

Neuropsychological or Language/Literacy Assessment: Which One is Right for the Student?

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Overview

- This session reviews the difference and purpose behind neuropsychological vs. comprehensive language and literacy assessments. It discusses common neuropsychological and language/literacy assessment batteries, as well as lists the components of each type of assessment. It describes the importance of error analysis as well as the formulation of goals and objectives for remediation purposes.

Learning Objectives

Be	At the end of this presentation learners will be able to
List	List the purpose for each type of assessment
Compare	Compare common neuropsychological vs. language/literacy assessment batteries
Discuss	Discuss assessment components relevant to intervention provision
Describe	Describe the importance of findings interpretation
Explain	Explain why goal formulation for remediation purposes should be a vital part of every assessment

Neuropsychological Testing Overview

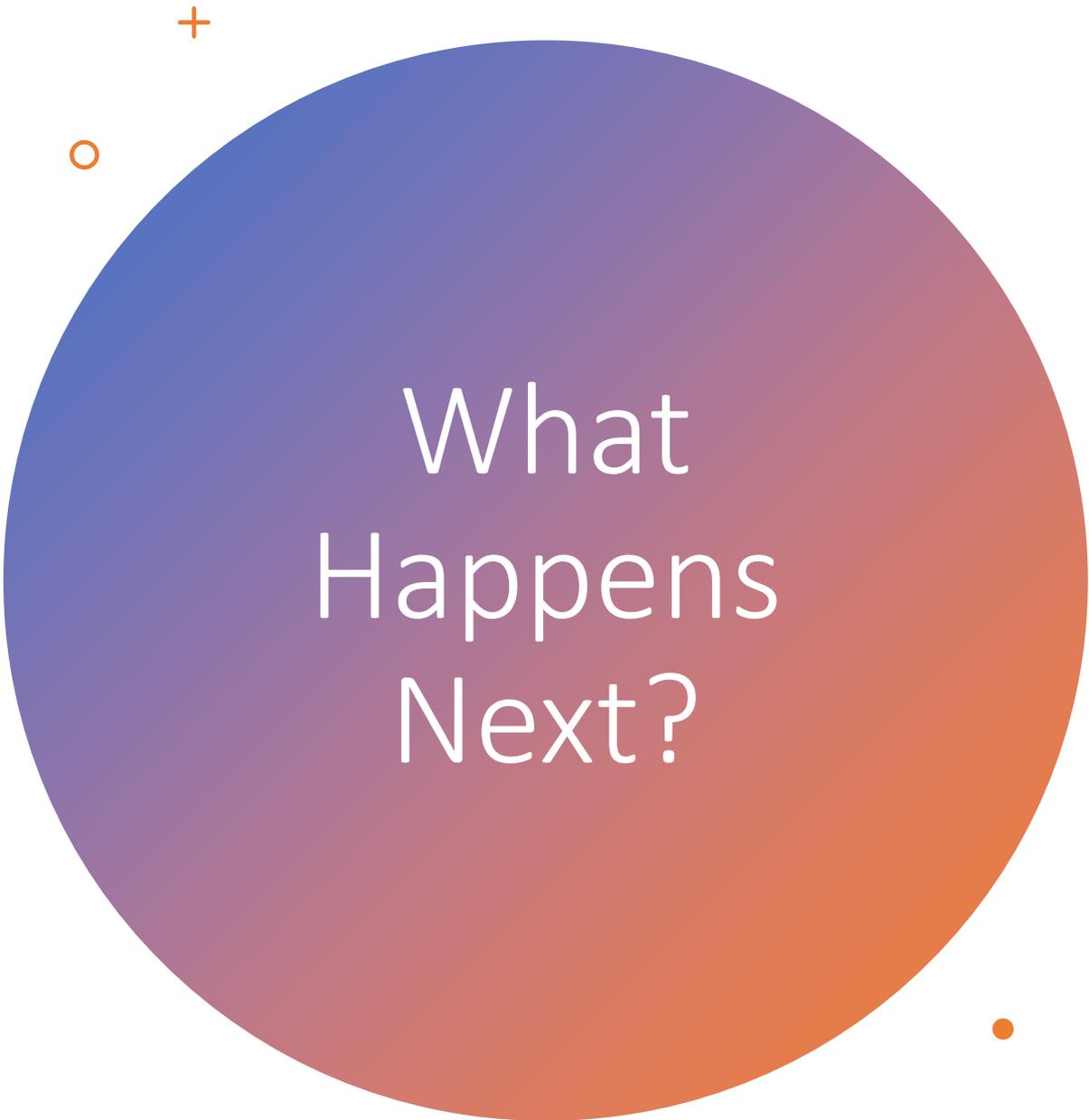
- Seek to establish a connection between brain and behavior
- Performed to determine the child's intellectual, emotional/psychiatric, and executive functioning
- Performed for differential diagnosis purposes to rule out confirm certain learning disabilities
- Testing is extensive and assesses many areas including memory, processing, visuospatial abilities, fluid reasoning, executive function, learning including learning disabilities, giftedness, and more
 - Classroom observation findings are integrated into the body of neuropsychological reports.
 - Some neuropsychologists will add educational testing for further comprehensiveness
 - *Neuropsychoeducational* vs. neuropsychological

Sample *Neuropsychoe*ducational Batteries

- Beery-Buktenica Developmental Test of Visual-Motor Integration (Beery VMI)
- Behavior Assessment System for Children, Third Edition (BASC-3) (Parent and Teacher Ratings)
- Behavior Rating Inventory of Executive Functioning-2 (BRIEF-2)(Parent and Teacher Forms)
- Bender Visual Motor Gestalt Test
- California Verbal Learning Test-Children's Version (CVLT-C)
- Conner's 3rd Edition (Parent and Teacher Forms)
- A Developmental Neuropsychological Assessment, Second Edition (NEPSY-II)
- Delis-Kaplan Executive Function System (D-KEFS)
- **Gray Oral Reading Tests-Fifth Edition (GORT-5)**
- Kaufman Test of Educational Achievement, Third Edition (KTEA-3)
- **Phonological Awareness Test-2: Normative Update (PAT-2: NU)**
- Purdue Pegboard Test
- **Test of Auditory Processing Skills, Fourth Edition (TAPS-4)**
- Test of Everyday Attention for Children Second Edition (TEA-Ch2)
- Test of Variables of Attention (TOVA)
- **Test of Written Language Fourth Edition (TOWL-4)**
- Thematic Apperception Test
- Wechsler Individual Achievement Test-Fourth Edition (WIAT-IV)
- Wechsler Intelligence Scale for Children – Fifth Edition (WISC-V)
- Wide Range Assessment of Memory and Language-2 (WRAML-2)
- Wide Range Achievement Test – 5 (WRAT-5)
- Woodcock-Johnson IV: Selected Achievement, Cognitive, and Oral Language Tests (WJ-IV)

Listed in chronological order

Tests highlighted in green are also administered by speech language pathologists



What Happens Next?

- The assessor will summarize assessment findings which typically includes
 - Intellectual functioning (Full Scale IQ)
 - DSM-5 diagnoses (e.g., psychiatric, learning, etc.)
 - Learning strengths/needs
 - Recommendations for in-school accommodations/modifications
 - Special education placements
 - Referrals to relevant professionals (speech pathologist, occupational therapists, audiologist, etc.) for additional in-depth testing if needed.
 - **Recommendations for particular programs/services**

Neuropsychological Recommendation Samples Part 1

Goals:

1. Participation in class.
2. Social Interaction and reciprocal conversation.
3. Mood and self-esteem.
4. Emotional regulation
5. Increase vocabulary goal.
6. Restroom accommodations/Goal

Given [REDACTED] slow processing speed, ADHD, and reading disorder, it is recommended that he be provided with 50% extended time on all classroom and standardized assessments. It is also recommended that he be permitted to take exams in an alternate setting that can minimize distractions that may be evident in the classroom.

It is recommended that [REDACTED] participate in the structured social skills program offered at his school, as this will provide him with an opportunity to practice appropriate social skills with peers, as well as receive gentle feedback about his behavior. Informal, extra-curricular

a. Reading – Student would benefit from a Balanced Literacy approach to reading. This type of teaching focuses on the strengths of the child. Consider using a multi-sensory type of Orton-Gillingham program, coupled with a fluency model such as Read Naturally.

dyslexia. In order to remediate his reading disability he requires reading instruction using an empirically-supported method such as Orton-Gillingham, Wilson or Lindamood-Bell. In order for meaningful progress to be made, it is essential for session to occur multiple times per week (i.e. 3 1-hour sessions after school,

[REDACTED] will also require accommodations to address his spelling/writing weaknesses. For instance, his teachers should help him proofread and edit his writing prior to handing in assignments, and spelling errors should ultimately be forgiven. Additionally, due to difficulty with theme development and organization, [REDACTED] teachers should also work with him to be sure that he is producing on-topic and concise writing. He should be given a writing rubric for each assignment so that he can evaluate his

Neuropsychological Recommendation Samples Part 2

spelling problems, and the results of the current evaluation have aided in the identification of more specific needs. This includes **phonetics** (sounding out words while reading and spelling), **grammar, handwriting, reading analogue clocks, place value** in math, and **learning new concepts**. He may also benefit from instruction in the **Wilson Reading Program (or another empirically validated Orton-Gillingham reading intervention)** designed to continue the development of his phonetics in both reading and spelling. Due to his exceptionally strong vocabulary and verbal abilities, authority

Due to his exceptional skills in the oral language domain, [REDACTED] may benefit from **opportunities to present his work orally or to respond to oral examinations**, if he prefers to do so. He should work to incorporate his exceptional vocabulary into his writing, as there is potential for his skills to develop beyond that of his same-aged peers.

area of auditory processing. On the current assessment, he demonstrated appropriate functioning on some subtests in this area, but he had difficulty clearly discriminating ending sounds in some words and also struggled with auditory tasks requiring memory. Some of [REDACTED] difficulty in this area seemed related to attention, but some auditory discrimination difficulty was also noted. He should continue to be monitored in this area and if concerns continue, he would benefit from an Auditory Processing Disorder (APD) evaluation with an audiologist. A referral name was provided.

warranted. She also demonstrated some auditory discrimination difficulty. [REDACTED] might also benefit from an evaluation for an Auditory Processing Disorder (APD) with an audiologist to determine whether additional support is warranted.

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Comprehensive Language and Literacy Testing

- Establishes the extent to which the child's language and literacy weaknesses are impacting his/her academic performance
- Determines appropriate educational environment
- Establishes present level of language and literacy functioning (strengths and needs)
- Develops comprehensive treatment goal hierarchy in order to improve social and academic functioning of the student in question
 - *While academic performance can be affected by impaired intellectual functioning, **reduced working memory**, and **processing abilities**, etc., (results of neuropsychological testing), difficulties exhibited by children in school setting are language-based (language and literacy testing)
 - *Because not all language deficits are obvious(e.g., reduced vocabulary and grammar), many subtle language difficulties (e.g., **social communication**, **writing**, etc.) may not be readily recognized without these in-depth assessments.

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Purpose of Language/Literacy Assessments

- Perform a **TARGETED** battery of standardized assessments
- Conduct clinical assessments of select deficit areas (discourse/narratives, reading, writing, and spelling) in order to tease out difficulties **not picked up by standardized testing**
- **Meticulously interpret all assessment findings**
- All standardized assessments possess functional limitations
- From weak psychometric properties to a lack of sensitivity picking up certain higher-order deficits, all standardized tests must be supplemented by clinical assessments which assess the child's abilities to function academically at the grade level versus mere basic language and literacy competency

Sample *Language/Literacy* Batteries

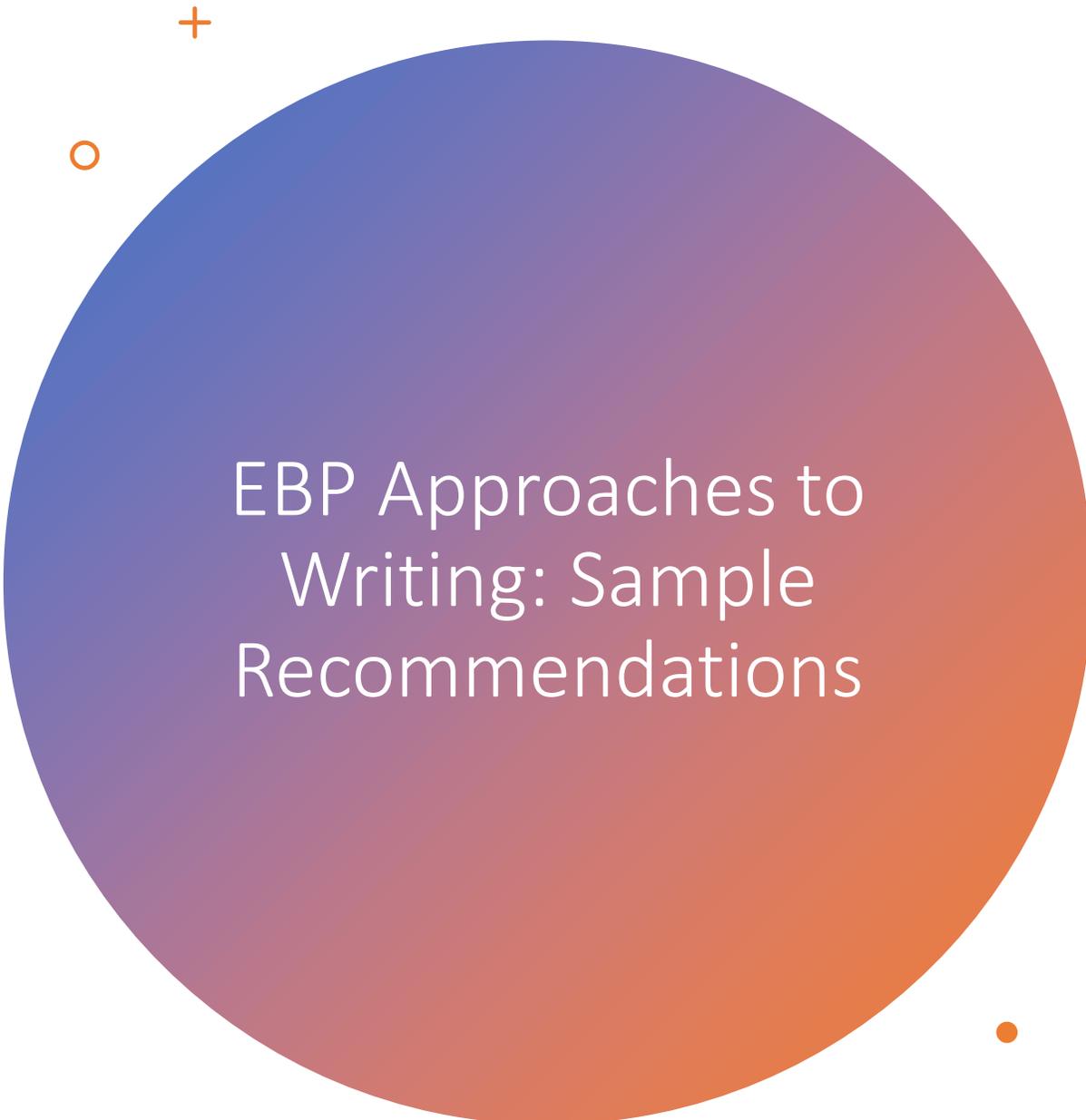
- **Clinical Assessment of Pragmatics (CAPs)**
- **Clinical Evaluation of Language Fundamentals-5: Metalinguistics (CELF-5:M)**
- **Comprehensive Test of Phonological Processing-Second Edition (CTOPP-2)**
- **Executive Functions Test: Elementary (EFT-E)**
- **Expressive Language Test – Second Edition (ELT – 2)**
- **Gray Oral Reading Tests-Fifth Edition (GORT-5)**
- **Language Processing Skills Assessment (TAPS-4)**
- **Oral Passage Understanding Scale (OPUS)**
- **Phonological Awareness Test-2 (PAT-2: NU)**
- **Social Language Development Tests (A and E)**
- **Spelling Performance Evaluation for Language and Literacy-Second Edition (SPELL-2)**
- **Test of Early Written Language-Third Edition (TEWL-3)**
- **Test of Integrated Language & Literacy Skills (TILLS)**
- **Tests of Problem Solving (TOPS 2 & 3)**
- **Test of Reading Comprehension-Fourth Edition (TORC-4)**
- **Test of Written Language-Fourth Edition (TOWL-4)**
- **WORD Tests (Elementary and Adolescent)**

Language/Literacy Report Expectations

- Outline of the students' difficulties in extensive detail
- ICD-10 diagnoses
- Recommendations for accommodations and modifications
- If classroom observations took place, then statement regarding whether the student's present classroom placement is appropriate
- If the classroom placement is not appropriate, what type of a classroom statement will be appropriate?
- Suggestions for various evidence-based therapeutic approaches and additional services (e.g., reading, writing, etc.)
- **TARGETED goals and objectives**

Sample SLP Assessment Findings

- **Impressions** - narrative review of a child's language and literacy weaknesses which include subjective ratings of deficits (below average, severely impaired, profoundly impaired) based on the combination of standardized & clinical assessments.
- Comprehensive language and literacy assessment revealed that the student presents with **previously unidentified** language and literacy deficits which are presently adversely affecting his educational performance and require targeted remediation. These deficits include **below average-moderately impaired** metalinguistic comprehension and oral language, **severely impaired** pragmatic abilities as well as **below average** reading, and writing abilities, which require targeted intervention services.
- Student's **oral expression and metalinguistic** weaknesses are characterized by impaired ability to explain ambiguous and figurative language as well as engage in age-level discourse.
- Student's **pragmatic** deficits are characterized by impaired ability to engage in social routine language, interpret context clues, comprehend irony and sarcasm, as well as express non-verbal body language and context clues.
- Student's **reading deficits** are characterized by below average phonemic awareness, reading accuracy, and reading comprehension abilities. Additional deficits further impacting student's reading comprehension include impaired **oral language, literate vocabulary knowledge, background knowledge, gestalt processing, and verbal reasoning abilities.**
- Student's **spelling deficits** are characterized by significant weaknesses in the areas of Phonemic and Morphological Awareness. Please find the detailed **SPELL-2 assessment results and recommendations summary** in the **Appendix A** of this report.
- Student's **writing deficits** are characterized by weaknesses in the areas of spelling, logical sentence construction, sentence revision, persuasive composition development, as well as proofreading and editing.



EBP Approaches to Writing: Sample Recommendations

- **SQ Write**
 - <http://www.sqwrite.com/white-papers-and-downloads/>
 - <http://www.sqwrite.com/sq-write-2/>
- **The Writing Revolution**
 - <https://www.thewritingrevolution.org/wp-content/uploads/2020/09/EVIDENCE-SUPPORTING-THE-WRITING-REVOLUTION-METHOD.pdf>
- **Best Practices in Writing Instruction**
 - Graham, S., MacArthur, C.A., & Fitzgerald, J. (Eds.). (2013). *Best practices in writing instruction* (2nd ed.). New York, NY: Guilford Press.
- **Think SRSD**
 - <https://ies.ed.gov/ncee/wwc/InterventionReport/680>
- **Evidence-Based Practices for Writing Instruction**
 - https://cedar.education.ufl.edu/wp-content/uploads/2014/09/IC-5_FINAL_08-31-14.pdf

Tests Administered

SCAN 3:C Tests for Auditory Processing
The Listening Comprehension Test-2nd Edition

Results of Testing

On the SCAN 3:C, [REDACTED] scored within the average range of development for all areas of auditory processing, including Filtered Words, Auditory Figure Ground, Competing Words and Competing Sentences. No further concern is noted in this skill area.

On The Listening Comprehension Test 2, [REDACTED] scored within the average range on all subtests, including understanding the main idea, details, reasoning and vocabulary. No further testing was warranted.

Clinical Summary

This testing revealed no further difficulty in the area of auditory or language processing skills. Her previous diagnosis of a mild specific language delay is supported by evidence of difficulty with more complex sentence comprehension and inconsistent word finding difficulty. She does have a previous diagnosis of reading difficulties (see psycho educational evaluation).

SLP Report Sample
Proceed with Caution

Assessments administered:



Clinical Evaluation of Language Fundamentals-5
Listening Comprehension Test-2
Peabody Picture Vocabulary Test-4 (Form B)
Expressive Vocabulary Test-2 (Form B)
Test of Narrative Language
Informal Conversation Sample

SLP Report
Sample
Proceed with
Caution

How are Test Overlaps Handled?

- When both professionals are doing assessments within the same time frame, each provides a courtesy list of tests to each other or to the parents (to be forwarded on) in order to avoid the **practice effect**
 - Repetition of the same test in a short period of time which skews the findings of that particular assessment
- Substitution of reading and phonological awareness tests
 - **CTOPP-2** for **PAT-2: NU**
 - **GORT-5** for **TORC-4**
- Use different forms of tests
- Form B instead of A on such tests as the **GORT-5, TOWL-4**, etc.

How Do Schools Use Both Types of Assessment Results?

Provide	Provide the students with relevant educational classification <ul style="list-style-type: none">• Learning disability
Provide	Provide the students with an IEP or a 504 plan
Determine	Determine classroom placement
Establish	Establish accommodations and modifications to be included in the IEP or 504 Plan to assist the child to succeed in the academic setting given his/her weakness areas

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Why Do Test Results Differ?

- A large number of educational tests such as **WIAT-IV, WJ-IV**, etc., were developed to rank children within the range of the general population
- We know that because their technical manuals lack information on discriminant accuracy (sensitivity and specificity)
- **As such students can do very well on these tests and be reading, writing or oral language impaired**

Discriminant Accuracy

Sensitivity and Specificity (Dollaghan, 2007)

- **Sensitivity** – does the assessment accurately identify those students who truly have a language, reading, writing disorder as having a disorder
- **Specificity** - does the assessment accurately identify those students who truly do not have any disorders as typical
- Sensitivity and specificity determine the test's degree of **discriminant accuracy**, or the ability to distinguish the presence of a disorder
- Vance and Plante (1994) established a criteria for accurate identification of a disorder (discriminant accuracy)
 - 90% should be considered good discriminant accuracy
 - 80% to 89% should be considered **fair**
 - Below 80%, misidentifications occur at unacceptably high rates” and lead to “serious social consequences” of misidentified children. (p. 21)”
- **Most important information about any standardized assessment**
 - **If discriminant accuracy section is missing from the manual, the test should not be used for the purpose of disorder identification as it results will not be accurate**

WIAT-3 vs. TILLS (Age:11)

Subtest Score Summary

Subtest	Raw Score	Standard Score	90%	Normal			Grade Equiv.	Age Equiv.	Growth Score
			Confidence Interval	Percentile Rank	Curve Equiv.	Stanine			
Word Reading	54	108	104-112	70	61	6	7.2	12:8	592
Pseudoword Decoding	27	96	91-101	39	44	4	4.2	9:0	510
Oral Reading Fluency	138 ¹	109	102-116	73	63	6	6.7	12:4	540
Spelling	21	86	81-91	18	30	3	3.7	9:0	516

SUBTEST 12: Written Expression (WE)

Student's Written Story

Last wednesday our school was closed. It was a school day and it was closed all day. When the janitor came at 6:00 A.M. he opened the school and he smelled something strange. It nearly forced him over. It was at night. He opened the doors and left them open. He searched in the library and at last he found 2 skunks eating some dry cookies. They looked so full. He called animal control right away. The worker came and took the skunks to the woods to let them go. The smell stayed for a whole week until it finally left the building and it smelled normal again.

Subtest	Subtest Scores and TILLS Total		
	Raw Score	Standard Score and TILLS Total	Percentile Rank
1 VA	39	11	53
2 PA	5	0	0
3 SR	27	11	57
4 NWRep	18	6	4
5 NWSpell	7	7	14
6 LC	19	9	36
7 RC	15	8	16
8 FD	10	7	12
9 DSR	29	13	79
10 NWRead	11	5	6
11 RF	122	4	5
12a WE-Disc	94	11	51
12b WE-Sent	1.71	9	32
12c WE-Word	84	0	0
13 SC			
14 DSF	6	7	14
15 DSB	2	6	5

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Goal Formulation: Neuropsychologists vs. SLPs

- Neuropsychologists **DO NOT** make specific treatment recommendations in their reports
- There are no professionals in school setting to follow and implement them
 - Even if neuropsychologists made specific treatment recommendations, these will not be implemented and executed in the school setting, because there are no neuropsychologists or psychologists who treat language and literacy difficulties **in the schools**
 - SLP scope of practice
 - **SLPs cannot implement treatment recommendations of neuropsychologists without performing their own comprehensive testing**
 - Contrastingly, if SLPs describe the students' literacy deficits in extensive detail and create specific goals addressing phonemic awareness, reading fluency, reading comprehension, etc., these can be implemented by **learning consultants and reading specialists in the school setting due to goal compatibility**

Goal formulation in SLP Reports: Pragmatics

- **Long Term Goals:** Student will improve his **pragmatic abilities** in order to effectively communicate with a variety of listeners/speakers in all social and academic contexts
- **Short Term Goals**
 1. Student will make effective social inferences based on visual context
 2. Student will effectively interpret facial expressions, body language, and gestures by stating visual clues which assisted him in the making of this determination.
 3. Student will resolve personal conflicts using effective solutions relevant to presented scenarios.
 4. Student will effectively justify solutions to presented situational conflicts.
 5. Student will provide multiple interpretations of presented social situations.
 6. Student will recognize sarcastic and ironic comments and infer what someone else is thinking in presented scenarios
 7. Student will appropriately interpret nonverbal body language of others (facial expressions, postures, gestures) in presented scenarios
 8. Student will appropriately interpret tone of voice and prosody of others in the presented scenarios
 9. Student will appropriately use social routine language (e.g., express greetings, introductions, requests, permissions, etc.)
 10. Student will appropriately convey non-verbal cues, such as facial expressions, tone of voice, inflections in prosody, gestures, and overall body language to express various communicative intents

Goal formulation in SLP Reports: Phonics

- **Long Term Goals:** Student will improve her **phonics abilities** for reading purposes
- **Short Term Goals:**
 1. **Student will map vowel combinations to represent a single vowel sounds (e.g., ee, ea, ie can represent /ē/)**
 2. Student will map consonant trigraphs (e.g., tch for /ch/, dge for /j/, etc.)
 3. Student will map consonant clusters/blends with 2 sounds in beginnings of words (e.g., /st/, /qu/, /sc/, etc.)
 4. Student will map consonant clusters/blends with 3 sounds in beginnings of words (e.g., /str/, /spl/, etc.)
 5. Student will map consonant clusters/blends with 2 sounds at the end of words (e.g., /mp/, /nd/, /ft/, etc.)
 6. Student will map silent letter patterns (e.g., kn for /k/, mb for /m/, etc.)
 7. Student will decode disyllabic and multisyllabic words with a variety of syllable types (open/closed/mixed) (e.g., fragment, contract, etc.)
 8. Student will decode multisyllabic words with a variety of prefixes and suffixes (e.g., pre-, -ous, -tion, etc.)
 9. Student will decode multisyllabic words with a variety of digraphs and trigraphs (e.g., pamphlet, etc.)
 10. Student will decode multisyllabic words with a variety of vowel digraphs and diphthongs (e.g., revenue, display, drowsy, etc.)
 11. Student will decode multisyllabic words containing r-controlled syllables (e.g., surgery, barren, etc.)
 12. Student will decode multisyllabic words with a variety of split vowels (e.g., violin)
 13. Student will decode multisyllabic words with silent consonants (e.g., rh, gh, mb, mn, etc.)



Goal formulation in SLP Reports: Reading Comprehension

- **Long Term Goals:** Student will improve his reading comprehension abilities for academic and social purposes.
- **Short Term Goals**
 1. Student will improve his reading accuracy for academic purposes (self-monitor for errors)
 2. Student will effectively define literate, text-embedded vocabulary (abstract nouns and metacognitive verbs) using text context
 3. Student will identify main ideas in read text.
 4. Student will effectively summarize read paragraphs.
 5. Student will effectively utilize background information to interpret text.
 6. Student will improve his morphological awareness abilities via effective recognition of stems and affixes (prefixes and suffixes) of presented words
 7. Student will answer abstract reading comprehension questions pertaining to the presented text (make text based and knowledge based inferences)



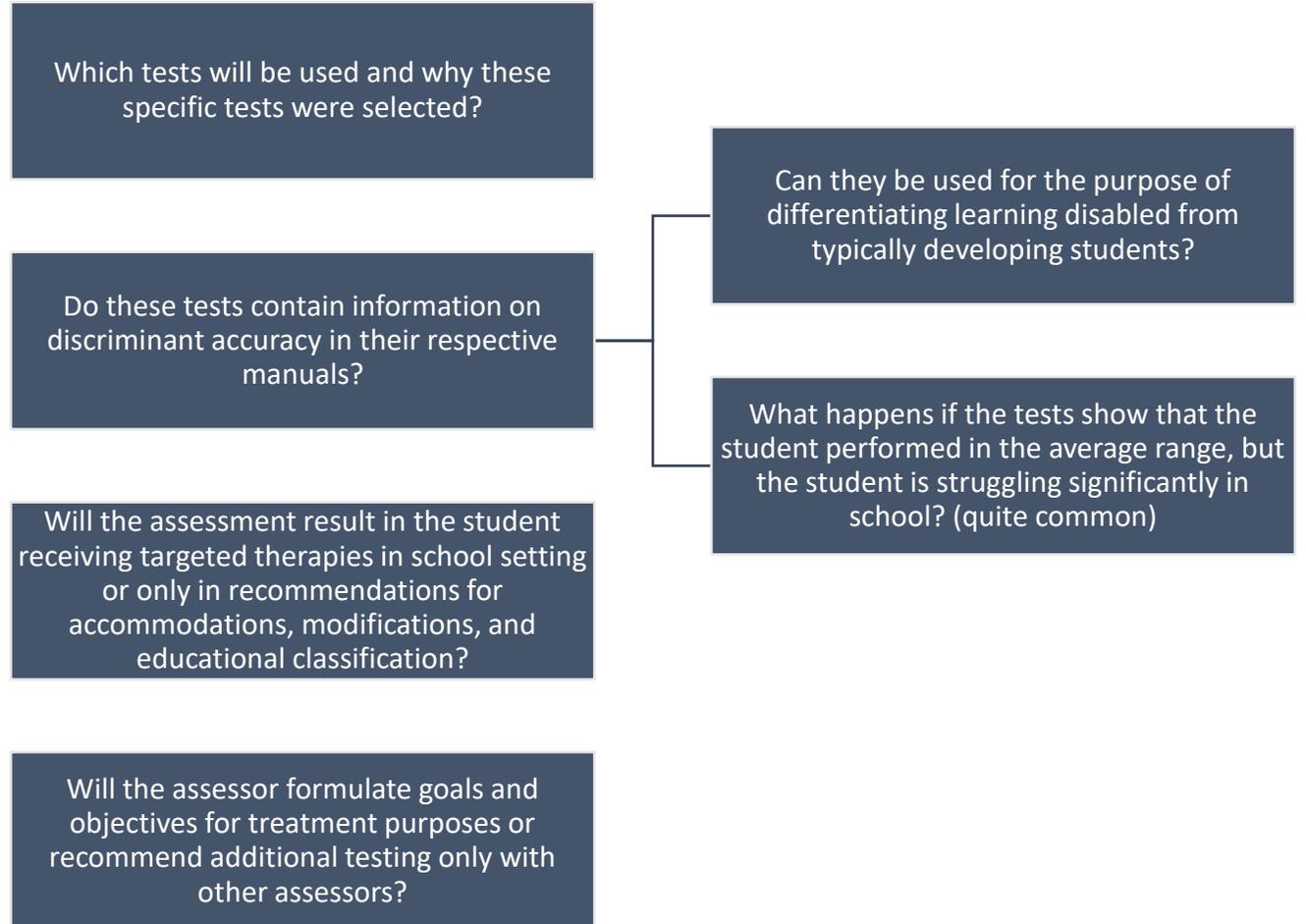
Major Differences Summary

- **Neuropsychologists make general recommendations to assist students with functioning in the academic setting**
- **Speech-language pathologists create specific, executable treatment goals which can be implemented in the school setting by fellow speech-language pathologists in order to actively intervene and improve the students' abilities in the affected areas of functioning.**
- A neuropsychologist may recommend a particular program to address reading (e.g., Orton-Gillingham, Wilson, etc.)
- Speech-language pathologist will not only create specific goals for reading but may **also specify the limitations of specific recommended programs** (e.g., *"Given the student's excellent decoding but very poor comprehension abilities, currently the use of the Wilson program is not recommended at this time as it does not adequately address reading comprehension abilities"*).

Role Differences (cont.)

- SLPs create a deeper analysis and possess a greater comprehension of language-based literacy deficits
- Neuropsychologist may recommend an application of particular writing approach/program to a child with difficulty in the area of writing
- SLP will recognize that a particular program is too advanced for the child's present level of writing abilities based on a targeted writing assessment and an analysis of child's writing deficits
 - Will adjust expectations and create more targeted hierarchical goals which are better suitable for the child's present writing needs.

Select Questions to Ask for Decision Making Purposes

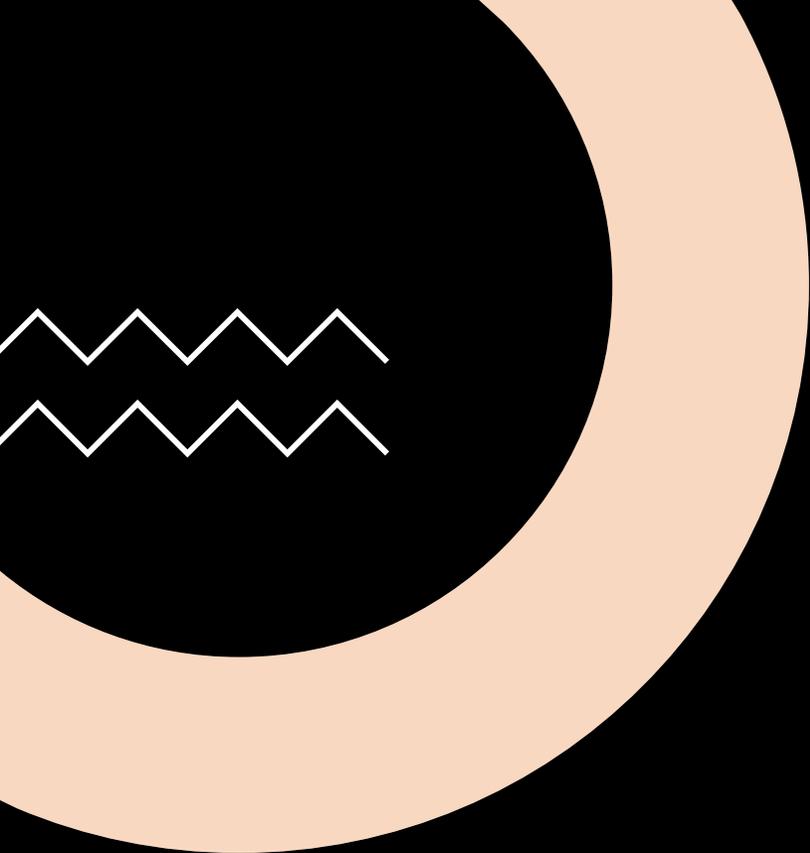


Functionality is Everything!

- Functional assessments are:
 - Psychometrically sound
 - Tests are sensitive to diagnosis of disorders/disabilities
 - Especially important for students with high FSIQ
 - Contain standardized and clinical examples
 - Grade level reading and writing samples completed by student independently
 - Contain **appropriate** interpretation of deficits areas
 - Contain goals and objectives for treatment purposes



Questions, Comments, Concerns



- *Group: <https://www.facebook.com/groups/EBPSLPs/>
- Blog: www.smartspeechtherapy.com/blog/
- Shop: <http://www.smartspeechtherapy.com/shop/>
- Business Page: www.facebook.com/SmartSpeechTherapyLlc
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