

WHAT THE HECK IS GOING ON WITH THIS CHILD?

The Evaluation of the Child with Reading Problems

Eric Tridas, M.D.

1

Disclosures

I have no disclosures

2

Objectives

1. Understand the components of an evaluation
 - ▣ The purpose: *Consequential validity* – The **WHY**
 - ▣ The science behind it – The **Foundation**
 - ▣ The structure – The **HOW**
 - ▣ The content – The **WHAT**
2. Interpreting the findings to guide intervention: The **NOW WHAT**

3

The **WHY**

The principle of *Consequential Validity*

4

Consequential Validity

- The positive or negative social consequences of a test
 - Positive examples
 - A test *measures accurately a specific function or skill*
 - Improving student learning through *test-based classification decisions*
 - Ensuring *equal access to content for all students*
 - Negative examples
 - Using test to re-allocate funding
 - Teaching students to pass a test rather than understanding the material
 - A test that produces a negative impact does not have consequential validity

<https://www.statisticshowto.com/consequential-validity/>
<https://methods.sagepub.com/reference/the-sage-encyclopedia-of-educational-research-measurement-and-evaluation/i5785.xml>

5

Why Do We Test

- Gather information to **inform decisions** about teaching & treating
- Collecting normed-referenced data to **compare performance** with other students
- Evaluate findings to **respond to questions and concerns**
- Identifying strengths, needs and weaknesses
- Making **meaningful recommendations**
- Ascertain **eligibility for services**
- Inform **diagnosis, intervention and supports**

6

Why Do We Test

We test to Teach & Treat

7

The FOUNDATION

The **Science of Reading** and the impact on the “**Whole Child**”

8

Everything has to do with language!!!

Literacy is part of language arts

9

The Four Language Arts Skills



Listening



Speaking



Reading



Writing



10

Oral Communication

Listening and Speaking

11

Listening – Oral Language Comprehension



The ability of the listener to interpret the message accurately

Understanding others

12

Speaking – Oral Language Expression

Using voice and gestures to share



Thoughts



Ideas



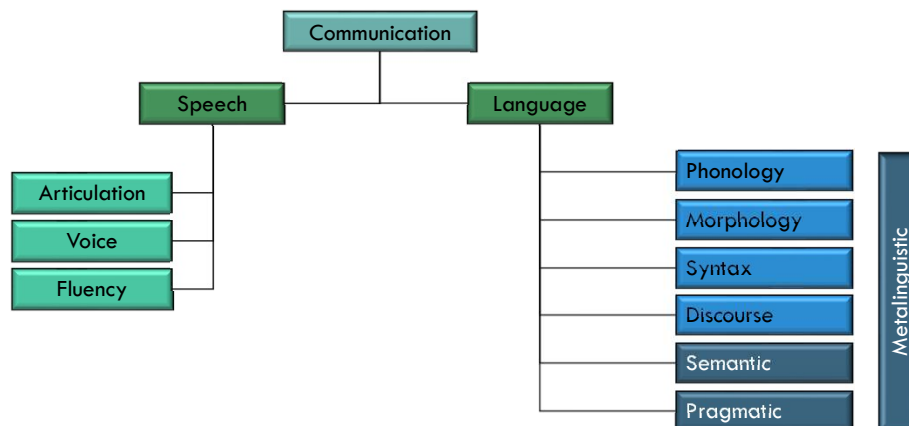
Feelings



Emotions

13

Speech & Language



14

Written Communication

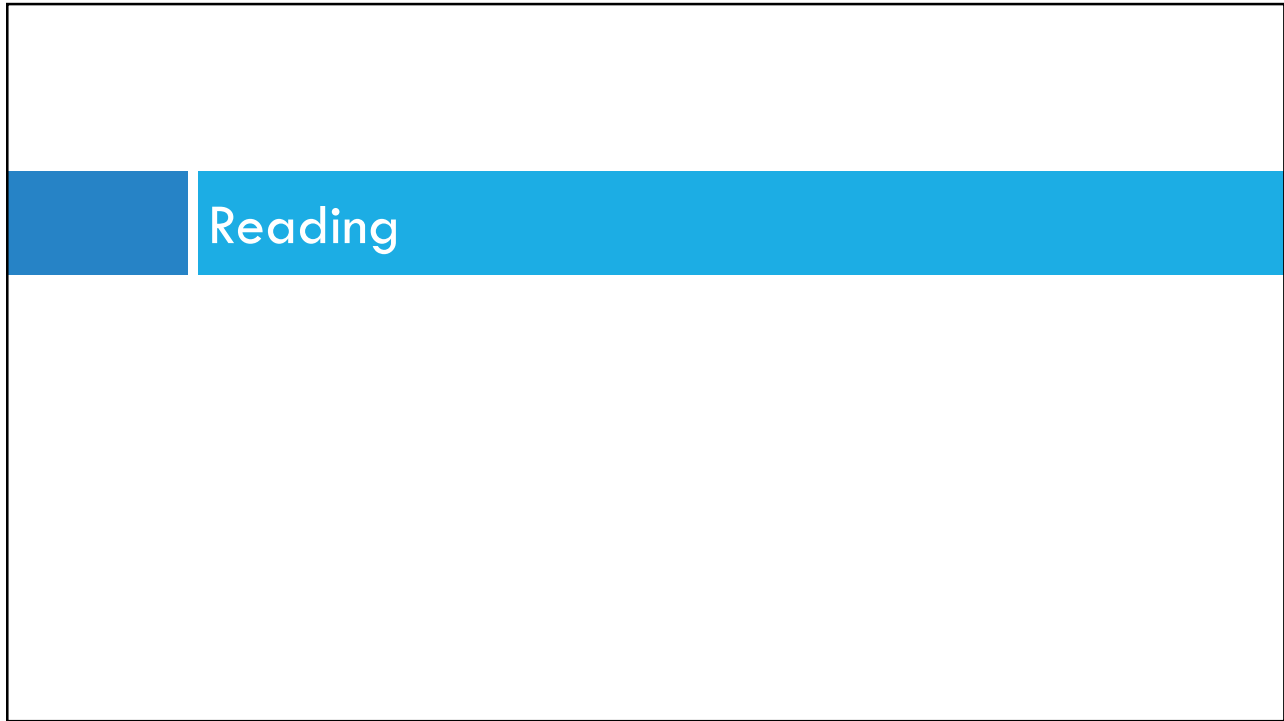
Reading and Writing

15

Literacy

- Reading and writing are two sides of the same coin
 - Require reciprocal functions at the **word level**
 - To read words is to **decode**
 - To spell a word is to **encode**
- Both depend on **language skills**
 - Listening and reading **comprehension**
 - If you don't understand what you hear, you won't understand what you read
 - Oral and written **expression**
 - If you can't say it, you can't write it

16



17

A slide with a white background and a thin black border. At the top, the word "Reading" is written in a large, dark blue, sans-serif font. Below the title is a solid blue horizontal bar. Underneath the bar are two light blue rounded rectangular boxes. The first box contains a quote icon (two blue quotation marks) on the left and the text "The process of looking at a series of written symbols and obtaining meaning from them" on the right. The second box contains a brain icon with gears (a blue silhouette of a head with two white gears inside) on the left and the text "Understand the meaning of any type of graphic representation¹" on the right. At the bottom left of the slide, there are two small footnotes: "1. English Club - <https://www.englishclub.com/reading/what.html>" and "2. Diccionario de la lengua española: Actualización 2022 - <https://dle.rae.es/leer?m=form>".

18

Report of the National Reading Panel

- **TEACHING CHILDREN TO READ: *An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction***
- Identified **five pillars of reading**
 - Phonemic awareness
 - Phonics
 - Fluency
 - Vocabulary
 - Comprehension



National Reading Panel (U.S.) & National Institute of Child Health and Human Development (U.S.). (2000). Report of the National Reading Panel: Teaching children to read: an evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. U.S. Dept. <https://www.nichd.nih.gov/publications/pubs/nrp/smallbook>

19

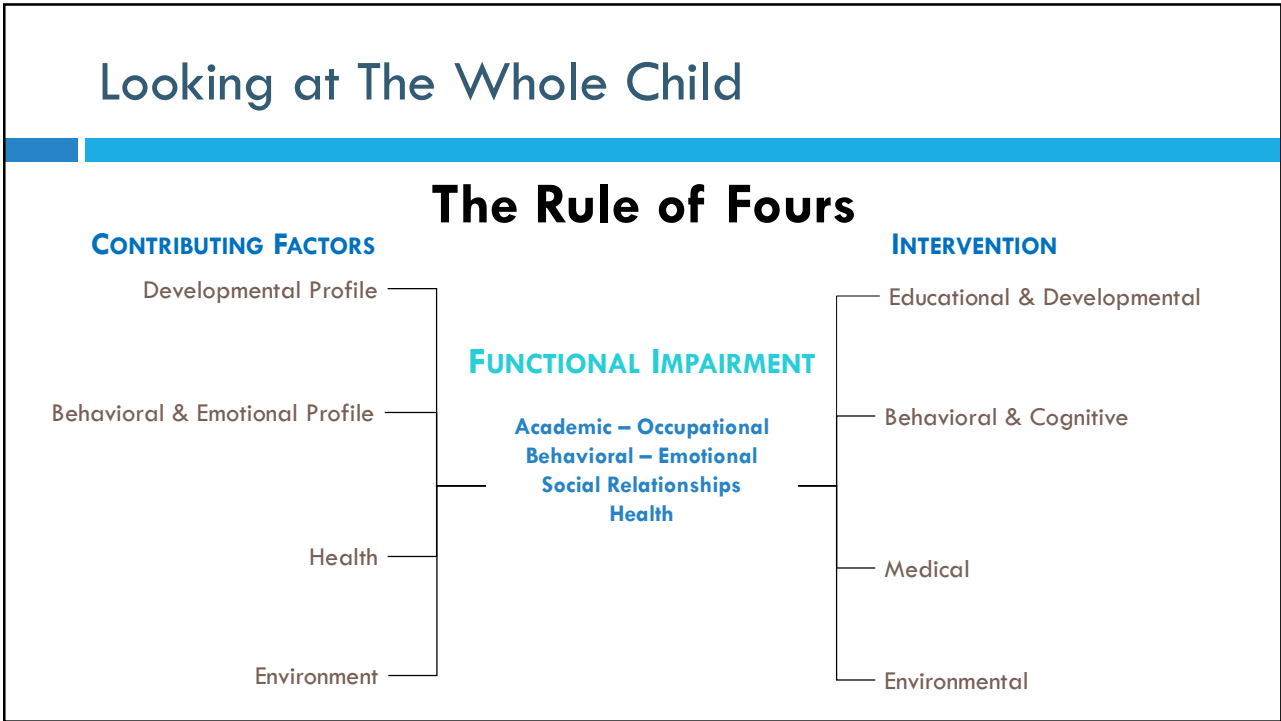
Writing

20

Writing

-  Representation of the oral or gestural language by means of a writing system
-  Complex process that uses various cognitive operations to translate ideas and thoughts into written language

21



22

Johnny: *The one who can't read*

Case Study

23

Johnny: Main Concerns

- Age: 7 years 4 months
- Grade: Entering 2nd grade
- Concerns
 - ▣ Difficulty acquiring basic reading and writing skills
 - ▣ Does not pay attention and is hyperactive
 - ▣ Has behavior problems at home

24

The WHAT

Based on the science of reading

25

Next Steps: The *Structure* of the Evaluation

□ **WHAT** to evaluate?

- Must assess the four contributing factors based on the Rule of Fours
 - Development
 - Behavior
 - Health
 - Environment

26

Reading

27

Reading Rope Model & When and What to Test

The diagram illustrates the Reading Rope Model, showing the development of reading skills over time. The rope is composed of two main strands: Language Comprehension and Word Recognition. Language Comprehension includes Background Knowledge, Vocabulary Knowledge, Language Structures, Verbal Reasoning, and Literacy Knowledge. Word Recognition includes Phonological Awareness, Decoding (and Spelling), and Sight Recognition. The rope is divided into five stages: Pre-K to K, Late K-1, Late 1-2, Late 2+, and 3+. The rope becomes increasingly strategic and increasingly automatic over time. Skilled Reading is defined as fluent execution and coordination of word recognition and text comprehension.

Reading Rope

Language Comprehension

- Background Knowledge
- Vocabulary Knowledge
- Language Structures
- Verbal Reasoning
- Literacy Knowledge

Word Recognition

- Phonological Awareness
- Decoding (and Spelling)
- Sight Recognition.

Reading is a multifaceted skill, gradually acquired over years of instruction and practice.

Ehri's Phases of Reading Development

- Pre-alphabetic stage
- Partial alphabetic stage
- Full alphabetic stage
- Consolidated alphabetic stage
- Automatic stage

Scarborough (2001)

28

Simple View of Reading: What do we test?

$$D \times LC = \text{Reading Comprehension}$$

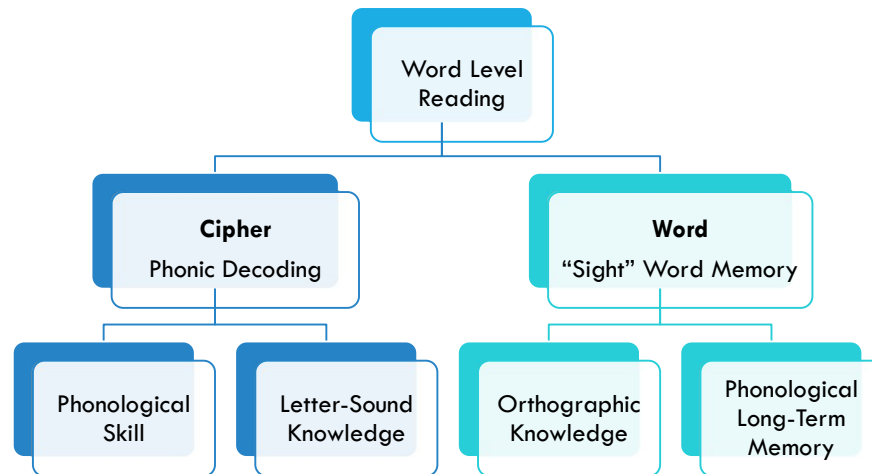
D = Decoding & fluency (word level reading): *Acquired skills*

LC = Listening Comprehension: *Innate skills*

Gough & Tunmer, 1986

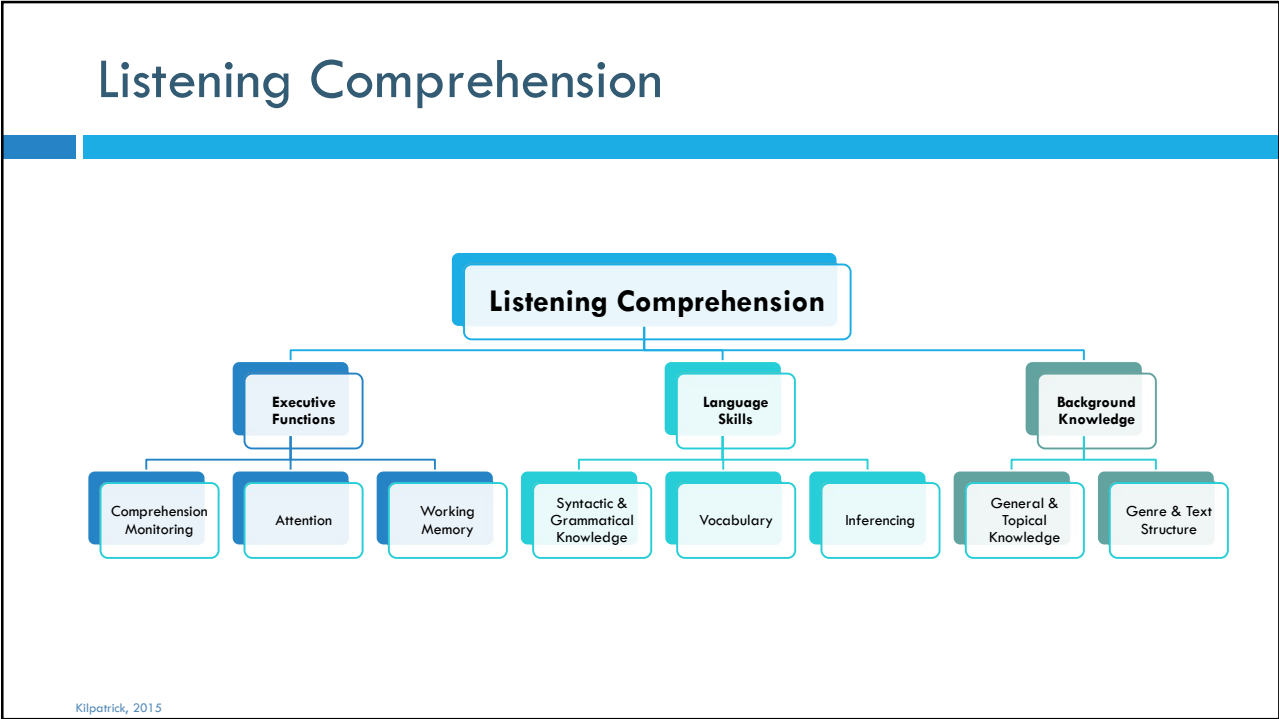
29

Word-Level Reading

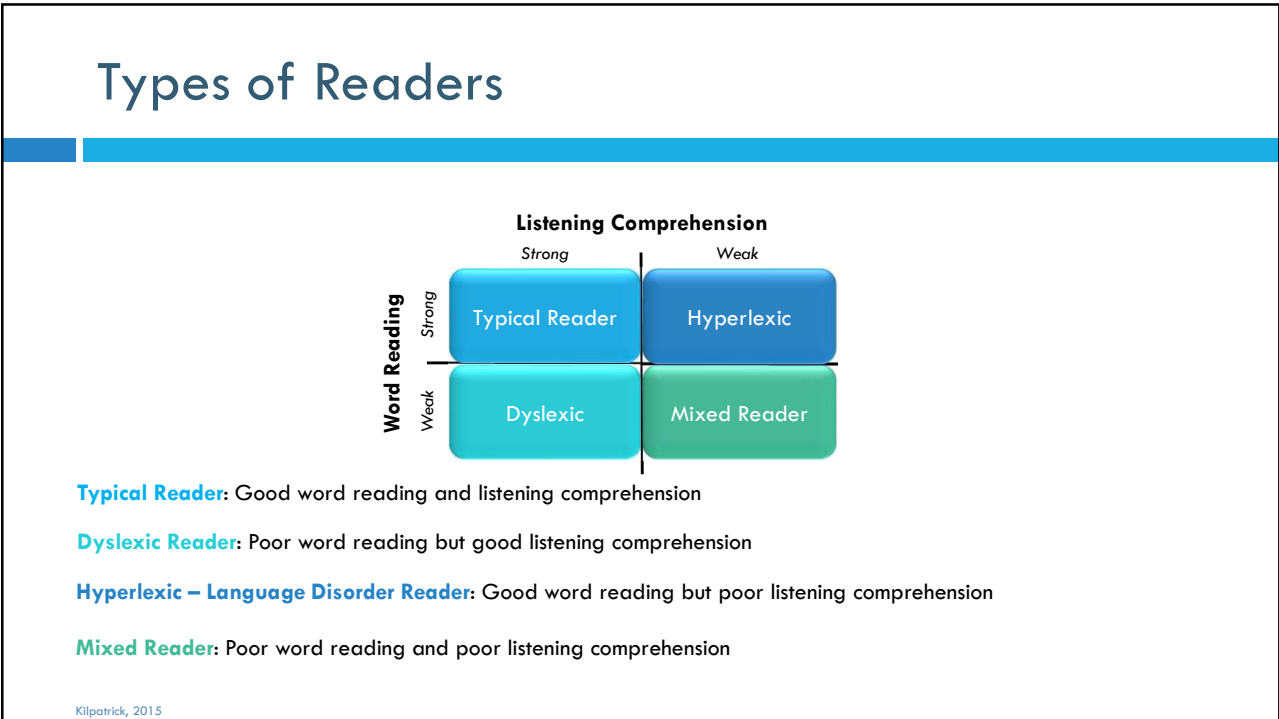


Kilpatrick, 2015

30



31



32

Dyslexia: IDA Definition

- One of several distinct learning disabilities
- Neurobiological in origin
- Symptoms
 - ▣ Poor decoding and spelling abilities
 - ▣ Problems with accurate and/or fluent word recognition
 - ▣ Inconsistent with age and/or cognitive ability

Adopted by the IDA Board of Directors, Nov. 12, 2002 (<https://dyslexiaida.org/definition-of-dyslexia/>)

33

Dyslexia: IDA Definition

- Etiology
 - ▣ Deficits in phonological processing
- Unexpected
 - ▣ In spite of typical instruction/opportunity to learn
 - ▣ Adequate intelligence
- Secondary Consequences
 - ▣ Poor reading comprehension
 - ▣ Poor vocabulary and general knowledge development

Adopted by the IDA Board of Directors, Nov. 12, 2002 (<https://dyslexiaida.org/definition-of-dyslexia/>)

34

DSM-5-TR: Types of Specific Learning Disorders

- With impairment in reading
 - ▣ Accuracy
 - ▣ Fluency
 - ▣ Comprehension
- With impairment in written expression
 - ▣ Spelling accuracy
 - ▣ Grammar and punctuation accuracy
 - ▣ Clarity or organization of written expression
- With impairment in mathematics
 - ▣ Number sense (numerosity)
 - ▣ Memorization of arithmetic facts
 - ▣ Accurate or fluent computation
 - ▣ Accurate math reasoning

DSM 5-TR, 2022

35

DSM-5-TR: Types of Specific Learning Disorders

- With impairment in reading
 - ▣ Accuracy } Dyslexia
 - ▣ Fluency }
 - ▣ Comprehension
- With impairment in written expression
 - ▣ Spelling accuracy
 - ▣ Grammar and punctuation accuracy
 - ▣ Clarity or organization of written expression } Dysgraphia
- With impairment in mathematics
 - ▣ Number sense (numerosity) } Dyscalculia
 - ▣ Memorization of arithmetic facts }
 - ▣ Accurate or fluent computation }
 - ▣ Accurate math reasoning

DSM 5-TR, 2022

36

DSM-5-TR & ICD-11: SLD Common Features

- **Cause**
 - Specific **deficits** in **perception or processing information** for **learning** academic **skills** efficiently and accurately
- **Onset**
 - Symptoms begin in the **developmental years** (Early identification = **risk**)
- **Manifestations**
 - Problems begin during the **formal school years** (After 1st semester of 1st grade = **diagnosis**)
 - May not manifest until volume, complexity and/or efficiency demands increase
- **Symptoms that are present for 6 months or longer**
 - **Persistent and impairing difficulty learning academic skills** (reading, writing & mathematics)
 - Academic performance is well below average for age (**Unexpected**)
 - Requires **extraordinary effort and/or support to reach acceptable levels**

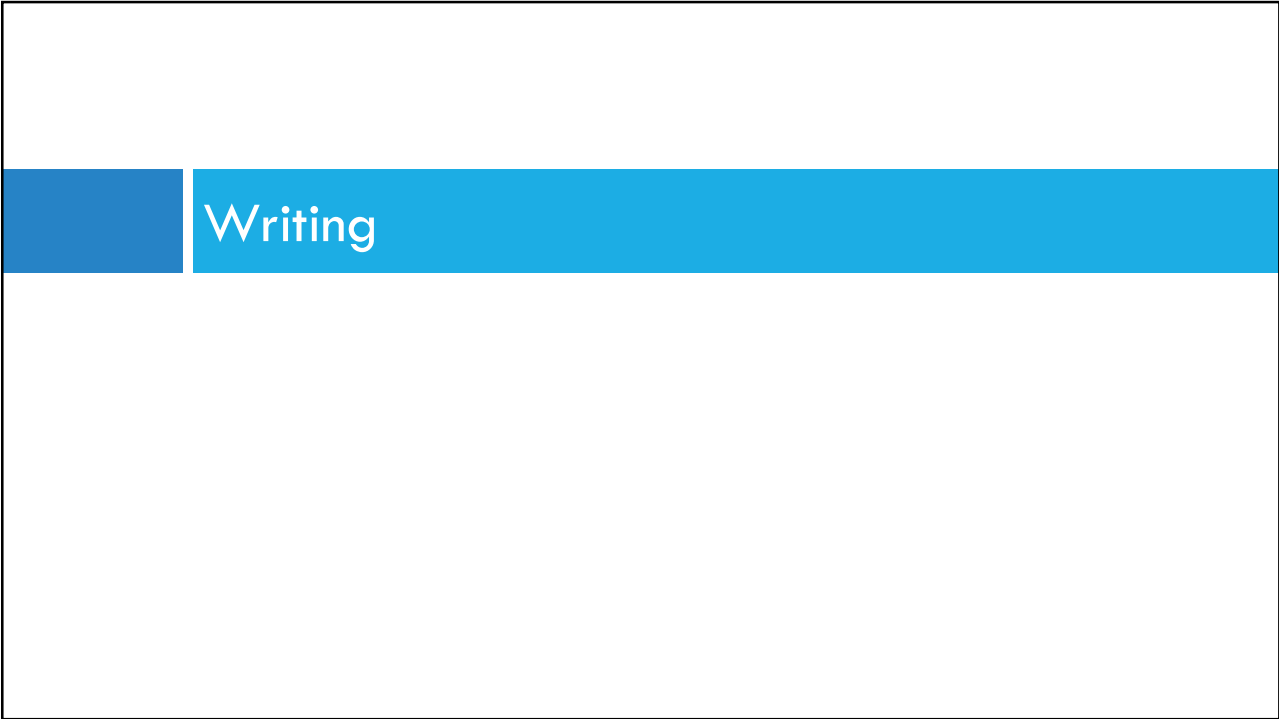
37

DSM-5-TR & ICD-11: SLD Common Features

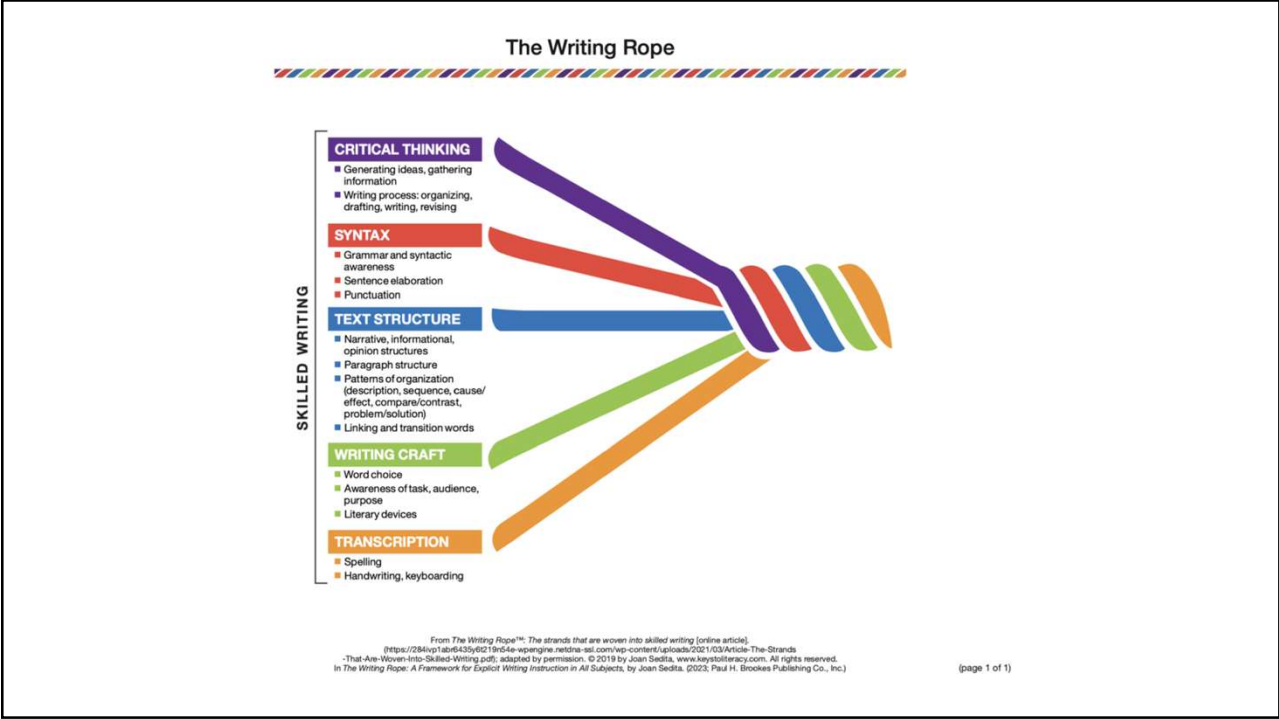
- Vary in severity
- Often coexists with other conditions
- They are heritable disorders (**Run in families**)
- Exclusion Criteria
 - Disorder of intellectual development
 - Sensory impairment (vision or hearing)
 - Neurological or motor disorder
 - Lack of availability of education
 - Lack of proficiency in the language of academic instruction
 - Psychosocial adversity

<https://icd.who.int/browse11/l-m/en#/http%3a%2f%2fid.who.int%2f%2fid%2fentity%2f2099676649>

38



39



40

What Else to Assess: *Think Rule of Fours*

- Consider the *whole child*
 - Other contributing factors (coexisting conditions)
 - Behavior and Emotional
 - Health
 - Environment

41

How to Assess

The structure of the evaluation process

42

The How: The **LEFT** Model

The diagram illustrates the LEFT Model with four steps, each represented by an icon and a text label:

- L**isten: Represented by a headphones icon.
- E**valuate: Represented by a bar chart icon.
- F**ormulate: Represented by a document icon.
- T**each and **T**reat: Represented by a person pointing at a screen and a head with gears icon.

43

Listen

The History: *If you want to know what is wrong, just ask!*

44

Listen

Informants: *Who do you ask?*

- Parents
- Teachers
- Students

Methods: *How do you ask?*

- Direct interview
- Questionnaires

45

What You Want to Know

Main concerns

Educational & Developmental History

Typical School Day Routine

Peer Interactions

Discipline and behavior management

Health History

Family & Social History

46

Johnny's Case

47

Johnny's Main Concerns: **Just the Facts**

- **Just the facts**
 - Descriptions of symptoms not impressions
 - What do you **observe**
 - Difficulty acquiring basic reading and writing skills
 - Does not pay attention, hyperactive/impulsive at home
 - Has behavior problems at home
- **Current interventions**
 - Tier 2 support services for reading and writing
 - 504 plan
 - Private tutoring
 - Stimulant medication (on school days)

48

Main Concern: The “My Opinion” Approach

- “His teacher this year recommended I have him evaluated for a **processing disorder**, and has also recommended a **special school** next year for children with **learning disabilities** (although he has never been formally DX'd with a learning disability...) only ADHD for which he takes medicine and has a **504 plan**. Was denied testing because **current progress monitoring scores were not ‘low enough’**”

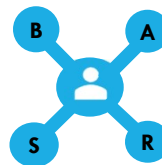
49

Educational History: *Let's go to the BARS!*



Monitor symptoms and impairment over time – Go grade by grade

- Establishes onset of symptoms
- Be aware of developmental expectations and educational demands



Ask about the type of problems

- Behavior
- Attention
- Readiness or the 3 Rs (reading, writing arithmetic)
- Social interaction

50

Johnny's Behavior & Attention

- Pre-k & K
 - Very disruptive, hyperactive, inattentive, non-compliant
 - A bit apprehensive
 - Trouble separating from mom in the morning
- 1st Grade
 - Compliance and hyperactivity improved after medication started
 - Still somewhat inattentive
 - Still a bit apprehensive, seems to worry

51

Johnny's Early Developmental History (Readiness)

- A little slow to talk
- Articulation difficulties
- Mixes similar sounds
- Trouble with rhyming

52

Johnny's Educational History (The 3 Rs)

- Pre-K & K
 - ▣ Trouble learning the names of letters and their sounds
- 1st grade
 - ▣ Struggled to sound out unfamiliar words
 - ▣ Poor sight vocabulary
 - ▣ Difficulty spelling
 - ▣ Illegible handwriting
 - ▣ Can communicate well and understands instructions appropriately

53

Johnny's Social Skills

- Pre-K & K
 - ▣ Made friends easily
 - ▣ Overwhelmed friends easily
 - ▣ Problems playing and following game rules
- 1st
 - ▣ Better at keeping friends and following rules since medication started
 - ▣ Gets invited to parties

54

Johnny's Typical School Day

Morning Routine

- Waking *Takes a while*
- Dressing
 - Supervision *Constant!*
 - Buttoning, snapping, zipping, tying, etc. *Can't tie or button*
- Breakfast
 - Sitting *Up and down*
 - Silverware *Problematic*
 - Messiness *YES!*
- Brushing/combining *Hit and miss*
- Gathering materials *Needs constant reminders*
- Arriving to school
 - Separation *Needs reassurance*
 - Transitioning into classroom *Needs reminders*

Afternoon & Evening Routine

- Picking up from school
- Afternoon routine
 - Homework *Takes forever. A battle. Forgets materials*
 - Play *OK*
 - Extracurricular activities *Problems following instructions*
- Dinner
 - Sitting *Up and down*
 - Silverware *Problematic*
- Evening routine
- Bedtime routine
 - Getting to bed *Problematic. Talks about school problems*
 - Falling asleep and or staying asleep *Varies*
 - Snoring *No*
 - Nightmares *No*

55

Johnny's Discipline at Home

Behaviors

- Defiance or non-compliance ✓
- Aggression (verbal or physical) ✓
- Emotional regulation ✓

Technique

- Time out ✓
- Restriction of privileges ✓
- Other

Effectiveness

- Attained compliance *Variable*

56

Johnny's Medical History

Birth: No complications

- Pregnancy, labor and delivery
- Neonatal period

Developmental History: Slight delays in speaking and articulation problems

Health: None

- Persistent and or significant health problems
- Ear infections, asthma, bed wetting, soiling of underwear, etc.
- Hospitalizations and surgeries
- Accidents with loss of consciousness/concussions

Allergies: None

Current medications: Vyvanse 10 mg – on school days

57

Johnny's Family and Social History

Parents

- Age: **38 y/o & 40 y/o**
- Level of education: **College (BA)**
- Occupation: **Bookkeeper/Entrepreneur**
- Health, learning, behavior/emotional problems: **Yes**

Siblings

- Age: **5 & 10 y/o**
- Health, learning, behavior, emotional problems: **One sibling has ADHD & LD**

Close Relatives

- Health, learning, behavior, emotional problems: **Yes**

Does your child remind you of anyone in the family? MANY CLOSE RELATIVES

58

Johnny's Family & Social History

- Environmental stress factors in the last 2 years: **None**
 - Marital difficulties
 - Financial difficulties
 - Change of job
 - Moving
 - Birth of a child
 - Death of a relative
 - Health problems

59

History Summary: Impairments and Strengths

Strengths

- Academic
 - Does well in math, good at sports
- Behavior/Emotional
 - Home: Can be sweet and loving
 - School: Respectful of teachers.
- Social interaction: Makes friends easily but can lose them
- Health: No problems
- Social/Environmental: Stable home environment

Impairment

- Academic
 - Difficulty acquiring basic academic skills in reading, spelling and handwriting
- Behavior/Emotional
 - Home: Irritable, defiant, non-compliant, emotional and aggressive
 - School: Apprehensive and trouble separating from mom
- Social interaction: Makes friends easily but can lose them. Better since Vyvanse was started
- Social/Environmental: Strong family history of learning and attention problems

60

Evaluate: Testing

Assessment of the specific skills of reading... And everything else!

61

Comprehensive Assessment

62

Components of a Comprehensive Assessment

- History (**L**isten)
- Testing with standardized instruments (**E**valuate)
- Assessment/Summary of Findings (**F**ormulation)
- Plan of intervention (**T**each and **T**reat)

63

Types of Assessments

- Psychoeducational Assessment – **Eligibility for services**
- Psychological Assessment – **Diagnosis & treatment**
- Neuropsychological Assessment – **Etiology, diagnosis & treatment**
- Multidisciplinary – **Etiology, diagnosis, treatment, greater detail**
- All include
 - Interviews with the parent, child and teachers
 - Administration of standardized assessments and rating scales
 - Observations of the child

64

Johnny's Standardized Testing

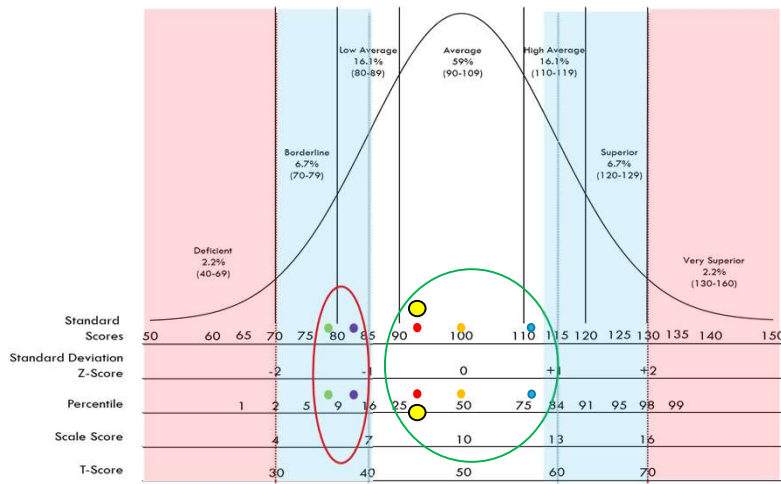
65

Johnny's Testing: Behavior Observations

- Duration of session: 4.5 hrs.
- Behavior
 - Polite, friendly, outgoing
 - Easily engaged, good rapport
 - Excellent interpersonal skills
- Attention
 - Verbal tangents in the middle of tasks
 - More stream of consciousness rather than avoidance
 - Easily redirected
 - No significant hyperactivity

66

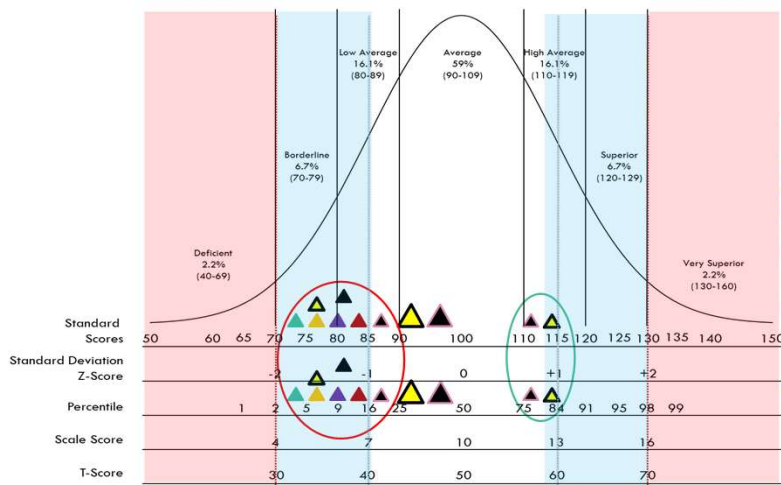
Johnny's Testing – IQ



WISC-V		
Scale	Composite Score	Percentile Rank
Verbal Comprehension	111	77
Visual-Spatial	100	50
Fluid Reasoning	94	34
Working Memory	79	8
Processing Speed	83	13
Full Scale IQ	94	34

67

Johnny's Testing – Achievement



KTEA-3		
Core Composite Subtests	Age-Based Standard Score	Percentile Rank
Reading	84	14
Written Language	77	6
Sound-Symbol	74	4
Decoding	80	9
Orthographic Processing	81	10
Comprehension	99	47
Reading	87	19
Listening	111	77
Expression	94	34
Written	77	6
Oral	114	82

68

Johnny's Testing: CTOPP

Subtest/Composite	Composite Standard Score	Subtest Scaled Score	Percentile Rank
Elision		6	9
Blending Words		8	16
Phoneme Isolation		7	25
Phonological Awareness	82		12
Memory for Digits		4	2
Nonword Repetition		7	25
Phonological Memory	73		3
Rapid Digit Naming		10	50
Rapid Letter Naming		10	50
Rapid Symbolic Naming	101		53

69

Johnny's Testing: Behavior/Emotional

- BASC
 - Home
 - Clinically significant for internalizing, externalizing, symptoms, attention symptoms
 - School
 - Borderline clinically significant for internalizing symptoms and attention symptoms

70

Formulation

Assessment- Summary

71

The 5 Questions to Answer

- Is there really a problem?
- What is it called (diagnosis -es)?
- What is (are) the cause(s)?
- What can be done?
 - How do we teach?
 - Is the student eligible for services?
 - What other services/interventions are needed
- What can be expected in the future?

72

Formulation Structure: Based on Rule of Fours

CONTRIBUTING FACTORS

Developmental Profile
Behavioral Profile
Health
Environment

FUNCTIONAL IMPAIRMENT

Academic – Occupational
Behavioral – Emotional
Social Relationships
Health

MANAGEMENT

Educational & Developmental
Behavioral & Cognitive
Medical
Environmental

73

Formulate: Putting it Together

- Organize it conceptually
 - Developmental Profile
 - Cognitive
 - Developmental level of functioning
 - Processing strengths and deficits
 - Academic skills
 - Reading, Writing, Arithmetic
 - Attention and Executive Functions
 - Behavior/Emotional Profile
 - Internalizing, Externalizing, Atypical symptoms
 - Health concerns, including sleep
 - Environmental/Social factors/Peer interactions
 - Diagnoses

74

Diagnoses

- Specific Learning Disorder with Impairment in Reading based on a lack of word reading accuracy and fluency (F81.9)
- Specific Learning Disorder with Impairment in Written Expression based on deficits in spelling accuracy, grammar, and clarity of written expression (F81.81)
- Attention Deficit Hyperactivity Disorder, combined presentation (F90.2)
- Developmental Coordination Disorder (F82)
- Oppositional Defiant Disorder (F91.3)
- Other Specified Anxiety Disorder (F41.9)

75

The 5 Questions

- Is there really a problem?
 - YES
- What is it called (diagnosis -es)?
 - Dyslexia, Dysgraphia, Dyspraxia, ADHD, ODD, Anxiety
- What is (are) the cause(s)?
 - Neurobiological and genetic
 - Deficits in PA, RAN, WM, fine motor control difficulties, attention problems, anxiety symptoms *all impacting one another!*
- What can be done?
 - Educational, Psychological, Medical and Environmental interventions
- What can be expected in the future?
 - Success, if the child is remediated and accommodated appropriately and we address coexisting conditions

76

Formulate: Demystification

- Discuss findings with family and student and *don't forget the strengths!*
 - Smart but can't read or spell due to brain differences that impact processing sounds of words, names of letters and recalling them quickly. Makes reading and spelling difficult. **Name: Dyslexia**
 - Absent minded and spacy, but not lazy (worse at home than school – only takes meds on school days) due to deficiencies in neurotransmitters – Low on brake fluid. **Name: ADHD**
 - A bit of a worry wort and irritable and defiant at home due to excessive survival neurotransmitters exacerbated by chronic stress of learning challenges. **Name: Anxiety**
 - Gets along well with others
 - Healthy
 - Good stable environment – **It is not your fault, but it is your problem!**
- Discuss further steps: **Stay tuned for Teach & Treat**
- Continue progress monitoring

77

Teach and Treat

Educational
Psychological
Medical
Environmental

78

Teach: Educational Interventions

- **Remediation**
 - Structured Literacy
 - Executive functions strategies
- **Accommodations**
 - Extended time
 - Assistive technology
 - Individual assistance
- **Modifications**
 - Homework time, volume of work (number of spelling words, math problems, etc.)
- **Behavior management and social emotional learning (SEL) strategies**

79

Psychological Interventions

- Behavior modification for home and school to address defiance and noncompliance
- Cognitive behavior therapy to address anxiety symptoms

80

Medical

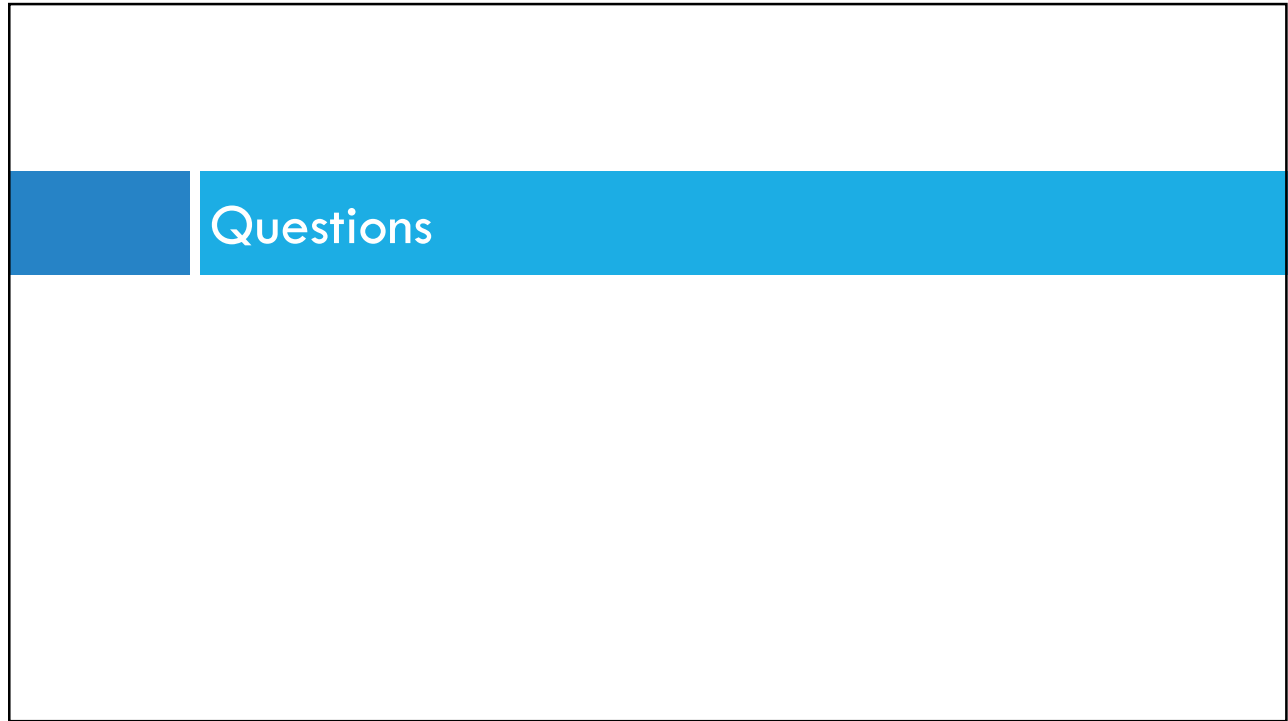
- Refer to prescribing physician to address attention difficulties
 - Possible considerations by the doctor
 - Give medication 7 days per week
 - Consider increase in dose given persistent difficulties with attention
 - Consider booster dose in the evening and giving morning dose earlier
 - May need a different medication

81

Environment

- School
 - Preferential sitting
 - Arrange schedule for difficult subjects early in the day
 - Maintain **consistent schedule**
- Home
 - Maintain **consistent schedule**
 - Provide time for leisure
 - Limit homework time
 - Promote extracurricular activities that enhance the child's strengths and interests
 - Manage parental stress

82



83