Simplifying Identification of True Dyslexia: Similarities and Differences in English and Spanish Speaking Children

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&

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Just to clarify .....

- My last name in English is: /ĕ/-/n/- “c” -/s/-/ō/
- My last name in Spanish is: en-ci-so
- My last name in English is: f/ i/fer not f/ee/fer
  (receive, vein, deify)
Presentation Goals

1. Compare/contrast some of the fundamental differences between Spanish and English with respect to reading.
2. Define developmental dyslexia and discuss California's current dyslexia legislation.
3. Discuss reading from a neuropsychological standpoint and key brain regions responsible for word identification skills.
4. Review current assessments and best practices for accurately screening both Spanish and English speaking children for developmental dyslexia.

NAEP: Reading 2017

148,800 4th-graders from 7,830 schools

The National Center for Education Statistics includes students with disabilities and ELL students and administers reading comprehension measures every two years.

*1992 – 28% proficient
*2017 - 37% proficient (CA 31%)
NAEP: Reading 2017
141,800 8th-graders from 6,500 schools

The National Center for Education Statistics includes students with disabilities and ELL students and administers reading comprehension measures every two years.

* 1992 – 28% proficient
* 2017 - 36% proficient (CA 32%)

IDEA 2015-2016

- 34 percent of the students receiving special education services have specific learning disabilities (80% due to reading disorders).
- 17% of males and 9% of females receive SPED
- Developmental dyslexia occurs in approximately 5-12% of the population (Lyon et al., 2003).
Defining Dyslexia??

**IDA** - deficits in accurate and/or fluent word recognition, decoding, spelling, with secondary effects on reading comprehension.

**ICD-10** - dyslexia is marked by reading achievement that falls substantially below that expected given the individual's chronological age, measured intelligence, and age-appropriate education.

**WHO** - a neurodevelopmental disorder hindering the acquisition of reading that cannot otherwise be explained by IQ, academic opportunities, motivation, or specific sensory acuity.

**IDEA** - a learning disability is a basic disorder of a psychological process used in understanding oral, spoken, or written language, and may manifest in the imperfect ability to listen, think, speak, read, write, spell, or do math. It may include conditions such as dyslexia.

**DSMV** – dropped the term and classifies reading issues under the generic term of specific learning disorder.

And the Winner Is.....

- “Dyslexia is characterized by difficulties with **accurate** and / or **fluent** word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.”

  - International Dyslexia Association
DEVELOPMENTAL DYSLEXIA

Learning Disabilities

Reading Disorders

Dyslexias

Subtypes

Ethnicity and Special Education

Figure 2. Percentage of students ages 3–21 served under the Individuals with Disabilities Education Act (IDEA), Part B, by race/ethnicity: School year 2015–16

The ELL Dilemma:

- Spanish is host language for approximately 3.7 million English Language Learners
- 665,000 ELL students identified as having a disability.
- 39 states have currently passed some type of dyslexia legislation. Some states have mandated dyslexia screening for all children K-2.
- **Type I error** – inferring the presence of a disability when there is none.

CASP Position Paper:
Dyslexia and assembly bill 1369

- **CASP** at the forefront:
  - Historical perspective on dyslexia
  - Importance of early reading monitoring and intervention (RtI)
  - Comprehensive evaluation and the role of phonological processing
  - Evidence based instruction and intervention
  - Further factors for educational consideration
CASP Position Paper: Dyslexia and assembly bill 1369

“Language and cultural factors.

...... instructional and intervention needs of EL students differ from the needs of their monolingual English-speaking peers. ..... Caution should be used in screening and assessing EL students for the purposes of identifying a reading disability such as dyslexia, especially when educational staff may not have specialized knowledge, training and practice for instruction and intervention with ELs.”

AB1369: What it Comes down to...(awareness)

➢ 56334.
   ▪ include “phonological processing” in...basic psychological processes (Title 5, 3030 of CCR)

➢ 56335.
   ▪ (a)(b)(c)(d)(e) develop program guidelines for dyslexia (to inform and drive educational practice... including “screening for dyslexia”)

...
The California "Dyslexia Bill" has two main focuses:
1. AB 1369 text requires an additional section be added to CA Eligibility Criteria for Specific Learning Disability (SLD). This addition, Section 56334, reads: "The State Board of Education shall include "phonological processing" in the description of basic psychological processes in Section 3030 of Title 5 of the California Code of Regulations."
2. The bill calls for the Superintendent of Public Instruction to develop program guidelines for dyslexia to be used to assist teachers and parents to plan, provide, evaluate, and improve educational services to students with dyslexia. These guidelines are to be available to the public in time for implementation in the 2017-18 school year. The Superintendent's guidelines will not change current law nor require the use of any specific curriculum in instruction of students. Instead, they will give guidance for staff in understanding implementation of instructional programs. Further information on the guidelines will be covered later in this document.

As mentioned above, AB1369 requires the addition of "phonological processing" to the "basic psychological processes" in the Eligibility Criteria for Specific Learning Disability (SLD). The bill does not establish a new eligibility category. It simply adds phonological processes to the existing processing areas defined in the current SLD eligibility criteria (CCR Section 56320 § 3030).

<table>
<thead>
<tr>
<th>Basic Psychological Processes Prior to AB1369</th>
<th>Basic Psychological Processes After AB1369</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attention</td>
<td>1. Attention</td>
</tr>
<tr>
<td>2. Visual processing</td>
<td>2. Visual processing</td>
</tr>
<tr>
<td>3. Auditory processing</td>
<td>3. Auditory processing</td>
</tr>
<tr>
<td>4. Sensory-motor skills</td>
<td>4. Sensory-motor skills</td>
</tr>
<tr>
<td>5. Cognitive abilities including:</td>
<td>5. Phonological processing</td>
</tr>
<tr>
<td>a. Association</td>
<td>a. Association</td>
</tr>
<tr>
<td>b. Conceptualization</td>
<td>b. Conceptualization</td>
</tr>
<tr>
<td>c. Expression</td>
<td>c. Expression</td>
</tr>
</tbody>
</table>

Note: As of Oct. 1, 2016, the addition of phonological processing has not been officially included into the existing California SLD Eligibility Criteria (CCR Title 5). Section 56320 does not establish a new eligibility category... including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.


- Reduced activation seen among 57 (8-12yo) students from Carnegie Mellon and 74 students from Stanford (7-16yo) in discrepant AND non-discrepant readers in left parietal and visual word form area.
- IQ is not a factor in phonological processing!! (Siegal, 1991: Fletcher, et al. 1994; Stanovich, 2005: Shaywitz, 2010).
So Why Worry About Difference?

- Sam Ortiz (in Kovaleski et al., 2015) offers this word of caution regarding the importance of nondiscriminatory SLD evaluation practices of English learners:
  - “Unless and until ELs are no longer mistakenly identified as having a learning disability, there will be little impetus to improve their education.”
  - ELs can also have a learning disability.
  - The goal is to identify the correct cases.

Getting to know English learners

- Young students can learn to speak without an accent
  - Teachers may think that they are as competent with the language as monolingual students
  - Accent is merely a function of age that 2nd language was introduced (not indicator of proficiency)
    - Before age 10: no accent- brain feedback assimilates correct pronunciation
    - Age 12-14: slight accent
    - Age 14-16: moderate accent
    - After age 16: Strong accent

*Adapted from Sam Ortiz’ presentation

Auditory Pruning - children who have not developed phonological awareness by age 9 or 10 probably lost the capacity to do so (Rourke & Del Dotto, 1994).
Getting to know English learners

- Pre-kindergarten EL children will have lost 4-5 years of exposure to the language once they enter school.
- EL students tend to peak at about 4th grade* due to increasing curriculum demands. (period of CALP emergence)
- “Reading out loud…. silently”

*Adapted from Sam Ortiz’ presentation

Problems with “Phonological Deficit” Hypothesis of Reading

1. Assumes dyslexia is a homogenous condition.
2. Does not account for the developmental trajectory of phonological awareness being more significant with younger than older readers (Araujo et al., 2010; Frijters et al., 2011).
3. The model fails to account why numerous phonological skills are preserved for disabled readers (Shany & Share, 2011).
4. The model suggests that phonological training is the only course of intervention.
5. Inconsistent with IDA definition and neuroscience.
Multiple Cueing System of Reading

- Recognizes that both phonological and orthographic and semantic cues can facilitate word recognition.

**Phonics**
- Phonemic Awareness
- Decoding

**Orthography**
- Orthographic Perception
- Orthographic Memory
- Alphabetic Knowledge

**Semantic**
- Vocabulary
- Executive Functioning

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The Reading Brain: How Words are Assembled

3. Specific neuroimaging techniques have demonstrated that phonological processing and orthographic processing are a by-product of the functional integrity of the temporal-parietal junctures in the left hemisphere of the brain (Pugh et al., 2000, McCandliss & Noble, 2003; Shaywitz, 2004; Sandak et al., 2004).
Four Subtypes of Reading Disorders

(1) **Dysphonetic Dyslexia** – difficulty sounding out words in a phonological manner.

(2) **Surface Dyslexia** – difficulty with the rapid and automatic recognition of words in print.

(3) **Mixed Dyslexia** – multiple reading deficits characterized by impaired phonological and orthographic processing skills. Most severe form of dyslexia.

(4) **Comprehension Deficits** – mechanical side of reading is fine but difficulty persists deriving meaning from print.

A Universal Reading Brain


- Proficient reading entails the convergence of phonological and orthographic processing systems onto a common network of neural structures dominated by the left perisylvian regions of the brain.

- Dyslexics in transparent orthographic systems, such as Spanish, German, Italian, Greek have difficulty in acquiring reading speed as a hallmark deficit of dyslexia (Ziegler et al., 2003; Davies et al., 2007; Constantinidou & Stainthorp, 2009; Wimmer et al., 2010).
Opaque vs. Tansparent Languages

English:
* 44 phonemes
* 1100 different grapheme representations
* 25% of words phonologically irregular (i.e. onion, debt, laugh, through)
* Too many homophones (ortho-consistent) (allowed vs. aloud; blue vs. blew; knows vs. nose)
* Too many homonyms (ortho-inconsistent) (wind, bass, tear, bow, lead etc.)

Spanish:
* 30 phonemes
* 98% of words phonologically consistent
* Only the letters “c”, “s”, “j”, “x” have pronunciations different due to context.
* An orthographically consistent language.

Examples of English Sounds That Do Not Exist in Spanish

- Consonants such as j as in judge/joke, h as in happy, and v which is not distinguished from b, similar to z not being distinguished from s
- Digraphs such as dg as in fudge, sh as in wash, th as in the, or wh as in what; other combinations e.g., ck, ght, nd, ng, thr, tw
- Syllables beginning with s and followed by a consonant such as sc, sch, spl, spr, sq, st
- Long and short vowel sounds other than /ah/, /E/, /ee/, /o/, /u/; e.g., a as in ace, e as in early, i as in ice, o as in on, u as in use
- Diphthongs e.g. au as in audio, aw as in paw, ew as in sew
- R-controlled vowels such as ar as in park, er as in perk, ir as in quirk, or in as in cork
Dyslexia in Spanish

- Spanish speaking dyslexics are characterized more by poor reading fluency than poor phonics.
- Fluency is related to orthographic perception and orthographic memory.
- Among 9-13 year-old dyslexic children (Spanish), context sensitive graphemes (c,g,j,z) posed the greatest difficulty, resulting in more serial reading (overly phonological) and slower pace.

Dyslexia in Transparent Orthographies

- Dyslexics in transparent orthographic systems, such as Spanish, German, Italian, Greek have difficulty in acquiring reading speed as a hallmark deficit of dyslexia (Ziegler et al., 2003; Davies et al., 2007; Constantinidou & Stainthorp, 2009; Wimmer et al., 2010).
- Dyslexics are much slower than normal children reading long words and non-words (accuracy still poor compared to typical peers).
- Spanish speaking dyslexics have difficulty forming orthographic representations for words even with consistent rules. In fact, dyslexic children were not able to develop orthographic representations despite 6 exposures, and continue using sub-lexical reading for all new words (Coalla et al., 2014).
What else do we know about English learners?

- Development of first language transfers to 2nd language
- Learning 2 languages does not lead to linguistic confusion (nor poor academic performance).
- 2nd language acquisition can start at any age especially if primary language is already learned well.

*Adapted from Sam Ortiz' presentation

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we also know that....

- CALP is attained by frequency, exposure and training
- Students who learn 2 languages very well (CALP in both) tend to outperform monolingual peers.
- Once bilingual, always bilingual (not the same as being monolingual)

Adapted from Sam Ortiz' presentation
Phonological awareness in a bilingual child

- Reading in English and Spanish requires similar phonological processing (Valle-Arroyo, 1996)
- Phonological processing skills transfer from one language to another (Cisero and Royer 1995; Durgunoglu, Nagy, and Hancin-Bhatt 1993; Kremin et al 2016)
- In fact, stimulation of phonological awareness of bilingual children in either of their languages is likely to transfer to the other language (Dickinson, McCabe, Clark-Chiarelli, and Wolf 2004)
- Spanish-English bilinguals place greater reliance on English phonological awareness; compared to vocabulary and naming speed in English monolinguals (Kremin et al, 2016)

Instructional programs for EL’s

Still, EL students tend to peak at about 4th grade due to increasing curriculum demands (period of CALP emergence) – Referrals for SLD – WHY?

- **Effective**
  - Fully bilingual programs (“dual bilingual”) Result=Bilingual biliterate (6% students at risk for academic failure)
- **Moderately effective**
  - English as a Second Language (ESL) content program late exit (5-6 years) 1st language instruction – shift to English (11% students at risk)
- **Less effective**
  - ESL content early exit (2-3 years) (27% at risk)
- **Poor**
  - English only with ESL pull-out (60% at risk)

*At the end of the day – the longer taught 1st language; the better 2nd language*

*Adapted from Sam Ortiz’ presentation*
Keys to Assessment

- Screening and clinical judgment more valuable than computer programs.
- Tests instruments do not diagnose, well trained practitioners working in collaborative teams do.
- Do not rely on just one data source.
- Developmental history may be the most essential component when making decisions on kids.
- Consider all current stressors (i.e. family dynamics, poverty, environment, etc.)
- It is more important to link children with proper interventions than search for categorical labels!
- Assessing and understanding the validity of your results is crucial (e.g. use of C-LIM)

California Code of Regulations (CCR) – Nondiscriminatory Testing

- **56320 (a)** Testing and assessment materials and procedures ... are selected and administered so as not to be racially, culturally, or sexually discriminatory. ...the materials and procedures shall be provided in the pupil's native language or mode of communication, unless it is clearly not feasible to do so.

- (b) Tests and other assessment materials meet all of the following requirements:
  - (1) Are provided and administered in the language and form most likely to yield accurate information on what the pupil knows and can do academically, developmentally, and functionally, unless it is not feasible to so provide or administer....
  - (2) Are used for purposes for which the assessments or measures are valid and reliable.

- (d) Tests are selected and administered to best ensure that ... produces test results that accurately reflect the pupil's aptitude, achievement level, or any other factors the test purports to measure...
DYSLEXIA ASSESSMENTS

Test of Auditory Processing Skills-3
Spanish Bilingual Edition (TAPS-3:SBE)

Author(s): Nancy Martin, PhD
Publisher: ATP

- Auditory Processing
- Ages 5-0 through 18-11
- Individual Administration
- Norm-referenced (U.S. Spanish-bilingual speakers)
- Qualification Level I

Description

The Spanish-bilingual version of the Test of Auditory Processing Skills, 3rd Edition (TAPS-3:SBE) is a norm-referenced, individually administered assessment of auditory skills commonly used in academic and everyday activities by Spanish speakers aged 5 to 18 years. It provides a way to identify any particular auditory process that the examinee may be having difficulties with, to allow for better remediation strategies to be planned. (It is not intended to assess language proficiency.) While this assessment is administered in Spanish and responses are expected to be in Spanish, the examiner may use English to give directions if necessary, and English responses may be accepted if the meaning is the same as the intended response.
DYSLEXIA ASSESSMENTS

Test of Phonological Processing in Spanish (TOPPS)

Authors and Date
David Francis, University of Houston; Maria Carlo, University of Miami; and Diane August, Darryl Kenyon, Valerie Malabonga, Silvia Casparian, and Mohammed Lougait, Center for Applied Linguistics. 2001.

Purpose
The Test of Phonological Processing in Spanish (TOPPS) was developed to assess the components of phonological awareness in native-Spanish-speaking children. The test was developed for the research study Transfer of Reading Skills in Bilingual Children, subproject 2 of Acquiring Literacy in English: Crosslinguistic, Intralinguistic, and Developmental Factors.

Age or Grade of Examinees
The assessment was developed to be used with students from kindergarten age through adult.

Description
The TOPPS consists of 9 subtests.

1. Sound Matching: Children identify the word that has the same first or last sound as the prompt word.

Examples:

<table>
<thead>
<tr>
<th>Test</th>
<th>Child Sees</th>
<th>Tester Asks</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First sound</strong></td>
<td>pictures of piano (prompt), hourglass, field, feet (choices)</td>
<td>¿Qué palabra empieza con el sonido /p/ como piano?</td>
<td>ples</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¿Cómo dice la hora, suelo, o mes?</td>
<td></td>
</tr>
<tr>
<td><strong>Last sound</strong></td>
<td>pictures of honey (prompt), salt, calendar, bread (choices)</td>
<td>¿Qué palabra termina con el sonido /a/ como miel?</td>
<td>sail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>¿Cómo dice la lea, mes, o pan?</td>
<td></td>
</tr>
</tbody>
</table>

Prelec - Prueba de precursores de lectura

JUDITH SUJO SÁNCHEZ, FERNANDO LEAL, CARRETERO DANIEL, ZAMBRANO ENRIQUE DE RIVERA MARÍA V.ELENA LÓPEZ MARQUÉZ

ISBN: 978849915089

Prelec es un material específicamente diseñado como prueba para analizar las dificultades de aprendizaje en la lectura más comunes, para así identificar y corregir posibles problemas durante la fase inicial de niños en edad preescolar.

Orientado a profesionales de Educación Infantil. Está dividido en 4 grupos asociados a 4 tipos de habilidades diferentes:

1. Familiaridad con materiales escritos. Analiza la experiencia que el niño/a ha tenido con los cuentos leídos por sus padres, maestros y/o cuidadores, para identificar cuáles son las partes que conocen de un libro y los aspectos básicos convencionales de la escritura.

2. Conciencia sílabica. Identifica si el niño/a puede diferenciar cuántas sílabas tiene una palabra, separar una palabra en sílabas o volverla a componer, si reconoce sílabas iguales o diferentes entre sí, etc.

3. Conciencia fonémica. Evalúa si el niño/a es capaz de diferenciar las diferentes fonemas que tiene una palabra.

4. Aprentizaje del sistema de escritura. Valora el nivel de conocimiento en base a las letras que el niño/a conoce; si puede escribir su nombre o el de un amigo, etc.
Why I am excited about the Ortiz PVAT!

- Dual norming structure
  - English speakers of same age
  - English learners of the same age with same lifetime exposure to English (by exact percentage)
- Not looking for language dominance, but rather language level and development in English
- Instructions in 5 different languages
- First “difference vs. disorder” tool
- Breakdown of results for guiding interventions
Case Study: Maria - 4th grade

- **Reason for Referral**
  - Difficulty with reading, writing, and math word problems.
  - Easily distracted.
  - Difficulty completing daily work

- **Language**
  - Spanish is primary language spoken at home.
  - Dual language immersion program since preschool.
  - California English Language Development Tests show growth each year.
Case Study: Maria - 4th grade

Ortiz Picture Vocabulary Acquisition Test

<table>
<thead>
<tr>
<th>English Language Norm*</th>
<th>Ortiz PIAT Score</th>
<th>Ortiz PIAT Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Score</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Standard Score (95% Confidence Interval)</td>
<td>110 (105-118)</td>
<td></td>
</tr>
<tr>
<td>Percentile</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>Stanine</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Age Equivalent (Years/Months)</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td>Average</td>
<td></td>
</tr>
</tbody>
</table>

*Compared to other English learners of the same age who have similar exposure to English.

Basic Interpersonal Communicative Skills (BICS)
Cognitive Academic Language Proficiency (CALP)

<table>
<thead>
<tr>
<th>Type</th>
<th>Number Presented</th>
<th>Number Correct</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergent BICS</td>
<td>12</td>
<td>12</td>
<td>100%</td>
</tr>
<tr>
<td>Intermediate BICS</td>
<td>19</td>
<td>19</td>
<td>100%</td>
</tr>
<tr>
<td>Advanced BICS</td>
<td>25</td>
<td>25</td>
<td>100%</td>
</tr>
<tr>
<td>Emergent CALP</td>
<td>27</td>
<td>19</td>
<td>70%</td>
</tr>
<tr>
<td>Intermediate CALP</td>
<td>0</td>
<td>± 6</td>
<td>± 6</td>
</tr>
<tr>
<td>Advanced CALP</td>
<td>0</td>
<td>± 6</td>
<td>± 6</td>
</tr>
</tbody>
</table>

Kaufman Assessment Battery for Children-2nd

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum of Standard Scores</th>
<th>Index (Standard Score)</th>
<th>95% Confidence Interval</th>
<th>Descriptive Category</th>
<th>Normative Strength/Weakness</th>
<th>Difference from Scale Mean</th>
<th>Personal Strength/Weakness</th>
<th>Frequency of Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequential/Gram</td>
<td>7</td>
<td>83</td>
<td>60 - 74</td>
<td>Low average</td>
<td>NWk</td>
<td>-20</td>
<td>PWk</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>Simultaneous/Ov</td>
<td>19</td>
<td>97</td>
<td>91 - 103</td>
<td>Average</td>
<td>-14</td>
<td>PSbr</td>
<td>&gt;10%</td>
<td></td>
</tr>
<tr>
<td>Learning/Gt</td>
<td>13</td>
<td>81</td>
<td>77 - 85</td>
<td>Below average</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Planning/Gt</td>
<td>15</td>
<td>85</td>
<td>60 - 93</td>
<td>-</td>
<td>Not Interpretable</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Knowledge/Gc</td>
<td>16</td>
<td>89</td>
<td>84 - 95</td>
<td>Average</td>
<td>-6</td>
<td>PSbr</td>
<td>&gt;10%</td>
<td></td>
</tr>
</tbody>
</table>

Test of Phonological Awareness in Spanish (TPAS)

<table>
<thead>
<tr>
<th>Index/Subtest</th>
<th>Standard Score</th>
<th>Descriptive Category</th>
<th>Test Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonological Awareness</td>
<td>82</td>
<td>Below Average</td>
<td>Below Average</td>
</tr>
<tr>
<td>Initial Sounds</td>
<td>5</td>
<td>Below Average</td>
<td>K level performance</td>
</tr>
<tr>
<td>Final Sounds</td>
<td>8</td>
<td>Average</td>
<td>2nd grade level performance</td>
</tr>
<tr>
<td>Rhyming Words</td>
<td>13</td>
<td>High Average</td>
<td>&gt;5th grade level performance</td>
</tr>
<tr>
<td>Deletion</td>
<td>3</td>
<td>Very Low</td>
<td>Very difficult task for her to complete</td>
</tr>
</tbody>
</table>
### Case Study: Maria - 4th grade

#### Feifer Assessment of Reading (FAR)

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Raw score</th>
<th>Standard score</th>
<th>Index standard score</th>
<th>Percentile rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonemic Awareness (PA)</td>
<td>66</td>
<td>73</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Positioning Sounds (PS)</td>
<td>24</td>
<td>79</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Rapid Automatic Naming (RAN)</td>
<td>78</td>
<td>54</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Verbal Fluency (VF)</td>
<td>19</td>
<td>100</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Visual Perception (VP)</td>
<td>2</td>
<td>73</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Semantic Concepts (SC)</td>
<td>3</td>
<td>≤50</td>
<td>&lt;0.1</td>
<td></td>
</tr>
<tr>
<td>Word Recall (WR)</td>
<td>9</td>
<td>91</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

#### Comprehensive Executive Functioning Inventory

![Graph showing executive functioning scores](image)
Case Study: Maria - 4th grade

Woodcock-Johnson IV Tests of Achievement

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Woodcock Johnson IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>57 Very low</td>
</tr>
<tr>
<td>Broad Reading</td>
<td>59 Very low</td>
</tr>
<tr>
<td>Basic Reading Skills</td>
<td>55 Very low</td>
</tr>
<tr>
<td>Reading Fluency</td>
<td>N/A</td>
</tr>
<tr>
<td>Mathematics</td>
<td>82 Low Average</td>
</tr>
<tr>
<td>Broad Mathematics</td>
<td>84 Low Average</td>
</tr>
<tr>
<td>Math Calculation Skills</td>
<td>87 Low Average</td>
</tr>
<tr>
<td>Written Language</td>
<td>67 Very low</td>
</tr>
<tr>
<td>Broad Written Language</td>
<td>62 Very low</td>
</tr>
<tr>
<td>Written Expression</td>
<td>58 Very low</td>
</tr>
<tr>
<td>Academic Skills</td>
<td>69 Very low</td>
</tr>
<tr>
<td>Academic Fluency</td>
<td>66 Very low</td>
</tr>
<tr>
<td>Academic Applications</td>
<td>62 Very low</td>
</tr>
<tr>
<td>Brief Achievement</td>
<td>65 Very low</td>
</tr>
<tr>
<td>Broad Achievement</td>
<td>62 Very low</td>
</tr>
<tr>
<td>Test scores</td>
<td>Woodcock Johnson IV</td>
</tr>
<tr>
<td>Letter Word ID</td>
<td>59 Very low</td>
</tr>
<tr>
<td>Sentence Reading Fluency</td>
<td>64 Very low</td>
</tr>
<tr>
<td>Passage Comprehension</td>
<td>60 Very low</td>
</tr>
<tr>
<td>Calculation</td>
<td>87 Low Average</td>
</tr>
<tr>
<td>Word Attack</td>
<td>46 Very low</td>
</tr>
<tr>
<td>Oral Reading</td>
<td>N/A</td>
</tr>
<tr>
<td>Math Facts Fluency</td>
<td>90 Average</td>
</tr>
<tr>
<td>Applied Problems</td>
<td>72 Low</td>
</tr>
<tr>
<td>Spelling</td>
<td>76 Low</td>
</tr>
</tbody>
</table>

Discrepancy - Consistency Model for Maria

- Discrepancy between high and low processing scores
- Discrepancy between high processing and low achievement
- Consistency between low processing and low achievement
Case Study: Maria - 4th grade

QUESTIONS

1. Does Maria present with a specific learning disability?
2. Does Maria present with a specific subtype of dyslexia?
3. What additional tests would you choose to administer?
4. Does being bilingual impact her learning and academic progress?
5. What recommendations would you suggest?

<table>
<thead>
<tr>
<th>Fundations</th>
<th>FAR INTERPRETIVE REPORT WRITER: Targeted Reading Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabetic Phonics</td>
<td>A multisensory phonological approach to reading that is an extension of the traditional Orton-Gillingham model. There are 11 fast-paced activities embedded within each lesson to develop automaticity with phonics skills.</td>
</tr>
<tr>
<td>Read Well</td>
<td>A top-down reading and language arts solution that emphasizes a mixture of instruction to the class as a whole, smaller groups, and individual student practice.</td>
</tr>
<tr>
<td>Lexia Primary Reading</td>
<td>A self-paced computer-based program that helps students develop reading skills. The program identifies when students would benefit from additional support, and automatically notifies the teacher with individualized feedback and recommendations.</td>
</tr>
<tr>
<td>Fast Forword Language to Reading</td>
<td>A scientifically-based 8-12 week reading intervention that boosts students’ reading levels by one or two grades. Focuses on phonemic awareness, phonics, fluency, comprehension, and vocabulary.</td>
</tr>
<tr>
<td>Voyager Time Warp Plus</td>
<td>A summer reading intervention that encompasses 80 hours-worth of material. Phonemic awareness, phonics and word analysis, fluency, vocabulary, and comprehension are covered thoroughly through daily practice.</td>
</tr>
<tr>
<td>System 44</td>
<td>Teaches foundational reading skills to students Grades 3+. This computer-based platform encourages students to think critically and interact with the text as they learn phonics and comprehension.</td>
</tr>
<tr>
<td>Academy of Reading</td>
<td>An intervention program that helps students with phonemic awareness, phonics, fluency, vocabulary, and comprehension. This online program includes real-time reading assessments and progress monitoring.</td>
</tr>
<tr>
<td>Words Their Way</td>
<td>A developmental spelling, phonics, and vocabulary program with numerous activities geared toward developing orthographic knowledge. Sorting, constructing a word wall, and creating a word study notebook are essential components of the program.</td>
</tr>
</tbody>
</table>
1. **Six Syllable Subtypes** — Explicit instruction on the 6 syllable subtype pattern in the English language, since 90% of words will adhere to this spelling pattern. These include:
   a) Closed syllables—just one vowel, such as “cat”
   b) Open syllables—ends in long vowel, such as “baby”
   c) Vowel-Consonant E Syllables—silent ‘e’ elongates vowel, such as “make”
   d) Vowel-Team Syllables—two vowels make one sound, such as “caution”
   e) R-Controlled Syllables—vowel followed by ‘r’ changes sound, such as “hurt”
   f) Consonant-le Syllables—end of word ending in ‘le’, such as “turtle”

2. **Color Code Markers** — Allow Maria to create her own diacritical markers or use color coding to facilitate the recognition of vowel patterns. Traditional diacritical markers often consist of abstract symbols that over-burden working memory systems for students with learning disabilities, and lead to poor retention of information.

3. **Finger Tapping** — Use finger tapping to learn sound and syllable breaks in words, as well as to facilitate spelling rules and boundaries.

4. **Decodable Text** — Incorporate reading decodable text silently in every lesson in order to develop a better feel for applying phonological processing skills to words in context and not just in isolation.

5. **Teach Vocabulary** — Children with dyslexia often lack the ability to recognize words due to a combination of poor phonological strategies, and limited word knowledge. Deepen word knowledge by teaching large concepts first, then linking new vocabulary words to already known words that comprise the concept. For example, introduce the concept of “liberty”, then ask if specific words such as “emancipation” or “independence” fit their conceptual schema of “liberty”.

6. **Write to Read** — Incorporating writing exercises (encoding) to targeted lessons can support reading and phonological development. Written language develops a motor pattern or engram that helps reinforce the sequence of letter sounds when reading. Practice having the student write sounds, phrases, and words from dictation.

7. **Advanced Phonological Mapping** — Research shows (Ehri, 2014) that traditional phonemic awareness is more beneficial at earlier ages, and more advanced phonological mapping is necessary for older children. This involves the formation of letter-sound connections to bond the spellings, pronunciations, and meanings of specific words in memory.

8. **Morpheme Mapping** — Morphemes are the smallest unit of language that convey meaning, and the English language is considered morphophonemic. Increased reading speed and comprehension can be gained using the following strategies:
   a) **Morphology Sorts** — Order and arrange words by common prefix and suffix roots.
   b) **Morpheme Maps** — Have students develop a graphic organizer or semantic map that groups and arranges words by meaning.
   c) **Draw a Morpheme** — Have students draw pictures of morphemes, and then affix their drawings to words with similar morphological structures.
   d) **Underline Morphemes** — Have students identify and underline selected morphemes when presented with a story or passage.
   e) **Color Code Morphemes** — Color code words with similar morphological roots in a text or passage prior to having students read.
Thanks for attending!

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