Washington State

Dyslexia Resource Guide

The
International
DYSLEXIA
Association

Promoting literacy through research, education, and advocacy.

Washington State Branch
Serving
Washington
Idaho
Western Montana

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Washington State
Dyslexia Resource Guide

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INTRODUCTION

As professionals, educators, families or caregivers working and living with students with specific learning disabilities like dyslexia, we mutually strive to understand the specific needs of our students. We also recognize the gifts and talents that may be unrealized when learning disabilities are not identified or remediated. The Washington Branch of the International Dyslexia Association (WABIDA) is proud to collaborate with the Washington State Office of the Superintendent of Public Instruction (OSPI) in the development of the Dyslexia Resource Guide.

The purpose of the Dyslexia Resource Guide is designed to provide guidance to schools and families in the realm of Dyslexia. With three goals in mind the intent is: 1) Build an understanding of the term dyslexia. 2) Learn how to identify students with Dyslexia. 3) Support teachers and parents in educating students with dyslexia. In addition, it will provide guidance for administrators, educators and caregivers in making the best educational decisions for Washington students with dyslexia.

> "I want to lift the barrier of ignorance surrounding dyslexia and replace it with the wonderful comfort of knowledge. I want to empower each and every (educator and) parent to know, first, what is best for your (student or) child and, second, what you can do to ensure that he or she becomes a reader."
>
> *Sally Shaywitz, M.D.*
> *Overcoming Dyslexia*

One in five students, 15-20% of the population, has a learning disability.[1] Of the students with specific learning disabilities receiving special education services, 70-80% have deficits in reading. Dyslexia is the most common cause of reading, writing and spelling difficulties.[2]

Many Washington teachers are not surprised by this statistic because they see the real world ramifications of it in their classrooms every day. Students continue to struggle to read, despite conventional or intensified instruction. Some students struggle during early reading acquisition. Others do not struggle until the later grades when they face more complex language demands. Some may be non-English speakers who struggle to read in their native language and/or English Language Learners (ELL) who struggle to read despite having appropriately developed oral English language. Many of these struggling readers face challenges because of dyslexia.

The Washington State Dyslexia Resource Guide addresses these questions:
- What exactly is dyslexia?
- How is a student identified as having dyslexia?
- What can we expect when a student has been identified as having dyslexia?
- How can teachers provide effective literacy instruction for students with learning differences?
- What laws support students with dyslexia

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[1] National Center for Learning Disabilities
[2] International Dyslexia Association

Purpose of
The Washington State Dyslexia Resource Guide

This resource guide provides recommended procedures for educators, families or caregivers concerning dyslexia in collaboration with Washington State Branch of the International Dyslexia Association (WABIDA) and the Office of Superintendent of Public instruction (OSPI). This initiative generated a comprehensive guide for districts, schools and educators to streamline procedures, codify ideas, and define terms concerning dyslexia. It may also be helpful to all seeking to understand dyslexia and to learn about the school system's approach to providing services to students with dyslexia.

As an informational guide about Dyslexia, it offers is a starting point and additional resources for administrators and teachers when they suspect a student may have difficulties with listening, speaking, reading and/or writing. The guide will help clarify language related to assessment and identification of these students. It provides guidelines for school districts to follow as they identify and provide services. It also provides school districts and parents with information regarding state statutes pertaining to dyslexia and how they relate to federal laws such as Section 504 of the Rehabilitation Act of 1973[3] (Section 504), and the Individuals with Disabilities Education Act (IDEA, 2006).[4]

As a complementing resource to this guide, additional dyslexia related projects are ongoing. In 2011, literacy representatives from nine Washington State Educational Service Districts (ESD's), in collaboration with OSPI and WABIDA, developed the Washington State Dyslexia Training Module in 2011. This module is an educator development program incorporating research based and multi-sensory intervention to build approaches meant to enhance the reading, writing, and spelling skills of students with dyslexia.

Since, Washington is a local control state; school districts have considerable autonomy in making decisions about which diagnostic tools and instructional programs to use. Choices though, may vary amongst school districts. OSPI does not endorse specific diagnostic tools or instructional programs and, as a result, the resource guide does not provide recommendations in these cases.   The Dyslexia Training Module, however, provides additional detailed information regarding instructional methods in alignment with the International Dyslexia Association and latest scientific based reading research (SBBR). Please consult this document's resource section, where you will find links to a variety of options.

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[3] Section 504
[4] IDEA

What is Dyslexia?

The term **dyslexia** is used to describe an "unexpected" difficulty with reading or writing. The word *dyslexia* is of Greek origin, with *dys* meaning "trouble with", and *lexia* meaning "words". Therefore, dyslexia means "trouble with words".[5] Difficulty in reading and writing is unexpected because these students are usually of average to superior intelligence. They are often thought of as bright, creative, imaginative, verbal, and otherwise capable of learning. However, these students experience difficulties in learning to read, spell, and express their thoughts in writing. They may also experience difficulties in sequencing, remembering what they have read, listening, following directions, and organizing their thoughts or expressing them clearly. These students may be perceived as lazy or unmotivated and often function significantly below their potential. Their difficulties cannot be explained by visual or hearing impairments, emotional/behavioral disorders, or lack of conventional instruction.

Throughout history, there have been many different definitions of dyslexia, causing confusion for families or caregivers, students and professionals alike. This inconsistency and confusion has resulted in avoidance of the term dyslexia in favor of terms such as "reading disability" or "learning disability". OSPI uses the definition adopted by the National Institutes of Health and the International Dyslexia Association (IDA):

> **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.[6]

Within the Washington state's public school system in the State of Washington, students with dyslexia qualify for special education services within the category of Specific Learning Disability (SLD) as defined by the Individuals with Disabilities Education Act (IDEA)[7] and the Washington Administrative Code (WAC). SLD as outlined in WAC 392-172A-03055 may include "conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia".[8] SLD is simply the category under which a student may qualify for specially designed instruction. Dyslexia is one type of SLD. For a list of tests appropriate for use in determining SLD eligibility, please see the OSPI publication: "Identification of Students with Specific Learning Disabilities". (OSPI, March 2011)

The exact causes of dyslexia are still not completely clear, but anatomical and brain imagery studies show differences in the way the brain of a person with dyslexia

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[5] Vail, P. 1990; Berninger & Wolf, 2009

[6] IDA (International Dyslexia Association)

[7] IDEA

[8] WAC 392-172A-03055

develops and functions. Moreover, most people with dyslexia have been found to have problems with identifying the separate speech sounds within a word and/or learning how letters represent those sounds, a key factor in their reading difficulties. Dyslexia is not due to either lack of intelligence or desire to learn; with appropriate teaching methods, people with dyslexia can learn successfully. It is a neurobiological and genetic disorder. Individuals inherit the genetic links for dyslexia. Chances are that one of the child's parents, grandparents, aunts, or uncles has dyslexia[9].

Dyslexia is the most common cause of reading, writing, and spelling difficulties.[10] Studies indicate that 15-20% of the population has a language-based learning disability. Of the students with specific learning disabilities receiving special education services, 70-80% have deficits in reading. Dyslexia affects males and females nearly equally, and people from different ethnic and socio-economic backgrounds as well. English Language Learners can also be identified as dyslexic.

Common Indicators

Each individual with dyslexia exhibits a unique set of characteristics that defines his learning skills. No two students are the same. However, there are a number of common indicators of dyslexia that may manifest themselves from a mild to severe degree. These indicators fall into several categories of skills including oral language, reading, spelling, writing, organization, and math. Familiarity with these indicators of difficulty in various categories may help educators and parents understand a student's behaviors. Students with dyslexia may have difficulty with:

Oral language: Students with dyslexia may have a history of delayed language or speech development. They may demonstrate poor articulation skills, trouble retrieving words in connected speech, or problems expressing their ideas clearly. Students with dyslexia may also exhibit poor listening skills and challenges following oral direction. Students with oral language difficulties will have trouble following multistep directions in the classroom, sequencing stories, and/or sharing a personal experience with adequate detail for the listener to understand. Expressive language may be characterized by false starts and increased use of filler and indefinite words such as "um", "you know", or "like".

Phonemic awareness: Phonemic awareness is the ability to recognize that words are composed of individual sounds put together in a sequence. Difficulties in phonemic awareness skills such as rhyme, perception and sequence of sounds in words, segmenting (breaking words into sounds), and blending (combining sounds to make a whole word) are early indicators of later reading difficulty. Examples include:
- "How many sounds do you hear in the word 'cat'?"
- "Say 'baseball' without 'base'."

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[9] Dyslexia FAQs
[10] National Center for Learning Disabilities Cortiella, C. 2011 pp.7-10.

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- "Say 'clamp' without '/k/'."
- "Change the first sound in 'mat' to /s/."

Detecting and generating rhyme, a crucial phonemic awareness skill, and understanding of the "alphabetic principle" (letters represent phonemes or sounds) are key components to later reading and spelling success.[11]

Decoding: Difficulty automatically associating letters to their corresponding sounds and difficulty sequencing letters or sounds in words, may indicate reading problems. When decoding, students may show confusion between letters or words that look similar ("horse" for "house"). A student will often misread or omit small words in a sentence or passage, delete or change syllables of words ("ducuz" for "because", "bargage" for "garbage"). Slow, laborious reading may lead to poor recall of what was read and inability to make inferences from the passage.

Spelling: Students with dyslexia almost always have difficulty with spelling. They may omit speech sounds (e.g., "afr" for "after"), write the wrong letters for sounds used (e.g., "tpe" for "trip"), and demonstrate poor recall for familiar, small, frequently used words (e.g. w*as, as, when, where, come, been, what, does, said*). Non-phonetic words (e.g. *could*, *does*, *sure*) and homonyms (e.g. *their*, *they're*, *there*) pose a persistent challenge for these students.

Writing: Many students with dyslexia can be highly verbal with a large vocabulary; however, this may not be evident in their written work. Often these students have good ideas, but are not able to express them coherently in their writing due to poor handwriting, awkward pencil grip, poor letter formation, difficulty spacing letters, and/or letter reversals. The student's writing does not reflect advanced oral language expression.

Mathematics: Problems in math may be manifested in difficulty learning math vocabulary and/or concepts, limited ability to memorize math facts or formulas, difficulty discriminating between similar sounding numbers (such as 13 as 30, 15 as 50), and difficulty copying problems or keeping numbers aligned. Students with dyslexia may be slower to learn to tell time or to sequence days of the week, months of the year, and seasons. Frequent calculation errors may also be observed. Additionally, interpretation of language in word problems can present challenges.

Organization of time, materials and space: In addition to weaknesses in reading, writing, and spelling, students with dyslexia may exhibit weak organizational skills such as difficulty remembering homework assignments, disorganized work space, poor time management skills, and a slow laborious work process (these students see the final product, but can't get started). The student may become overwhelmed with too much information. Students with dyslexia often confuse spatial directions and have difficulty learning left and right. They usually require repeated teaching in order to fully grasp concepts. They often demonstrate inconsistent performance in school, work, and other tasks.

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[11] Moats, L & Dakin, K. 2008, p. 9-24.

Social and emotional development: Consistent and persistent struggles in school can lead to significant concerns in a student's social and emotional development. These students have often experienced repeated failure in the classroom while watching their peers develop skills more quickly and easily. Students with dyslexia may misunderstand messages from others because they are unable to interpret the meaning of non-verbal messages. Language processing difficulties and poor understanding of figurative expressions may lead to very literal interpretations of the message. These students may misinterpret humor, figurative language, or innuendo.

There are a number of indicators that profile a student with dyslexia, but it is also important to identify their strengths. Dr. Sally Shaywitz at Yale University's Center for Study of Learning and Attention calls dyslexia an "encapsulated weakness surrounded by a sea of strengths".[12] Dyslexic students are often described as creative, innovative thinkers with general knowledge, vocabulary, and reasoning skills in the average to above average range. Many of these students think outside the box, come up with novel solutions to problems, and are hands-on learners.

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[12] Shaywitz, S, 2003. p. 58

Dyslexia Through the Life Cycle

Dyslexia is a persistent disorder. It is a chronic condition that affects an individual throughout his life. Although poor readers may continue to progress in reading development, the gap between good readers and poor readers remains over time without intervention. The common indicators discussed above may be observed at various points in a student's growth and development.

As early as preschool, signs of possible dyslexia can be observed. Delayed language development, poor articulation, difficulty pronouncing multisyllabic words, lack of interest in books, and weak listening skills can be associated with later reading difficulties.[13]

As the demands of school increase in the elementary years, a student may develop some skills, but difficulties persist with reading, writing, and spelling. The student may struggle with decoding or sounding out words, recognizing common and important words in reading, and spelling--often leaving out sounds from words. These students may read word by word with limited expression. Written language, an enormously demanding task for any learner, is that much more difficult for a student with dyslexia. These students often have very creative ideas and can share them verbally; however, when faced with the task of writing their thoughts on paper many of these students become overwhelmed. If these students get effective phonological training in Kindergarten and 1st grade, they will have significantly fewer problems in learning to read at grade level than do students who are not identified or helped until 3rd grade.[14]

In the intermediate grades a student makes the transition from learning-to-read to reading-to-learn. Difficulties in reading printed words accurately and fluently will significantly impact a student's ability to access the classroom curriculum and increase general knowledge. These challenges continue in middle school and high school as students not only need the core language, reading, and writing skills, but also must learn note-taking skills, notebook organization, schedule compliance, and time management skills for studying independently, and completing work on-time. All this is done in addition to developing coping strategies for dealing with a slow reading rate.[15]

In rare instances, a person may not be identified as having dyslexia until college or professional school.[16] These individuals may require accommodations in order to succeed in higher education. Adults with dyslexia often go to great lengths to hide their reading difficulty. They may be poor spellers or unable to write. These individuals are usually competent in oral language and have very good people skills. They can be intuitive, may have an excellent memory, and are often spatially talented. Adults with dyslexia can pursue any profession. People with dyslexia are engineers, architects, designers, artists, mathematicians, physicists, physicians, and dentists. Examples of individuals with dyslexia who have succeeded in their chosen field include:

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[13] Moats, L & Dakin, K. 2008. p. 9-24
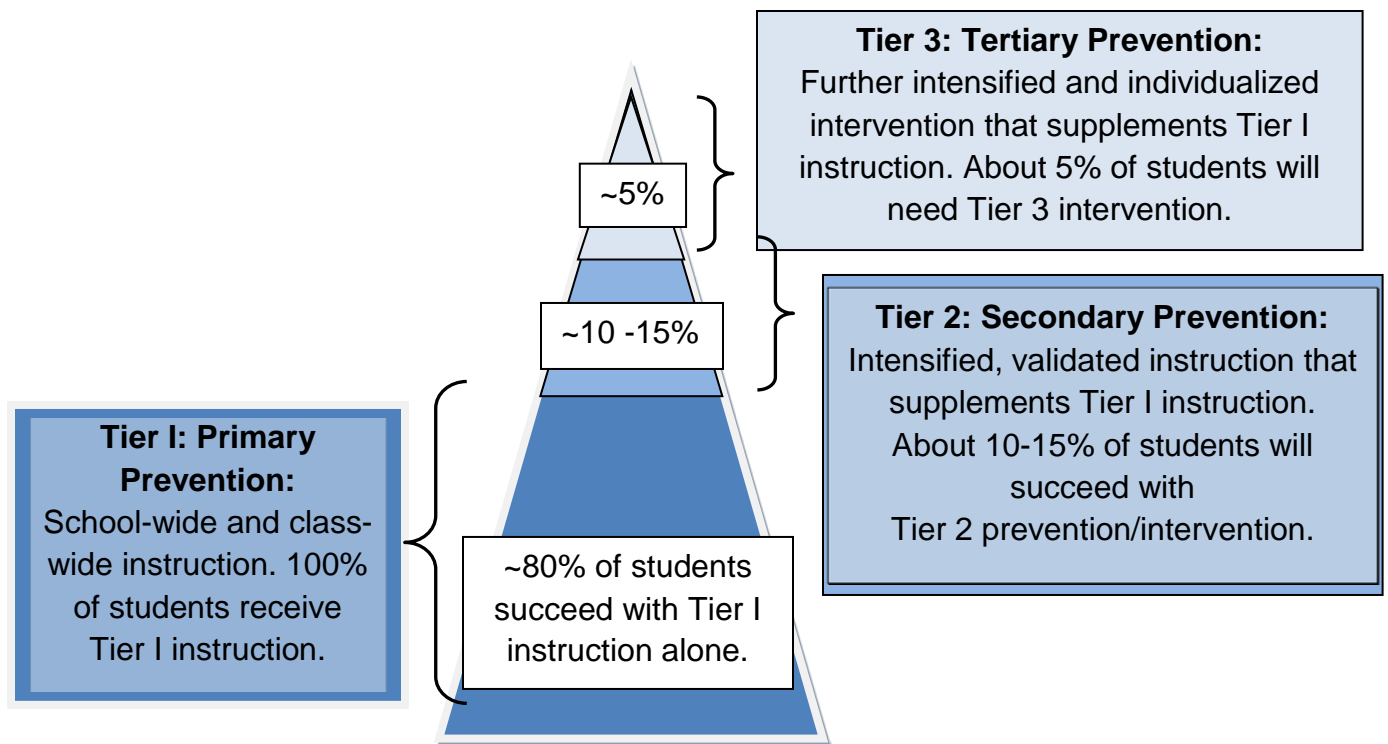[14] Ibid.
[15] Ibid.
[16] Ibid.

Erin Brokovich - Real-life heroine who exposed a cover-up by a California utility
Danny Glover **-** Award-winning actor
Whoopi Goldberg - Actor and comedian
Tommy Hilfiger - Fashion designer
Craig McCaw - Founder of McCaw Cellular
Nolan Ryan **-** Baseball Hall-of-Fame pitcher
Charles Schwab - Founder and Chairman of Charles Schwab & Co
Henry Winkler **-** Actor, producer and director[17]

Although there is no "cure" for dyslexia, individuals can succeed in school and as working adults with proper diagnosis, appropriate instruction, hard work, and support from family members, teachers, friends, and others. It is never too late to learn to read, process, and express information more efficiently.

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[17] IDA Fact Sheets on Dyslexia and Related Language Based Learning Differences

Response to Intervention,[18] or RtI, is a tiered instructional approach that is intended to improve learning outcomes for all students, including those with disabilities. It integrates assessment and intervention within a school-wide, multi-level prevention system to maximize student achievement and reduce behavior problems. With RtI, schools identify students at risk for poor learning outcomes, monitor progress, provide evidence-based interventions, and adjust the intensity and nature of those interventions based on a student's responsiveness. RtI may be used as part of the determination process for identifying students with specific learning disabilities such as dyslexia. For an in depth discussion of RtI please see the National Center on Response to Intervention (NCRTI)[19]

Tier 3: Tertiary Prevention:
Further intensified and individualized intervention that supplements Tier I instruction. About 5% of students will need Tier 3 intervention.

~5%

~10 -15%

Tier 2: Secondary Prevention:
Intensified, validated instruction that supplements Tier I instruction. About 10-15% of students will succeed with
Tier 2 prevention/intervention.

Tier I: Primary Prevention:
School-wide and class-wide instruction. 100% of students receive Tier I instruction.

~80% of students succeed with Tier I instruction alone.

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[18] Washington State OSPI RtI
[19] National Center on Response to Intervention (NCRTI) 2010

RtI was developed as part of the reauthorization of IDEA in 2006 to place focus on early identification of and early intervention for students with learning disabilities. The intent of RtI is to improve outcomes for *all* students. Immediate support to students who are at risk for poor learning outcomes is provided as early as Kindergarten.

RtI may be used for special education eligibility for students with specific learning disabilities or Section 504 support (in accordance with federal and state laws).[20] In Washington State, school districts may choose to use either RtI or a "discrepancy" model[21] to determine eligibility for specially designed instruction.

Levels of Instruction

Within a functioning RtI system, all students receive high quality reading instruction through a school-wide multilevel prevention system, as follows:
- Primary prevention level (Tier 1) core instruction
  - All students receive Tier 1 instruction.
  - Screening data are used to evaluate the effectiveness of the core instructional program, and to identify students who may require additional assessment and/or intervention.
- Secondary prevention level (Tier 2)*
  - Supplemental instruction for students not making adequate progress in Tier 1 alone.
  - Progress monitoring is used to determine response to instruction.
- Tertiary prevention level (Tier 3)*
  - Individualized instruction is provided for students who do not respond adequately to Tier 1 and Tier 2 instruction.
  - Progress monitoring is used to determine response.
  - Student *may* qualify for special education.

Multiple rounds of intervention may be needed for some students.

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[20] See State and Federal Law section (make a link here)

[21] The "discrepancy" model is a method used to identify a learning disability through a combination of cognitive (intellectual) and academic (achievement) testing. The model compares the results of the tests to identify a 'severe discrepancy' between cognitive ability and academic achievement. Each state establishes its own formula for determining when a 'discrepancy' can be considered 'severe'.

<u>Using RtI to Assess Student Progress</u>

RtI uses assessment and data driven instructional decisions for moving students within the multilevel system or identifying disabilities in accordance with state law. An effective RtI system includes scientifically-based, rigorous, systematic, and objective procedures to increase reliable outcomes.
The four types of assessment within RtI are:

- **Universal Screening.** Conducted for all students. Identify students at risk for academic failure.

- **Progress Monitoring**. Conducted for students identified as at risk for poor educational outcomes. Document student growth over time.

- **Diagnostic Assessment.** In the context of RtI, *diagnostic assessment* refers to specific tests, procedures or instruments (diagnostic tools) selected to measure areas of concern. In this context, diagnostic testing does not lead to a *diagnosis* (the identification of a disorder); rather it identifies areas to be addressed through differentiated instruction and targeted intervention.

- **Summative Assessment.** Following instruction and/or intervention, student performance is measured relative to national grade level peers.

Early identification and appropriate instructional planning are critical to student outcomes.   At least 70% of students who do not learn to read by age 9 will struggle to catch up to their typically developing peers.[22]

There is no single test that can prove or disprove dyslexia; and the disorder can vary from mild to moderate to severe to profound. Testing "is the only way to quantify how far below her potential the child is working." [23]   Assessment is a procedure for collecting data, and is an ongoing process.

> "The best solution to the problem of reading failure is to allocate resources for early identification and prevention."
> *J. K. Torgeson, 2000*

Data are collected through a variety of methods using RtI. The use of screening and progress monitoring data helps the teacher develop and monitor an instructional program and quantify whether adequate progress is being made. For students who are not making adequate progress, a comprehensive assessment may be used to determine whether a student would benefit from special education services. RtI is not intended to diagnose dyslexia; rather, it may be used for special education eligibility under the SLD category.

As stated earlier, a functioning RtI System consists of 4 main areas:

1.   Universal Screening

Universal screening data are used to identify students at risk for poor learning outcomes or academic failure. All students should participate in screening assessments conducted three times per year. Screening data may also help educators evaluate the effectiveness of their instructional program, and may be used to identify students who are at risk for poor learning outcomes. The student's data at benchmark testing periods can be used to validate the effectiveness of intervention.

A **screening assessment** is generally a short, informal test that may assist a parent or educator in determining if a problem exists. It can be used to either determine whether further testing is warranted, or determine whether an individual is likely to be helped by a specific program. A screening can take the form of a checklist that can help focus an assessment or identify specific characteristics. Screening tools must be reliable, valid, and accurate in classifying students as at-risk or not at-risk. Although a screening

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[22] Shaywitz, S. 2003, p. 42
[23] Hal, S.I & Moats, L. 1999, p. 294

assessment does not lead to a formal diagnosis, it can be a useful tool in determining whether formal testing is warranted.

In general, screening instruments, such as academic screening tests, contain a small sample of items from a specific subject (e.g., reading, math or spelling) that assess skills that have been shown to be good barometers of the overall health of a skill. Because the number of items is small, it does not take a lot of time to do this kind of screening. The results, however, are inconclusive: they do not diagnose the learner's academic strengths and weaknesses in each skill area, but only give a rough estimate of the learner's overall skill levels. Screening instruments, including those for learning disabilities, have most or all of the following characteristics. They are:

- helpful in determining the need for future testing,
- inexpensive,
- quick to administer, score, and interpret,
- appropriate for large numbers of persons, and may sometime be administered in group settings,
- narrow in focus,
- able to provide a superficial assessment of several areas, such as language, motor, or social skills, and
- usable without extensive training of staff.

2.   Progress Monitoring

Educators use progress monitoring to document student growth over time to determine if the students are learning critical skills at an adequate rate. Curriculum Based Measurements (CBMs) are primarily used as a method for progress monitoring because they are brief, easy to administer and score, and are good predictors of student ability.

Progress monitoring data provide a picture of the student's performance and rate of growth to guide instructional and curricular changes so that every student reaches proficiency on targeted skills.

Progress monitoring may also be used to assess a student's academic performance, to quantify the rate of improvement or responsiveness to instruction, and to evaluate the effectiveness of the instruction.

According to the National Research Center on Learning Disabilities (NRCLD) progress monitoring should do the following:

- Assess the specific skills embodied in state and local academic standards;
- Assess marker variables that have been demonstrated to lead to the ultimate instructional target;
- Be sensitive to small increments of growth over time;
- Be administered efficiently over short periods;
- Be administered repeatedly (using multiple forms), so that scores over time may be compared;
- Result in data that can be summarized in teacher-friendly data displays;
- Be comparable across students;
- Be applicable for monitoring an individual student's progress over time;
- Inform development of instructional strategies and use of appropriate curriculum that addresses the area of need. [24]

As related to successful identification of Dyslexia, educators are recommended to monitor the following:

Academic Skills	Definition
Word Reading (real and nonsense)	The ability to read phonetically regular and irregular words
Letter-Sound Associations	The knowledge of letters and their corresponding sounds
Reading Comprehension	The ability to understand what one reads
Reading Fluency	The ability to read passages quickly, accurately, and with proper expression
Spelling	The ability to spell phonetically regular and irregular words
Handwriting/Written Expression	The ability to organize and form letters, words and numbers on paper

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[24] National Research Center on Learning Disabilities (NRCLD)

3.   Diagnostic Assessment

In the context of RtI, *diagnostic assessment* refers to specific tests, procedures or instruments (diagnostic tools) selected to measure areas of concern. In this context, diagnostic testing does not lead to a *diagnosis* (the identification of a disorder); rather it identifies skill and/or developmental areas to be addressed through differentiated instruction. Diagnostic assessments may occur at all levels of instruction under RtI.

The following defined cognitive processes may be evaluated in a diagnostic assessment.

Cognitive Processes	Definition
General Verbal Ability	The overall ability to comprehend and use words
Phonological Awareness	The ability to perceive and "play with" sounds within words
Phonological Memory	The ability to store auditory information, especially phonological in nature
Rapid Automatic Naming	The ability to retrieve linguistic information from long-term memory quickly and efficiently
Receptive/Expressive Orthographic Coding	The ability to recognize and retrieve from memory letters and letter sequences
Graphomotor Functions	The ability to physically form letters, words, and numbers

Interpretation

In relation to the listed above, students with dyslexia typically display the following profile:

- The student has **good general verbal ability**.
- The student is **underachieving** in the areas of word reading (especially nonsense word reading), spelling, and/or reading fluency. Dyslexia may also hinder development of reading comprehension, written expression, and math skills.
- The student demonstrates **cognitive processing weaknesses** related to phonological processing (awareness and/or memory). In addition, individuals with dyslexia may also demonstrate weaknesses related to orthographic coding and rapid naming.

- **Atypical error patterns** are present in the student's academic products. For instance, a student with phonological processing weaknesses may make a sound-based spelling error (e.g., *firt* instead of *third*), whereas a student with orthographic coding weaknesses may make errors related to the retrieval of specific letters and letter sequences from memory (e.g., *foolr* instead of *floor*).

  Should results signal a concern in any of these areas, it is suggested a careful and thorough review of the student's developmental and educational histories should be completed. A **differential diagnosis** is also encouraged. A differential diagnosis refers to ruling out other possible reasons for the student's challenges, as well as considering other co-occurring factors such as dysgraphia and Attention Deficit Hyperactivity Disorder (ADHD).

4. Summative Assessment

Following instruction and/or intervention, teachers measure student performance relative to national grade level peers, using tests such as the Washington's State-led assessment Measure of Student Progress (MSP), High School Proficiency Exam (HSPE), norm-referenced tests, and/or other criterion referenced measures. These tests are assessments of learning outcomes. They aim to summarize progress and may be used to identify any weaknesses. Summative assessments are cumulative in nature and are used to determine whether a student has met goals or learning outcomes at the end of a program.

Comprehensive Special Education Assessments: Beyond RtI

Schools using a discrepancy model rather than RtI to identify learning disabilities can use further comprehensive assessments to define a student's learning profile.

A comprehensive special education assessment, administered by a school psychologist, will provide specific information about the extent of the reading difficulties. This information may be used to determine appropriate instructional approaches, to provide recommendations for educational planning, and to assist with the determination of eligibility for either special education services or a Section 504 Accommodation Plan at school. A student with dyslexia may qualify for special education services as a student with a Specific Learning Disability in the area of reading, but a formal diagnosis of dyslexia will not be provided at the school level.

The diagnosis of dyslexia reflects a reading difficulty that is unexpected for a student's intelligence and exposure to teaching strategies. It is a clinical diagnosis generally given by a Learning Disabilities Specialist, Clinical Psychologist, Neuropsychologist, or Educational Psychologist based on a thorough examination of a number of factors including family history, observations of a student's reading and speaking, and tests of reading and language. A diagnostic assessment process should be comprehensive and tailored so that it reflects the nature of the problems of the student. In general, a formal assessment should include the following:

- a case history including medical, academic, developmental, behavioral, family and instructional/classroom information;
- determination of overall cognitive abilities including verbal and nonverbal skills;
- educational tests for basic skills in reading, writing, spelling, written language, and often math, including:
  - vocabulary and syntax, phonological sound and symbol matching,
  - single real and nonsense word decoding,
  - oral and silent reading comprehension,
  - fluency in oral and silent reading,
  - spelling and handwriting, and
  - written language;
- examination of specific cognitive processes including phonological awareness, phonological memory, orthographic coding, and rapid naming; and
- clinical observations.

Post-Assessment Considerations for Students with Dyslexia

After an educational assessment is interpreted, educators and families gain insight into how a student's learning challenges can impede her ability to achieve in a classroom setting. Students with documented learning disabilities are entitled to appropriate accommodations under the Individuals with Disabilities Education Act (IDEA), Public Law 94-192, and Section 504 of the Rehabilitation Act.[25] This enables students to more adequately process information, demonstrate their understanding, and be measured on what they know. [26]

Each academic year, students with documented accommodation plans are reviewed by Section 504 coordinator or the special education team, and the parents or guardians. Annual accommodation plans are communicated to the student's teachers by school specialists who may include the school psychologist, counselor, special education department, and a speech-language pathologist. As they progress, students are encouraged to become self-advocates for their learning and explain to their teachers and school specialists how adjustments help them achieve. Recommended accommodations provide individualized classroom support and improve academic outcomes.

As students progress through the grades, there are a number of accommodations using assistive technology that can be made, such as the use of software programs that read text out loud, help students with outlining materials, or create graphic organizers that can support secondary students. In addition, students applying to college may submit accommodations on the SAT and the ACT exams, to the College Board for consideration. Extended time limits, a reader, and access to a keyboard are examples of modifications provided during the administration of these college entrance examinations.

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[25] See State and Federal Laws section

[26] Washington State SLD Guide

Teaching students with dyslexia requires careful consideration of factors which influence the student's ability to learn to read. Teachers will be most effective when they understand the three components:

1. Principles of instruction of students with dyslexia;
2. Essential components of reading; and
3. Additional elements of literacy including oral language, spelling and writing, and handwriting.

1.   Principles of Instruction

Teachers who provide instruction to students with dyslexia and related disabilities should be trained on instructional approaches that are explicit, systematic, sequential, and cumulative. Instruction must address the phonology, morphology, orthography, syntax, semantics, and pragmatics of language.

Students with dyslexia learn best when presented with instruction that is:
- Simultaneous and Multisensory
- Systematic and Cumulative
- Direct
- Synthetic and Analytic

Teacher should be adept at utilizing prescriptive and individualized teaching instructional practices. Daily plans should be based on careful and continuous formal and informal assessments of class and individual needs. At the student level, content should be mastered to a level of automatic function so students can perform the skill with relatively little attention and effort. This requires teacher awareness of student performance and regular review.

Simultaneous and Multisensory

Multisensory integration happens at every level of human activity—at work, in play, in sports, and in school. Humans process all types of information using all of our senses.

Multisensory teaching links listening (ear), speaking (voice), reading (eye), and writing (hand) to reinforce learning of language structure. It is the **simultaneous** and **alternative** involvement of visual (seeing text or pictures), auditory (hearing lecture, discussion, or technology), and kinesthetic/tactile (feeling and moving) sensory modalities. It supports the connection of oral language with visual language symbols. When all three sensory pathways are used at the same time, the material is presented in a simultaneous, multisensory way with the strong channels reinforcing the weak. A

reader with dyslexia "can develop awareness of the sound structure of a word by physically forming the word with his lips, tongue and vocal chords."[27]

Multisensory integration more completely and explicitly registers linguistic information (phonological and other) in the learner's working memory by joining new learning to previously established skills. Its power may come from the mediating effect of various sensory and motor experiences on attention and recall. Multisensory experiences with linguistic units may activate more circuitry than uni-sensory (or one) experiences do, during language learning by establishing new neural networks through repeated activation.

Intentional and structured language strategies that access multiple learning styles may activate sensory motor pathways through involvement of fingertips, hand, arm, whole body, and/or vocal speech during reading instruction. As a result they may establish and access necessary circuits for word recognition more easily.

Systematic and Cumulative

Multisensory language instruction follows the logical order of language. It begins with the easiest, most basic elements of language and progresses to more difficult material. Each step builds on those already learned. Concepts are reviewed systematically to strengthen memory.

Struggling learners benefit when the structure of spoken and written language, beginning with phonemes, is represented for them **explicitly**, **sequentially**, **directly** and **systematically** in the context of a comprehensive reading program. "It is easier to integrate multiple sources of information during learning when the material is physically integrated, auditorily and visually, than when information is presented to each modality separately."[28] Orton Gillingham based programs combine multisensory teaching of handwriting, spelling, decoding, and reading.

Direct Classroom Instruction

In direct instruction the teacher does not assume that the student will learn any concept through inference alone. The teacher explains what is being taught and guides learning through practice to independence. The direct teaching of all concepts requires continuous student-teacher interaction in a shared and cooperative experience.

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[27] Shaywitz, S., 2003, p. 81
[28] Mousavi, S., Low, R. & Sweller, J. 1995

<u>Synthetic and Analytic</u>

Synthetic instruction presents each concept/skill in isolation (such as teaching individual sounds) and then teaches how the parts work together to form a whole (combining those sounds and letters to spell words).

Analytic instruction begins with the whole and teaches how it can be broken down into component parts as when the student decodes a word, moving from a word unit to sound units.

Research by Foorman (1997, p. 63) showed that students who received research validated, multi-sensory synthetic phonics approach outperformed students receiving a sight word or a combination synthetic-analytic approach.[29]

2.   Essential Components of Reading

According to Reid Lyon of the National Institute for Child Health and Human Development (NICHHD), "Reading skill serves as the major foundational skill for all school-based learning. When children do not learn to read, their general knowledge, their spelling and writing abilities and their vocabulary development suffer in kind." [30]

But what is reading? It has nothing to do with looking. Rather, it depends on the ability to perceive and discriminate symbols and associate them with speech sounds and the structure of language. Reading is the ability to extract meaning from print.

The National Reading Panel (200) has identified five major areas important to reading that need to be taught:[31]
- Phonemic awareness;
- Phonics and the "alphabetic principle";
- Fluency;
- Vocabulary instruction; and
- Comprehension strategies.

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[29] Foorman, B, et. al. 1997 p. 63-71,

[30] Lyon, R., 1998.

[31] National Reading Panel, 2000

Phonemic Awareness

Phonemic awareness is an awareness of the sounds that make up spoken words and the ability to manipulate sounds within words.[32] These skills are among those most directly related to reading and writing.[33]

> *Activities to help develop Phonemic Awareness:*
> - **Rhyming Tasks**- student is taught that rhyming words are words that have the same ending, like ran, fan, and man.
> - **Categorization of Phonemes**- student must choose the word that does not belong from three or four spoken words.
> - **Identification of Phonemes**- student recognizes the same sound in three or four different spoken words.
> - **Phoneme Blending**- student hears a sequence of individual sounds and combines them to give the word.
> - **Word and Phrase Segmentation**- student is taught that compound words and phrases have distinct parts.
> - **Phoneme Deletion**- student recognizes words when a phoneme has been removed.
> - **Phoneme Addition**- student is able to form a new word by adding a phoneme to an existing word.
> - **Phoneme Substitution**- student can substitute one phoneme for another to form a new word.

When students are introduced to new sounds, they should practice substituting beginning, ending and medial sounds, for example, *dig-rig-big-bit-bat-but*. As students become more experienced, they may organize words by initial consonants or by vowels. This provides practice in manipulating and sorting letters and sounds.

Phonics and the "Alphabetic Principle"

Phonics is a method that stresses letter-sound relationships in reading and spelling. It provides tools for decoding unfamiliar words. Automatic letter recognition is the key to automatic word recognition.[34] This provides a tool that helps students decode words rather than rely solely on memorization of words.

Understanding of the alphabetic principle emerges with the student's realization that spoken words are made up of sounds that can be represented in print.[35] Further experiences with print and writing move the student to the stage of complete phonetic representation.

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[32] Henry, M. 2003, p. 288
[33] Scarborough, H. 1998 p. 91
[34] Adams, M. 1990, p 105
[35] Carreker, S. as cited in in Birsh, 2005, p259

Daily practice is the key to success. Students may still be familiarizing themselves with the names of letters, even into third and fourth grades.[36]

The sound sequences, letter patterns, and morphemes depend to a large extent on word origin—whether a word is of Anglo-Saxon, Latinate, French, or Greek origin, for example.[37] Words connected by meaning are also connected by spelling. For example, the silent *g* in the word *sign* is articulated in the words *signal* and *signature*. Morphology often preserves the spelling of the meaningful parts of words, though pronunciation may vary, as in *define* and *definition* or *doubt* and *dubious.*

Hands on Strategies:

Activities to increase letter and sound knowledge
- Write letters in sand, salt, or rice while naming letter. Naming letters strengthens memory recall through simultaneous multisensory association of the name of the letter with the feel of its formation.
- Trace over large letter patterns with fingers again while naming letter.
- Play alphabet games, such as matching upper to lower case letters.
- Identify beginning letters or ending letters from a list of words or from picture cards.
- Identify sounds and letters in words. For instance, ask "What letter makes the first sound in /car/ or last letter in /hat/?"
- Search for words with the same beginning letter or same vowel sound in magazines and newspapers.
- Place pictures or words in categories; explain why they fit in a particular category such as beginning sound, ending sound).
- Point out words on road signs, labels and posters in order to build print awareness and vocabulary.

Fluency

A fluent reader makes the words sound natural and more like speaking. Reading is well phrased, paced, and read with ease. Students without fluency may read slowly, haltingly, and at a spasmodic pace. They make decoding or word-calling errors. Phrasing is poor, with poor intonation and inflection. There is a direct relationship between fluency and comprehension. "Fluency allows readers to attend to the meaning of the text rather than the mechanics of decoding." [38] It is the single best indicator of overall reading skill and is commonly used for screening and progress monitoring.

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[36] Neuhaus, G. 2002

[37] Henry, M. 2003

[38] Samuels, S. 1979, Adams, M. 1990

Fluent reading requires three key elements – ***accurate*** reading of connected text at a conversational ***rate,*** with appropriate ***prosody*** or expression.[39]

Accuracy is the ability to recognize or decode words correctly. It requires a strong understanding of the alphabetic principal, the ability to blend sounds together, knowledge of a large bank of high-frequency words and their multiple meanings, and the ability to link decoding with context.

Reading **rate** links both word-level automaticity and the speed and fluidity with which a reader moves through connected text.[40] It is usually measured in terms of speed – either the number of words read correctly per minute or the length of time it takes for a reader to complete a passage. It is an important measure of reading proficiency to understand what is read and a tool for monitoring progress.

Prosody is a linguistic term to describe the rhythmic and tonal aspects of speech -- the "music" of oral language. It includes:
- intonation and modulation,
- variations in pitch,
- rise and fall of the voice,
- stress patterns,
- duration,
- the break or pause, phrasing, in a line, or sentence,
- the arrangement of spoken words alternating stressed and unstressed elements, and;
- use of punctuation to signal something, such as question, surprise, or exclamation.

Prosody and reading comprehension have a reciprocal relationship. Prosody provides evidence that the reader understands what is being read.[41]

Students with good prosody read almost every word, skipping only a few words like *and*, *the*, or *of;* read every letter in every word; perceive letters in chunks, not individually; and recognize high frequency letter combinations just like they recognize high frequency words. They perceive letters almost instantly; and break words into syllables with little conscious analysis.

Fluent readers have adequate speed, appropriate phrasing, and intonation. Reading mirrors their oral speech. Fluency is evident when students read books at their independent reading level. They will read accurately and quickly, and if they make mistakes that interrupt meaning they will correct the mistakes.

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[39] Hudson, R., Mercer, C. & Lane, H. 2000
[40] Ehri, L & McCormick, S. 1998; Kuhn, M. & Stahl, S. 2000
[41] Kuhn, M & Stahl, S. 2000

Hands-on Strategies:

Instruction for Fluency

Provide the following as part of each lesson:

- Multiple readings of connected text. The most successful fluency intervention, **repeated reading**, is effective because it provides the kind of repeated exposure to words that leads to either the formation of new orthographic images, or increases the efficiency of access to images already formed.[1]
- Daily opportunities to listen to stories read with good inflection and prosody.
- Practice naming letters, letter groups, decodable and non-decodable words. This is especially necessary for beginning readers.
- Instruction in decoding and word identification.
- Materials at each student's independent reading level (no more than a 5% to 10% error rate). Avoid the frustration of reading material that is too difficult. When students can read connected text, they should reread materials from their reading lessons or familiar books from independent reading.

The goal is to make reading functions become automatic so that cognitive energy is available for higher order thinking and comprehension.

Read Aloud

Reading aloud to students is one of the most effective ways to build reading skills. There are numerous benefits of reading aloud to students. They will:

- be exposed to new vocabulary;
- expand their world experiences by learning about new places and circumstances;
- hear and begin to understand the difference between words that are spoken and words that are read;
- learn that print has meaning;
- hear how letters and sounds work together (needed when sounding out words);
- have an opportunity for conversation about the story or topic, and build stronger oral language and thinking skills; and
- foster a love of books.

Reading with and to students helps them to see themselves as readers. Reading aloud will focus attention on repeated exposure to vocabulary, will help create better listeners, strengthen auditory recall, and improve following directions.[1] Choose a variety of books for reading aloud, including chapter books and topics that interest the student. Note that student's listening comprehension is at a higher level than their actual reading level.

Reading aloud can be beneficial to students of all ages. The remediating effect of oral reading is not limited to elementary ages and should be incorporated into classroom instructional practices in middle and high school as well. Please see The *Dyslexia Friendly Classroom* section of this resource guide for suggestions of techniques for reading aloud.

<u>Vocabulary</u>

There is a high correlation between vocabulary knowledge and comprehension of written text.[42] It allows the reader to have a thorough understanding of complicated text.[43]

Vocabulary knowledge is crucial for:
- comprehension of auditory information and written text, including multiple meanings, synonyms, antonyms, and application of word in context,
- generation of written language,
- overall understanding of global information,
- effective verbal expression, and
- academic success.

Hands-on Strategies:

Activities to Develop Vocabulary

Successful instruction of vocabulary includes:
- a small number of words taught intensively,
- exposure to the words in many contexts, focusing on the meaning of word parts, such as prefixes, suffixes, and roots;
- direct, systematic, and continuous instruction and practice.

Principles of effective vocabulary instruction include:
- providing definitional and contextual information about a word,
- generating information that ties the new word to already known information,
- providing multiple exposures, and
- involving simultaneous association of Auditory-Visual-Kinesthetic modalities.

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[42] Anderson & Freebody, 1981
[43] Beck et al, 1991

<u>Reading Comprehension</u>

Reading comprehension involves making meaning of printed words efficiently; good readers expend less brain activity.[44] Intensive intervention that targets specific reading skills rectifies activity in the brain. Intervention returns the brain activity of those with dyslexia to that more like the brain activity of those without dyslexia. To comprehend text well, readers must have:
- enough time to process the text,
- ability to connect the written word with the sounds of spoken language, and;
- meaningful context with retrievable words.

Teaching these processes draws on multiple units or levels of language. These include:
- phonology—speech sounds (phonemes),
- syntax—phrase and sentence structure,
- semantics—phrase and sentence meaning,
- discourse structure—organization of connected sentences, and
- pragmatics—use of language for communication acts.

Strategies In Both Oral And Silent Reading fluency section instructional approaches
Until students are reading without effort, each reading lesson should consist of teacher-directed, explicit, and systematic instruction in:
- phonological awareness,
- applying phonics (alphabetic principle) and morphology to decoding,
- applying background knowledge already learned to unfamiliar words or concepts in material to be read (activating prior knowledge),
- both oral reading and silent reading, with appropriate instructional materials,
- activities to develop oral reading fluency, and
- questioning and discussion to clarify reading comprehension.

The goal of this instruction is also to develop independent readers who can apply what they learn to reading on their own.

The ability for students to remember what they have heard is also an essential skill for reading. A simple two or three step direction requires a conscious effort to retain multiple instructions. Listening and following directions helps increase the ability to recall and remember verbal information. Successful listening comprehension helps to increase reading comprehension.

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[44] Shaywitz, 2003

Additional Elements of Literacy

Oral Language Development

Oral language development is the natural basis for all instruction for all students, especially those with dyslexia. In reading, the visual symbols must be translated into phonetic structures, then into the acoustic structures before traveling to the level of comprehension. A good foundation in speaking and listening improves reading performance.[45]

In language growth, each newly learned skill builds upon previous skills put to functional use as the student gains understanding. Students must learn to understand and use their language when reading, speaking or writing. Oral language development is crucial to literacy development and is a very complex patterning that requires complete sensory integration.

Preschoolers with oral language problems may continue to have language learning problems through the school years. They may be evident in first grade or later as they struggle with reading comprehension.[46]

Oral language is a preparation for written language. "Systematic oral-aural teaching of sentence structures enhances children's ability to comprehend and compose sentences."[47] Oral language is essential in learning to read and write and is particularly relevant to development of reading comprehension skills.

It is easy to develop oral language in the classroom:
- It requires little or no preparation.
- It can be implemented throughout the day.
- It can serve as a formal lesson or as a sponge activity.

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[45] Healy, J., 1999
[46] Catts, et al 1999, 2005; Bishop, D. & Adams, C. 1990
[47] Haynes, C & Jennings, T. 2006

Hands-on Activities:

Activities to Develop Oral Language

Some Suggestions:
- Encourage questions, and give answers, modeling the skill of answering.

- Teach about communication, how we share information through speaking, listening and watching.

- Help students to maintain eye contact.

- Cue attention by using consistent cues such as, "It's time to listen."

- Read to the class. This builds attention span, vocabulary, rhythm and phrasing and inflection of the language.
- Use complete sentences and expect the student to do so as well. This develops expressive language, organization of thoughts for oral expression, and encourages use of linguistic structures. These are skills needed for written expression and reading comprehension.

- Provide daily practice in responding to questions in a variety of ways to develop vocabulary and word retrieval skills.

- Develop orally the concept that a topic sentence, body and conclusion are needed for a paragraph.

- Encourage and provide practice in critical listening and thinking skills by asking both concrete and inferential questions.
  - o   Help students respond to various kinds of questions:
  - o   "What do you like to read?"
  - o   Have students describe thoughts, as in "I'm thinking of …."
  - o   Teach students to sequence through exercises such as "Tell me three things you did last week in the correct order."
  - o   Have students explain procedures, as in explain "Explain how to make a sandwich."

- Practice following directions to reinforce auditory perception and recall. Develop the skill by asking students to perform a series of tasks. Begin with one or two step directions. Kindergarten students are usually able to recall and follow three step directions.

- Build vocabulary in both oral and written work.

- Teach parts of speech orally. "The parts of speech provide the building blocks for teaching students how to write sentences…. Knowledge of the parts of speech plays a valuable role in reading."

Spelling and Written Language

Spelling is a complex process for students with dyslexia. It is not simply rote memorization that relies totally on visual recall. Writing words is related to sound sequences, letter patterns, and morphemes (base words and affixes). It requires knowledge and use of phonology (speech sounds), morphology (meaning units), and orthography (patterns and rules). Spelling involves knowledge about the sounds of the language; the most frequent and reliable letter patterns, and rules of English orthography, morphology, and word origins.[48]

Influences on Spelling Beyond Phonics

Many factors govern spelling. They include:
- The alphabetic principle and the following six syllable types[49]:

  - Closed syllables,
  - open syllables (vowel at the end of a syllable),
  - vowel consonant e syllables,
  - vowel digraph,
  - consonant –le, and
  - r controlled.

- Vowel sounds and spellings are often governed by their placement in the word

- Some general rules for syllabication are:

  - If the syllable is closed (consonant–vowel–consonant), the vowel sound will be short.
  - Vowels at the end of accented syllables are usually long, as in *baby, secret, tiger, pony,* and *music.*
  - Vowels at the end of an unaccented syllable may have a schwa (reduced vowel sound) as in *away or afraid.*
  - Consonant digraphs and trigraphs—*ck, dge, tch*—occur immediately after a short vowel.
  - The letters *f, l, s,* and *z* are doubled at the end of a one syllable short vowel word.

- Word origin: Many words in reading texts and students' written productions in the first three grades are one or two-syllable high-frequency words of Anglo-Saxon origin. Many of the words in textbooks and students' written production in the upper grades, however, are of Latinate origin and tend to have three to five syllables and unaccented schwas, or are of Greek origin with some different spelling-to-sound correspondences and morpheme patterns than words of Anglo-Saxon origin.[50]

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[48] Brady & Moats, 1997

[49] Moats, 2000

[50] Balmuth, 2009; Henry, 2003

After learning how to spell base words, students should practice adding prefixes and suffixes. Prefixes give shades of meaning to words and suffixes indicate tense, number (singular or plural), and part of speech. This understanding contributes to both vocabulary and reading skills. Students who understand word parts express themselves with greater precision and facility.

Multisensory Approach to Spelling Instruction

The various multisensory teaching methods use slightly different approaches to spelling instruction. Each method should teach students the common orthographic patterns of English (phonograms) as well as use of affixes and spelling rules.

When encoding, students should be encouraged to:
- repeat the word,
- listen to the sounds in sequence,
- think of each vowel sound in the word and associate it with the letter or letters that spell it,
- repeat the word, and
- recall the sounds of the words in sequence, and then spell the whole word.

Repeating the word helps students hear sounds in sequence and feel the speech production in sequence. Listening for the vowel sounds allows students to address difficult and ambiguous parts of the word first.

Independent Written Composition

Students are ready for written expression of ideas when they can write letters and spell words. Success at all levels requires instruction and guided practice that develop thought patterns and effective written language. Well-planned, structured, sequential, and systematic lessons are necessary for developing writing skills. Such lessons include:
- teaching and practicing for automatic, fluent handwriting;
- exercises to develop perception and discrimination of the letter or letters that spell sounds;
- practice in spelling regular and ambiguously spelled words;
- formation of complex words by adding prefixes and suffixes to base words;
- daily guided practice in writing phrases and sentences from dictation; and
- modeling, teacher guidance, and practice in constructing well-formed paragraphs.

<u>Paragraphs</u>

Independent paragraph writing requires integration of several tasks. Students must:
- demonstrate the organization of thoughts and retrieve the language for each sentence to produce a cohesive sequence of ideas that express a view or an idea;
- spell correctly; and
- use capitalization and punctuation appropriately.

A good paragraph should have:
- a clear topic sentence that tells the reader what the paragraph will be about;
- a body that gives specific details that support and strengthen the topic sentence; and
- a concluding sentence that provides closure or leads the reader to the next paragraph.

Daily practice with writing sentences leads to construction of clear, well-organized independent paragraphs. Writing multi-paragraph papers provides a structure for note taking and multi-page reports.

Handwriting: Language by Hand

Handwriting is one of the most important skills in learning to express ideas in written language. Students with dyslexia may also have a writing disability. Spelling problems tend to persist beyond the reading problems and are shown to be linked to written composition. Reading problems may resolve in elementary grades but writing problems may persist, requiring explicit instruction in writing and reading-writing integration in grades K – 12.

Dysgraphia is a problem in handwriting in which the ability to retrieve and produce legible letters automatically, effortlessly, and quickly is impaired. Students with dysgraphia may have problems in spelling with or without indicators of dyslexia. They may have problems in executive functions for self-regulating the letter writing, word spelling, and composing process (fluency and quality).

One in ten students, with or without dyslexia, struggles with handwriting and sometimes keyboarding. Often undiagnosed and untreated, dysgraphia is related to failure to complete written assignments, and difficulty with composition and expressive language. Differences in a brain region associated with working memory during idea generation, may explain why handwriting or spelling (transcription) problems alone are not the reason for their difficulties in composing.

All students can benefit from handwriting instruction that teaches automatic letter formation because the brain uses its limited resources more efficiently when letter formation is automatic. Handwriting instruction:

- Addresses the writing disabilities of those with dyslexia.
- Aids students with dysgraphia by helping them retrieve and produce legible letters automatically, effortlessly and quickly.
- Provides access to a tool for automatic expression.

A close relationship exists between letter production and letter perception. Both motor and visual regions of the brain are involved in handwriting, and handwriting may enhance visual perception and reading.[51]

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[51] James & Gauthier, 2006; Longcamp, et al. 2003

Hands-on Strategies:

Handwriting Instruction

Studies at the University of Washington have identified the following elements for effective handwriting instruction.

Strategies may include:

- A five minute per day "writers' warm-up" improves reading performance.
- Students should always name the letter as it is written. This facilitates retrieval and fluency.
- For review, teach for letter retrieval from long-term memory (write the letters that come after and before other letters). This aids recall of alphabetical order and improves the ability to write a series of letters; it transfers to longer compositions.
- Have students write a letter and trace it repeatedly until the next letter is given, rather than writing a long row of the same letter. This will avoid habituation of writing errors.
- Teach letter writing and integrate it with comprehensive writing instruction that includes composing in many genres.
- Always teach for transfer by following letter writing practice with composing.
- Teach self-monitoring and other-monitoring of letter legibility (is the letter recognizable out of word context?) in written compositions.

The juggling act of writing may place greater demands on internal working memory than reading does, but writing externalizes cognition making thought visible via written language to become an object for reflection and repair.   As a result, writers gain conscious access via writing to what they are thinking in unconscious implicit memory.

Fluency is also a concern with handwriting. Students must receive purposeful instruction in handwriting to associate sounds to unfamiliar letter shapes. How fluently a student manipulates the writing instrument will affect the speed and flow of written work. Just as fluency in reading correlates with comprehension, fluency in writing contributes to written expression. Automatic and clear handwriting is necessary to express one's thoughts on paper. Only when the act of handwriting is automatic can the mind focus on expression and meaning.

Manuscript, Cursive,
Touch Screen, or Keyboard?

Educators continue to debate the best practices for teaching writing.

Both manuscript printing and cursive have advantages. Printing letters transfers to the kinds of letters in books and on monitors. Cursive can increase the speed of writing and reduce reversals. It provides more consistency for those unsure about where to start a letter because all cursive strokes start on the writing line. The key is consistent instruction and practice.

European preschoolers and children in the early grades learn to write in cursive from the outset. Brain research in France[52] and the United States[53] shows that forming letters stroke by stroke, rather than selecting and pressing keys, enhances perception, learning, and memory.

Keyboarding and touch screens can be beneficial to students who struggle with letter formation. University of Washington brain imaging showed that finger sequencing engages the thinking parts of the brain.[54] A given motor task involving the hand or finger may uniquely activate brain regions associated with the higher level planning and/or control functions as well as those associated with the actual execution of the motor act. The goal is to provide an automatic, legible tool that enhances all aspects of language.

However, printing, cursive, keyboarding, and touch screen use should be taught to *all* students so they can become bilingual by hand in the information age.

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[52] Longchamp & Velay,1980
[53] James & Gauthier, 2006
[54] Berninger & Richards, 2002 as cited in Berninger & Wolf, 2009. p.64-65

Many teachers of students with reading issues (often dyslexia) are at a loss as to how to help these students within the context of the regular classroom.
Students with dyslexia are often overlooked in the regular classroom for several reasons:

- Students with dyslexia can be mildly to severely impaired, with only the severely impaired qualifying for special services. Others take years to qualify and get help, while others are never identified.
- Many students with dyslexia are very bright and compensate well to cover up their areas of deficit.
- Some of these students read fluently, but have trouble with spelling and writing.
- Many students with dyslexia have ADD/ADHD[55] and their reading, writing, spelling, and/or handwriting issues are masked by their attention problems.
- Many struggle with spelling problems or read slowly but with good comprehension. Since poor spelling and slow reading does not qualify students for Special Education services, issues are not addressed and persist.

Even without direct training in the systematic, explicit, multisensory instruction that is recommended for students with dyslexia, there are many classroom activities teachers can incorporate into their regular instruction that will benefit *all* students.

Reading Strategies

The following activities are centered on teaching the *reading code*, i.e. explicitly teaching how words are put together. All good readers use the phonological (sound), orthographic (patterns and rules), and morphological (meaning) codes while reading. Systematically instructing students in these three codes will improve *all* students' understanding of words, increasing their reading and spelling skills.

In a dyslexia friendly classroom, "even the most vulnerable learners are set up to succeed because they are effectively working within their comfort zones for much of the time and operating from a secure platform of strength and competence."

Neil Mackay,
The School That I'd Like 2009

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[55] Attention Deficit Disorder / Attention Deficit Hyperactivity Disorder

Phonological Code:

Connecting the sounds in our language to print

Students need a great deal of practice identifying the sounds and connecting these sounds to letter patterns.

Recommendations:

Assess: Screen students for phonemic awareness issues and letter/sound correspondence skills (phonics).

Teach: Use letter pattern cards to systematically teach students to automatically connect sounds to letter patterns. These card sets teach more patterns than the single letter sounds. Students need to know the sound /ay/, for example, for reading and spelling. There are about seventy common patterns used to write the forty-four sounds that make up English words. The more common letter patterns a student recognizes automatically, the more easily he will be able to decode unknown words.

Orthographic Code:

Letter patterns in English

Good readers more easily identify common letter patterns. One reason for this is that the more a student reads, the more practice that student has recognizing the correct pattern.

Recommendations:

Assess: Give a one minute oral reading test to each student. Note the types of errors a student makes in decoding unknown words and how automatically the student recognizes letter or word patterns.

Teach: Systematically and explicitly teach spelling rules. Use a systematic phonics based, rather than a pattern based (words sorted by patterns) spelling program. Provide students with consistent opportunities to read aloud with guided help focusing on recognizing letter patterns/sounds and word patterns.

Morphological Code:
Understanding that pieces of words have meaning

Using context and meaning to read is often a strength of students with good oral language skills, but if their decoding skills are not strong enough to sustain reading for any length of time students have difficulty creating meaning. Students with dyslexia need explicit instruction in the morphological code. Research especially supports the importance of morphological instruction for older students.

Recommendations:

Assess: During class discussions, frequently ask students to supply the base word of multi-syllabic words. Conversely, when discussing interesting words, especially in math, social studies, or science (think of the word *divide*), have students generate derivatives and assess how easily they can do this. Give a pretest on common prefixes and suffixes by grade level. Check for deep understanding by asking students if "er", for example, has meaning in such words as *corner* and *teacher*, to assess whether the student comprehends whether "er" is actually a suffix with meaning in the word or a phonogram.

Teach: Systematically teach prefixes and suffixes and refer to them when decoding and discussing vocabulary. Teach Latin roots and Greek combining forms with their meanings, and practice generating words made of several roots. Involve students in word investigations in as many ways as possible, including looking for interesting words in their reading and using their word knowledge to generate derivatives.

Strategies for In-Class Work and Homework

Problems with reading, handwriting, and spelling make in-class work or homework hard to complete for students with dyslexia. Therefore, learning through discussion is beneficial to them. When asked to read, these students benefit from choral reading, partner reading, following along as the teacher reads, or being asked to read independently only at their reading level in order to learn information through reading. Many of these students have attention issues and, understandably, will not sustain independent silent reading, especially if asked to read independently above their reading level.

Students with dyslexia often have problems with remembering and following directions. Listening and writing (note taking) may be difficult for them. The following suggestions may be helpful:

- Give a direction and ask the student to repeat it back before starting a task.
- Break down tasks into manageable parts.
- Model what to do when giving directions for each part, rather than explaining what to do all at once.
- Provide directions and information both verbally and visually in written form.

Integration with the Daily School Routine

Schools work hard to help students at all academic levels. In addition to regular classroom learning environments, schools often have resource rooms for students in special education and remedial reading small groups to help students who are working below their grade level. Every school structures and schedules their support services differently. Parents and teachers should explore what resources are in place at their school and understand the purpose of the program as well as the skills a student will be working on.

Students with dyslexia often need many more repetition to master the same material as those without dyslexia. Additional accommodations may be necessary. These may include:
- Allowing more time on a task to learn a skill.
- Receiving extra help outside of class, coordinated with what is being taught in the classroom. Helping students finish in-class work or homework in this time is not as important as working on the underlying skills of reading and spelling at the student's level. Additional practice on needed skills is how progress can best be accelerated.

<u>Useful Classroom Modifications</u>[56]

There is no doubt that students with dyslexia can be well taught in the regular classroom. However, they can benefit from extra work at their instructional skill level and with some accommodations. Because these students struggle in their processing of single words, they often become very tired at school, especially during reading and writing tasks. There are many classroom accommodations and modifications that can make learning easier and less tiring for students with dyslexia. These accommodations and modifications should not take the place of teaching these students to be efficient readers, spellers, and writers; rather they will allow the students to best take information into their brains for quick processing.

Seating Arrangement: With this accommodation, all students are seated so they face the board. Students with dyslexia should not be looking over their shoulders as they copy from the board. Rows work well and students can sit in rows with a desk partner. A horseshoe-shaped desk arrangement also works.

Writing: Have students with dyslexia say a sentence aloud before they write it. This will help them get their thoughts on paper quickly (before forgetting) and with semi-accurate spelling.

Students who struggle with letter formation should sit near the teacher for monitoring. While teaching students how to write their letters properly must happen in separate lessons, students with dyslexia should not be allowed to practice making their letters incorrectly because inefficient letter formation ultimately slows down sentence writing.

Keyboarding: Do not jump to keyboarding as the solution for poor handwriting. "Although computer keyboards may make it easier to produce letters, evidence shows that children write longer compositions and write them faster by pen than by keyboard."[57]

When writing for duration of time, for example in paragraph writing, have students use a recording device to dictate (capture) their thoughts. They can then play back and write their thoughts down.

Reading: Use recorded books as a scaffold. Students can follow in their own text. This may help move these students through text.

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[56] For specific teaching techniques, refer to the *Instruction and Intervention in the Classroom* Section.

[57] Berninger & Wolf, 2009, pg 133

Spelling:
- Teach spelling as suggested in the Instruction and Intervention in the Classroom section. Reading and writing skills both improve when spelling improves.
- Goods spellers visualize in their "mind's eye" the spelling of words. Teach students with dyslexia to use their ears to hear the sequence of sounds and their "mind's eye" to visualize words, especially words they need to spell every day (such as *they* and *because*) or words that are hard to decode.

Spelling <u>and</u> Reading: Very few words need to be taught by sight or memory. Instead, sound through words and look at all letter and meaning patterns in each word. Teach students to blend. This strategy (sounding out a word) is the most efficient for word identification.[58]

General Accommodations

- Break assignments into small steps and provide examples.
- Provide more time for assignments and tests.
- Use graphic organizers, calendars/ student planners, written schedules to support organization.

Check student work frequently. Nothing is more discouraging to a student than doing something incorrectly overtime and having to go back and relearn a skill.

Specific Accommodations for Students with Section 504 Plans

Students with dyslexia may be eligible for additional accommodations under Section 504. Accommodations may include:
- extended time on tests,
- a designated note taker,
- computer support for writing,
- books on tape,
- reducing distractions,
- use of multi-sensory instructional methods (i.e. visual graphs and charts, to accompany oral presentation)
- supplemental instructions, and
- modified test delivery.[59]

Please refer to The State and Federal Laws section for more information.

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[58] Snow, 1998

[59] For a list of sample accommodations see: A Parent & Educator Guide to Free Appropriate Public Education Under Section 504 of the Rehabilitation Act of 1973

Federal and State Law

The principal federal law ensuring free appropriate education for children with disabilities is the Individuals with Disabilities Education Act (IDEA), which was initially passed in 1975 and reauthorized in 2006. IDEA provides for free testing, entitles eligible disabled students to Free Appropriate Public Education (FAPE), specifies the requirements for FAPE, and provides federal funds to states to provide special education and related services. IDEA covers students at the preschool, elementary, and secondary levels (ages 3 through 21, or high school graduation, whichever comes first). Disabilities covered under IDEA include Specific Learning Disabilities (SLD); dyslexia is included as a condition under this category of disability.

"Specific Learning Disability(SLD) means 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, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia, that adversely affects a student's educational performance." (IDEA)

At the state level, regulations governing special education issued and followed by the OSPI are included in Chapter 392-172A of the Washington Administrative Code (WAC). These regulations specify how the state carries out the requirements of IDEA.

Section 504 of the Rehabilitation Act of 1973 protects the civil rights of individuals with disabilities. Section 504 prohibits discrimination on the basis of disability in any program that receives federal funds, including public schools. Section 504 is broader than IDEA, and may cover elementary and secondary students who are not eligible for services under IDEA. College students can also receive accommodations under Section 504.

State law also prohibits discrimination based on disability in Washington public schools. These laws and regulations are located in chapter 28A.642 of the Revised Code of Washington (RCW) and chapter 392-190 of the Washington Administrative Code (WAC).

Referral and Testing

Under IDEA, either a child's parent or a public agency (e.g., a school) may initiate a request for an initial evaluation to determine if the child has a disability. The federal law establishes that the initial evaluation must be completed within 60 days of receiving parental consent for the evaluation. The evaluation must "consist of procedures to determine if the child is a child with a disability…and to determine the educational needs of the child."

IDEA specifies that "screening of a student by a teacher or specialist to determine appropriate instructional strategies for curriculum implementation shall not be considered to be an evaluation for eligibility for special education and related services." Evaluation assessments must be administered in mode of communication (e.g., in the child's native language) and form that is most likely to yield accurate information.

According to the United States Department of Education (USDOE) states must not require the use of a "severe discrepancy between intellectual ability and achievement" to determine whether a child has a specific learning disability. The 2006 reauthorization of IDEA allows for the optional use of the Response to Intervention (RtI) approach to determine whether a child has a specific learning disability.

In Washington state, schools may use either a discrepancy model or RtI (as stated in the district's policies and procedures) to identify students with a specific learning disability (ld) which includes dyslexia. "RtI is a tiered approach to educational intervention; the most common is a 3-tiered model. Tier 1 provides high quality reading instruction to all students, with careful progress monitoring by teachers in the classrooms. Tier 2 is the same high quality instruction but with increased intensity for those not progressing well enough. If students do not progress with this more intensive instruction, they are identified for Tier 3, which is targeted special education intervention. Tier 3 students would have full evaluations and the establishment of an Individualized Education Program (IEP)." [60]

IDEA and state regulations provide a way to protect the rights of students who are entitled to, but denied accommodations. Parents must be notified of any school district decisions affecting a student's special education program after a decision is made, but *before* the decision is implemented. Office of Special Education Programs has determined that RtI may not be used to delay or deny a referral to special education.[61]

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[60] NIH - National Institute of Child Health and Human Development, *Learning Disabilities*
[61] Office of Special Education Programs RtI memo

Section 504

Section 504 of the Rehabilitation Act of 1973 is a federal civil rights law designed to eliminate disability discrimination in programs and activities that receive federal funds, including public schools. Section 504 requires each school district to provide a "free appropriate public education" (FAPE) to each qualified student with a disability who is in the school district's jurisdiction, regardless of the nature or severity of the disability. Under Section 504, FAPE consists of the provision of regular or special education and related aids and services designed to meet the student's individual educational needs as adequately as the needs of nondisabled students are met. Denying a student with a disability a free appropriate public education constitutes disability discrimination.

For further information on Section 504, please refer to the following publications by the U.S. Department of Education Office for Civil Rights:
• "Student Placement in Elementary and Secondary Schools and Section 504 of the Rehabilitation Act and Title II of the Americans with Disabilities Act,"
http://www2.ed.gov/about/offices/list/ocr/docs/placpub.html
• "Protecting Students with Disabilities – Frequently Asked Questions about Section 504 and the Education of Children with Disabilities,"
http://www2.ed.gov/about/offices/list/ocr/504faq.html

IEP – Individual Education Plan

The child study team, (which may include school psychologist, classroom teacher, parents, and other specialists) recommends the intervention based upon assessment results. Recommendations are made for specially designed instruction and an individual education plan (IEP) is developed. The (IEP) identifies the specifics of the special education, related services, and other supports needed to provide a student with a FAPE based on their individual and unique needs. For a student with dyslexia, this typically means a multisensory, structured, sequential phonics based targeted instruction, and may also include other accommodations. Every student determined eligible for special education must have a current IEP in place. IDEA specifies the required contents of IEPs, IEP meetings, the composition of IEP teams, and procedures for amending IEPs and IEP progress and accountability. School districts are required to take steps to assure that one or both of an eligible student's parents are present at IEP meetings, or are provided the opportunity to attend.

For information about Procedural Safeguard regarding IEPs and Special Education,
http://www.k12.wa.us/SpecialEd/pubdocs/PS.pdf

Washington Administrative Code

The [evaluation] group described in WAC 392-172A-03050:

Additional members of the evaluation group.
The determination of whether the student is eligible for special education services in the specific learning disability category shall be made by the student's parent and a group of qualified professionals which must include:

(1) The student's general education classroom teacher; or

(2) If the student does not have a general education classroom teacher, a general education classroom teacher qualified to teach a student of his or her age; or

(3) For a student of less than school age, an individual qualified to teach a student of his or her age; and

(4) At least one individual qualified to conduct individual diagnostic examinations of students, such as school psychologist, speech language pathologist, or remedial reading teacher.

WAC 392-172A-03055 may determine that a student has a specific learning disability if:

(1) The student does not achieve adequately for the student's age or meet the state's grade level standards when provided with learning experiences and instruction appropriate for the student's age in one or more of the following areas:

    (a) Oral expression
    (b) Listening comprehension
    (c) Written expression
    (d) Basic reading skill
    (e) Reading fluency skills
    (f) Reading comprehension
    (g) Mathematics calculation
    (h) Mathematics problem solving

(2)   (a) The student does not make sufficient progress to meet age or state grade level standards in one or more of the areas identified in subsection (1) of this section when using a process based on the student's response to scientific, research-based intervention or the group finds that the student has a severe discrepancy between achievement and intellectual ability in one or more of the areas identified in subsection (1) of this section; and

    (b) When considering eligibility under (a) of this subsection, the group may also consider whether the student exhibits a pattern of strengths and weaknesses in performance, achievement, or both, relative to age, state

grade level standards, or intellectual development, that is determined by the group to be relevant to the identification of a specific learning disability, using appropriate assessments, and through review of existing data.

(3) The group determines that its findings under subsection (2) of this section are not primarily the result of:

(a) A visual, hearing, or motor disability;
(b) Intellectual disability;
(c) Emotional disturbance;
(d) Cultural factors;
(e) Environmental or economic disadvantage; or
(f) Limited English proficiency.

(4) To ensure that underachievement in a student suspected of having a specific learning disability is not due to lack of appropriate instruction in reading or math, the group must consider:

(a) Data that demonstrate that prior to, or as a part of, the referral process, the student was provided appropriate instruction in general education settings, delivered by qualified personnel; and
(b) Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the student's parents.

(5) The district or other public agency must promptly request parental consent to evaluate the student to determine if the student needs special education and related services, and must adhere to the time frames for an initial evaluation under WAC 392-172A-03005:

(a) If, prior to a referral, a student has not made adequate progress after an appropriate period of time when provided instruction, as described in subsection (4)(a) and (b) of this section; or
(b) Whenever a student is referred for an evaluation.

Legislative History and Dyslexia Resource Guide Project Timeline

In 2003-2004 a legislative committee led by Senator Kastama, created and submitted bill to support instruction for students with dyslexia. The bill is not passed; however, $677,000 is allocated in 2005-2007 Governor's State Budget to support five schools, called, Lorraine Wojahn Dyslexia Pilot Reading Program.

Beginning in the fall, 2005, four school districts applied for and received $60,000 per year in grant funds for two years to implement research-based multi-sensory literacy intervention for students with dyslexia and/or who display characteristics of dyslexia. To receive grant funding, schools were required to have a three-tiered reading structure in place, provide professional development training to teachers, assess students, collect and maintain data on student progress, attend professional development training as requested by OSPI, and attend/present at a national conference.

September, 2005 – June, 2007

- Four schools are awarded $120,000 for two years to implement intervention for students with dyslexia and provide professional development to teachers. OSPI collaborates with Washington Branch of IDA and offers Dyslexia Summit. 500 educators attend.
- Data are collected on results of Dyslexia Pilot Project. Approximately 180 students are provided with services.
- Students make substantial progress and outperform their grade level peers on measures of phonological processing.
- Over 25 teachers trained in a Scientifically Based Reading Research (SBRR) intervention program
- 6 teachers, 2 administrators attend out-of-state conferences
- 12 teachers attend in-state conferences
- All teachers and all principals at each school attend 30-45 minute presentation on dyslexia
- 3 schools present at OSPI Summer Institute 2006

July 2007-June 2009
- Legislators approve funding in the amount of $588,000 to continue funding of the Lorraine Wojahn Dyslexia Pilot Reading Program.
- OSPI posts competitive grant application. 24 schools/districts apply. 12 schools/districts are accepted for three days of PD on topic of dyslexia and grant preparation. Those 12 schools/districts submit second round of application.
- 4 schools awarded $120,000 each for two years to implement intervention and provide PD to teachers.

- Students make substantial progress in areas of reading and spelling in all grades and outperform their grade level peers on phonological processing. Writing remains flat in all grades.
- District and school leaders continue to support teachers and students. Teachers continue to focus on student academic success.
- Dyslexia Pilot Project schools, including students, present at IDA 59th Annual Conference in Seattle.
- May 18, 2009, Governor Gregoire signs SSB 6016, "an act relating to training for educators to identify students with dyslexia" submitted by Senator Benton
- Legislators appropriated $145,000 each year of the 2009-2011 biennium to fund SSB 6016.

July 2009-June 2011

- Forty-five educators, including representatives from each Educational Service District, attended five-days of professional development on the topic of dyslexia. All participants had previously completed twelve modules of *Language Essentials for Teachers of Spelling and Reading* (Sopris West) and considered reading experts. Plans to develop Washington State Dyslexia Training Module for "training of trainers" in place.
- Literacy representatives from the ESDs in collaboration with OSPI Reading, develop the Washington State Dyslexia Training Module and pilot the professional development.
- Washington Branch of the International Dyslexia Association in collaboration with OSPI develops the 2011 Washington State Dyslexia Resource Guide.

Glossary

criterion referenced measure – a test designed to measure how well a student has learned a specific body of knowledge and skills according to predetermined criteria.

decode – to transform an encoded message, such as a group of letters, into an understandable form (word)

diagnostic assessment – in the context of RtI: specific tests, procedures or instruments (diagnostic tools) are selected to measure areas of concern. In this context, diagnostic testing does not lead to a *diagnosis* (the identification of a disorder); rather, it identifies areas to be addressed through differentiated instruction

discrepancy model – a method used to identify a learning disability through a combination of cognitive (intellectual) and academic (achievement) testing. The model compares the results of the tests to identify a 'severe discrepancy' between cognitive ability and academic achievement. Each state establishes its own formula for determining when a 'discrepancy' can be considered 'severe'.

dyscalculia – a specific learning disability involving innate difficulty in learning or comprehending simple mathematics. It is akin to dyslexia and includes difficulty in understanding numbers, learning how to manipulate numbers, learning math facts, and a number of other related symptoms

dysgraphia – a problem in handwriting in which the ability to retrieve and produce legible letters automatically, effortlessly, and quickly is impaired

dyslexia – a learning disorder marked by a difficulty in recognizing and understanding written language.

fluency – the ability to speak, read, or write a language clearly and efficiently

graphomotor functions – the ability to physically form letters, words and numbers

morpheme – the smallest meaningful element of speech or writing; base words, prefixes and suffixes

morphology – in linguistics, the structure of words in a language, including patterns of inflections and derivation

multisensory instruction – teaching by employing visual, auditory, and kinesthetic-tactile modalities to enhance retention and retrieval of information

norm-referenced test – a test to determine a student's placement on a normal distribution curve. Students are compared to age- or grade-level peers from a normative sample on this type of assessment.

orthographic coding – the ability to recognize and retrieve letter and letter sequences from memory

phoneme – a speech sound that distinguishes one word from another, e.g. the sounds "d" and "t" in the words "bid" and "bit." A phoneme is the smallest phonetic unit.

phonemic awareness – the ability to recognize that words are composed of individual sounds put together in a sequence

phonics – a method of teaching reading in which students learn to associate letters with the speech sounds they represent, rather than learning to recognize the whole word as a unit

phonograms – common orthographic patterns in language

phonological awareness – one's sensitivity to, or explicit awareness of, the phonological structure of one's language. It involves the ability to notice, think about, or manipulate the individual sounds of words. It does not require alphabet knowledge.

phonological memory – the ability to retrieve linguistic information, especially phonological in nature

phonology – speech sounds

prosody – a linguistic term to describe the rhythmic and tonal aspects of speech

Section 504 - Section 504 of the Rehabilitation Act of 1973 prohibits discrimination on the basis of a disability in programs or activities that receive federal financial assistance from the US Department of Education.

screening – generally a short, informal test used to determine whether further testing is indicated

syllabication – to break a word down into syllables in speech or writing

Acronyms

ADD/ADHA – Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder. ADD is a biological, brain based condition that is characterized by poor attention and distractibility and/or hyperactive (ADHD) and impulsive behaviors. It is one of the most common mental disorders that develop in children.

CBM – Curriculum Based Measurement. CBM is a method teachers use to determine how students are progressing in specific academic areas such as math, reading, writing, and spelling

FAPE – Free Appropriate Public Education. FAPE mandates that school districts provide access to general education and specialized educational services. It also requires that children with disabilities receive support free of charge as is provided to non-disabled students.

HSPE – High School Proficiency Exam. The HSPE measures the proficiency of students in high school and serves as Washington State's exit exam in reading and writing.

IDA – International Dyslexia Association. IDA is a non-profit organization dedicated to helping individuals with dyslexia, their families, and the communities that support them.

IDEA – Individuals with Disabilities Education Act. IDEA is a law ensuring services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education and related services to eligible infants, toddlers, children and youth with disabilities.

IEP – Individualized Education Plan. This is a legally binding document that spells out exactly what special education services a student will receive and why. It will include the student's classification, placement, services and therapies, academic and behavioral goals, a behavior plan if needed, percentage of time in regular education, and progress reports from teachers and therapists.

MSP – Measure of Student Progress. MSP is Washington State's exam for students in grades 3-8. The MSP name conveys the goal of the test: to measure student progress. State testing should never be the sole judge of a student's academic skills and knowledge.

OSPI – Office of the Superintendent of Public Instruction. OSPI is the primary agency charged with overseeing K-12 public education in Washington State. Led by State School Superintendent Randy Dorn, OSPI works with the state's 295 school districts to administer basic education programs and implement education reform on behalf of more than one million public school students.

RtI – Response to Intervention. RtI is a tiered instructional approach design to integrate assessment and intervention within a school-wide, multi-level prevention system to maximize student achievement and reduce behavioral problems.

SLD – Specific Learning Disability. A student has an SLD if he does not achieve adequately for his age or meet the state's grade level standards when provided with learning experiences and age appropriate instruction. Categories for SLD are outlined by the Washington Administrative Code. LSDs cannot be explained by visual or hearing impairments, emotional or behavioral disorders, lack of conventional instruction, or limited English proficiency.

WAC – Washington Administrative Code. Regulations of executive branch agencies are issued by authority of statutes. Like legislation and the Constitution, regulations are a source of primary law in Washington State. The WAC codifies the regulations and arranges them by subject or agency.

WABIDA – Washington Branch – International Dyslexia Association

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Resources

<u>Online resources</u>

Best Evidence Encyclopedia
http://www.bestevidence.org/

Doing What Works
http://dww.ed.gov/

Florida Center for Reading Research
http://www.fcrr.org/

International Dyslexia Association
http://www.interdys.org/index.htm

International Multisensory Structured Language Education Council (IMSLEC)
http://www.imslec.org/

Learning Disabilities Association of America
http://www.ldanatl.org/

National Center for Learning Disabilities
http://www.ncld.org/

North Central ESD Dyslexia Project
http://www.ncesd.org/167310114123234440/blank/browse.asp?A=383&BMDRN=2000&BCOB=0&C=55211

Office of the Education Ombudsman
http://www.governor.wa.gov/oeo/

Section 504 Manual (A Parent & Educator Guide to Free Appropriate Public Education under Section 504 of the Rehabilitation Act of 1973)
http://www.psesd.org/images/stories/LandT/specialservices/504manual.pdf

Section 504 Manual in Spanish (A Parent & Educator Guide to Free Appropriate Public Education under Section 504 of the Rehabilitation Act of 1973)
http://www.psesd.org/images/stories/LandT/specialservices/504spanish.pdf

US Department of Education Office for Civil Rights
        http://www2.ed.gov/about/offices/list/ocr/index.html?src=oc

Washington Branch-International Dyslexia Association
        http://wabida.org/

What Works Clearing House
        http:/ies.ed.gov/ncee/wwc/

Additional Resources.
(These resources are supplemental to resources included in the Reference section.)

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