I. What Are Learning Disabilities?

Learning disabilities are disorders that affect a person's ability to either interpret what they see and hear or to link information from different parts of the brain. These limitations show up in many ways, including specific difficulties with spoken and written language, coordination, self-control, or attention and concentration. By definition these problems can impede learning to read, write, or do math. Learning disabilities can be lifelong conditions that can affect many parts of a person's life, including school or work, daily routines, family life and friendship patterns. People may show signs of multiple overlapping learning disabilities or they may have a single, isolated learning problem that has little impact on other areas of their lives. Not all learning problems are necessarily learning disabilities. Many children are simply slower in developing certain skills.

#  Learning disabilities can be divided into three broad categories:
  X Developmental speech and language disorders;
  X Academic skills disorders;
  X "Other" Learning Disabilities, including coordination disorders and learning handicaps not covered by the other terms.


II. Developmental Speech & Language Disorders

Speech and language problems are often the earliest indicators of a learning disability. These disorders are characterized by difficulties producing speech sounds, using spoken language to communicate, or understanding what other people say.
Developmental Articulation Disorder, or "Phonological Disorder," occurs in approximately 10% of children younger than 8 years of age who typically show signs of difficulty in controlling their rate of speech, or they may lag behind their classmates in learning to make speech sounds, e.g., "wabbit" for rabbit and "thwim" for swim. In most instances articulation disorders can be outgrown or successfully treated with speech therapy.

Developmental Expressive Language Disorder refers to children who have problems expressing themselves in speech. Children who call objects by the wrong names, or the 4 year old who speaks only in two word phrases and the 6 year old who is unable to fully answer simple questions all have different forms of expressive language disorder.

Developmental Receptive Language Disorder includes children who show signs of difficulty understanding certain aspects of speech. Despite intact hearing, receptive language problems are manifested by the toddler who does not respond when called by name, a preschooler who hands you a bell when you asked for a ball, or the child who consistently seems unable to follow simple spoken directions in the classroom.

Mixed Receptive-Expressive Language Disorder includes children who show delays in both receptive and expressive language skills. Preschoolers often confuse sounds, words, or grammar, as a normal part of learning how to speak . . . it is only when these problems persist and when they are developmentally inappropriate that learning disabilities should be suspected.

III. Academic Skills Disorders

Academic skills disorders include students who are often years behind their classmates in developing reading, writing, or arithmetic skills.

Developmental Reading Disorder, sometimes referred to as "dyslexia," affects approximately 2 to 8% of elementary school children. Children with this problem can show any number of symptoms, including difficulty in distinguishing or separating the sounds in both spoken and written words, problems with rhyming games, or matching sounds with written symbols. Other types of reading disabilities can appear in the upper grades when the focus of reading shifts from word identification to word comprehension.

Developmental Writing Disorder may result from problems in several brain functions, including vocabulary, grammar, hand movement and memory. For example, the child who has difficulty in distinguishing the sequence of sounds in a word is likely to have problems with written spelling. Another child with a developmental writing disorder may not be able to compose, organize and write out complete, grammatically correct sentences.
Developmental Arithmetic Disorder can be seen in children who show persistent problems in any of the skills required to effectively learn arithmetic, including recognizing numbers and symbols, memorizing facts such as the multiplication table, aligning numbers and understanding abstract concepts like place value and fractions. Problems with numbers and basic math concepts tend to show up quite early. Developmental delays in math typically appear in the later grades as problems in math reasoning.

IV. "Other" Learning Disabilities

This category might include problems in all three areas (reading, mathematics, written expression) that together significantly interfere with academic achievement even though performance on tests measuring each individual skill is not substantially below that expected given the person's chronological age, measured intelligence and age-appropriate education. Also included are coordination disorders that can lead to poor penmanship, as well as certain spelling and memory disorders.

V. Disorders of Attention and Sustained Concentration

Attention-Deficit/Hyperactivity Disorder, or ADHD, is a neurobiological disorder that interferes with a person's ability to maintain attention and focus on a task, and to delay impulsive behavior. ADHD behaviors most often become evident in early childhood with onset usually before age seven, affecting approximately 3 to 5% of all school aged children. These behaviors are chronic across the lifespan and persist across many different types of situations, both at school and at home. Children with ADHD do not necessarily show signs of serious emotional problems or behavior disorders; however, if not properly diagnosed and treated, ADHD children are at elevated risk for developing emotional difficulties, behavior disorders, depression and substance abuse as they mature into adulthood.

The ratio of ADHD diagnosis in males versus females ranges between 4:1 and 9:1. Males typically show more intensely impulsive behaviors. Females tend to show slow academic progress accompanied by mild to moderate behavioral and adjustment problems. ADHD symptoms can become less obvious as children mature. Typical signs of excessive motor activity seen in childhood - running, climbing, not remaining seated - become less obvious with age. Children who have problems with motoric restlessness may only be somewhat fidgety, or experience an inner feeling of restlessness as adolescents or as adults.

Individuals can vary greatly to the degree they experience hyperactivity, or motoric restlessness. Some ADHD individuals are hampered more by motoric restlessness (hyperactivity) whereas others struggle more with mental restlessness (inattention). Subtypes of ADHD include:

*# ADHD, Hyperactive-Impulsive Type* occurs more commonly in males.
These individuals do not seem to be able to inhibit behavior, wait, persist in tasks, sustain attention, or anticipate consequences. Other characteristics include early onset, chronicity of symptoms over lifetime, pervasiveness across most situations, and having a strong family history of ADHD and/or externalizing (disruptive) behaviors. These individuals typically respond to treatment with medication, although they may also suffer from problems with oppositional or negativistic behaviors, learning problems, and possibly other mood disorders.

# ADHD, Inattentive Type, more commonly affects females (without hyperactivity) who often seem "tuned out," confused or lost in thought, sluggish, slow moving, apathetic or distracted. Appears to be comprised of 2 groups, comprised of individuals with either: (1) other learning or processing problems; (2) emotional problems. Other characteristics include more likelihood of having family history of LD +/- anxiety than ADHD or externalizing problems. These individuals tend to show differential responses to medication. They are not usually socially rejected or aggressive.

ADHD is a lifelong problem that persists through adulthood, although symptoms of the disorder may change over time. Many adults with ADHD retain the classic symptoms from childhood: restlessness, impulsivity and distractibility. Problems with moods, depression, self-esteem and self-image can also tend to complicate the lives of ADHD adults.

# Adulthood symptoms of ADHD include: a chronic sense of underachievement and low self-esteem, difficulty getting organized, chronic procrastination or trouble getting started, many projects going simultaneously/trouble with follow-through, tendency to say what comes to mind without necessarily considering the timing or appropriateness of the remark, frequent search for high stimulation, intolerance of boredom, easy distractibility, trouble focusing attention, tendency to tune out or "drift away," impatient, impulsive verbally or in action, tendency to worry needlessly/endlessly, sense of impending doom or insecurity, mood swings, mental and/or physical restlessness and tendency towards addictive behavior.

The adult who has undiagnosed and untreated ADHD faces a multitude of challenges in school, at home, in relationships with family members, intimate relationships with a spouse, as well as disruption within the workplace.

VI The Role of Psychological Evaluation in Diagnosing Specific Learning Disabilities

The assessment of specific learning disabilities is complex and multifaceted. Typically, evaluations are completed over a series of 3-5 individual appointments. A thorough initial history taken from the individual will include a review of information about onset and severity of problems, academic performance, grade placement, details about prior remedial interventions and/or special education placement, individual learning styles/strategies, as well as a person’s learning strengths and weaknesses.
Background information obtained will also include a review of family history of learning problems, medical history and psychiatric disorders. An accurate diagnosis of adulthood specific learning disability must necessarily be preceded by a childhood history of learning problems. Documentation of prior school performance problems can be critical in supporting and corroborating an accurate diagnosis of adult learning disability, including but not limited to reviewing elementary, junior- and senior high school grade and behavior reports. Students at the post-secondary level are also asked to provide copies of current transcripts and/or job performance evaluations. A mental status examination, or MSE, is completed even prior to initiating any formal psychological testing. The MSE is both a descriptive inventory of behavior and serves as a method by which to systematically organize and record observations regarding an individual's behavior, especially features related to thinking, attitudes and emotions.

The psychological or psychoeducational evaluation involves administering standardized psychological tests that serve as a sample of behavior across different types of testing situations. These evaluations generally include tests that measure intelligence, achievement and emotional functioning. The test findings are used as the basis for establishing an accurate diagnosis and to outline recommendations for subsequent care which can include remedial intervention as well as mental health treatment. An effective evaluation should clarify the nature of the specific learning disability if one is found, and provide specific recommendations for follow-up remediation and/or care. An effective report should culminate in a series of concise, easily understood, and realistic recommendations.

VI Commonly Administered Tests for Measurement of Ability and Functioning

# Tests of Intelligence sample many of those cognitive skills that are needed to learn in school, including verbal comprehension and expression, verbal and nonverbal reasoning, concept formation, vocabulary development, numerical reasoning and problem solving ability, auditory and visual immediate memory, visual perception and discrimination, spatial organization, and visual-motor coordination. A student’s performance on an intelligence test is generally considered to be the best predictor of academic achievement. Tests: Wechsler Adult Intelligence Scale-Revised (WAIS-R), Wechsler Adult Intelligence Scale-III (WAIS-III).

# Tests of Executive Functions evaluate problem solving abilities. These include attention and concentration, drive and motivation, mental flexibility, planning and organizational skills, ability to recognize and correct mistakes, ability to respond to feedback cues, and the ability to understand behavioral consequences. Tests: Trail Making Test, Wisconsin Card Sorting Test, Booklet Category Test (age 15+).

# Tests of Reasoning and Concept Formation quantify abilities to make inferences, draw conclusions, and make judgments, as well as form concepts that are ideas based on common characteristics of a group of objects, events, or qualities. Tests: Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Cognitive Ability), Test of Problem Solving, Test of Nonverbal
Intelligence-2.

# Language Functions include speech skills (articulation, speech/sound production, voice, fluency) and language skills (grammar, sentence length and structure, vocabulary and meaning, auditory processing). Tests: Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Cognitive Ability), Wechsler Individual Achievement Test (WIAT), Peabody Picture Vocabulary Test-3.

# Tests of Memory Functions include evaluations of both auditory memory (remembering information presented orally and in sequence) and visual memory (remembering information presented visually and in sequence), or a combination of both (verbal and visual information presented simultaneously). Tests: Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Cognitive Ability), Bender Gestalt Visual-Motor Test, Rey-Osterrieth Complex Figure Test.

# Tests of Motor Functions evaluate graphomotor (fine) motor skills demonstrated when using a pencil, including both qualitative analysis of handwriting ability and also rate of written production. Tests: Bender Gestalt Visual-Motor Test, Rey-Osterrieth Complex Figure Test, Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Cognitive Ability).

# Tests of Auditory Processing evaluate the ability to differentiate between similar sounds and words, understand a sequence of words, discriminate a speaker’s voice in the presence of background noise, and understand a word or sound when a part of the information may be missing. Tests: Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Cognitive Ability).

# Tests of Visual Processing help determine level of ability in differentiating between shapes of letters, numbers, words, and pictures, as well as perceive objects as separate from the background, identifying pictures or words with parts missing, and quantify visual processing speed. Tests: Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Cognitive Ability).

# Tests of Academic Functions which cover basic reading skills, reading comprehension, reading rate, written expression, spelling mechanics of writing, writing speed, mathematical computation, and mathematical reasoning. Tests: Woodcock-Johnson Psycho-Educational Battery-Revised (Tests of Achievement), Wide Range Achievement Test-III (WRAT-III), Nelson Denny Reading Test, Woodcock Reading Mastery Test-Revised, Wechsler Individual Achievement Test (WIAT), Kaufman Test of Educational Achievement, Gray Oral Reading Test.

# Tests of Attention and Sustained Concentration obtain information about an individual’s ability to remain focused and free from distractability. Tests: Brown Attention-Deficit Disorder Scales, Attention-Deficit Disorder Scales
Tests of Emotional & Personality Functioning are used to determine whether psychological problems are interfering with a student’s ability to learn. These measures provide information about an individual’s coping skills, emotional controls, and inner conflicts. These measures look at a student’s attitudes toward himself, family, peers, and school. Tests: Projective Drawings (House-Tree-Person, Draw-A-Person, Draw-A-Family), Thematic Apperception Test (TAT), Rorschach Inkblot Technique, Minnesota Multiphasic Personality Inventory-2 (MMPI-2), Millon Clinical Multiaxial Inventory-III (MCMI-III), and Sentence Completion Test.

Evaluations should include a thorough analysis of discrepancies between intellectual ability and reading achievement, as well as discrepancies between and within academic domains. In addition to evaluating discrepancies, qualitative analysis of academic performance errors should be an integral part of any comprehensive evaluation.

The predominant problem for learning disabilities administrators is the broad range and varying types, complexity, accuracy and level of detail in recommendations of evaluations that serve as the initial focal point for establishing an intervention plan.