Pearson

Assessment of Articulation and Phonological Processing Using the GFTA-3 and KLPA-3

**Gloria Maccow, Ph.D.
MSHA, 2016**

GFTA 3
GOLDMAN-FRISTOE
TEST OF ARTICULATION

KLPA 3
KHAN-LEWIS
PHONOLOGICAL ANALYSIS

aɪ
♥
spitʃ
pəθɑlədʒi

Disclosures

- Gloria Maccow, Ph.D. is employed by Pearson Clinical Assessment, publisher of the GFTA-3 and KLPA-3.

- This presentation will focus on administration, scoring, and interpretation of the GFTA-3 and KLPA-3. No other articulation or phonological assessments will be discussed during this session.

GFTA3   KLPA3

Pearson

Learning Objectives

GFTA 3
GOLDMAN-FRISTOE
TEST OF ARTICULATION

KLPA 3
KHAN-LEWIS
PHONOLOGICAL ANALYSIS

- Describe at least three features new to the GFTA-3 and KLPA-3.

- Identify at least two changes to the scoring procedures for the GFTA-3.

- List at least two factors to consider when evaluating an examinee's error patterns on the GFTA-3 and KLPA-3.

Pearson

Articulation

Speech Sound Disorders

+

Phonological Processes

http://www.asha.org/public/speech/disorders/SpeechSoundDisorders/

Pearson   Assessing Articulation and Phonological Processing | 4

How are Speech Sound Disorders Diagnosed?

Use Formal Articulation Test

Listen to Person Speak

Conduct Oral Mechanism Exam

Evaluate Language Development

Pearson   Assessing Articulation and Phonological Processing | 5
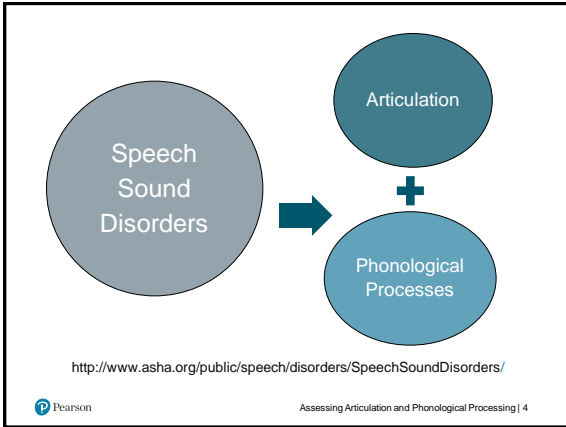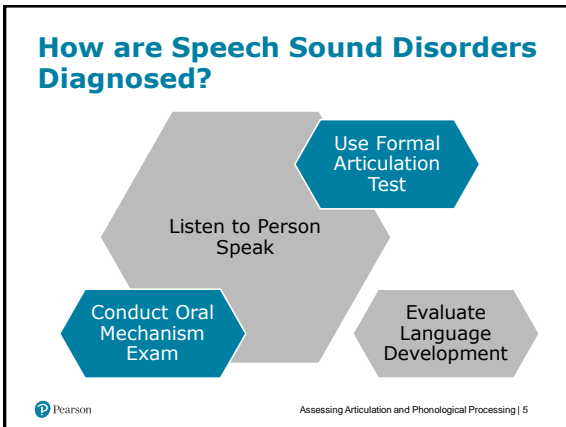
Assess speech sound disorders using the new GFTA-3 *&* KLPA-3.

The new Goldman-Fristoe Test of Articulation–Third Edition (GFTA™-3) and Khan-Lewis Phonological Analysis–Third Edition (KLPA™-3) offer comprehensive articulation and phonology assessment designed to help you diagnose speech sound disorders and plan effective intervention for your diverse client population.

Pearson   Assessing Articulation and Phonological Processing | 6

Articulation	Phonology
Goldman-Fristoe Test of Articulation-3	Khan-Lewis Phonological Analysis-3
Provides diagnostic information about individual's ability to articulate consonant sounds in single words and connected speech.	Provides a comprehensive analysis of speech sound patterns so you can determine if use of phonological processes is contributing to an individual's speech sound disorder.

Pearson

Assessing Articulation and Phonological Processing | 7

GFTA-3

Features of GFTA-3

Administered individually.

Assesses speech sound abilities in the area of articulation.

Used with children, adolescents, and young adults (ages 2:0 through 21:11.

Administered by SLPs.

Pearson

Assessing Articulation and Phonological Processing | 9

Test Materials

GFTA3
GOLDMAN-FRISTOE
TEST OF ARTICULATION

Manual

Stimulus Book

Record Form

Assessing Articulation and Phonological Processing | 10

Comparing GFTA-3 and GFTA-2

See handout

GFTA3
GOLDMAN-FRISTOE
TEST OF ARTICULATION

Comparison with Prior Edition (GFTA™-2)

Goldman-Fristoe Test of Articulation	Goldman Fristoe 2 Test of Articulation®	GFTA3 GOLDMAN-FRISTOE

Assessing Articulation and Phonological Processing | 11

**GFTA-3
What's New?**

GFTA-3 Updates

Multiple opportunities to produce consonant and consonant cluster sounds in different word positions.

Standard scores for articulation at word level and connected speech level.

Compare intelligibility in connected speech with that of same-age peers.

Pearson   Assessing Articulation and Phonological Processing | 13

What's New? GFTA-3 *Sounds-in-Words*

Assess consonants in multiple contexts.

New error analyses for vowels and R productions.

Dialect-sensitive scoring for a wide range of American English dialects.

Two new sets of picture stimuli.

Pearson   Assessing Articulation and Phonological Processing | 14

What's New? GFTA-3 *Sounds-in-Sentences*

Easy-to-elicit connected speech measure with a new sentence imitation task.

Standard scores for speech sound productions in connected speech.

New stories.

New intelligibility rating.

Pearson   Assessing Articulation and Phonological Processing | 15

5

Dialect-Sensitive Scoring

If a response to a GFTA-3 item is a variation from SAE that is appropriate for the individual's speech and language background, score it as correct.

See Appendix E: Common Phonemic Contrasts between Standard American English and _____

Table E.1   African-American English
Table E.2   Spanish-Influenced English
Table E.3   Asian-Influenced English

Pearson   Assessing Articulation and Phonological Processing | 16

KLPA-3

Features of KLPA-3

Companion tool for GFTA-3.

Norm-referenced in-depth analysis of phonological process usage.

Used with children, adolescents, and young adults (ages 2:0 through 21:11.

SLP analyzes responses on GFTA-3 to obtain further diagnostic information about speech sound abilities.

Pearson   Assessing Articulation and Phonological Processing | 18

When to Complete Phonological Analysis of GFTA-3 Results

No Speech is reasonably intelligible and contains few misarticulated phonemes.

Yes Speech is reasonably intelligible and contains many misarticulated phonemes.

Yes Examinee is very young or has moderately to severely unintelligible speech.

Pearson   Assessing Articulation and Phonological Processing | 19

Materials Needed

Pearson   Assessing Articulation and Phonological Processing | 20

Comparing KLPA-3 and KLPA-2

See handout

Pearson   Assessing Articulation and Phonological Processing | 21

**KLPA-3
What's New?**

New Features!

More efficient and accurate scoring.

Identify phonological processes for each sound error.

Calculate percent of occurrence for each phonological process.

Ⓟ Pearson

Assessing Articulation and Phonological Processing | 23

New to KLPA-3

- "Core" (Developmental processes) vs. "Supplemental" (Atypical) Processes
- Core Phonological Process Analysis
- Percent of Occurrence of Supplemental Processes

- Phonological Processes per Word (PPW)
- Intelligibility rating
- Vowel analyses
  – Phonetic inventory
  – Vowel phonological process usage

Ⓟ Pearson

Assessing Articulation and Phonological Processing | 24

---

12 Core Processes

Core Processes: frequently occurring phonological processes that are developmental in nature

Manner	Place	Reduction	Voicing
Deaffrication	Palatal fronting	Cluster simplification	Final devoicing
Gliding of Liquids	Velar fronting	Deletion of final consonant	Initial devoicing
Stopping of fricatives and affricates		Syllable reduction	
Stridency deletion			
Vocalization			

New normative data. Obtain standard scores and percentile ranks by age and gender.

Pearson   Assessing Articulation and Phonological Processing | 25

Core Phonological Processes Summary

	Phonological Process	Number of Occurrences	Total Possible Occurrences	Percent of Occurrences
Manner	Deaffrication (DF)	0	of 8 =	0%
	Gliding of liquids (GL)	12	of 20 =	60%
	Stopping of fricatives and affricates (ST)	6	of 48 =	13%
	Stridency deletion (STR)	11	of 42 =	26%
	Vocalization (VOC)	6	of 15 =	40%
Place	Palatal fronting (PF)	1	of 12 =	8%
	Velar fronting (VF)	0	of 23 =	0%
Reduction	Cluster simplification (CS)	7	of 23 =	30%
	Deletion of final consonant (DFC)	1	of 36 =	3%
	Syllable reduction (SR)	0	of 25 =	0%
Voicing	Final devoicing (FDV)	0	of 35 =	0%
	Initial voicing (IV)	0	of 33 =	0%

Pearson   Assessing Articulation and Phonological Processing | 26

12 Supplemental Processes

Data-driven determination of the phonological processes that are more clinical in nature (less frequently occurring; atypical)

Manner	Place	Reduction	Voicing
Affrication	Backing to velars or /h/	Deletion of initial consonant	Initial devoicing
Frication		Deletion of medial consonant	Medial devoicing
Gliding (Other than liquids)			Medial voicing
Glottal replacement			
Liquidization			
Stopping (Other than Fricatives/Affricates)			

Pearson   Assessing Articulation and Phonological Processing | 27

Supplemental Processes

- The 12 Supplemental Phonological Processes are recorded, tallied and converted to a Percent of Occurrence.
- Generally, Supplemental Phonological Processes occur less frequently in typical development.
- Clinical signs that could be diagnostic or prognostic and may be red flags for further consideration.
- Contribute to the Processes per Word (PPW).

Pearson — Assessing Articulation and Phonological Processing | 28

Supplemental Phonological Processes Summary

	Phonological Process	Number of Occurrences	Total Possible Occurrences	Percent of Occurrences
Manner	Affrication	0	of 151 =	0%
	Frication	0	of 111 =	0%
	Gliding (other)	0	of 81 =	0%
	Glottal replacement	0	of 159 =	0%
	Liquidization	0	of 124 =	0%
	Stopping (other)	0	of 59 =	0%
Place	Backing to velars or /h/	0	of 134 =	0%
Reduction	Deletion of initial consonant	0	of 58 =	0%
	Deletion of medial consonant	1	of 27 =	4%
Voicing	Initial devoicing	0	of 41 =	0%
	Medial devoicing	0	of 22 =	0%
	Medial voicing	0	of 11 =	0%

Pearson — Assessing Articulation and Phonological Processing | 29

Definitions

Core Phonological Process Definitions

Manner

DF Deaffrication: deleting the stop feature of an affricate, with retention of the continuant, or fricative, feature
chair → [ʃɛr]   /tʃ/ → [ʃ]

GL Gliding of liquids: producing the liquids /l/ and /r/ as glides /w/ and /j/
giraffe → [dʒəwæf]   /r/ → [w]

ST Stopping of fricatives and affricates: stopping a fricative, resulting in an affricate, stop, or glottal stop; stopping an affricate, resulting in a stop or glottal stop
pajamas → [pədɑmɑs]   /dʒ/ → [d]

STR Stridency deletion: deleting stridency from strident consonants either through deletion or replacement
chair → [tɛr]   /tʃ/ → [t]

Supplemental Phonological Process Definitions

Manner

AFF Affrication: adding a stop feature to the continuant feature of a fricative
brushing → [brʌtʃɪŋ]   /ʃ/ → [tʃ]

FRC Frication: changing any nonfricative or nonaffricate consonant to a fricative
quack → [kvæk]   /w/ → [v]

GL(Oth) Gliding of consonants other than liquids: changing a nonliquid consonant to a glide in a position other than word-finally
shoe → [ju]   /ʃ/ → [j]

GR Glottal replacement: using a glottal stop to replace any consonant
vacuum → [va?um]   /kj/ → [?]

Pearson — Assessing Articulation and Phonological Processing | 30

Phonological Processes Per Word (PPW)

Processes Per Word (PPW) Summary

Item	Target Word	Core Processes per Word	Supplemental Processes per Word	Total Processes per Word
1		2	0	2
11		1	0	1
12		1	0	1
13		3	0	3
15		3	0	3
17		1	0	1

Ⓟ Pearson   Assessing Articulation and Phonological Processing | 31

Other Phonological Processes and Sound Change Booklet

- Individuals may use phonological processes that are not included in the Core or Supplemental Processes.
- The KLPA-3 Sound Change Booklet, just like KLPA-2, aids scoring by providing you with phonological processes for many possible sound changes for each target consonant.
- Other Phonological Processes may be recorded on the KLPA-3 Analysis Form and may contribute to the PPW.

Ⓟ Pearson   Assessing Articulation and Phonological Processing | 32

Consonant Analysis

Phonetic Inventory for Consonants and Consonant Clusters.

Core Phonological Process Analysis.

Summary of Consonant Analysis

Ⓟ Pearson   Assessing Articulation and Phonological Processing | 33

Vowel Analysis

Eight Phonological Processes that impact vowel production.

Vowel Phonetic Inventory.

Vowel Usage Section.

Summary of Vowel Analysis.

Vowel Analysis: Definitions

Vowel Phonological Process Definitions

Backing: producing a front vowel as a back vowel
monkey → [mʌŋku]   /I/ → [u]

Fronting: producing a back vowel as a front vowel
frog → [freg]   /ɔ/ → [e]

Centralization: producing a front or back vowel as a central vowel
cookie → [kuke]   /I/ → [ə]

Decentralization: producing a central vowel as a front or back vowel
cup → [kop]   /ʌ/ → [o]

Raising: altering vowel production by raising vowel height
giraffe → [dʒərɪf]   /æ/ → [ɪ]

Lowering: altering vowel production by lowering vowel height
blue → [blɑ]   /u/ → [ɑ]

Diphthongization: producing a monophthong as a diphthong
go → [goɪ]   /o/ → [ɔɪ]

Monophthongization: producing a diphthong as monophthong
boy → [bo]   /ɔɪ/ → [ɔ]

Interpretation

Interpretation and Treatment Planning

GFTA-3 and KLPA-3 provide *quantitative* data and *qualitative* data. Both are used to develop treatment plans.

Quantitative Scores

Norm-referenced scores that enable you to compare examinee's performance to others of same gender and age.

- Standard Score
- Percentile Rank
- Test-age equivalent

GFTA3   KLPA3

Ⓟ Pearson

Assessing Articulation and Phonological Processing | 37

Standard Scores

Guidelines for Describing the Severity of a Speech Sound Disorder		
Test Score	**Classification**	**Relationship to Mean**
115 and above	Above average	+1 SD and above
86 to 114	Average	Within + or – 1 SD
78 to 85	Borderline/Marginal/At-Risk	Within -1 to -1.5 SD
71 to 77	Low/Moderate	Within -1.5 to -2 SD
70 and below	Very Low/Severe	-2 SD and below

GFTA3

Ⓟ Pearson

Assessing Articulation and Phonological Processing | 38

Growth Scale Values

Growth scale values provide an objective score for measuring changes in GFTA-3 performance over time. They can be used to:

- Track an individual's skill development on specific tests (e.g., Sounds-in-Words and Sounds-in-Sentences).
- Determine if the individual has gained additional speech sound skills since a previous administration of the GFTA-3, and
- Measure the efficacy of an intervention protocol that has been implemented for the individual.

Ⓟ Pearson

Assessing Articulation and Phonological Processing | 39

Interpret Growth Scale Values Relative to Standard Scores

Growth Scale Value	Standard Score
Provides information on gains made since last assessment.	Compares individual's performance to that of same-age peers.

Pearson

Assessing Articulation and Phonological Processing | 40

Evaluating Error Patterns

Factors to Consider When Evaluating Error Patterns on GFTA-3

Review the age/gender data specific to the child
- Normative score
- Age of emergence of phonemes
- Age of mastery

Is the child's speech related to a dialectal variation or influence from learning a second language?

Pearson

Assessing Articulation and Phonological Processing | 42

Factors to Consider When Evaluating Error Patterns on GFTA-3

- Are errors in single words or sentences?
- Are the errors consistent?
- Is the child stimulable for phonemes produced in error? Are there facilitating contexts?
- Is the child's speech intelligible? How does intelligibility compare to that of peers?

Factors to Consider When Evaluating Error Patterns on KLPA-3

Review the age/gender data specific to the child (normative scores)

If phonological processes are present,
- Are the processes developmental or atypical?
- Are they processes that should have been suppressed?
- If atypical, are the processes common in a clinical population?

Factors to Consider When Evaluating Error Patterns on KLPA-3

- Are the errors consistent?
- Are there multiple error patterns or are they confined to one or two patterns?
- Are there some contexts where the phonological process is demonstrated?
- Is the child's speech intelligible? How does intelligibility compare to that of peers?

Male, B., Age 6:3

- Referred by first grade teacher
- Difficult to understand in single word production and in conversational speech
- Also struggling with sound decoding in reading
- Mostly drawings and little or no text in daily writing journal
- Plays alone
- Kindergarten teacher reported no academic concerns
- Referred to Child Study Team for speech and literacy concerns

GFTA   KLPA

Referral Questions

1. Does B. have a speech sound disorder in the area of phonology?

2. If a speech sound disorder in the area of phonology is present, what is B.'s profile of strengths and weaknesses?

3. What intervention recommendations can be derived from B.'s profile?

GFTA-3 Sounds-in-Words Score Summary					
Raw Score	Std. Score	Confidence Interval	%ile Rank	Test Age Equiv.	GSV
22	77	73-83	6	3:10-3:11	555

Some sound changes on early developing sounds (e.g., /k/, /g/, but mostly on later developing sounds (e.g., /r/, /l/, clusters).

KLPA-3 Score Summary				
Raw Score	Std. Score	Confidence Interval	%ile Rank	Test Age Equiv.
23	77	73-83	6	3:6-3:7

Core Phonological Processes:
- Cluster Simplification
- Gliding of Liquids
- Velar Fronting
- Deletion of Final Consonant

Supplemental Phonological Processes:
- Initial Devoicing
- Deletion of Medial Consonant

Phonetic Inventory for Consonants in Single Words
- Lack of consonants in word-final position
- Liquids changing to glides in consonant clusters in initial position
- Few liquids or velars produced

Pearson — Assessing Articulation and Phonological Processing | 49

Recommendations

- Speech Sound Disorder in area of phonology.
- Would benefit from intervention focused on the following goals:
  - Suppression of deletion of final consonant
  - Expansion of consonant cluster usage
  - Suppression of velar fronting
  - Suppression of initial devoicing
- Refer for comprehensive psychoeducational evaluation due to difficulties in reading and writing.

Pearson — Assessing Articulation and Phonological Processing | 50

Questions

gloria.maccow@pearson.com