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Multilingualism for Monolingual Clinicians: Narrative and Vocabulary Assessment Options

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Multilingualism for Monolingual Clinicians: Narrative and Vocabulary Assessment Options

Teresa Signorelli Pisano, PhD, CCC-SLP

10 May 2018
Disclosures

- **Financial Disclosures:** Teresa Signorelli Pisano works as an independent contractor and is receiving a stipend for this talk.

- **Non-Financial Disclosures:** Teresa Signorelli Pisano is a Visiting Research Scholar in the Doctoral Program in Speech-Language-Hearing Sciences at the CUNY Graduate Center. She also serves on the Advisory Board of the Clinical Centers of Loyola University in Baltimore.

Learner Outcomes

**By participating in this course, participants will be able to:**

1. Describe key differences between mono- and bilingual speakers, related regulations, and best practices.
2. Identify appropriate assessment protocols to use with multicultural/multilingual children.
3. Explain how to distinguish language difference versus disorder in bilingual children.
Overview

- **Regulations & Background**
  - Basics of Bilingualism
  - Legal Perspectives
  - Professional Perspectives
    - ASHA Knowledge and Skills
    - Ethnographic Interview

- **Assessment Options**
  - Dynamic Versus Traditional Assessment Basics
  - Narrative Analysis, focus on Dynamic Assessment
  - Measuring Vocabulary

- **Summary & Conclusions**

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Audience

- Who is working with multilingual/cultural patients/clients?

- Who is NOT highly familiar with the principals of Dynamic Assessment?

- Who uses Dynamic Assessment?

- Who is NOT highly familiar the Conceptual Scoring concepts?

- Who employs Conceptual Scoring
High Stakes

Misdiagnosis

Inadequate Intervention

Inappropriate Education

Malpractice

Bilingual Language Development

- Varied experience
  - Simultaneous versus sequential
  - Spanish at home, English as school

- Knowledge may be unequal and in flux
  - Receptive and Expressive Skills
  - Language Areas: phonology, morphology, semantics, syntax, and pragmatics

- Consider “ability” vs. “proficiency” (Jacobson & Walden, 2015)
  - Ability to learn relative to attainment in a given language
Bilingual Language Development

- **Long L2 Learning Process** (Cummins, 1999)
  - Basic Interpersonal Communication Skills (BICS): 3 - 5 years
  - Cognitive Academic Language Proficiency (CALP): 5 - 7 years

- **Shared LI Characteristics** (Seitel & Garcia, 2009)
  - Short Attention/Distractible
  - Rely on gestures
  - Challenge to sequence ideas
  - Confusion
  - Limited output

- **Normal Developmental Errors**
  - Interference/Transfer
  - Code Switching
  - Silent Period
  - L1 language loss

Requisite Competencies

- Cultural Competence
- Clinician’s Language Competencies
- Language, Socio-linguistic, & Cultural influences
- Articulation & Phonology
- Resonance, Voice, & Fluency
- Swallowing
- Hearing & Balance
- Identification & Assessment
  - Foundational Content
  - Assessment Tools
  - Differential Diagnosis
- Management

**Sunsetted Document**

*ASHA Knowledge and Skills Needed by Speech-Language Pathologists and Audiologists to Provide Culturally and Linguistically Appropriate Services (2004)*
Requisite Competencies

- **Visit Practice Portal**
  - [http://www.asha.org/Practice-Portal/](http://www.asha.org/Practice-Portal/)

- **Bilingual Service Delivery**
  - [http://www.asha.org/Practice-Portal/Professional-Issues/Bilingual-Service-Delivery/](http://www.asha.org/Practice-Portal/Professional-Issues/Bilingual-Service-Delivery/)

- **Cultural Competence**
  - [http://www.asha.org/Practice-Portal/Professional-Issues/Cultural-Competence/](http://www.asha.org/Practice-Portal/Professional-Issues/Cultural-Competence/)

- **Collaborating with Interpreters, Transliterators, and Translators**
  - [http://www.asha.org/Practice-Portal/Professional-Issues/Collaborating-With-Interpreters/](http://www.asha.org/Practice-Portal/Professional-Issues/Collaborating-With-Interpreters/)

Federal & State Regulations

**CLAS Report Four Mandated Standards**
- Standard 4. No-cost language assistance services
- Standard 5. Inform of right to language assistance services.
- Standard 6. Assure competence of language assistance
- Standard 7. Easily understood patient-related materials - Signage in languages commonly to served community

**Individuals with Disabilities Education Act**
- ASHA IDEA Part B Issue Brief:
  - Racially or culturally non-discriminatory
  - Native language unless it is clearly not feasible
  - Lack of English skill not indicate disability
  - Interpreters IEP meetings
  - IEPs sensitive to need for child with limited English

**State Regulations**
- Bilingual Extension of the TSSLD in NY State
- Check with your state
The Ethnographic Interview

- **Ethnography:**
  - Qualitative research method to study culture
  - Naturalistic observation
  - Sensitive to potential bias
  - Language and culture are inextricably linked

- **Ethnographic Approach**
  - Fosters patient/family agenda
  - Family has valuable information, clinician may be unaware
  - Specific questioning approach

Ethnographic Q&A Principals

- **Use over Meaning**
  - **Say** “Describe the environments in which having conversations is difficult?”

- **Be Open Ended**
  - **Say** “In what ways does your daughter tell you her wants and needs?”

- **Restate | Don’t Rephrase or Interpret**
  - May prompt more detailed information

Ethnographic Q&A Principals

- **Summarize to**
  - Validate Understanding
  - Direct Accurate Intervention Planning

- **Beware of Bombarding with Question Sequence**

- **Beware of Leading Questions**


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Ethnographic Q&A Principals

- **Beware** | Yes/No queries can often be leading

- **Beware of “Why” Questions. They can sound presumptive and critical**
  - **Say,** “What keeps you from attending therapy regularly?”

Language History

- Always, ALWAYS include languages and/or dialects patient/child uses

- Mention exposure and use
  - when began, with whom, what situations, include educational and home setting
  - include estimates of dominance and proficiency

- References/Tools
  - LEAP-Q: Adapted parent survey on language experience and proficiency (Marian, et al., 2007)
    - https://bilingualism.northwestern.edu/leapq/
  - See Hammer et al. (2012) article “Predicting Spanish-English Bilingual Children’s Language Abilities” in JLSHR
  - See Li et al. (2006) “Language history questionnaire: A Web-based interface for bilingual research” in Behavior Research Methods

Traditional Assessment

- Lends to Bias

- Few Appropriate Tools
  - Static comparison to “peers”

- Inadequate sensitivity & specificity
  - Sensitivity
  - Specificity

- Static comparison to “peers”

- Translation fraught
  - Milestone variations
  - Varied social experiences
  - Structures lost in translation
  - No normative data for scores
Dynamic Assessment

- **Mitigates bias**
- **Cultural relevance**
- **Variable, more natural**
- **Child compared to self**
  - Nature/degree of change
- **Theoretical Bases**
  - Vygotsky's Zone of Proximal Development
  - Information-Processing
  - Language challenges 2nd to attention/memory (Marton, 2007, 2008)

**Multi-step, Active, Interactive**

1. Test
2. Teach (Modified Learning Experience)
3. Re-Test

**Aims**

- Identify skills through teaching/learning session/s
- Ascertain learning potential
- Determination of language difference or disorder
- Intervention targets (Need be...)

[Image 228x24 to 383x62]
[Image 126x427 to 486x697]
[Image 126x95 to 486x365]
On Employing Dynamic Assessment

- DA has good track record for accurate classification
  - Especially regarding modifiability

- DA, however, not widely employed

- Potential DA use barriers
  - Clinician training
  - Administration time
  - Subjective characteristics
  - Unclear disorder cutoff points


Methods

- Participants
  - Bilingual children ages 6;4 to 7;7
  - 32 Typically Developing (TD)
  - 10 c/ Language Impairment (LI)
    - IEPs, receiving SpLx therapy;
    - LI determination by native Spanish-speaking SLP;
    - 1 SD on story retell in both languages
    - Confirmation from parent or teacher/No contest of diagnosis

- Procedures & Materials
  - Baseline Narrative in Each Language: “Frog, Where Are You?”
    - Story modeled and child asked to retell
    - See SALT Script (Miller and Iglesias, 2012)
  - Two, 25 minute DA sessions across two days
    - Pretest and Posttest retell
    - Teaching session/Modifiability judged
    - Real-time scoring with structured scoring sheet

Peterson et al. (2017)
Pre & Post-Test Rating Parameters

- **Quality (18 Points):**
  - Character, setting, problem, emotion, plan, attempt, consequence, ending, ending emotion

- **Target Words (10 Points):**
  - “Then” (1x), “Because”, “when”, and “after” (3x)

- **Episode Complexity (5 Points):**
  - Initiating event, attempt, consequence

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Four-Step Teaching Cycle

- **Clinician Models**
  - Identifies story grammar elements
  - Tells novel story using pictures with icons representing story elements

- **Child Retells with “Heavy” Support**
  - Pictures and icons present
  - Clinician support given during retell as needed with preset prompts

- **Child Retells with “Less” Support**
  - Only icons present
  - Clinician support given as needed

- **Child Retells with “Minimal” support**
  - Icons and picture removed
  - Clinician support as above

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Peterson et al. (2017)
Seven Modifiability Rating Parameters

0 to 2 Point Scale; “Relatively Heavy to Minimal Support”

1. Response to Prompts
   - How much direction needed?
   - Pause time?

2. Degree of Transfer
   - How are targets used across cycles?

3. Attention to Teaching
   - How focused versus distracted is the child?

4. Ease of Teaching
   - What is the degree of clinician teaching effort?

5. Frustration
   - What are the degrees of enthusiasm versus distress?

6. Disruptions
   - What is the degree of task interruption?

7. Overall Learning Potential


Results & Discussion

- Compared Measures
  - DA gains
  - Posttest Scores*
  - Modifiability*
    - Overall Modifiability (Mod-7, Question 7 Only)
    - All Modifiability Factors/Total Modifiability (Questions 1 – 7)
    - Duration of First Teaching Cycle (TC1)*

- Overall Modifiability & TC1 Duration Combined
  - 90% Sensitivity and 97% Specificity

- Mod-7 from both DA Sessions
  - 100% Sensitivity and Specificity

Peterson et al. (2017).

*Significant Group Differences
Results & Discussion

- **Cut-Off Points: ROC Curve Analysis**
  - Probability of falling in to a given category
    - .5 = chance, 1 = perfectly predictive

- **ROC Curve Results**
  - Mod-7 Score alone reasonable accuracy
  - Improved accuracy with any two of the four indices
  - Decreased accuracy with three and more so with four

- **Sensitivity/Specificity Trade-Off**
  - Overall Mod-7 had highest sensitivity BUT TMI had higher specificity
  - Cutoff Scores:
    - Lower cutoff: fewer falsely diagnosed as LI BUT more genuinely LI children are missed and vice versa
    - Classification accuracy dropped after combining more that two scores

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Peterson et al. (2017).

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Results & Discussion

- **Posttest, modifiability, and learning-time duration** evidenced “very good to excellent” classification accuracy

- **Protocol Viability**
  - Real-time scoring with structured scoring sheet
  - Potential to decrease administration time with more research, clinician training, and use in the clinical arena

- **To Be Investigated**
  - Real-world setting results
  - More evidence of solitary modifiability rating validity
  - Performance in other cultural/linguistic populations
  - Larger sample sizes
  - Potential materials and protocol modification
  - Lack of significant differences with gain scores

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Peterson et al. (2017).
More on Narrative Assessment

**Dynamic:** Peña, Gillam, & Bedore (2014)
- MLU, NDW, TNW, Main Verbs/Utterance: LI and TD on par
- Pre- to post-test improvement significantly lower in LI than TD
- LI significantly more agrammatic output than TD

**Traditional:** Jacobson & Walden (2013)
- NDW & Spanish Vocabulary: TD slightly higher raw scores but not statistically different from LI
- English Vocabulary: TD marginal statistically higher score
- Typical children significantly fewer **word/morpheme omissions** in both languages
- Omission Errors more reliable predictor of LI relative to Lexical Diversity
  - Consistent with the literature (e.g., Bedore et al., 2010; Rice & Wexler, 1996; Jacobson & Schwartz, 2009)

Measuring Vocabulary & Concepts

**Vocabulary development and skills**
- Linked to later higher-level language skills in mono- and bilingual children (e.g., Conboy and Thal, 2006)
- Problem area for SLI

**Bilinguals often score lower than monolingual in single-language vocabulary assessments**
- Bilinguals not two monolinguals in one brain (Grosjean, 1989)
- Not typically normed on bilingual speakers
- Knowledge in/experience with languages not often overlap
  - School English, home Mandarin

**Consider lexical and semantic knowledge across all languages**
On Improving Vocabulary Measurement

**Vocabulary Measure “Pros”**
- Vocabulary development/use = areas of SLI weakness
- Ease of administration/scoring

**Vocabulary Measure “Cons”**
- Poor psychometric properties
  - English test ranges: sensitivity 71-77%, specificity 68-77% (Gray et al., 1999)
- Bilinguals score lower than monolingual counterparts
  - Distributed vocabulary
  - Situation influencing word choice
  - Cognitive interference/non-target language suppression

**See article for more details**


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Conceptual Scoring

**Conceptual Score**
- Number of concepts a child knows regardless of the language

**Scoring Methods**
- Immediate Code Mixing
  - Prompt child to use non-target language immediately following an incorrect/no response
- Semi-Delayed Re-administration
  - After testing “Language A”, immediately re-administer any missed items in “Language B”
- Independent Language Assessment
  - Test “Language A” one day/sitting and “Language B” another day/sitting

**Different Methods – Different Processing Demands**
- Language activation and suppression levels?
- Costs of switching to and from stronger/weaker languages?
- See work by J. Abutalebi, E. Bialystok, D. Green, M. Finkbeiner, J. Kroll

Anaya et al. (2018)
Methods: Participants

- **Participants**
  - 247 bilingual children, 5;1 to 11;1 years old
  - Typical (TD) and Impaired Language (LI)
  - See article for TD/LI confirmation procedures
  - Dual language programs
    - English : Spanish :: 51% : 49% (avg. combined in/output)
  - Parent & Teacher Surveys (Pena et al., 2014)
    - Bilingual Input-Output Survey - BIOS
    - Inventory to Assess Language Knowledge – ITALK

Methods: Materials

- **Materials** (Vocabulary)
  - EOWPVT-3: English and SBE (Brownell, 2000, 2001)
    - Same items in each edition
    - 16 items precluded from regular Spanish protocol, but administered in this study for item level comparison
### Methods: Procedures

**Test Administration**
- English “Only” EOWPVT-3
- Spanish “Only” EOWPVT-3 BSE
- Examiner prompted child to respond in non-target language in event of error or no response
- Target language prompted in event non-target language used
  - E.g., “Ojo” for “eye” in English test. Prompt English. Recorded both (any) response
- Research ceiling = six incorrect (per test manual) + additional 14 items

Anaya et al. (2018)

### Methods: Scoring

**Scoring was consistent with the published Manuel**

**Six scores calculated across three methods**

**Monolingual English**
- Only English accepted as correct

**Monolingual Spanish**
- Only Spanish accepted as correct
- The 16 do-not-administer items were excluded from scoring

Anaya et al. (2018)
Methods: Scoring

- **Within-Test Conceptual Scores**
  - Analyzed items *within* a single language administration
  - Responses in either language counted as correct
  - English standard score & Spanish standard score
  - The 16 do-not-administer items excluded from Spanish scoring

- **Across-Test Conceptual Scores**
  - Analyzed items *across* both language administrations
  - Responses in either language counted as correct
  - English standard score & Spanish standard score
  - The 16 do-not-administer items excluded from Spanish scoring

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Scoring Illustration (not from an actual test or study)

<table>
<thead>
<tr>
<th>Target</th>
<th>Testing</th>
<th>Scoring Methods</th>
<th>Monolingual Scoring</th>
<th>English Test Performance</th>
<th>Spanish Test Performance</th>
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<td>Leche / Milk</td>
<td>Leche</td>
<td>Milk</td>
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<td>Leche</td>
<td>Milk</td>
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<tr>
<td>Grande / Big</td>
<td>Big</td>
<td>Big</td>
<td>1</td>
<td>Big</td>
<td>Big</td>
</tr>
<tr>
<td>Nariz / Nose</td>
<td>Nariz</td>
<td>NR</td>
<td>1</td>
<td>Nariz</td>
<td>Nariz</td>
</tr>
<tr>
<td>Bola / Ball</td>
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<td>Ball</td>
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<td>Bola</td>
<td>Ball</td>
</tr>
<tr>
<td>Silla / Chair</td>
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<td>Chair</td>
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<tr>
<td>Camisa / Shirt</td>
<td>Camisa</td>
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<th>Words Named Any Language</th>
<th>Raw Score</th>
<th>Total Concepts Known</th>
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<tbody>
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<td>6</td>
<td>5</td>
<td>6</td>
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</table>

**KEY**

- English word said in Spanish Test
- Spanish word said in English Test
- Stated in Other not This Test
- NR = No Response
- NA = Not Applicable
Results & Discussion

- **Best classification accuracy:** Spanish across-language scoring
- **Poorest classification accuracy:** English single language scoring
- **Success of across-test over within-test scoring suggests switching cost**
  - Relatively less success toggling between a target language and one being inhibited versus staying (primarily) within one language
- **Unacceptable sensitivity/specificity (56-79%) for diagnosis**
- **Next steps:** Greater sample size, varied elicitation methods (narratives), varied word classes (verbs, prepositions, etc.), of switching costs

Other Protocol Considerations

<table>
<thead>
<tr>
<th>Gross et al. 2014 Method</th>
<th>Core et al. 2013 Method</th>
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<tbody>
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<td><strong>Target</strong></td>
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<tr>
<td>Grande (Big)</td>
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<tr>
<td>Pelo (Hair)</td>
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<th><strong>English Label</strong></th>
<th><strong>Concepts</strong></th>
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<td>Chico (Small)</td>
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<td>Nariz (nose)</td>
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<td>Bola (Ball)</td>
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Core, Hoff, Rumiche, Señor, (2013) Total and Conceptual Vocabulary in Spanish-English Bilinguals From 22 to 30 Months: Implications for Assessment, JSLHR, 56, 1637-1649
Key Take-Aways

- Appropriate knowledge and skills are needed to service bilingual patients and clients, such as:
  - Understanding of bilingual language development and functioning
  - Knowing cultural perspectives of served population and own possible personal biases
  - Ethnographic principals
  - Collaborating with cultural/linguistic representatives

- Few to no appropriately normed tests exist for bilingual children

- Formal tests are especially susceptible to bias and inappropriate diagnosis

Key Take-Aways

- **Dynamic Assessment:**
  - Good for differential diagnosis of language difference from genuine disorder
  - Assess learning potential/relative strengths and weaknesses
  - Mitigate cultural/linguistic biases
  - Modifiability can be quite useful for differential diagnosis
  - DA feasible to execute within an assessment session

- **Narrative Analysis:**
  - Can work well in DA format
  - Ungrammaticality and omission rather than substitution errors show good potential to indicate disorder from differences

- **Vocabulary:**
  - All languages need to be considered for the most accurate assessment of word knowledge
  - Vocabulary tests are not ideally designed for diagnosing a language impairment in mono- or bilingual speakers
Thank You

What are your questions?