

## Learning Disabilities

PSY 560 Intellectual Assessment

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## Learning Disabilities

- 12% of children aged 5-17 have difficulties performing one or more everyday activity
- Diverse Group
- Some Common Characteristics
  - Disorder of attention
  - Poor motor abilities
  - Perceptual and information processing problems

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## Learning Disabilities

- Problems with cognitive strategies for learning
- Oral language difficulties
- Reading difficulties
- Written language difficulties
- Mathematics difficulties
- Inappropriate social behavior
- More boys than girls
  - Gender differences
  - Why are there gender differences?

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## Cross-Cultural Nature of LD

- **LDs are universal**
  - Not just in the U.S.
- **Children who are culturally diverse in the U.S. can also have learning disability**
  - Though it can get tricky to diagnose

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## Definitions of Learning Disabilities

- **Federal Definition**
  - From IDEA
  - **Disorder in one or more of the basic psychological processes**
    - **Difficulty in learning**
      - Specifically speaking, listening, writing, reading, and mathematics
  - **Not due to other causes**
    - Visual or hearing problems
    - Motor handicaps
    - Mental retardation

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## Definitions of Learning Disabilities

- Emotional disturbance
- Environmental disadvantage
- Cultural disadvantage
- **Severe discrepancy exists between the student's apparent ability and actual achievement**
- **Interagency Committee on Learning Disabilities**
  - Can have difficulties in listening, speaking, reading, writing, reasoning, mathematics, or social skills

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## Definitions of Learning Disabilities

- Can occur concomitantly with other conditions
- Intrinsic to the individual
- Caused by CNS dysfunction
  - Impairment in brain function
  - Organic
- **National Joint Committee on Learning Disabilities**
  - Heterogeneous group of disorders
  - Problem is intrinsic

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## Definitions of Learning Disabilities

- CNS dysfunction
- Can occur with other disorders
- **Kentucky State Definition**
  - a permanent disorder which affects the manner in which individuals with normal or often above average intelligence acquire, retain, and express information

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## Definitions of Learning Disabilities

- Discrepancy = a difference  $> 14$  points between global intelligence and measured achievement

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## Definitions of Learning Disabilities

- The discrepancy cannot be because of any of the following:
  - Visual, hearing, or motor impairment
  - Mental retardation
  - Emotional disturbance
  - Environmental, cultural, or economic disadvantage

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## Definitions of Learning Disabilities

- Common Elements of the definitions
  - CNS dysfunction
  - Uneven growth pattern and psychological processing differences
  - Difficulty in academic and learning tasks
  - Discrepancy between potential and achievement
  - Exclusion of other causes

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## Prevalence of LDs

- Ranges from 1% to 30%
  - Approximately 5% of all school-age children have been diagnosed as having a LD
- Number increased over the years
  - More awareness
  - Improvement in procedures used to identify
  - Social acceptance
  - Cutbacks in other programs and lack of educational alternatives
  - Court orders

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## Assessment of LDs

- **State of KY**
  - Evaluation to include the following:
    - Add info here

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## Specific LD: Language Problems

- **Oral language, reading, and writing are an integrated system**
  - Fulfills several functions
    - Provides a means of communication
    - Provides a means of socialization
    - Enables culture to be transmitted across generations
    - Vehicle of thought

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## Specific LD: Language Problems

- **Forms of language:**
  - Listening
  - Speaking
  - Reading
  - Writing
- **Primary language system**
  - Listening and speaking
- **Secondary language system**
  - Reading and writing

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## Specific LD: Language Problems

- **Receptive skills**
  - Listening and reading
- **Expressive skills**
  - Speaking and writing

	Expressive	Receptive
Primary	Speaking	Listening
Secondary	Writing	Reading

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## Specific LD: Language Problems

- Language is a communication process
- Involves sending and receiving a message
- Understanding the communication process helps in dealing with communication problems

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## Linguistic Systems

- Linguistics is the study of the pattern of language systems and the nature, development, function, and use of language.
  - Attitudes toward language
  - Linguistic systems
    - Phonology
      - System of speech sounds in a language
      - Smallest unit = phoneme

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## Linguistic Systems

- **Morphology**
  - System of meaning units in a language
  - Smallest unit = morpheme
- **Syntax**
  - Grammar system of the language
- **Semantics**
  - Word meanings in a language
- **Pragmatics**
  - Social side of language
- **Other parts of the language system**
  - intonation

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## Neuroanatomy of Language

- **Wernicke's area**
  - Left temporal lobe
  - Language comprehension
- **Broca's area**
  - Right temporal lobe
  - Word finding and use of grammar

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## Language Problems of Students with LDs

- **Lack of phonological awareness**
- **Slowness in naming; word finding problems**
- **Nonstandard English**
- **Limited English proficiency**

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## Language Disorders

- **Speech Disorders**
  - **Abnormalities of speech**
    - Articulation difficulties
    - Voice disorders
    - Fluency difficulties
  - **Language delay**
  - **Language disorders**

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## Reading Disorder

- **Clinical features (Diagnostic Criteria)**
  - Reading achievement that is substantially below that expected given the individual's age, intelligence, and education
  - Significantly interferes with academic achievement or activities of daily living involving reading skills
  - Not due to a sensory deficit

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## Reading Disorder

- Reading characterized by distortions, substitutions, and omissions
- Affects both oral and silent reading
- **Associated features**
  - Demoralization
  - Low self-esteem
  - Deficits in social skills
  - High drop-out rates
  - Comorbid with CD, ODD, ADHD, Major Depression, Dysthymia, and other LDs

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## Reading Disorder

- **Etiology**
  - Genetic predisposition
  - Perinatal injury
  - **Neurological and other medical conditions**
    - Lead poisoning, FAS, fragile X syndrome
  - Phonological processing deficit
  - May have a general processing speed deficit
  - Magnocellular pathway
  - Brain's white matter

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## Reading Disorder

- **Gender Features**
  - 60-80% are male
- **Prevalence**
  - 4% for school-aged children
- **Course**
  - Some symptoms may occur as early as kindergarten
  - Not typically diagnosed before the end of kindergarten or the beginning of 1<sup>st</sup> grade
  - With a high IQ, may not be diagnosed until around 4<sup>th</sup> grade

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## Disorder of Written Expression

- **Clinical features (Diagnostic Criteria)**
  - Writing skills that fall substantially below those expected given the individual's age, intelligence, and education
  - Significantly interferes with academic achievement or activities of daily living that involve writing
  - Not associated with a sensory deficit
  - **Difficulties in composing written text**
    - Not diagnosed if there are only spelling error or poor handwriting in absence of other criteria

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## Disorder of Written Expression

- **Prevalence**
  - Difficult to estimate, but probably around 2-4%
- **Course**
  - Seldom diagnosed before the end of 1<sup>st</sup> grade
  - Some symptoms may appear as early as the beginning of 1<sup>st</sup> grade
  - With a high IQ, may take longer to diagnose—perhaps to 4<sup>th</sup> grade

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## Expressive Language Disorder

- **Clinical features (Diagnostic Criteria)**
  - An impairment in expressive language development that is substantially below that obtained in both nonverbal intellectual capacity and receptive language development
  - Interferes with academic achievement, occupational functioning, and social functioning

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## Expressive Language Disorder

- If MR or speech-motor/sensory deficits are present, the language difficulties are more severe than would be expected given these associated features
- Includes difficulties with both oral and sign language
- Linguistic features vary depending on the severity of the disorder and the age of the individual
- Nonlinguistic functioning is WNL

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## Expressive Language Disorder

- **Acquired vs. Developmental**
  - **Acquired Type**
    - Impairment occurs after a period of normal development as a result of neurological or other general medical conditions
  - **Developmental Type**
    - Impairment is not associated with a neurological insult.
- **Depend on pointing and gesturing to make their wants/needs known**
- **Can understand language produced by others**

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## Expressive Language Disorder

- **Dysnomia**
- **Apraxia**
- **Associated features**
  - **Phonological Disorder**
  - **Rapid rate and erratic rhythm of speech**
  - **Disturbances in language structure**
  - **Other speech problems**
  - **School and learning problems**

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## Expressive Language Disorder

- **May be a mild impairment of receptive language**
- **Delay in reaching motor milestones not uncommon**
- **Social withdrawal**
- **Comorbid with ADHD and other disruptive behavior disorders**
- **Gender features**
  - **More common in males than females**

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## Expressive Language Disorder

- **Prevalence**
  - 3-5% for Developmental Type
  - Acquired Type is less common
- **Course**
  - **Developmental type**
    - Recognized by 3 years of age
    - Milder forms may not be recognized until early adolescence
    - Outcome is variable
      - 50% outgrow; 50% have long-lasting difficulties
    - Most children will have normal language by adolescence

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## Expressive Language Disorder

- **Acquired Type**
  - Onset is sudden
  - Occurs at any age
  - Prognosis depends on severity and location of insult, age of the child at the time of the injury, and the extent of language development at the time
- **Familial patters**
  - More likely to occur in children of individuals who have a family history of language and communication problems

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## Mixed Expressive-Receptive Language Disorder

- **Clinical Features (Diagnostic Criteria)**
  - Impairment in both expressive and receptive language that is substantially below measured nonverbal intelligence
  - Impairs academic achievement, occupational achievement, and social functioning
  - Does not meet criteria for PDD
  - If there are other deficits present, the difficulties are greater than would be expected, given the other deficits

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## Mixed Expressive-Receptive Language Disorder

- Occurs in both oral and sign language
- Markedly limited vocabulary
- Errors in tense
- Difficulty recalling words or producing sentences
- Difficulty expressing ideas
- Difficulties understanding words, sentences, or specific types of words

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## Mixed Expressive-Receptive Language Disorder

- Echolalia
- Some have problems with discrimination of pitch/tone
- Mild vs. Severe cases
- Acquired vs. Developmental
  - Acquired Type
    - Impairment occurs after a period of normal development as a result of a neurological or other general medical condition
  - Developmental Type
    - Impairment not associated with neurological damage

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## Mixed Expressive-Receptive Language Disorder

- Associated features
  - Linguistic features similar to Expressive Language Disorder
  - Deficit in comprehension discriminates between the two disorders
    - May be less obvious to observers and only be found on standardized tests
  - May appear to not hear/be confused/not paying attention when spoken to
  - May follow instructions poorly, if at all.

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## Mixed Expressive-Receptive Language Disorder

- May be exceptionally quiet or talkative
  - In the latter case, conversational skills are poor
- Deficits in sensory information processing
  - Especially temporal auditory processing
- Deficits in motor coordination
- Comorbid with Phonological D/O, LD, ADHD, Developmental Coordination D/O, Enuresis

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## Mixed Expressive-Receptive Language Disorder

- Gender features
  - Developmental Type more common in males
- Prevalence
  - Developmental Type may occur in 3% of school children
    - May be less common

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## Mixed Expressive-Receptive Language Disorder

- Course
  - Developmental Type
    - Usually detectable before age 4
    - Milder forms may not be noticeable until elementary school
    - Many children do develop normal language skills
      - Prognosis worse than for children with Expressive Language D/O
  - Acquired Type
    - Occurs at any age
    - Prognosis depends on the location and severity of brain injury, age of the child at the time of the injury, and the extent of language development

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## Phonological Disorder

- **Clinical Features (Diagnostic Criteria)**
  - Failure to use developmentally expected speech sounds that are appropriate for age and dialect
  - Interfere with academic or occupational achievement or social functioning
  - If other deficits are present (MR, sensory deficits), the impairment is worse than would be expected given the other impairments

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## Phonological Disorder

- Includes errors in sound production, use, representation or organization, substitutions of one sound for another, or omissions of sounds.
- Articulation errors involving failure to form speech sounds correctly
- Cognitive problems that involve a deficit in linguistic categorization of speech sounds
- Most frequently misarticulated sounds:
  - l, r, s, z, th, ch

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## Phonological Disorder

- Lispings is fairly common
- May also involve errors of selection and ordering of sounds within words and syllables
- Severity ranges from mild to severe
- **Associated features**
  - May have hearing impairments, structural deficits of oral peripheral speech mechanism, neurological conditions, cognitive limitations, or psychosocial problems

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## Phonological Disorder

- **Gender features**
  - More common in males than females
- **Course**
  - In severe cases, language may be unintelligible even to close family members
  - Milder forms may not be recognized until elementary school

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## Phonological Disorder

- **How to test for Phonological Disorder**
  - Rhyme Oddity
  - Alliteration Oddity
  - Blending
  - Elision

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## Assessing Oral Language

- **Purpose**
  - Determine the language abilities children have acquired
  - Assess any language problems
  - Assess functional use of language
- **Should cover both parts of oral language**
  - Listening and speaking
- **Typically uses standardized tests**

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## Assessing Oral Language

- **These tests include:**
  - Boehm Test of Basic Concepts—Revised
  - Clinical Evaluation of Language Fundamentals—Revised (CELF-R)
  - Detroit Tests of Learning Aptitude—4 (DTLA-4)
  - Fullerton Language Test for Adolescents

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## Treatment of Learning Disorders

- **Behavior Therapy has been used successfully in the treatment of LDs**
  - **Three Domains in which it has been applied**
    - development of specific skills
    - development of organizational and problem-solving strategies
    - treatment of problems in attitude or effect
- **Principles of Behavioral Therapy**
  - identify the targeted behavioral goal, such as acquisition of a set of facts, concepts, or overt behaviors
  - break down the goal into its constituent parts

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## Treatment of Learning Disorders

- arrange the parts sequentially, in successive approximations toward the goal
- identify which is the most appropriate first step for the individual
- allow the child to work through the program, systematically progressing along the successive approximation sequence
- provide contingent feedback at each step

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## Treatment of Learning Disorders

- Has been used to develop specific skills
  - BBRs
  - Data supports use
- Treatment for problems associated with LDs
  - Social skills deficits
  - Anxiety
  - CD
  - Poor self-esteem

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