Learning Objectives

1. Understand the diagnosis, assessment, and associated features of dyslexia.
2. Understand executive functioning challenges that often co-occur with dyslexia and potential treatment implications.

Outline

- Specific Learning Disorder: Definitions and Background
- Comorbidity
- Executive Dysfunction
- Affective Disorders
- Case Examples
- Recommendations/Resources
- Questions
Definitions

Learning Disability (IDEA)

“A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations.”

(IDEA, 2004, p. 13)

Specific Learning Disorder

DSM-5 criteria:

• Difficulties learning and using academic skills:
  – Word reading, reading comprehension, fluency (with impairment in reading; dyslexia)
  – Spelling, grammar and punctuation, written expression (with impairment in written expression; dysgraphia)
  – Number sense, arithmetic facts, fluent calculation, math reasoning (with impairment in mathematics; dyscalculia)
• Affected skills lower than age expectations, cause interference in daily living

Specific Learning Disorder versus Dyslexia?

• Psychological versus medical diagnosis
• Both refer to deficits in reading
• Caused by problems with information processing in the language regions of the brain; display challenges with phonemic awareness, sound blending, and/or rapid word recognition.
• May observe poor decoding, poor comprehension, slow reading, and avoidance of reading
• May also affect spelling, foreign language learning, and some aspects of math computation (speeded math)
Identification

Psychologists and educators are typically involved in identification, but have different training and emphasis areas

Some aspects of twice-exceptionality are identified in schools (i.e., talent development) and some are identified in clinics (i.e., ADHD, anxiety)

For some students, a comprehensive evaluation is critical in understanding a child’s range of strengths and weaknesses

Comprehensive Evaluation

1. Review of records (Educational, Medical)
2. Interviews with parent and child
3. Individual administration of
   a. Intelligence
   b. Academic achievement
   c. Other areas of functioning as indicated (e.g., visual-motor integration, executive functioning, memory, and attention)
4. Behavioral Rating scales completed by students, parents, and teachers
   a. Behavioral Assessment System for Children (BASC-3)
   b. Measures of self-concept, depression, anxiety

Presentation across the lifespan

Preschool
- Lack of interest in games requiring sound repetition and rhyming
- Difficulty learning nursery rhymes
- May use “baby talk,” mispronounce words, and have trouble remembering names of common objects
- Fail to recognize letters in name
- Difficulty learning to count
Presentation across the lifespan

Kindergarten
- May not recognize and write letters, write their name, and may use invented spelling
- May struggle to break words into syllables
- Show difficulty with rhyming
- May struggle to connect letters with sounds and recognize phonemes

Presentation across the lifespan

Early Elementary
- Difficulty learning letter-sound correspondence
- Poor fluency with word decoding or spelling; reading aloud is slow, inaccurate, or effortful
- Problems with manipulating phonemes and recognizing irregularly spelled words
- Difficulty sequencing letters or numbers
- Complain learning tasks are hard and show avoidance

Presentation across the lifespan

Middle Grades
- May mispronounce or skip parts of multisyllabic words
- Get the first part of a word right, and then guess "wildly" at the rest of the word
- Confuse words that sound alike
- May show poor reading comprehension
- May show slow, effortful, or inaccurate reading
- Poor spelling
- Express fear of and/or refuse to read aloud

Presentation across the lifespan

Adolescents and Adults
- May have mastered decoding, but show slow and effortful reading
- May struggle with reading comprehension and written expression (including spelling)
- May show poor mastery of math facts
- Need to frequently reread to understand text
- May struggle to make inferences in reading
- Avoid activities requiring reading
- Ongoing spelling problems
Risk and Prognosis

- Appears to aggregate in families
- Risk 4-8 times higher in first-degree relatives than those w/o family history
- More common in males than females (2:1 ratio)
- Higher risk of learning concerns in students who
  - Show inattention in preschool years
  - Nonresponsive to academic interventions
  - Have speech delays or impaired cognitive processing (e.g., working memory, rapid naming)
- Worse outcomes when comorbid with ADHD

Functional Consequences

- Lower academic attainment
- High rate of high school drop out
- Lower rate of postsecondary education
- Higher rate of unemployment and underemployment
- High levels of psychological distress and poorer mental health

Associated Features & Comorbidity

- Parents of students with LD report mildly elevated psychosocial concerns
- Increased anxiety around performance/failure
- Unrealistic expectations of self
- Protective factors: strong support system, involving in extracurricular activities/work/volunteerism, self-knowledge, self-acceptance, and self-advocacy
  - Participation in enrichment associated with improved self-concept and attitude toward school

General Psychosocial Factors

- Participation in enrichment associated with improved self-concept and attitude toward school

References

Ngonon et al., 2011
Psychiatric Comorbidities

Approximately 62% of students with SLD have comorbid diagnoses

- Other Learning Disorders
  - Writing (~35% comorbidity in our sample)
  - Math (30 – 70%)
- ADHD (31 – 45%)
- Anxiety Disorders (~30% comorbidity, 70% increased anxiety)
  - Generalized Anxiety
- Depressive Disorders (~10%)
  - Suicidal ideation (associated with school drop out)
- Disruptive Disorders (low comorbidity when control for ADHD)
- Other neurodevelopmental disorders
  - Communication Disorders (~11%)
  - Developmental Coordination Disorder (~18%)
- General deficits in processing speed, working memory, and verbal comprehension are common, but nonspecific

What does this mean?

- Students with comorbidities show greater functional impairment over the lifespan
- Comprehensive assessment is key
  - Recommended that students diagnosed with LD be screened for ADHD, and vice versa
- Recognize range of needs
  - Cognitive, academic, behavioral, emotional
- Understand how comorbidities may exacerbate LD
- Include supports for comorbidities in treatment/accommodation plans

ADHD Diagnosis

DSM-5 criteria:

- Persistent pattern of inattention and/or hyperactivity/impulsivity causing interference with daily functioning
- 6 symptoms inattention and/or 6 symptoms hyperactivity/impulsivity
- Symptoms prior to age 12
- Symptoms present in 2 or more settings
- Inattentive, H/I, or Combined Presentation

Impact of ADHD

Symptoms of ADHD interfere with learning

- Poor attention to detail in reading
- Distractibility leads to missed instruction
- Attention problems attenuate benefits of repetitive drills
- Disorganization/forgetfulness may lead to poorer work completion
- Poorer ability to sustain effort and persevere with challenge

*Research shows ADHD does not cause LD*
**Recommendations - ADHD**

- Research suggests prioritizing academic needs; improving academic performance may improve behavior, but the reverse has not been found to be true in this population
- Implement evidenced-based curricula for LDs
- Implement treatment strategies across settings (school and home)
- Implement treatments/accommodations for ADHD
  - Psychotropics
  - Behavioral modification
  - Testing accommodations
  - Increase structure, predictability of environment

**Anxiety Diagnosis**

**DSM-5 Generalized Anxiety Disorder**

- Excessive anxiety and worry occurring more days than not, for at least 6 months, about several issues/events (social, school, performance, health, world events, etc.)
- It is difficult to control the worry
- In children, anxiety is associated with one or more: restlessness, easily fatigued, difficulty concentrating, irritability, muscle tension, sleep disturbance
- Symptoms cause distress or impairment

**Impact of Anxiety**

- Anxiety interferes with learning
  - Disrupts attention, focus, concentration
  - Lower tolerance for frustration
  - May be more distracted by somaticizing symptoms
  - Task avoidance (which increases anxiety)
- Anxiety interferes with performance
  - Forgetfulness
  - Self-doubt
  - Less efficient cognitive processing
- Behavior
  - Acting out symptoms associated with panic
  - Escape behaviors

![The Yerkes-Dodson Law](image)
Recommendations - Anxiety

- Consider psychotherapy
  - Teach coping strategies
  - Address unhelpful cognitive distortions
    - "I'm so stupid. I'll never get this!"
    - "I'm the only one who doesn't understand."
- Accommodate LD and anxiety
  - Testing accommodations
  - Extra time
  - Reduced assignments
  - Limit opportunities for humiliation
- Enhance strengths/show evidence of progress
- May consider psychotropic medication

Depression Diagnosis

DSM-5 Criteria for Major Depressive Disorder

- Five or more symptoms in two-week period; must include either depressed mood (may present as irritability in children) or loss of interest/pleasure:
  - Change in appetite/weight
  - Change in sleep
  - Psychomotor agitation or retardation
  - Fatigue or loss of energy
  - Feelings of worthlessness or guilt
  - Diminished ability to think, concentrate, decide
  - Recurrent thoughts of death or suicidal ideation

Impact of Depression on Learning

- Low energy, motivation
- Disruption of sleep cycle
- Cognitive dysfunction (impaired executive functioning: memory, decision-making, attention, processing speed, etc.)
- Preoccupation with somatic symptoms
- Increased absenteeism
- Social isolation

Recommendations - Depression

- Psychotherapy
  - Teach coping strategies
  - Address unhelpful cognitive distortions
- Consideration of psychotropic medication
- Accommodate weaknesses
- Strategies to increase engagement and satisfaction with school (prevent drop out)
  - Enhance strengths
  - Build positive relationships
  - Show evidence of progress
  - Identify role models
When to refer?

• When there are concerns about learning, consider referral to a licensed psychologist for a diagnostic evaluation.
  – Recommend including a screening of potential attention and anxiety/mood concerns.
• Refer parents to make a formal request in writing to the child’s school to determine whether they qualify for specialized supports or services (504 Plan or IEP).

School Services

• Only schools (IEP team) can determine whether a student qualifies for services, but must take into consideration outside documents (e.g., evaluations).
• Individual Education Program (IEP) is a legal document detailing the special education instruction, supports, and services that will be provided to a student with a qualifying disability.
• 504 Plan is a legal document delineating accommodations for a student with a qualifying disability or medical condition in order to access the educational curriculum; not a special education program.
• Procedural Safeguards for Parent Rights (IDOEO)

Case Examples

Xander

• 10 years old; in 5th grade
• Referred by parents due to difficulties w/ reading and writing (e.g. probes w/ comprehension, reversals, transposes words)
• Slow writer, writing is laborious and emotionally strenuous
• Anxiety regarding reading performance
• Parents- outgoing, puts forth good effort in reading
• Tutor- helped w/ reading and spelling
• Additional concerns: disorganized, problems w/ concentration, worry, panic symptoms
Xander

WISC-V %ile
Verbal Comprehension 50
Visual Spatial 77
Fluid Reasoning 66
Working Memory 23
Processing Speed 14

WA IV %ile
Sentence Reading Fluency 12
Math Facts Fluency 21
Sentence Writing Fluency 18

Neuropsychological Findings:
Phonological Processing 9th %ile
Speeded Naming
Completion Time Total 37th %ile
Overall Accuracy Score 63rd %ile
7 self-corrected errors 9th %ile

Design Copying 26th %ile

Xander

Dx: Specific Learning Disorder with Impairment in Reading
Specific Learning Disorder with Impairment in Written Expression

Recommendations:
1. IEP or 504 Plan
2. Intervention and accommodations for reading, written language, and spelling
3. Support in math (accommodate computation)
4. Occupational Therapy
5. Tutoring
6. Enrichment
7. Parent Resources and Support

Leo

• Age 7 years; in 2nd grade
• Referred by parents due to attention and learning concerns; high cognitive ability, but delays in reading
• Struggles to apply phonics, views reading as a “chore,” self-conscious about reading level, makes letter reversals, struggles with spelling, better at verbalizing than writing ideas
• Works slowly and meticulously, struggles with timed tasks
• Broad concerns with attention, organization, & task completion; also hyperactive and poor emotional regulation
• Enjoys audiobooks
• Participated in Reading Recovery in kindergarten & 1st grade
• Current teacher reports “average” reading, strong in math
• Despite a love of learning, Leo strongly dislikes school

Leo

WISC-V %ile
Verbal Comprehension 95
Visual Spatial 77
Fluid Reasoning 95
Working Memory 30
Processing Speed 25

WA IV %ile
Sentence Reading Fluency 9
Math Facts Fluency 45
Sentence Writing Fluency 21

Neuropsychological Findings:
Phonological Processing 10th %ile
Speeded Naming
Completion Time Total 25th %ile
Overall Accuracy Score 5th %ile
11 self-corrected errors <2nd %ile
Visual-Motor Integration 32nd %ile

Rating scales: Significant for attention problems and hyperactivity
CPT-3: Significant for ADHD
Leo

Dx: Specific Learning Disorder with Impairment in Reading
Attention-Deficit/Hyperactivity Disorder, Combined Presentation

Recommendations:
1. IEP or 504 Plan
2. Intensive reading intervention
3. Consult medical provider for medication management of ADHD
4. Accommodations for reading and ADHD
   a. Testing accommodations
   b. Reduced distractions
   c. Organizational assistance
5. Positive behavioral supports
6. Tutoring
7. Extracurricular opportunities
8. Parent Resources and Support

Iris

17 years old; in 11th grade
- Referred by parents due to underachievement and anxiety
- In preschool, struggled with rhyming and letter sounds
- Early school concerns included poor sight reading, spelling, and memorization of math facts
- Participated in Title I Reading for 3 years, parents initiated private tutoring
- Junior High and High School: strong reading comprehension, poor fluency and continued decoding challenges; completes work slowly, poor academic self-confidence
- Overwhelmed by amount of schoolwork
  - “No longer able to compensate for her challenges”
  - Highly motivated, loves to learn, puts forth great effort

Iris

WAIS-IV
Verbal Comprehension 98
Perceptual Reasoning 96
Processing Speed 14

WJ-IV
Reading Fluency 16
Math Fluency 19
Writing Fluency 24

WIAT-III
Reading 21
Comprehension 66
Fluency 10
Mathematics 92
Written Expression 65
Spelling 18
Essay Composition 92

Psychosocial:
- significant generalized anxiety

Dx: Dyslexia (Specific Learning Disorder with imp. in Reading, Spelling)
Generalized Anxiety Disorder

Recommendations:
1. IEP or 504 Plan
2. Testing accommodations (time, reduced distraction, breaks, multiple test sessions, reader)
3. Reduce homework
4. Accommodate spelling weakness in writing
5. Calculator for rapid math computation
6. Alternatives to foreign language requirement
7. Continued private tutoring
8. Psychotherapy for anxiety
9. Consider medication management of anxiety
10. Extra challenge in math
11. Enrichment opportunities
### General Reading Supports

- Intensive instruction
- Use audiobooks and other forms of Assistive Technology
- Testing accommodations:
  - Extra time, reduced distraction, reader
  - Modify/shorten assignments requiring lengthy reading
  - Play games involving labeling pictures, simple reading, and spelling
  - Boost confidence by reading to younger children
  - Partner read with parent/older sibling
  - Balance reading new books and re-reading old favorites
  - Find books at reading level that relate to interests
  - Encourage reading for pleasure and reading for purpose
  - Teach comprehension strategies – use text structure to guide comprehension
  - Teach reading self-monitoring, use of context, and paraphrasing skills
  - Make visual representations of reading material
  - Link new info to background knowledge

### General Executive Function Supports

- Testing accommodations
  - Extra time, reduced distraction, frequent breaks, multiple test sessions, answer in test booklet
  - Preferential seating
  - Consistency and predictability in environment
  - Reduce distraction in learning environment
  - Frequent breaks, chunk workload
  - Non-intrusive cueing
  - Organizational assistance, especially for multi-step projects
  - Structured study hall
  - Multimodal instruction, give written and verbal reminders
  - Use mnemonics and other strategies for enhancing memory
  - Opportunities to be active (don’t remove recess!)
  - Reward positive behavior change

### General Psychosocial Supports

- Testing accommodations: extended time, reduced distraction
- Identify and enhance strengths; show evidence of progress
- Create an environment where it is safe to take risks
- Focus on effort and learning over outcomes/grades
- Build coping skills and frustration tolerance
- Use positive behavior supports to develop needed skills
- Avoid high stakes rewards/consequences and power struggles
- Provide structure, predictability, and choice
- Understand that challenging behavior can indicate anxiety/low mood in youth and intervene accordingly
- Identify stressors and take steps to minimize stress
- Identify a safe place/person student can visit when distressed
- Enroll in enrichment and extracurricular programs of interest
- Monitor overall mood and satisfaction with peer relationships

### Resources

- [http://www.education.uiowa.edu/belinblank](http://www.education.uiowa.edu/belinblank)
- [educateiowa.gov/pk-12/special-education](http://educateiowa.gov/pk-12/special-education)
- [www.bookshare.org](http://www.bookshare.org)
- [https://www.ncld.org](http://www.ncld.org)
- [http://www.decodingdyslexiaiowa.org](http://www.decodingdyslexiaiowa.org)
- [http://dyslexiashelp.umich.edu/tools/informational-websites](http://dyslexiashelp.umich.edu/tools/informational-websites)
- [www.askresource.org/index.html](http://www.askresource.org/index.html)
- [www.iowacompass.org](http://www.iowacompass.org)
Questions or Comments?

Website:
http://www2.education.uiowa.edu/belinblank/clinic/