council. (2001). *Standards for Staff Development*. Available online: <http://www.nsdc.org/library/standards2001.html>

Nebraska Department of Education Verification Guidelines (2015). Available online: URL: www.education.ne.gov/sped/technicalassist/verificationguidelines.pdf

Neuhaus G., Foorman B.R., Francis D.J., & Carlson C.D. (2001). Measures of information processing in rapid automatized naming (RAN) and their relation to reading. *Journal of Experimental Child Psychology*. 78, 359-73.

Nichols, S. C., & Sheffield, A. N. (2014). Is there an elephant in the room? considerations that administrators tend to forget when facilitating inclusive practices among general and special education teachers. *National Forum of Applied Educational Research Journal*, 27(1), 31-44.

Nicolson, R.I., & Fawcett, A.J. (2011). Dyslexia, dysgraphia, procedural learning and the cerebellum. *Cortex*, 47(1), 117-127.

Obrzut, J. E., & Mahoney, E. B. (2011). Use of the dichotic listening technique with learning disabilities. *Brain and Cognition*, 76, 323-331.

O'Connor, R. E., & Jenkins, J. R. (1999). The prediction of reading disabilities in kindergarten and first grade. *Scientific Studies of Reading*, 3, 159-197.

Olson, R.K., Keenan, J.M., Byrne, B., & Samuelsson, S. (2014). Why do children differ in their development of reading and related skills? *Scientific Studies of Reading*, 18(1), 38-54.

Pammer, K. 2014. Brain mechanisms and reading remediation: more questions than answers. *Scientifica*. Published online 2014, Jan 12. doi: [10.1155/2014/802741](https://doi.org/10.1155/2014/802741).

Podhajski, B. (1999). *Time for Teachers – What Teachers Need to Know About What Children Need to Know to Learn to Read: A Trainer's Manual for Professional Development of K-3 Educators* (1st ed.), Williston, NT: Stern Center for Language and Learning.

Pressley, M., Wharton-McDonald, R., Hampson, J.M., & Echevarria, M. (1998). The nature of literacy instruction in ten grade-4/5 classrooms in upstate New York. *Scientific Studies of Reading*, 2, 159-191.

Price, C., 2012. A review and synthesis of the first twenty years of pet and fMRI studies of heard speech, spoken language and reading. *Neuroimage*, 62(2), 816-847.

PubMed Health. (2012). A.D.A.M. Medical Encyclopedia.
URL: <http://www.ncbi.nlm.nih.gov/pubmedhealth>

RAND (2002). Reading for understanding: Toward an R&D program in reading comprehension. Santa Monica, CA: Author.

Reid, R., & Lienemann, T. O. (2006). *Strategy instruction for students with learning disabilities*. NY: The Guilford Press.

Reilly, D., (2014). Collaborative teaching: A delivery model to increase responsiveness to the needs of all learners through academic and social inclusion. *Master's Theses and Capstone Projects*. Paper 129. URL: <http://www.scholar.dominican.edu/master-theses>

Riddick, B. (2010). *Living with Dyslexia – The Social and Emotional Consequences of Specific Learning Difficulties and Disabilities* (2nd ed.). NY: Routledge.

Rimrodt, S.L., & Lipkin, P.H. (2011). Learning disabilities and school failure. *Pediatrics in Review*, 32(8), 315-24.

Rosenzweig, C., Krawec, J., & Montague, M. (2011). Metacognitive strategy use of eighth-grade students with and without learning disabilities during mathematical problem solving: A think aloud analysis. *Journal of Learning Disabilities, 44*, 508-520.

Ryan, M. (2004a). Social and Emotional Problems Related to Dyslexia. International Dyslexia Association Fact Sheet series. The International Dyslexia Association.

Ryan, M. (2004b) Unlocking the social and emotional enigmas of dyslexia, *Perspectives, 30*(4), 1-4.

Scarborough, H. S. (1998). Predicting the future achievement of second graders with reading disabilities: Contributions of phonemic awareness, verbal memory, rapid serial naming, and IQ. *Annals of Dyslexia, 48*, 115–136.

Screeivasa, K. K., & Jha, A. P. (2007). Selective attention supports working memory maintenance by modulating perceptual processing distractors. *Journal of Cognitive Neuroscience, 19*, 32-41.

Sedita, J. (2011). Adolescent literacy: Addressing the needs of students in grades 4-12. *Multisensory teaching of basic language skills* (3rd ed., p. 532). Baltimore, MD: Paul H. Brookes Publishing.

Sharifi, S. (2014). Neuroimaging essentials in essential tremor: a systematic review. *Neuroimage Clinical, 5*: p. 217–231. doi:10.1016/j.nicl.2014.05.003. PMC 4110352. PMID 25068111.

Shaywitz, S.E. (1996). Dyslexia. *Scientific American, 275*, 98-104.

Shaywitz, S.E. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level*. New York: Vintage Books.

Shaywitz, S.E., & Shaywitz, B.A. (2001). The Neurobiology of Reading and Dyslexia. *Focus on Basics 5.A.*, [NCSALL.net](http://www.ncsall.net). (National Center for the Study of Adult Learning and Literacy). URL: <http://www.ncsall.net/index.html?id=278.html>

Shaywitz, B.A., Lyon, G.R., Shaywitz, S.E. (2006). The role of functional magnetic resonance imaging in understanding reading and dyslexia. *Developmental Neuropsychology, 30*(1), 613–32.

Shaywitz, S.E., Shaywitz, B.A., Fletcher, J.M., & Escobar, M.D. (1990). Prevalence of reading disability in boys and girls. Department of Pediatrics, Yale University School of Medicine, New Haven, CT.

Shaywitz, B.A., Shaywitz, S.E., Pugh, K.R., Fulbright, R.K., Mencl, W.E., Constable, R.T., Skudlarski, P., Fletcher, J.M., Lyon, G.R., & Gore, J.C (2001). The neurobiology of dyslexia. *Clinical Neuroscience Research, 1* (4), 291–99.

- Sideridis, G. D., Morgan, P. L., Botsas, G., Padeliadu, S., & Fuchs, D. (2006). Predicting LD on the basis of motivation, metacognition and psychopathology: A ROC analysis. *Journal of Learning Disabilities, 39*, 215-229.
- Siegel, L. S. (1989). IQ is irrelevant to the definition of learning disabilities. *Journal of Learning Disabilities, 22*, 469-86.
- Sinclair, E., Guthrie, D., & Forness, S. R. (1984). Establishing a connection between severity of learning disabilities and classroom attention problems. *Journal of Educational Research, 78*, 18-21.
- Smith, C. R. (2004). *Learning disabilities: The interaction of students and their environments* (5th ed.). Boston, MA: Pearson Education, Inc.
- Snow, C.E., Burns, M.S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Snyder, J., Bolin, F., & Zumwalt, K. (1992). Curriculum implementation. In P. Jackson (Ed.), *Handbook of research on curriculum* (pp. 402-435). New York: Macmillan Publishing.
- Stahl, S.A., Duffy-Hester, A.M., & Stahl, K.A.D. (1998). Everything you wanted to know about phonics but were afraid to ask. *Reading Research Quarterly, 33*, 338-355.
- Stanovich, K. E., & Siegel, L. S. (1994). Phenotypic performance profile of children with reading disabilities: A regression-based test of the phonological-core variable-difference model. *Journal of Educational Psychology, 86*, 24-53.
- Steele, S. C., & Watkins, R. V. (2010). Learning word meanings during reading by children with language learning disability and typically-developing peers. *Clinical Linguistics and Phonetics, 24*, 520-539.
- Stronge, J. H. (2002). *Qualities of Effective T* Stronge, J. H. (2002). *Qualities of effective teachers*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Swanson, H. L. (2011). Dynamic testing, working memory, and reading comprehension growth in children with reading disabilities. *Journal of Learning Disabilities, 44*, 358-371.
- Swick, K. (2003). *Communication concepts for strengthening family-school-community partnerships*. ERIC Journal No. EJ673573.
- Taylor, B.M., Pressley, M., & Pearson, P.D. (2002). Research-supported characteristics of teachers and schools that promote reading achievement. In B.M. Taylor & P.D. Pearson (Eds.), *Teaching Reading: Effective Schools, Accomplished Teachers*, pp. 361-374. Mahwah, NJ: Erlbaum.

Torgesen, J.K. (1997). Research on the prevention and remediation of phonologically-based reading disabilities. *Perspectives*, 27-28.

Torgesen, J.K., (1997). The "P" book, phonological awareness: A critical factor in dyslexia. Baltimore, MD: The International Dyslexia Association's *Orton Emeritus Series*.

Torgesen, J. K. (2002). The prevention of reading difficulties. *Journal of school psychology*, 40(1), 7-26.

Torgesen, J. K., Alexander, A. W., Wagner, R. K., Rashotte, C. A., Voeller, K. K., & Conway, T. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities*, 34(1), 33-58.

Torgesen, J.K., Burgess, S., & Rashotte, C.A. (1996). *Predicting phonologically-based reading disabilities*. Paper presented at the annual meeting of the Society for the Scientific Study of Reading, New York, April.

Torgesen, J.K., Wagner, R. K., Rashotte, C.A., Rose, E., Lindamood, P., Conway, T., & Garvin, C. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational Psychology*, 91, 579-593.

Troia, G. A. (2011). How might pragmatic language skills affect the written expression of students with learning disabilities. *Topics in Language Disorders*, 31, 40-53.

Tucker, G. C. (2015). Tips to be an effective advocate for your child.
URL: understood.org.

U.S. Department of Education. (1998). *Promising practices: New ways to improve teacher quality*. Washington, DC: Author. Available online:
<http://www.ed.gov/pubs/PromPractice>

Valdois, S., Bosse, M., & Tainturier, M. (2004). The cognitive deficits responsible for developmental dyslexia: review of evidence for selective visual attentional disorder. *Dyslexia*, 10(4), 339-363.

Vukovic, R. K., & Siegel, L. S. (2006). The double-deficit hypothesis: A comprehensive analysis of the evidence. *Journal of Learning Disabilities*, 39, 25-47.

Walther-Thomas, C. S., Bryant, M., & Land, S. (1996). Planning for effective co-teaching: The key to successful inclusion. *Remedial and Special Education*, 17(4), 255-264. EJ 527 660.

Weiler, M. D., Forbes, P., Kirkwood, M., & Waber, D. (2003). The developmental course of processing speed in children with and without learning disabilities. *Journal of Child Experimental Psychology*, 85, 178-194.

Westby, C., & Watson, S. (2004). Perspectives on attention deficit hyperactivity disorder: executive functions, working memory, and language disabilities. *Seminars in Speech and Language*, 25, 241-254.

Whitaker, H.A. (2010). *Concise Encyclopedia of Brain and Language*. Elsevier Science and Academic Press: Amsterdam, Netherlands, p. 180.

Wilson, S. M., & Berne, J. (1999). Teacher learning and the acquisition of knowledge: An examination of research on contemporary professional development. *Review of Research in Education*, 24, 173-204.

Wright, S. P., Horn, S. P., & Sanders, W. L. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education*, 11, 57-67, p. 63.

Zimmerman, B. J. (1986). Becoming a self-regulated learner: Which are the key subprocesses? *Contemporary Educational Psychology*, 11, 307- 313.

APPENDIX

- A. FAQs
- B. SAMPLE GUIDELINES FOR DETERMINING STUDENT STRENGTHS AND WEAKNESSES
- C. SAMPLE SCREENING AND EVALUATION INSTRUMENTS
- D. GLOSSARY
- E. WEBSITES AND RESOURCE MATERIALS
- F. OCT. 2015 UNITED STATES DEPARTMENT OF EDUCATION OFFICE OF SPECIAL EDUCATION AND REHABILITATIVE SERVICES LETTER RE: DYSLEXIA

A. FAQ

Q. What causes dyslexia?

A. The *National Center for Learning Disabilities* reports that dyslexia is a neurological and often genetic condition www.nclld.org. Researchers have yet to pinpoint the exact causes of dyslexia, however they do know that genetic make-up and brain differences may influence a child's chances of having dyslexia. Possible causes of dyslexia may include:

Genes and heredity: Dyslexia often runs in families. If someone in the family or extended family has dyslexia, there is likelihood that your child may also have dyslexia. About 40% of siblings of children with dyslexia may have the same reading issues (Shaywitz & Shaywitz, 2001). As many as 49 percent of parents of children with dyslexia may have it too (Ibid.) Scientists have found several genes associated with reading and language processing issues (Ibid.).

Brain anatomy: The brain of a child with dyslexia is distinctly different compared to those without dyslexia. The brain of the dyslexic person may function differently because it is organized differently. Neuroimaging techniques such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) have shown a correlation between functional and structural differences in the brains of children with reading difficulties (Whitaker, 2010). Some individuals with dyslexia show less electrical activation in parts of the left hemisphere of the brain involved in reading (Pammer, 2014). Brain activation studies using PET to study language have produced a breakthrough in understanding of the neural basis of language and reading over the past decade (Price, 2012). Sharifi (2014) has claimed that fMRIs in dyslexics have provided important data supporting the interactive role of the cerebellum and cerebral cortex as well as other brain structures. The cerebellar theory of dyslexia is based on the association of dyslexia with balance, coordination, and time estimation. Research has identified impairment on both sides of the cerebellum, displaying lower blood flow in the areas in question when active (Cain, 2010).

Brain activity: To be able to read, our brains have to translate the symbols we see on the page into sounds. Then those sounds have to be combined into meaningful words. Typically the areas of our brains responsible for language skills work in a predictable way. But if your child has dyslexia, those areas don't work together in the same way. Children with reading issues end up using different areas of the brain to compensate.

As researchers zero in on what causes dyslexia, they're also learning how the brain can be neurologically changed given appropriate stimulation. This concept is known as "neuroplasticity" and studies have shown that brain activity in people with dyslexia can change upon receiving specific and appropriate stimulation through effective instruction and tutoring (Meyler, et.al., 2008).

Dyslexia is not caused by poverty; developmental delay; speech or hearing impairments; or learning a second language. However, these conditions may put a child more at risk for developing a reading disability such as dyslexia (Snow, et.al., 1998).

Q. Does my child have dyslexia?

A. An individual may have several, not just one, of the characteristics listed below. These characteristics persist over time and interfere with his or her learning. If your child is having difficulties learning to read and you have noticed several of these characteristics, he or she may need to be evaluated for the specific disability of dyslexia. The conditions include:

Difficulty with oral language

- Late in learning to talk
- Difficulty in pronouncing words
- Difficulty acquiring vocabulary or using age-appropriate grammar
- Difficulty following directions
- Confusion with before/after, right/left, above/below, etc.
- Difficulty learning the alphabet, nursery rhymes, or songs
- Difficulty understanding concepts and relationships
- Difficulty with word retrieval or naming problems

Difficulty with reading

- Difficulty learning to read
- Difficulty identifying or generating rhyming words or counting syllables in words (phonological awareness)
- Difficulty with hearing and manipulating sounds in words (phonemic awareness)
- Difficulty distinguishing different sounds in words (auditory discrimination)
- Difficulty in learning the sounds of the letters
- Difficulty remembering names and/or the order of letters when reading
- Misreading or omitting common little words
- Stumbling through or guessing at longer words
- Poor comprehension during oral and silent reading
- Slow, choppy, and/or laborious oral reading

Difficulty in handwriting

- Poor formation of letters
- Undeveloped penmanship

Difficulty with written language

- Trouble getting ideas on paper
- Many spelling errors
- Difficulty in proof reading

Q. Does dyslexia affect only areas of reading proficiency?

A. No. Dyslexia may impact many other areas of development and academic performance. The following are potential areas that may pose challenges:

Difficulty in handwriting (Dysgraphia)

- Confusion with handedness – is he or she right or left dominant?
- Poor, underdeveloped, or slow handwriting
- Messy or unorganized written work
- Difficulty copying from a written model
- Underdeveloped or poor fine motor skills

Difficulty with math (Dyscalculia)

- Difficulty counting accurately
- Number reversals or inversions
- Difficulty memorizing math facts
- Difficulty copying math problems and organizing math written work
- Calculation errors
- Difficulty retaining math vocabulary and/or concepts

Attentional issues (ADD or ADHD)

- Inattention
- Inconsistent attention based on interest level
- Distractibility
- Impulsivity
- Over-activity
- Pronounced lethargy

Difficulty with motor skills (Dyspraxia)

- Difficulty planning and coordinating body movements
- Difficulty coordinating muscles to produce speech sounds

Difficulty with organizational skills

- Tends to lose things
- Poor sense of time
- Forgets to do homework and/or return it to school
- Messy desk or locker
- Too much input is overwhelming
- Slow and/or labored work pace
- Operates by “out-of-sight, out-of-mind”

Other difficulties

- Difficulty naming things quickly (rapid naming) (i.e., colors, letters, objects, etc.)
- Exhibits memory problems
- Needs many repetitions to learn something
- Needs multiple sensory inputs to understand a concept
- Easily distracted by visual or extraneous auditory stimuli
- Decline in school performance – achievement, grades, test scores, etc.
- Inconsistent work products
- Relatives may experience similar challenges

Q. Can individuals with dyslexia ever learn to read?

A. Yes, definitely. The human being has incredible potential for resilience when faced with adverse conditions. Some aspects that affect a person's ability to learn to

read include the quality and selection of accommodations, the ability to effectively use compensatory strategies, use of assistive technologies, etc.

Q. Do boys have dyslexia more frequently than girls?

A. Dyslexia affect boys and girls in equal numbers, however boys are often more frequently identified with dyslexia than girls. Girls tend to more quietly deal with issues related to dyslexia whereas boys tend to draw greater attention from education professionals because of their more overt behaviors to learning frustration. Overt behaviors are more readily recognizable than internalized behaviors.

Q. Do children with dyslexia simply read backwards or just reverse letters?

A. No. Children with dyslexia have difficulty breaking down words. But reversing letters is not always a sign of dyslexia. Young children often reverse and/or invert letters, numbers, etc. This may be developmental rather than dyslexia. Children with dyslexia often struggle with a number of skills that may include writing, spelling, speaking, and socializing.

Q. Is it true that children with dyslexia just need to try harder?

A. This is NOT true. Children with dyslexia often have difficulty learning to read by traditional instructional methods. Studies have consistently demonstrated that children with dyslexia benefit when instruction is systematic and intensive; implicit, sequential, and multisensory (e.g., uses the senses of sight, sound, and touch in combination).

Q. Is dyslexia a sign of low intelligence or IQ?

A. No. Having dyslexia does not mean your child is not smart. Dyslexia occurs in children of all backgrounds, all socioeconomic levels, and all levels of intelligence. With appropriate instruction and support, children with dyslexia can achieve great things: College, successful careers, successful life experiences. Dyslexia does not imply low intelligence.

Q. Is dyslexia curable?

A. Dyslexia is a lifelong challenge and cannot be “cured.” Early intervention and effective classroom instruction and accommodations can have a positive impact upon a child’s ability to read and experience academic success in other areas of the curriculum.

B. Sample Guidelines for Determining Student Strengths and Weaknesses

ASSESSMENT TYPE	STRENGTH	WEAKNESS
PROGRESS MONITORING: <ul style="list-style-type: none"> BENCHMARKING CBM PROBES 	<ul style="list-style-type: none"> $\geq 20^{\text{th}}$ percentile ("Benchmark" zone) Data points at or above aim-line 	<ul style="list-style-type: none"> $\leq 10^{\text{th}}$ percentile ("Intensive" zone) Data points below aim-line for at least 4 consecutive weeks
STATE ASSESSMENT	"Meets" or "Exceeds" grade level expectations	"Does Not Meet" grade level expectations
NORM-REFERENCED TESTS	$\geq 25^{\text{th}}$ percentile	$\leq 15^{\text{th}}$ percentile
CURRICULUM ASSESSMENTS AND TESTS	Score $\geq 80\%$	Score $\leq 70\%$
GRADES	A's or B's / "Meets" or "Exceeds" grade level expectations	D's or F's / "Does Not Meet" grade-level expectations
TEACHER REPORT	Student performs at or above expectations when compared to other students in the classroom	Student performs well below expectations when compared to other students in the classroom
ACADEMIC OBSERVATIONS	Student demonstrates average to above-average understanding of academic content in comparison to other student in the classroom	Student demonstrates that he or she does not understand the majority of the academic content
BEHAVIORAL/FUNCTIONAL OBSERVATIONS	Student demonstrates typical behavioral and functional skills in comparison to other same-age-or same-grade students	Most of the student's functional and behavioral skills appear to be well-below average in comparison to other same-age or same-grade students
RATING SCALES	Scores fall within the "normative" range	Scores fall within the "clinically significant" range

C. Sample Screening and Evaluation Instruments for Consideration in Multidisciplinary Decision in Assessing Dyslexia

There is no one single test that may be used to comprehensively assess for the reading disability of **dyslexia**. Rather, a comprehensive battery of tests must be considered based upon the recommendation of the school multidisciplinary team. Tests should be selected on the basis of their measurement properties and their potential to address noted concerns. Tests that measure phonemic awareness, expressive oral and written language, receptive oral and written language, and reading skill development are important components of an effective assessment plan.

This list of measures is not exhaustive, but rather a sampling of assessments and evaluations that may be considered as multiple data sources to assist and inform decision-making in a verification of the **specific learning disability (SLD): Dyslexia**

Information gleaned through a multidisciplinary evaluation will guide the verification team's decision in the determination of whether or not the student's performance meets the set of outlined criteria enumerated in Nebraska Rule 51.

Some of these instruments (noted by *) may require specialized training in administration and interpretation of results.

Aimswest Test of Early Literacy – Identifies students at risk for reading difficulties. The four measures in the battery include: 1) Letter Naming Fluency – identified as the best single indicator of risk for reading failure, 2) Letter Sound Fluency – with equal or better predictive ability to later general reading skill, 3) Phoneme Segmentation Fluency – the ability to hear critical sounds in the spoken word, and 4) Nonsense Word Fluency – the ability to link the written code with the most common sounds.

Assessing Linguistic Behaviors Communicative Intentions Scale (ALB): Assesses the performance in cognitive-social and linguistic development (cognitive antecedents to word meaning, play, communicative intentions, language comprehension, and language production).

Clinical Evaluation of Language Fundamentals, Fifth Edition (CELF-5): Assesses language 'content and form' in both expressive and receptive language modalities and includes a subtest for assessment of pragmatics in language use.

Comprehensive Assessment of Spoken Language (CASL): Assesses language processing skills including comprehension, expression and retrieval. Fifteen subtests, in four language structure categories include 1) lexical/semantic, 2) syntactic, 3) supralinguistic, and 4) pragmatic language use. The test is orally-administered and requires a verbal or nonverbal response; no reading or writing is required.

Comprehensive Test of Phonological Processing-2 (CTOPP-2) - Phonological Awareness Composite – Subtests include elision, blending words, sound matching, phoneme isolation, blending nonwords, segmenting nonwords, digit memory, nonword repetition, rapid digit naming, rapid letter naming, rapid color naming.

DORA Phonemic Awareness Online Assessment – DORA is a thorough assessment of phonemic awareness skills. This assessment was designed to identify children who struggle with distinguishing and manipulating phonemes in words, showing proficiency in phonemic awareness tasks, or exhibit extraordinary facility with phonemes. It can be used to screen or diagnose in the areas of phonemic awareness. Specific skills tested include: addition, deletion, substitution, identification, categorization, blending, segmenting, isolation, and rhyming.

Dynamic Indicators of Basis Early Literacy Skills (DIBELS) –DIBELS is a set of procedures and measures for assessing the acquisition of early literacy skills. Seven measures comprise DIBELS and function as indicators of phonemic awareness, alphabetic principle, accuracy and fluency with connected text, reading comprehension, and vocabulary.

Dynamic Screening of Phonological Awareness (DSPA) - This screening test helps clinicians identify young children who are at risk for reading disabilities and in need of supplemental and/or diagnostic testing.

Expressive One-Word Picture Vocabulary Test, Fourth Ed. (EOWPVT-4): This picture-naming test measures a child's naming and expressive vocabulary skill. Administration is efficient and may be completed in 20 minutes.

Gates-MacGinitie Reading Test (GATES) – GATES provides a general level of student reading achievement. Four subtests include: 1) literacy concepts - student understanding of the nature and use of written English; understanding of the use of words and phrases commonly recognizable in reading readiness, 2) oral language concepts – phonological awareness; evaluates ability to attend to basic conventions of spoken words [phonemic units], 3) letter/sound correspondence, and 4) listening comprehension.

Goldman-Fristoe Test of Articulation-2 (GFTA-2) Designed to provide a systematic means of assessing an individual's articulation in single words.

Gray Oral Reading Test –5 (GORT-5) – The GORT consists of sixteen developmentally sequenced reading passages, each followed by 5 comprehension questions. It identifies students who are significantly below grade level peers in oral reading proficiency.

Gray Silent Reading Tests (GSRT) – GSRT is a quick efficient measure of silent reading comprehension. It is a new addition to the Gray reading test battery and consists of 13 developmentally sequenced reading passages with five multiple-choice questions.

Kaufman Speech Praxis Test for Children (KSPT) - A norm-referenced, standardized assessment of a child's speech production to assist in identifying and determining treatment options for children with developmental apraxia of speech.

***Kaufman Test of Educational Achievement, Second Edition (KTEA – II)** – Subtests include phonological processing (PP), letter & word recognition (LWR), nonsense word decoding (NWD), writing fluency (WF), reading comprehension (RC), written expression (WE), spelling (SP), object naming facility (ONF), reading vocabulary (RV), letter naming facility (LNF), listening comprehension (LC), word recognition fluency (WRF), oral expression (OE), decoding fluency (DF).

Khan-Lewis Phonological Analysis-2 (KLPA-2) - A norm-referenced analysis of overall phonological process usage. The percent of occurrence scores indicate how frequent the process is used by the child to simplify the speech process.

MacArthur Communicative Development Inventories-Words and Gestures (CDI): The CDI is a checklist that asks parents to identify various words and utterances their child (8-16 months) says. It includes vocabulary related to people, action words, description words, pronouns, question words, items around the home, and sentences.

Oral and Written Language Scales: Written Expression (OWLS Written Expression): Three scales provide assessment opportunity in written expression, oral expression, and listening comprehension. The written expression scale measures the use of handwriting, spelling, and punctuation. The oral expression scale measures the child's ability to answer questions and complete sentences. The listening comprehension scale measures ability to comprehend the spoken word and respond by pointing to a picture of the given word.

Peabody Developmental Scales-2 (PDMS-2) - is an early childhood motor development program providing both in-depth assessment and training or remediation of gross and fine motor skills.

Peabody Picture Vocabulary Test, Fourth Ed. (PPVT-4): This test measures a child's receptive vocabulary. The child is shown a page with four pictures on it. The examiner says the name of one of the pictures and asks the child to point to the correct picture.

Phonological Awareness Test-2 (PAT-2) – Subtests in this battery include rhyming, segmentation, isolation, deletion, substitution, blending, graphemes, and decoding.

Predictive Assessment of Reading (PAR): Subtests included in the PAR assessment are: 1) phonemic awareness, 2) fluency, and 3) single word reading and vocabulary. This

assessment allows for 3 data points over the course of one year (initial, mid-year, and final) and is used as a progress monitoring tool.

Preschool Language Scale-5 (PLS-5) - The PLS-5 is an individually administered test used to identify a language delay or disorder in children, from birth to 7 years 11 months.

Qualitative Reading Inventory, Fifth Edition (QRI-5): The QRI assesses reading ability at emergent through high school levels. Graded word lists and written passages are designed to evaluate oral reading, silent reading, and listening comprehension.

Rapid Automatic Naming and Rapid Alternating Stimulus Tests (RAN/RAS) – This RAN/RAS measures word retrieval fluency. It consists of four rapid naming tests for familiar letters, numbers, colors and objects and two rapid alternating stimulus tests.

Sutherland Phonological Awareness Test - Revised (SPAT-R) – The SPAT measures skills in the following categories: 1) sound identification, 2) blending, 3) segmenting, 4) manipulation, 5) non word reading, and 6) spelling.

The Lindamood Auditory Conceptualization Test, Third Edition (LAC-3) - is a nationally normed measure of phonemic awareness.

The Slingerland Screening Tests - are designed to screen individual or groups of students strengths and weaknesses in the areas that contribute to language acquisition: visual, auditory and kinesthetic-motor.

Test of Auditory Comprehension of Language, Third Edition (TACL-3): A picture-pointing test, the TACL assesses understanding of word classes (e.g., nouns, verbs, adjectives), grammatical morphology (e.g., prepositions, singular vs. plural nouns, verbs), and sentence structures (e.g., questions, negatives).

Test of Auditory Processing Skills-3 (TAPS-3) - The TAPS-3 measures what a person does with what is heard. It provides a way to identify particular auditory processes that the individual may be having difficulties with, allowing appropriate remediation strategies to be planned.

Test of Early Reading Ability-3 (TERA-3) - Three subtests comprises the TERA: 1) alphabet, 2) conventions, and 3) meaning. It is a screening measure that can be administered quickly.

Test of Phonemic Awareness-2 (TOPA-2) – The TOPA measures the ability to (a) isolate individual phonemes in spoken words and (b) understand the relationships between letters and phonemes in the English language.

Test of Word Reading Efficiency-2 (TOWRE-2) – This is a quick screening measure that assesses sight word vocabulary and phonetic decoding efficiency.

Test of Written Language - 4 (TOWL-4) – Two subtests comprise the TOWL: Vocabulary and Spelling.

Test of Written Spelling-5 (TWS-5) – The TWS is an accurate and efficient instrument that uses a dictated-word format to assess spelling skills in school-age children and adolescents.

***Wechsler Individual Achievement Test-III (WIAT-III)** – Subtests in the WIAT include 1) word reading (phonological awareness and decoding), 2) reading comprehension, 3) pseudo-word (phonetic decoding and word attack), 4) spelling (dictated letters, sounds, and words), 5) written expression (writing letters, words, and sentences as quickly as possible), and 6) listening comprehension.

Wide Range Achievement Test-Fourth Ed. (WRAT-4) – This instrument measures basic skills in reading, spelling, and mathematical computation. Three subtests that apply to the assessment of phonemic awareness are: 1) word reading, 2) spelling, and 3) sentence comprehension [measure of reading comprehension].

***Woodcock-Johnson Psycho-Educational Battery – III (WJPEB-III)** – Subtests of achievement in reading include:

- ~Letter-Word Identification - naming letters and reading words aloud from a list
- ~Reading Fluency - speed of reading sentences
- ~Passage Comprehension - orally supplying the missing word removed from each sentence or very brief paragraph
- ~Word Attack - reading nonsense words aloud to test phonetic word attack skills
- ~Reading Vocabulary - orally stating synonyms and antonyms for printed words and orally completing written analogies

The following subtest covers the area of phonemic awareness as outlined in NCLB and Reading First:

- ~Sound Awareness - rhyming, deletion, substitution, and reversing of spoken sounds

Woodcock Reading Mastery Test-III (WRMT – III) – The WRMT is thorough in its scope for in-depth assessment of reading skills. It includes subtests specifically designed to assess 1) phonological awareness (first sound matching, last sound matching, rhyme production, blending, deletion); 2) listening comprehension; 3) letter identification; 4) word identification; 5) rapid automatic naming (object & color naming, number & letter naming); 6) oral reading fluency; 7) word attack; 8) word comprehension (antonyms, synonyms, analogies); and 9) passage comprehension.

D. Glossary

accommodations: Changes made in materials, actions, or instructional strategies that enable a student with disabilities to participate more meaningfully in grade-level or course-level classroom instruction. Accommodations occur in instructional activities when educators incorporate individualized strategies to meet the learning needs of the student.

ADHD: Attention Deficit Hyperactivity Disorder. ADHD is a medical condition that impacts learning through chronic and serious inattentiveness; hyperactivity and/or impulsivity; and excessive motor behaviors that impede learning.

alphabetic principle: The understanding that the sequence of letters in written words represents the sequence of sound (e.g., phonemes) in spoken words.

automaticity: The ability to do things without intense concentration. Automaticity is the result of learning, repetition, and practice that allows an individual to perform tasks rapidly and effortlessly without attention (e.g., as an “automatic” process). Examples of automaticity in common activity include walking and speaking. In reading, automaticity is the rapid, effortless word recognition that comes from reading practice. In the early stages of learning to read, students may be accurate but slow and inefficient at recognizing words. Continued reading practice helps word recognition become automatic, rapid, and effortless.

coarticulated: Coarticulation is the way the brain organizes sequences of vowels and consonants to interweaving the individual movements necessary for each into one smooth whole. It takes about a fifth of a second to produce a syllable, or about a fifteenth or twentieth of a second for each consonant or vowel. Now it turns out it takes a little longer than that to move the lips, tongue and jaw for each vowel and consonant. So what is happening?

- The brain coordinates these individual movements in a very ingenious way, such that movements needed for adjacent vowels and consonants are produced simultaneously.
- This result is very smooth speech.

dyslexia: See Section 2, page 5 of this document - “Definition of Dyslexia.”

encoding: Encoding is a process of translating spoken language into written symbols – spelling. Encoding is attempting to write letters to represent sound in words. Spelling conventions and patterns should be taught as they are needed to spell words that the student is learning to decode.

evidence-based practices: Educators agree that evidence-based practices, at a minimum, must be based on the following criteria:

1. objective—any evaluator would identify and interpret the research data in a similarly
2. valid—data that adequately represent the tasks that children need to accomplish to be successful readers
3. reliable—data remains essentially unchanged if collected on a different day or by a different person
4. systematic—data were collected according to a rigorous research design of experimentation or observation
5. refereed—data have been approved for publication by a panel of independent reviewers

fluency: In the reading process, fluency is the ability to read text accurately, quickly, and with appropriate expression and prosody (e.g., rhythm, intonation, and phrasing). Fluency provides the bridge between word recognition and reading comprehension. It involves accurate anticipation of what will come next in the reading of text.

formative assessments: Formative assessment is a process used by teachers and students during instruction that provides explicit feedback to adjust ongoing teaching and learning to improve student achievement of intended instructional outcomes. Formative assessment is a method of continually evaluating student academic needs and development within the classroom and precedes local benchmark assessments and state-mandated summative assessments.

Teachers who engage in formative assessments give continual, explicit feedback to students and assist them in answering the following questions:

Where am I going?

Where am I now?

How can I close the gap between the two?

heterogeneous: A term used to describe the diversity of nearly anything — populations, classrooms, children, individuals, collections, etc. An example of the concept of heterogeneous is a classroom made up of a multitude of students from varying backgrounds, varying levels of ability, different ethnicities, etc.

implementation fidelity: The degree to which the program is implemented as intended by program developer, including the quality of implementation. Includes implementation with consistency, accuracy, and integrity. The concept of fidelity is important because it:

1. Ensures that instruction has been implemented as intended,
2. Helps link student outcomes to instruction,
3. Helps in the determination of intervention effectiveness, and
4. Helps in instructional decision making

metacognition: A higher-order processing skill that enables understanding, analysis and control of one's own learning and thinking. It is often referred to as the ability to "think about one's thinking."

morpheme: The smallest element of meaningful speech or writing (i.e., base words, prefixes, suffixes, etc.). For example, “unladylike” has 3 morphemes (and 4 syllables). The morpheme breaks are “un” which means “not,” and “lady” which means “female adult human,” and “like” which means “having characteristics of.” The word, “technique,” has 1 morpheme (and 2 syllables). The morpheme is “technique” which cannot be further broken down into meaningful units of language.

morphology: The study of the structure of words in a language, including patterns of inflections and derivation. Just as sentences can be broken down into smaller units of meaning (e.g., words), words can be broken down into smaller units of meaning (e.g., morphemes). For example, “amoral” has 2 morphemes: “a” means “not” and “moral” relates to the state of character.

multisensory instruction: Teaching with instructional activities that require the student to use multiple sensory pathways (i.e., seeing, hearing, touching, etc.) to enhance retention and retrieval of information.

phoneme: The smallest parts of sound in a spoken word that make a difference in a word's meaning. The English language has about 44 phonemes. When phonemes are combined, they make words. For example, the word bat has 3 phonemes: /b/, /a/, /t/.

phonemic awareness: Phonemic awareness is the ability to hear, identify, and manipulate individual sounds (*phonemes*) in spoken words. Before children learn to read print, they need to be aware of how the sounds in words work. They must understand that words are made up of speech sounds, or *phonemes* (the smallest parts of sound in a spoken word that make a difference in a word's meaning).

phonics: A method for teaching reading and writing by developing the learner's phonemic awareness—the ability to hear, identify, and manipulate phonemes—in order to teach the correspondence between these sounds and the spelling patterns (graphemes) that represent them. The goal of phonics instruction is to enable beginning readers to decode new written words by sounding them out, or in phonics terms, *blending* the sound-spelling patterns.

phonological awareness: The sensitivity to, or explicit understanding of, the sound structure of spoken words and the ability to hear sounds that make up words in the spoken language. This includes recognizing words that rhyme, determining whether words begin or end with the same sound(s), understanding that sounds can be manipulated to create new words, and separating words into their individual sounds.

phonology: The study of the systematic organization of sounds in languages and the rules that specify how sounds interact with each other. Phonology is described as an aspect that deals with rules for the structure and sequencing of speech sounds. Every

language has a wide variety of speech sounds (e.g., phonemes). For example, in English, the *ng* sound, as in *ring*, will never appear at the beginning of a word. Phonology rules also determine which sounds may be combined. For example, the combination of *dn* will not appear in sequence in the same syllable.

pragmatics: The knowledge and skills that enable a reader to decipher different intents or meaning from the context. Use of context clues that surround an unfamiliar word is a form of pragmatics. It is also the ability to understand another speaker's intended meaning. The meaning of spoken words depends on an understanding of the context and intent. For example, the sentence "You have the green light" has multiple meanings. Without knowing the context, the identity of the speaker, or the intent, it is difficult to infer absolute meaning of the sentence. It could mean:

You are holding a green light....or

You have a green light while driving your car....or

You can move forward with the project.

prosodic features: The defining feature of expressive reading, prosody comprises all the variables of expression: timing; phrasing; rhythm; emphasis; intonation; pause structures; stress; voice patterns that rise and fall; and general expressiveness that help convey aspects of meaning. Prosodic features are one of the hallmarks of fluent reading.

phonological memory: The ability to code and retrieve bits of information in working short-term memory. Phonological memory deficits can constrain the ability to learn new written or spoken words or vocabulary.

rapid automatic naming (RAN): The ability to efficiently retrieve phonological information (individual sounds in words, pronunciations of common word parts, pronunciation of whole words) from long-term memory. Strength in RAN is predictive of efficient reading rate and fluency. RAN is highly correlated with success in reading.

semantics: The study of relationships between words and how meaning is constructed at the word, phrase, sentence and text level. For example, "crash" can mean auto accident, a drop in the Stock Market, to attend a party without being invited, ocean waves hitting the shore, or the sound of cymbals being struck together.

syntax: The basic structure of sentences. Sentences must follow certain structural rules in order to make sense. The arrangement of words and phrases to create well-formed sentences is called syntax. A very simple grammatical rule is that every sentence must have a noun and a verb.

working memory: The ability to hold in mind and mentally manipulate bits of information over short periods of time. Often thought of as a mental workspace that used to store information. It may involve new or already stored information and is important for learning, reasoning, and comprehension. An example that uses working

memory is a mental math problem: 37×9 . To do this effectively, one must hold the digits in working memory while applying processes of multiplication and adding (regrouping). Working memory must hold many bits of information within the mind all at one time to efficiently problem-solve.

E. Websites and Resource Materials

Websites

asha.org - American Speech-Language-Hearing Association (ASHA) features a multitude of information on topics related to language and dyslexia.

bestevidence.org - The Best Evidence site was created by Johns Hopkins University School of Education's Center for Data-Driven Reform in Education (CDDRE) under funding from the Institute of Education Sciences, U.S. Department of Education. It includes reliable reviews of research-proven educational programs to help policy makers use evidence to make informed choices; school administrators to elect programs and practices that meet high quality standards; teachers to use the most powerful teaching tools available; and researchers to find rigorous evaluations of educational practices and programs.

channing-bete.com - This website includes a very informative handbook designed for parents of a child with dyslexia. It's titled: "A Parent's Handbook: Helping Your Child with Dyslexia."

dyslexiafoundation.org - The Dyslexia Foundation promotes identification of children with dyslexia and notes efforts to assist children to establish higher levels of learning through specialized programs that promote effective reading practices.)

dyslexia.yale.edu - The Yale Center for Dyslexia and Creativity serves as a nexus for research on dyslexia, and is well a leading source of advocacy and information to better the lives of individuals with dyslexia.

eida.org - The International Dyslexia Association (IDA) provides Dyslexia Basics, Research, Education, Programs, FAQs, Advocacy, etc. A broad array of links are included to further deeper study in dyslexia.

getreadytoread.org - This website targets childcare workers and provides information about the "constellation of care" that encourages early literacy in childcare centers. Skill-building activities, information on programs and resources, research information, and FAQs on developing early literacy skills are included in this website.

ida-umb.org - An extension of the international website (IDA), this website is specific to the upper Midwest branch (UMB) of the International Dyslexia Association and is further referred to as UMBIDA. UMBIDA is a nonprofit organization that supports individuals with dyslexia and related, language-based learning disorders. It includes good information for teachers and parents and is one of 46 IDA branches worldwide. UMBIDA has been serving the areas of Minnesota, North Dakota, South Dakota and Manitoba, Canada for nearly 45 years.

ies.ed.gov/ncee/wwc/topics.aspx - The What Works Clearinghouse is sponsored by the Institute of Education Sciences (IES) and provides a review of a wide range of programs, products, practices, and policies for effective interventions in educational practice.

ldaamerica.org - Learning Disabilities Association (LDA) of America provides cutting edge information, practical solutions, and a comprehensive network of resources to support individuals with learning disabilities, their families, teachers, and other professionals.

learningally.org - Learning Ally is a relatively new website that includes the older version of "Recordings for the Blind and Dyslexic" (rfd.org). Learning Ally provides resources to help students overcome learning challenges. Educational solutions from audiobooks to support services are included for blind, visually impaired, and dyslexic students from kindergarten through college and beyond. Tools are included to help students develop the skills needed to become confident and effective learners at every stage of life.

nationalreadingpanel.org - This website contains the meta-analyses of the studies conducted in 2000 by the federally appointed National Reading Panel. Links include research outcomes in the areas of phonemic awareness, phonics, and fluency.

ncl.org - National Center for Learning Disabilities. The mission of NCLD is to improve the lives of children and adults with learning and attention issues.

nebraskadyslexia.org - The Nebraska Dyslexia Association [NDA] promotes the study, prevention, and treatment of dyslexia. The NDA works to enhance the public's perception and understanding of dyslexia and related language/learning abilities. It is a comprehensive website that includes links for educators and parents.

nichd.nih.gov - The National Institute of Child Health and Human Development (NICHD) contains a great deal of research on dyslexia.

nifl.gov - The National Institute for Literacy (NIFL) is an independent federal organization that supports the development of high-quality services on literacy development. NIFL administers the Partnership for Reading and related programs.

promisingpractices.net. The Promising Practices Network highlights programs and practices that research indicates are effective in improving school outcomes for children, youth, and families.

smartkidswithld.org . Smart Kids provides information specific to dyslexia [i.e., addressing reading issues; assistance for older children with reading problems; assessment and evaluation for dyslexia; etc.]

understood.org (Understood is a comprehensive, free non-profit resource to help parents of children with learning issues. It provides clear and concise information and practical advice that positively supports and assists children who exhibit significant learning differences.)

webmd.com (WebMD is a comprehensive website that includes information on a multitude of aspects of dyslexia [i.e., overview, causes, symptoms, risks, parent resources, related information, etc.]

Resource Materials

Fielding, R. (2012). *DYSLEXIA - Assessment, the Symptoms and Understanding Dyslexia*.

Graham, Y. & Graham, A. (2012). *Dyslexia Tool Kit for Tutors and Parents: What to do when phonics isn't enough*.

Marshall, A. (2013). *The Everything Parent's Guide to Children with Dyslexia: Learn the Key Signs of Dyslexia and Find the Best Treatment*.

Moats, L. & Dakin, K.E. (2007). *Basic Facts About Dyslexia & Other Reading Problems*.

Nicolson, R. & Fawcett, A. (2010). *Dyslexia, Learning, and the Brain*.

Shaywitz, S. (2005). *Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at Any Level*.

Siegel, L. (2013). *Understanding Dyslexia and Other Learning Disabilities*.

F. Oct. 2015 Letter: United States Department of Education Office of Special Education and Rehabilitative Services RE: Dyslexia



UNITED STATES DEPARTMENT OF EDUCATION
OFFICE OF SPECIAL EDUCATION AND REHABILITATIVE SERVICES

THE ASSISTANT SECRETARY

OCT 23 2015

Dear Colleague:

Ensuring a high-quality education for children with specific learning disabilities is a critical responsibility for all of us. I write today to focus particularly on the unique educational needs of children with dyslexia, dyscalculia, and dysgraphia, which are conditions that could qualify a child as a child with a specific learning disability under the Individuals with Disabilities Education Act (IDEA). The Office of Special Education and Rehabilitation Services (OSERS) has received communications from stakeholders, including parents, advocacy groups, and national disability organizations, who believe that State and local educational agencies (SEAs and LEAs) are reluctant to reference or use dyslexia, dyscalculia, and dysgraphia in evaluations, eligibility determinations, or in developing the individualized education program (IEP) under the IDEA. The purpose of this letter is 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.

Under the IDEA and its implementing regulations “specific learning disability” is defined, in part, as “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest 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.” See 20 U.S.C. §1401(30) and 34 CFR §300.8(c)(10) (emphasis added). While our implementing regulations contain a list of conditions under the definition “specific learning disability,” which includes dyslexia, the list is not exhaustive. However, regardless of whether a child has dyslexia or any other condition explicitly included in this definition of “specific learning disability,” or has a condition such as dyscalculia or dysgraphia not listed expressly in the definition, the LEA must conduct an evaluation in accordance with 34 CFR §§300.304-300.311 to determine whether that child meets the criteria for specific learning disability or any of the other disabilities listed in 34 CFR §300.8, which implements IDEA’s definition of “child with a disability.”

For those students who may need additional academic and behavioral supports to succeed in a general education environment, schools may choose to implement a multi-tiered system of supports (MTSS), such as response to intervention (RTI) or positive behavioral interventions and supports (PBIS). MTSS is a schoolwide approach that addresses the needs of all students, including struggling learners and students with disabilities, and integrates assessment and intervention within a multi-level instructional and behavioral system to maximize student achievement and reduce problem behaviors.

MTSS, which includes scientific, research-based interventions, also may be used to identify children suspected of having a specific learning disability. With a multi-tiered instructional

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The Department of Education's mission is to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access.

framework, schools identify students at risk for poor learning outcomes, including those who may have dyslexia, dyscalculia, or dysgraphia; monitor their progress; provide evidence-based interventions; and adjust the intensity and nature of those interventions depending on a student's responsiveness. 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 (34 CFR §300.309(c)(1)); and those children who simply need intense short-term interventions may continue to receive those interventions. OSERS reminds SEAs and LEAs about previous guidance regarding the use of MTSS, including RTI, and timely evaluations,¹ specifically that a parent may request an initial evaluation at any time to determine if a child is a child with a disability under IDEA (34 CFR §300.301(b)), and the use of MTSS, such as RTI, may not be used to delay or deny a full and individual evaluation under 34 CFR §§300.304-300.311 of a child suspected of having a disability.

In determining whether a child has a disability under the IDEA, including a specific learning disability, and is eligible to receive special education and related services because of that disability, the LEA must conduct a comprehensive evaluation under §300.304, which requires the use of a variety of assessment tools and strategies to gather relevant functional, developmental, and academic information about the child. This information, which includes information provided by the parent, may assist in determining: 1) whether the child is a child with a disability; and 2) the content of the child's IEP to enable the child to be involved in, and make progress in, the general education curriculum. 34 CFR §300.304(b)(1). Therefore, information about the child's learning difficulties, including the presenting difficulties related to reading, mathematics, or writing, is important in determining the nature and extent of the child's disability and educational needs. In addition, other criteria are applicable in determining whether a child has a specific learning disability. For example, the team determining eligibility considers whether the child is not achieving adequately for the child's age or to meet State-approved grade-level standards when provided with learning experiences and instruction appropriate for the child's age or the relevant State standards in areas related to reading, mathematics, and written expression. The team also must determine that the child's underachievement is not due to lack of appropriate instruction in reading or mathematics. 34 CFR §300.309(a)(1) and (b). Section 300.311 contains requirements for specific documentation of the child's eligibility determination as a child with a specific learning disability, and includes documentation of the information described above. Therefore, 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, dyscalculia, or dysgraphia) in documenting how that condition relates to the child's eligibility determination. 34 CFR §§300.306(a)(1), (c)(1) and 300.308.

¹ See OSEP Memo 11-07 (January 21, 2011) available at: www.ed.gov/policy/speced/guid/idea/memosdcltrs/osep11-07rtimemo.pdf Under 34 CFR §300.307(a)(2)-(3), as part of their criteria for determining whether a child has a specific learning disability, States must permit the use of a process based on the child's response to scientific, research-based intervention, and may permit the use of other alternative research-based procedures in making this determination.

Stakeholders also requested that SEAs and LEAs have policies in place that allow for the use of the terms dyslexia, dyscalculia, and dysgraphia on a child's IEP, if a child's comprehensive evaluation supports use of these terms. There is nothing in the IDEA or our implementing regulations that prohibits the inclusion of the condition that is the basis for the child's disability determination in the child's IEP. In addition, the IEP must address the child's needs resulting from the child's disability to enable the child to advance appropriately towards attaining his or her annual IEP goals and to enable the child to be involved in, and make progress in, the general education curriculum. 34 CFR §§300.320(a)(1), (2), and (4). Therefore, if a child's dyslexia, dyscalculia, or dysgraphia is the condition that forms the basis for the determination that a child has a specific learning disability, OSERS believes that there could be situations where an IEP Team could determine that personnel responsible for IEP implementation would need to know about the condition underlying the child's disability (e.g., that a child has a weakness in decoding skills as a result of the child's dyslexia). Under 34 CFR §300.323(d), a child's IEP must be accessible to the regular education teacher and any other school personnel responsible for its implementation, and these personnel must be informed of their specific responsibilities related to implementing the IEP and the specific accommodations, modifications, and supports that must be provided for the child in accordance with the IEP. Therefore, OSERS reiterates that there is nothing in the IDEA or our implementing regulations that would prohibit IEP Teams from referencing or using dyslexia, dyscalculia, or dysgraphia in a child's IEP.

Stakeholders requested that OSERS provide SEAs and LEAs with a comprehensive guide to commonly used accommodations² in the classroom for students with specific learning disabilities, including dyslexia, dyscalculia, and dysgraphia. The IDEA does not dictate the services or accommodations to be provided to individual children based solely on the disability category in which the child has been classified, or the specific condition underlying the child's disability classification. The Office of Special Education Programs (OSEP) funds a large network of technical assistance centers that develop materials and resources to support States, school districts, schools, and teachers to improve the provision of services to children with disabilities, including materials on the use of accommodations. The U.S. Department of Education does not mandate the use of, or endorse the content of, these products, services, materials, and/or resources; however, States and LEAs may wish to seek assistance from entities such as the National Center on Intensive Intervention at: <http://www.intensiveintervention.org>, the Center for Parent Information and Resources available at: <http://www.parentcenterhub.org>, and the National Center on Accessible Educational Materials available at: <http://aem.cast.org/>. For a complete list of OSEP-funded technical assistance centers please see: <http://ccrs.osepideasthatwork.org/>.

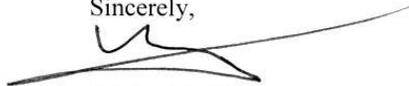
In implementing the IDEA requirements discussed above, OSERS encourages SEAs and LEAs to consider situations where it would be appropriate to use the terms dyslexia, dyscalculia, or dysgraphia to describe and address the child's unique, identified needs through evaluation, eligibility, and IEP documents. OSERS further encourages States to review their policies,

² Although the IDEA uses the term "accommodations" primarily in the assessment context, OSERS understands the request to refer to the various components of a free appropriate public education, including special education, related services, supplementary aids and services, and program modifications or supports for school personnel, as well as accommodations for students taking assessments.

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. Finally, in ensuring the provision of free appropriate public education, OSERS encourages SEAs 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.

I hope this clarification is helpful to both parents and practitioners in ensuring a high-quality education for children with specific learning disabilities, including children with dyslexia, dyscalculia, and dysgraphia. If you have additional questions or comments, please email them to sld@ed.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael K. Yudin", with a long horizontal line extending to the right.

Michael K. Yudin

**For additional information, please contact the
Office of Special Education
402-471-2147**