Using GFTA-3 Spanish Phoneme Emergence/Mastery Date to Inform Recommendations
May 2, 2018

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Research Director, Speech and Language

Instructions for submitting forms for ASHA CEUs

Pearson will submit completed CE forms to ASHA if:
- You attend the entire 60 minutes of the live session (confirmed by ReadyTalk log in time)
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- You complete the ASHA Participant Form and Evaluation Form
- You mail the forms postmarked no later than 5-9-18 to Darlene Davis, Pearson
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- CE forms are submitted if you view the webinar recording on PearsonClinical.com or speechandlanguage.com.

Questions about CEUs?
Contact Darlene Davis at darlene.k.davis@pearson.com

Disclosures

Marie Sepulveda is the Research Director for the GFTA-3 Spanish. She is a speech-language pathologist employed by Pearson Clinical Assessment.

There are no relevant non-financial relationships to disclose.

The Pearson Assessment Division develops and distributes assessment and intervention tools for speech-language pathologists. Course information will only cover information that pertains to the effective and appropriate use of GFTA-3 Spanish, which was developed by Pearson Clinical Assessment. No other assessments will be discussed.
Agenda

• Introduction and Overview
• GFTA-3 Spanish Administration and Scoring Overview
• GFTA-3 Spanish Interpretation and Recommendations
• Q&A

Learning Objectives

1. Describe why it is important to examine an individual’s speech sound productions in multiple contexts rather than in a single instance in each position of a word.

2. Explain how to use age-and sex-based information provided by GFTA-3 Spanish to determine if the individual is beginning to produce developmentally appropriate speech sounds at either an emerging or mastery level.

3. Explain how to use information in the GFTA-3 Manual and Record Form to identify the age at which speech sounds should be produced correctly at least 85% of the time.

GFTA-3 Spanish Overview
GFTA-3 Spanish: Overview

- Assess consonants in multiple contexts-every consonant error is scored
- Age appropriate art for ages 2:0 – 6:11 and 7:0 – 21:11
- Norm referenced scores
- Data about the emergence and mastery of speech sounds based on productions of Spanish speaking individuals
- Dialect-sensitive scoring for a wide range of Spanish dialects
- Rate intelligibility of connected speech
- Digital administration and scoring options

Art Examples

<table>
<thead>
<tr>
<th>Unique to GFTA-3 Spanish</th>
<th>Art Shared by English and Spanish Editions</th>
</tr>
</thead>
<tbody>
<tr>
<td>fruta</td>
<td>pato</td>
</tr>
<tr>
<td>sopita</td>
<td>mesa</td>
</tr>
<tr>
<td>foto</td>
<td>dientes</td>
</tr>
</tbody>
</table>
Two sets of test stimuli

Example

Phoneme production is tested in multiple contexts

Examples of words testing prevocalic /m/
- mesa
- manzana
- durmiendo

Examples of words testing postvocalic /s/
- nariz
- llaves
- tijeras
Who can administer this test?

**Bilingual SLP**
- Native or near native proficiency in Spanish
- Trained and experienced in administering and interpreting articulation tests
- Knowledgeable of speech sound disorders in the Spanish-speaking population
- Knowledgeable of Spanish phonological development and transcription using the International Phonetic Alphabet (IPA)
- Knowledgeable of pronunciation differences among speakers of Spanish dialects

Who can administer this test?

**SLP collaborating with a bilingual professional**
- SLP without native or near native proficiency in Spanish,
  - The SLP is responsible for being familiar with
    - speech sound disorders in the Spanish speaking population
    - Spanish phonological development
    - transcription of the individual’s production of target words using the International Phonetic Alphabet (IPA)
    - dialectal differences
    - cultural considerations
  - Collaborating with a bilingual speech-language pathology assistant (SLP-A) or other bilingual professional (e.g., psychologist, occupational or physical therapist, diagnostician, or teacher)
  - The bilingual professional is trained on test administration, and administers the question prompts and suggested cues.
  - For resources for working with bilingual professionals, see ASHA.org.
Sonidos-en-palabras

- 50 words
- Two sets of art stimuli
- Contents examined in prevocalic, intervocalic, and postvocalic contexts
- Measures 17 consonants (including 3 allophones), 11 R & L clusters
- Question Prompts and Suggested Cues
- Phonetic Error Analysis

Sonidos-en-palabras
administration format

Present words and the examinee names the picture.

If a child doesn’t label a picture spontaneously, we provide a suggested cue

You can provide a different cue that follows the format provided. If that doesn’t work, the child can imitate the target word

Sonidos-en-palabras
Score all consonants

<table>
<thead>
<tr>
<th>#</th>
<th>Target Word</th>
<th>PA Transcription</th>
<th>Response</th>
<th>Prevocalic</th>
<th>Intervocalic</th>
<th>Postvocalic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>pato</td>
<td>pato</td>
<td></td>
<td>p</td>
<td>t</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>mesa</td>
<td>mesa</td>
<td></td>
<td>m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>nariz</td>
<td>naris</td>
<td></td>
<td>n</td>
<td>r</td>
<td>s</td>
</tr>
<tr>
<td>4</td>
<td>vaca</td>
<td>baka</td>
<td></td>
<td>b</td>
<td>k</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>camas</td>
<td>kama</td>
<td></td>
<td>k</td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>leche</td>
<td>leche</td>
<td></td>
<td>l</td>
<td></td>
<td>f</td>
</tr>
<tr>
<td>7</td>
<td>leche</td>
<td>leche</td>
<td></td>
<td>l</td>
<td></td>
<td>p</td>
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<tr>
<td>8</td>
<td>leche</td>
<td>leche</td>
<td></td>
<td>l</td>
<td></td>
<td>t</td>
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<tr>
<td>9</td>
<td>leche</td>
<td>leche</td>
<td></td>
<td>l</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Phonetic Error Analysis: Common Error Patterns: Place

Common Error Patterns: Manner

Phonetic Error Analysis lists phonemes arranged by:
- stops
- nasals
- approximants
- fricatives
- affricates
- liquids
Sonidos-en-palabras scores

- Standard scores
- Percentile ranks
- Age equivalents
- Growth scale values

Sonidos-en-oraciones

- Sentence imitation task
- One story for ages 4:0 to 6:11; the other for ages 7+
- Intelligibility score
- Report normative scores, including standard scores, percentile ranks, and age equivalents

Score all consonants in target words only
Sonidos-en-oraciones
Phonetic Error Analysis

- Organized by stops, nasals, approximants, fricatives, affricates, liquids
- Not all phonemes are represented

Intelligibility rating

Inteligibility Rating: 1 2 3 4

Inteligibility Ratings of the Nonnative Sample by A:

<table>
<thead>
<tr>
<th>Intelligibility rating</th>
<th>60-61.4</th>
<th>62-63.4</th>
<th>64-65.4</th>
<th>66-67.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>51.1</td>
<td>51.3</td>
<td>42.0</td>
<td>26.9</td>
</tr>
</tbody>
</table>
Dialect sensitive scoring

APPENDIX D

Examples of Dialectal Variations

<table>
<thead>
<tr>
<th>Phenome</th>
<th>Allophones</th>
<th>Dialectal variations</th>
</tr>
</thead>
<tbody>
<tr>
<td>[n]</td>
<td>[n] after pause or nasal</td>
<td>[n] (weak)= bona</td>
</tr>
<tr>
<td>[n]</td>
<td>[n] / other place</td>
<td>[n] (medium)= bana</td>
</tr>
<tr>
<td>[n]</td>
<td>[n] / intervocalic, all other places</td>
<td>[n] (strong)= bana</td>
</tr>
<tr>
<td>[n]</td>
<td>[n] / declension, of other places</td>
<td>[n] (weak)= bana</td>
</tr>
<tr>
<td>[n]</td>
<td>[n] / with liaison</td>
<td>[n] (medium)= bana</td>
</tr>
<tr>
<td>[n]</td>
<td>[n] / with liaison</td>
<td>[n] (strong)= bana</td>
</tr>
<tr>
<td>[n]</td>
<td>[n] / with liaison</td>
<td>[n] (weak)= bana</td>
</tr>
<tr>
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</tr>
<tr>
<td>[n]</td>
<td>[n] / with liaison</td>
<td>[n] (strong)= bana</td>
</tr>
</tbody>
</table>

Standardization Sample

Individuals tested in the US were from families whose country of origin was one or more countries in Central and South America, the Caribbean, and Spain—17 countries total

Argentina, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Spain, Uruguay, Venezuela

Vowels

<table>
<thead>
<tr>
<th>Vowel Errors Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
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<tr>
<td>e</td>
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<tr>
<td>i</td>
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<tr>
<td>o</td>
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<tr>
<td>u</td>
</tr>
</tbody>
</table>
Observations and/or Concerns

Sonidos-en-oraciones results

- Standard scores
- Percentile ranks
- Age equivalents
- Growth scale values
- Intelligibility measure

Assess Stimulability

- Option of checking stimulability on error phonemes
Gender differences

• Separate norms for females and males through the entire age range (2:0 through 21:11)

• Mastery for all phonemes exhibited in singleton and cluster productions:
  - Females:
    - Most sounds developed by 6:0 to 6:11
    - Late developing sounds (7:0 to 8:0+): x, ð, tap r and trill r, pr
  - Males:
    - Most sounds developed by 7:0 to 7:11
    - Late developing sounds (8:0+): tap r and trill r

Interpreting GFTA-3 Spanish Results

Administration and Scoring Choices
Emergence and Mastery Data

- **GFTA-3 Premise [English and Spanish editions]:**
  Phonemes should be tested in multiple contexts because productions can be affected by surrounding vowels and consonants and the complexity of the word structure. Children begin to correctly produce phonemes at different ages, with a time period between emergence and mastery of sounds.

  Low standard scores indicate that a child’s speech is not comparable to age/gender peers.

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All sound productions are not created equal

Even in single word productions, accurate production of the target phoneme is influenced by context
- simple vs. complex syllable shapes
- production changes when the target is next to other consonants, vowels or clusters

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Has speech sound developmental data really changed?

**Emergence**
- Age at which a phoneme is present (one or more correct productions) in the child’s repertoire.
- Reported as the ages at which 50%, 75% and 90% of children spontaneously produced a phoneme correctly one or more times on GFTA-3 Spanish, based on age and sex.

**Mastery**
- Ages at which 90% of the GFTA-3 normative sample (by sex) produced the phoneme with at least 85% accuracy.
### Emergence Data: When should a child be able to say a sound one or more times on GFTA-3 Spanish?

**Table PR1: “Present” in the Normative sample**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Phoneme 1</td>
<td></td>
<td></td>
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<tr>
<td>Phoneme 2</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phoneme 3</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**GFTA-3: Emergence Data:** % of girls producing the phoneme one or more times correctly (multiple opportunities).

### Mastery Data: When should a child be able to say a sound correctly with at least 85% accuracy on GFTA-3 Spanish? Mastery (Females)

**Table PD2: Ages at which 85% of the Normative Sample correctly produced the phoneme (Females)**

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Phoneme 1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phoneme 2</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phoneme 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

**GFTA-3: Mastery data:** 85% of girls producing the phoneme 85% or more correctly (multiple opportunities).
Developmental data on this chart show the range of ages of sound acquisition beginning with emergence of consonant and blends to mastery (90% correct productions). Syllable sound position data is collapsed.

GFTA-3 Spanish data show a similar pattern using emergence at one or more correct productions (50% for most phonemes tested) and an 85% criterion for mastery.

GFTA-3 Spanish data indicate that it is NOT common for children to go from not producing a phoneme to spontaneously producing a phoneme accurately 85% or more of the time. Most children produce phonemes correctly in certain contexts (e.g., when produced in specific vowel or consonant combinations), before exhibiting mastery (85%+ correct productions).

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<table>
<thead>
<tr>
<th>Ana, age 2:2</th>
<th>Type of /r/ errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trill/Tap r and r clusters</td>
<td>22</td>
<td>114</td>
<td>82.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ana, age 4:2</th>
<th>Type of /r/ errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trill/Tap r and r clusters</td>
<td>22</td>
<td>94</td>
<td>34.5</td>
<td></td>
</tr>
<tr>
<td>Trill r only</td>
<td>6</td>
<td>1</td>
<td>87.1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ana, age 6:2</th>
<th>Type of /r/ errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trill/Tap r and r clusters</td>
<td>22</td>
<td>9</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>Trill r only</td>
<td>6</td>
<td>97</td>
<td>42.1</td>
<td></td>
</tr>
<tr>
<td>r clusters only</td>
<td>7</td>
<td>94</td>
<td>34.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ana, age 6:8</th>
<th>Type of /r/ errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trill/Tap r and r clusters</td>
<td>22</td>
<td>76</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Trill r only</td>
<td>6</td>
<td>95</td>
<td>36.9</td>
<td></td>
</tr>
<tr>
<td>r clusters only</td>
<td>7</td>
<td>90</td>
<td>25.3</td>
<td></td>
</tr>
</tbody>
</table>

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**What we know to be best practice**

- The GFTA-3 Spanish score **should never be** the sole determiner for eligibility for services.
- The GFTA-3 Spanish score ≠ a comprehensive assessment.
  - The GFTA-3 Spanish score indicates how a child compares to same age/same gender peers.
  - The clinician determines appropriate next steps.
- **GFTA-3 Spanish standard scores provide one part of the evidence you report as part of the comprehensive assessment.**
Interpreting assessment results—what we know to be best practice

- Examine standard scores to determine how an individual functions relative to peers
- Examine emergence and mastery data to identify phonemes that
  - should be emerging in the individual’s repertoire
  - should be mastered by individuals at the same age

in addition to….

...qualitative GFTA-3 Spanish data

Based on child’s age/gender, note performance and/or improvements
- Phoneme inventory
- Correct/incorrect phoneme productions in different syllable shapes and word contexts
- Developmental patterns
- Stimulability
- Productions in connected speech
- Intelligibility in words and sentences

In addition to the GFTA-3 Spanish results, obtain data from any of the following
- Spontaneous connected speech sample
- Parent interview (behavior at home, concerns, priorities)
- Preschool teacher interview (academic/social emotional impact; participation in classroom)
- Observations with adults and peers
- Dynamic assessment to identify techniques that elicit correct productions
What should my recommendations be?

What are the recommendation options?
Parents and teachers want to know that their concerns about a child’s speech are being addressed. But that doesn’t necessarily mean that enrollment in therapy is the next step.

- Monitor the child’s speech in the classroom
- Do a re-check in six months
  - Improvement?
  - New facilitating context(s) acquired independently?
  - Implications
- Classroom Articulation lab
- Parent strategies
- Placement in Speech and Language services

Explaining Results to Stakeholders
Explaining test results to parents/teachers

**Expectation:** Parent or teacher expects the child to earn a low score

**Results:** Parent or teacher concerns and priorities do not match expectations on GFTA-3 Spanish test results. The child earns a GFTA-3 Spanish score in the average range.

**Explanation:** When producing sounds, your child/student makes errors that some children her age make. She is able to imitate the sounds correctly, which is a positive sign that she will learn to produce the sounds correctly on her own given a little more time.

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Explaining test results when results don’t match your expectations

**Expectation:** Clinician expects the child to earn an average score because errors are on later-developing sounds

**Results:** Child earns a low GFTA-3 Spanish score

**Explanation:** The child does not produce later-developing sounds in any of the words tested. When examining the emergence data, a boy his age or younger was able to produce these sounds correctly in one or more instances. Intelligibility may be fair to good, however, he was unable to imitate the sounds correctly, which is a poor prognostic indicator that he will learn to produce the sounds correctly without additional support (e.g., home, classroom, direct therapy).

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Explaining test results to administrators

**Expectation:** Administrators/district requirements for “academic impact” needed to provide services

**Results:** Administrator view of academic impact does not match clinicians’ view of need for services

**Explanation:** The student does not produce the sounds trill and tap r, s, and r and l clusters in any of the words that were tested. He was unable to imitate these sounds correctly, which is a poor prognostic indicator that he will learn to produce the sounds correctly without additional support.

The student’s errors negatively impact intelligibility, so that teachers have difficulty understanding his oral responses in class. Teasing from peers has resulted in him becoming more withdrawn, significantly reducing his participation in the classroom.
Explaining test results to funding entities

**Expectation:** Funding entity requires a standard score of 77 to fund services (e.g., insurance, Medicaid)

**Results:** Child earns a GFTA-3 Spanish score of 78. Clinician’s recommendation is that the child receive direct services

**Explanation:** The child’s results from a comprehensive assessment of articulation show her articulation skills to be at the very low range of ability. She incorrectly produces 13 speech sounds, which significantly reduces intelligibility. The percentile rank on the GFTA-3 Spanish places her at the 7.1st percentile. Stimulabilty (the ability to imitate correct productions of sounds) was poor (she was stimulable for 5 of 13 error sounds, indicating a poor prognosis for spontaneous improvement of sound productions without intervention.

Stakeholder does not accept your recommendations based on assessment results

- Document all test results and considerations to support your recommendations for the student
- Norms cannot be “adjusted” to meet ever-changing legislative, district, and insurance requirements for a student’s eligibility for services.
- Consider/offer recommendations for alternatives to direct treatment:
  - monitor child and retest in X months
  - consultation in classroom
  - home practice
  - articulation lab in classroom
Evidence of Validity

Correlation with PLS-5 Spanish Articulation Screening

- Ages 2:6 to 7:11
- Corrected $r = .70$

Speech Sound Disorder (SSD) Compared to Matched Control

- Ages 4:0 to 8:11

<table>
<thead>
<tr>
<th>GFTA-3 Spanish</th>
<th>SSD Mean</th>
<th>SD</th>
<th>Matched Control Mean</th>
<th>SD</th>
<th>Difference</th>
<th>Standard Difference (effect size)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonidos-en-palabras</td>
<td>76.6</td>
<td>9.4</td>
<td>104.4</td>
<td>13.8</td>
<td>27.8</td>
<td>2.35</td>
</tr>
<tr>
<td>Sonidos-en-oraciones</td>
<td>76.0</td>
<td>15.6</td>
<td>100.3</td>
<td>18.4</td>
<td>24.3</td>
<td>1.42</td>
</tr>
</tbody>
</table>

Sensitivity and Specificity

- Ages 2:6 to 7:11
- Optimal cut score: -1 SD (85)
- Sensitivity .88
  - Probability that individuals who identified with a speech sound disorder* have a speech sound disorder
- Specificity .91
  - Probability that individuals who do not have a speech sound disorder were correctly classified

*Based on a pool of 30 bilingual SLPs’ determination of a speech sound disorder based on criteria they use in their practice:
- standardized test results
- language sample
- observations
- informal assessment

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