# IMPLEMENTATION GUIDELINES FOR SPEECH IMPAIRMENT WITH AN ARTICULATION DISORDER: CULTURAL & LINGUISTIC DIVERSITY (CLD) COMPANION*


# TEXAS SPEECH LANGUAGE HEARING ASSOCIATION

# 2010

***This manual is to be used as an extension of, or to augment, the TSHA Eligibility Guidelines for Speech Impairment, 2009. It is not intended for use as a standalone guide.**

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# I. General Information

# A. PURPOSE AND INTENDED USE OF THE CLD COMPANION to the ARTICULATION ELIGIBILITY GUIDELINES

The purpose of the CLD Companion to the Articulation Eligibility Guidelines is to provide a structure within which the speech-language pathologist (SLP) can use consistent, evidence-based evaluation practices in accordance with the law to:

- Provide information to teachers and parents regarding the nature of articulation and disorders of articulation in culturally and linguistically diverse populations and, when indicated, provide classroom intervention recommendations based on data collected by the Student Support Team (SST).
- Complete a comprehensive evaluation of a student's articulation abilities following a referral for articulation concerns for a Full and Individual Evaluation (FIE) for special education.
- Identify whether an articulation disorder is present, and differentiate disorders from differences due to cultural and linguistic diversity.
- Determine if the presence of an articulation disorder results in a disruption in academic achievement and/or functional performance, and document the need for specially designed instruction by the speech-language pathologist (SLP).
- Make recommendations to the Admission, Review, Dismissal (ARD) Committee regarding eligibility for special education services and support based on speech impairment (SI).

These guidelines are intended to be used in combination with the information provided in the *Texas Speech Language Hearing Association (TSHA) Eligibility Guidelines for Speech Impairment, 2009*, with the understanding that use of the tools in this articulation guidelines manual require additional, specialized training regarding cultural and linguistic diversity and its influence on articulation. SLPs should become very familiar with the information in that manual and be aware that information from both manuals is essential to completing a comprehensive evaluation of articulation.

Please see the *Texas Speech Language Hearing Association (TSHA) Eligibility Guidelines for Speech Impairment, 2009,* for additional information (available online at www.TXSHA.org).

# B. LINGUISTICALLY DIVERSE POPULATIONS: CONSIDERATIONS AND RESOURCES FOR ASSESSMENT AND INTERVENTION

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## I. INTRODUCTION

Recognizing the vast cultural and ethnic diversity that exists in Texas, this document has been prepared by the Texas Speech Language Hearing Association Task Force on Cultural and Linguistic Diversity (CLD) Issues in an effort to establish guidelines for assessment and intervention of speech and language disorders in culturally and linguistically diverse individuals. In the document entitled "Knowledge and Skills Needed by Speech-Language Pathologists and Audiologists to Provide Culturally and Linguistically Appropriate Services" written by the 2004 Multicultural Issues Board of the American Speech-Language-Hearing Association, ASHA recognizes the shortage of bilingual speech-language pathologists and audiologists (*ASHA Supplement* 24). Furthermore, they acknowledge the importance for all service providers to assume responsibility for effective services and to be prepared to competently respond to issues of diversity.

Diversity may include a variety of factors, such as race, ethnicity, culture, religious beliefs, sexual orientation, socioeconomic level, and linguistic and educational background. However, the purpose of this document is to focus on issues related to linguistic diversity as it impacts the practice of speech and language pathology in the state of Texas.

Linguistically diverse populations include individuals who:

- learned two or more languages simultaneously (simultaneous bilingualism)
- learned an additional language(s) after development of the first language (sequential bilingualism)
- are fluent in one language but have significant exposure to other language(s)
- speak more than one dialect

As we are dealing with the population living within the United States, very often the "other" language in question is English. Linguistically diverse individuals/public school students are frequently classified or referred to as Limited English Proficient (LEP)/English Language Learners (ELL). These are individuals who are learning or have learned to speak, understand, read, and/or write English as a second or other language, even though they may have spent a number of years in an English-speaking environment.

The following guidelines are proposed as a means of enhancing the quality of speech and language services to linguistically diverse populations.[1]

[1] This review focuses on the communication disorders that may be most affected by the presence of two or more languages, including articulation, language, and fluency.

## II. ASSESSMENT

### A. Information to consider in addition to traditional case history:

The examiner should obtain a case history from a variety of sources including interviews with family members and clients/students. (See case history samples in Kayser, 1995 and 1998, and Mattes, 1985 and 1991). In addition to questions regarding speech, language, and other developmental history, information about the following should be obtained from records or through interview. The examiner should keep in mind that families may be sensitive to some questions:

- Family's country of origin
- Length of time the individual has been in the United States
- When and how the client/student learned the languages
- Pattern of language/dialect use in the home (e.g., use of code-switching)
- The extent and nature of his/her exposure to each language
- Academic and educational placement (e.g., language of instruction)
- Family's perception of the individual's communication abilities

### B. Language of Assessment

Assessment of the communication skills of bilingual or linguistically diverse individuals must be driven by the information obtained in the comprehensive case history. Proficiency levels in each language are important pieces of this case history. Determination of proficiency must take into account both the Basic Interpersonal Communication Skills (BICS) and the Cognitive Academic Language Proficiency (CALP) levels in both languages. BICS involves face-to-face, "context-embedded" communication (Cummins, 1992). Achieving proficiency in BICS typically requires a minimum of 1 to 2 years of exposure to the second language. CALP denotes the ability to understand and utilize the language skills required in academic settings (Cummins, 1992). Development of CALP equivalent to that of native speakers of a language can take from 5 to 7 years when there is native language support in the school setting (e.g., bilingual education programs) (Cummins, 1992). Without such support, CALP may require from 7 to 10 years to develop (Peregoy & Boyle, 1997).

Formal and/or informal data must be gathered to provide preliminary information about an individual's BICS and CALP levels. This knowledge will assist in determining to what extent skills in each language must be measured. If one language is stronger than the other, the stronger language is said to be the **dominant language.** It often happens that bilingual individuals show no clear language dominance. It is also important to note that dominance may shift over time; it is not permanent.

**Assessment should address primary (L1) and secondary languages.**

Practice in the public schools is directed by federal mandates PL94-142 and Title VII of PL 95. These mandates indicate that assessment of speech and language disorders of limited English proficient speakers should be conducted in the native language or language(s) the child speaks. IDEA, 2004 states that assessments should be "provided and administered in the child's native language or other mode of communication and in the form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is clearly not feasible to so provide or administer; [300.304(c)(1)(ii)]. At the same time, it is very important to note that the individual's native language may not be the dominant language at the time of the assessment. In any case, each language should be addressed to the extent appropriate. This assessment may involve only informal language sampling or it may include norm referenced testing. This recommended practice (Anderson, 2002; Roseberry-McKibben 2002; Goldstein, 2000) is appropriate for all clinical settings (e.g., hospital, clinic, public schools) and will fulfill legal requirements.

Evaluation of CLD individuals requires specific competencies, which ASHA has defined in the 2004 Knowledge and Skills document. In general, the following hierarchy should be followed in selecting personnel to conduct the evaluation.

> **Level 1**: Trained (in CLD issues) bilingual speech-language pathologist fluent in the individual's native language and English.
>
> **If this option clearly is not feasible, the following options should be considered:**
>
> **Level 2**: Trained (in CLD issues) monolingual speech-language pathologist assisted by trained bilingual ancillary examiner. The ancillary examiner is one who has received in depth training in the measure(s) to be used and administers testing in the native language in the presence of the SLP. The SLP is responsible for analyzing all testing data.
>
> **Level 3**: Trained (in CLD issues) monolingual speech-language pathologist assisted by trained interpreter.

Use of trained interpreters is acceptable when services of a bilingual SLP cannot be obtained. Information regarding interpreter training can be found from several sources including Langdon (2002).

### C. Assessment Procedures

A variety of assessment techniques should be utilized in order to thoroughly describe the individual's speech and language skills.

- Standardized testing may be conducted in the native language, if appropriate measures are available. However, before testing in the native language, obtain information regarding language exposure, use, and proficiency in *each* language. Many speakers lose native language skills due to lack of use (i.e., language loss); therefore, formal measures may be of limited use. Test scores should be utilized with caution, as the standardization sample may not be representative of the individual tested. When the match between the student/client and the standardization sample is questionable, norms should not be used; however, the strengths and weaknesses demonstrated on test tasks can be analyzed (without scoring the test) and used as criterion-referenced assessment.

- If the individual has been exposed to English, then level of functioning in English must be addressed, to whatever extent appropriate. Again, information regarding language exposure, use, and proficiency should be obtained prior to evaluation. Often, it will not be appropriate to report standard scores, as the standardization sample will not reflect the linguistic background of the individual. Results can be reported as criterion-referenced assessments.

- Informal testing such as speech and language sampling, dynamic assessment, structured observation, and narrative assessment must be conducted. The results of these measures should be considered equally as significant (if not more so) as the results of any standardized measures in making a determination about the communication skills of CLD individuals. For more information on these techniques, refer to the works of Hamayan and Damico (1991), Kayser (1998), Peña (1996), Peña and Gillam (2001), and Roseberry-McKibbin, 1995.

**1. Language**

Below are descriptions of available language assessment tools and strategies for the evaluation of linguistically diverse populations. Since English is usually the "other" language of concern, assessment in English will be specifically addressed.

- Standardized measures of language skills are available in Spanish to assess receptive and expressive vocabulary, morphology, and syntax for individuals age 0 to 21. Depending on the student's cultural/linguistic background and family's country of origin, these measures may or may not be appropriate for administration.

- The *Bilingual Verbal Ability Tests,* which measure vocabulary and verbal reasoning skills, are available in at least eighteen different languages.

- English receptive and expressive skills may be addressed via formal and/or informal measures. The examiner must carefully consider what measures are most appropriate for the client, how to utilize the measure, and the most valid method of interpreting the outcomes of the measure. These considerations will be guided by knowledge about the individual's exposure to and level of proficiency in English.

At times, due to lack of available instruments in low incidence languages, examiners may consider the option of translating items from English language measures in order to assess specific native language skills. Although such testing may provide insights regarding the individual's abilities, it is never appropriate to report any score as the result of such testing. Further, if this strategy is utilized, the following precautions should be observed.

- Translation of English-language measures into the native language should be completed with caution. There will be some test items that cannot be directly translated into another language and still measure the targeted skill. (e.g., translation of sentence repetition tasks)

- These translations should be completed, administered, and results analyzed only by a clinician working with a trained interpreter. The clinician must be competent and knowledgeable about assessment of CLD individuals.

- Such translations may be used as informal probes or criterion-referenced measures; original test norms do not apply to the translation so scores must not be reported.

**2. Articulation/Phonology**

Articulation/phonological assessment also will be guided by knowledge of the individual's linguistic background:

- Assessment of articulation skills may be conducted only in the individual's first language when the exposure to the other language(s) is determined to be negligible. (See Goldstein, 2000 for normative information on a variety of languages.)
- When two languages are spoken by the client/student, articulation skills should be assessed in both languages.
- Interpretation of results must consider the influence of each phonological system on the other(s).

Determination of an articulation impairment cannot be based only on the phonology of English/L2. If the individual's articulation skills are within normal limits in the primary language (L1) then an impairment does not exist. Dialectal variations cannot be considered as articulation errors.

**3. Fluency**

When suspecting a stuttering problem in a bilingual speaker, a number of issues merit consideration during the assessment process.

- Family and cultural attitudes toward speech, fluency, and stuttering.

  There is quite a bit of variability in the health beliefs and practices across cultural groups. Through discussion and exploration, it is important that the clinician strive to understand how speech disorders and stuttering, specifically, is viewed by the client and family members. Some groups view stuttering as an emotional disturbance or a punishment by a spiritual figure (Bebout & Arthur, 1992). Such beliefs may impact the clinician's ability to diagnosis stuttering and will affect the nature of intervention.

- Bilingualism as a risk factor for stuttering.

  There is little empirical evidence to support the belief that bilingualism per se puts an individual more at risk for stuttering or impedes his/her ability to recover from stuttering (Van Borsel, Maes, & Foulson, 2001). More important to the differential diagnosis of chronic stuttering is a family history of stuttering and delays and/or disorders in the acquisition of first and/or second languages.

- Nature of disfluencies in both languages.

  Since disfluency patterns may differ in the languages spoken and these differences may provide insights as to the nature of the fluency problem (i.e., linguistically based or chronic stuttering), it is important to assess fluency in both languages. In connected speech samples of both languages, frequencies, disfluency type and nature, and stuttering loci should be examined.

- *Frequencies*: Disfluency rates may be higher in the less proficient language (Van Borsel et al., 2001). If the client reports and/or the clinician observes significant differences in the disfluency frequencies in the two languages, the influence of language learning and /or loss merits consideration.
- *Types and nature*: Stuttering types seem to be similar across languages (Bernstein-Ratner, 2004). These types generally consist of within word disfluencies, such as sound and syllable repetitions, blocks, and prolongations. These behaviors can be observed even when the listener does not speak the language of the speaker. If disfluency types predominantly are between words (e.g., revisions, interjections), the fluency problem may be linguistically based rather than chronic stuttering. The clinician also should note the presence of struggle, tension, and/or extra movements during disfluencies. These behaviors are often associated with chronic stuttering.
- *Loci of stuttering*: The phonemic and linguistic loci of stuttering may differ in the two languages spoken. More stuttering may occur at higher levels of linguistic complexity, including during code-switching moments (Bernstein-Ratner, 2004). Understanding the influence of language complexity on the client's fluency will provide insights about his language proficiency as well as potential linguistic fluency stressors. These insights are important considerations when planning and providing intervention.

In summary, Boscolo, Bernstein-Ratner, and Rescorla (2002) suggest that the following conditions may indicate a fluency problem associated with limited English proficiency rather than chronic stuttering:

- No secondary features during disfluent moments.
- Lack of a self-concept as a person who stutters.
- Locus of disfluency at positions of increased encoding difficulty in the less proficient language.
- Lack of stuttering in the stronger language.

For additional information see Watson and Kayser, 1994.

**D. Interpretation of Assessment Results**

When interpreting assessment results, the distinction must be made between a communication impairment and a dialectal, cultural, or language difference. As defined in IDEA, 2004, a determination of an impairment cannot be due to limited English proficiency [300.306(b)(1)(iii)]. Further, IDEA states that determination of a communication impairment cannot be made on the basis of a single measure but rather requires data from "a variety of assessment tools and strategies." Therefore, sufficient evidence must be gathered in the assessment to allow the clinician to clearly document the presence or absence of a communication impairment. In order to distinguish between a communication impairment and a dialectal, cultural, or language difference, the clinician must consider:

- Information from case history
- Language development (e.g., the process by which s/he became bilingual)
- Educational history (e.g., bilingual/ESL instruction)
- Bilingual issues (e.g., current BICS and CALP levels)
- Analysis of formal and informal assessment results, in both languages

The knowledge and experience of the speech-language pathologist in second language issues is important when interpreting assessment results. The complexity of the issues requires the ability to integrate and comprehend the data collected before determining the need for speech therapy services.

## III. Intervention

### A. Determining language(s) of intervention.

The decision as to which language to use during intervention is mediated by the client's needs and proficiencies, legislation, and case law (IDEA, 2004; TEA 1991, 2001, 2003). In the public schools, speech-language services should be developed to enable the CLD student to receive an educational benefit. Current law states that "in the case of a student with limited English proficiency, consider the language needs of the student as those needs relate to the student's IEP" (IDEA, 2004) [300.324(a)(2)(ii)]. Although it will be the Admission, Review, and Dismissal (ARD) committee's decision as to which language should be used in therapy, the SLP is responsible for making an informed recommendation based on the information obtained during the assessment.

Decisions regarding language of intervention depend on:

- Client's dominant language
- Family language use
- Language environments

In most cases, services initially should be provided in the dominant language if **clear** dominance can be determined (Langdon & Saenz, 1996). In cases where no clear dominance can be determined, services should be provided in the home language (L1). This approach will promote the development of first language skills (skills that may be transferred to the second language) and facilitate family involvement (Kiernan & Swisher, 1990; Perozzi, 1985; Perozzi & Sanchez, 1992). Another option is based on the bilingual model where content is addressed in both languages. This model stresses the transfer of knowledge and skills between languages and emphasizes that both languages are valued and valuable (Kohnert & Derr, 2004). The decision to provide services in the client's first language or in both languages is based on current understanding of intervention environments and outcomes. Recommendations intended to promote maximum therapeutic benefit (e.g., L1 intervention, bilingual intervention) may or may not align with the current language of instruction and/or parental preference, but *should be based on the client's current language profile*.

Since client needs and skills are dynamic and evolving depending on his/her exposure to each language, the language of intervention requires careful and regular evaluation and may change over time. (For additional information, refer to *Communicologist* Aug. 2004; Beaumont, 1992; Goldstein, 2000; Goldstein, 2004; Ortiz, 1984; and Roseberry-McKibben, 1995.)

### B. Intervention Models

When a language other than English is recommended for intervention, consider one of the following models as described by Kayser (1998) and outlined below to determine how services will be provided.

(1) Bilingual support model: Monolingual speech-language pathologist uses a speech-language pathology assistant or technician (e.g., communication helper) who is bilingual to assist the speech-language pathologist in providing service in the minority language.

(2) Coordinated service model: Monolingual and bilingual speech-language pathologists work as a team to provide services.

(3) Integrated bilingual model: The bilingual speech-language pathologist provides all services.

(4) Combination of bilingual support and coordinated model: The monolingual speech-language pathologist and bilingual assistant provide services with the support of the bilingual speech-language pathologist.

Instructional approaches, materials, and activities must be appropriate to the culture and language of the student.

## IV. FINAL OBSERVATIONS AND CONSIDERATIONS

The guidelines and practices described in this document are intended as a resource for consideration when conducting assessments and providing intervention for linguistically diverse populations. The document is not a prescriptive formula to address all disorders that may occur in the CLD population. Cultural and linguistic issues are multifaceted, dynamic, and require an ongoing commitment to learning. The CLD Task Force developed these guidelines in the hopes of providing a better understanding of the requirements, procedures, and knowledge needed when providing services to those of diverse linguistic backgrounds.

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## RESOURCES[1]

## Tests:

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[1] Although many relevant resources are included, ***this list is not exhaustive*** and other books, journals, websites, tests, and materials also are useful. Readers are encouraged, as with all resources, to critically review these resources when applying them to clinical, empirical, or other activities.

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## Therapy Materials

### Articulation

Ninos y Sonidos, Bilingual Speech Resource
Spanish Articulation Picture Cards, Academic Communication Associates
Teaching Spanish Sounds, Academic Communication Associates
¡Oscar! Spanish Flashcards, TrabaLenguas

### Language

Spanish Vocabulary Development, Leap Frog
Fiesta in the House-Party en la Casa, Leap Frog
Ver y leer de Richard Scarry, Leap Frog
Bilingual Language Picture Resource, Academic Communication Associates
The Incredible City, Academic Communication Associates
Basic Concepts for Language Learners, Academic Communication Associates
Talk About Stories in English and Spanish, Academic Communication Associates
Language Booster Cards Decks, Spanish/English (Spatial Concepts and Actions)

### Websites for therapy ideas:

www.bogglesworld.com – Language activities
www.enchantedlearning.com – Crafts and language activities
www.csusm.edu/csb/espanol/ – Recommends a variety of Spanish books
www.innovative-educators.com – Bilingual, feely, and board books
www.tsl.state.us/ld/projects/ninos/songsrhymes.html –Traditional songs, rhymes, finger plays, and games in Spanish and English
www.spanishtoys.com – Spanish language toys, videos, software, and books
www.PsychoCorp.com
www.asha.org – Go to the Multicultural Affairs site addressing CLD issues, latest research, and materials for intervention.
www.clas.uiuc.edu – Promotes intervention practices that are culturally appropriate

# C. KNOWLEDGE AND SKILLS NEEDED BY SPEECH-LANGUAGE PATHOLOGISTS AND AUDIOLOGISTS TO PROVIDE CULTURALLY AND LINGUISTICALLY APPROPRIATE SERVICES

**ASHA's Multicultural Issues Board**

About this Document

This knowledge and skills document is an official statement of the American Speech-Language-Hearing Association (ASHA). It describes the particular knowledge and skills needed to provide culturally and linguistically appropriate services in our professions. This document acknowledges the need to consider the impact of culture and linguistic exposure/acquisition on all our clients/patients, not simply for minority or diverse clients/patients. In doing so, this document augments and expands the ASHA Scope of Practice in Speech-Language Pathology (ASHA, 2001), the ASHA Scope of Practice in Audiology (ASHA, 1996 in references), and the ASHA Preferred Practice Patterns (ASHA, 1997a, 1997b).

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## Introduction

The ethnic, cultural, and linguistic makeup of this country has been changing steadily over the past few decades. Cultural diversity can result from many factors and influences, including ethnicity, religious beliefs, sexual orientation, socioeconomic levels, regionalisms, age-based peer groups, educational background, and mental/physical disability. With cultural diversity comes linguistic diversity, including an increase in the number of people who are English Language Learners, as well as those who speak non-mainstream dialects of English. In the United States, racial and ethnic projections for the years 2000–2015 indicate that the percentage of racial/ethnic minorities will increase to over 30% of the total population. The makeup of our school children will continue to diversify so that by 2010, children of immigrants will represent 22% of the school-age population (U.S. Bureau of the Census, 2000).

As professionals, we must be prepared to provide services that are responsive to this diversity to ensure our effectiveness. Every clinician has a culture, just as every client/patient has a culture. Similarly, every clinician speaks at least one dialect of English and perhaps dialects from other languages, as does every client/patient. Given the myriad factors that shape one's culture and linguistic background, it is not possible to match a clinician to clients/patients based upon their cultural and linguistic influences. Indeed, recent ASHA demographics indicate that only about 7% of the total membership are from a racial/ethnic minority background and less than 6% of ASHA members identify themselves as bilingual or multilingual (ASHA, 2002).

Only by providing culturally and linguistically appropriate services can we provide the quality of services our clients/patients deserve. Regardless of our personal culture, practice setting, or caseload demographics, we must strive for culturally and linguistically appropriate service delivery. For example, we must consider how communication disorders or differences might be manifested, identified, or described in our client's/patient's cultural and linguistic community. This will inform all aspects of our practice, including our assessment procedures, diagnostic criteria, treatment plan, and treatment discharge decisions.

This document sets forth the knowledge and skills that we as professionals must strive to develop so that we can provide culturally and linguistically appropriate services to our clients/patients. The task may seem daunting at first. Given the knowledge and skills needed, we may shy away from working with clients/patients from certain cultural or linguistic groups. We may question whether it is ethical for us to work with these clients/patients. These guidelines provide a way to answer that question for each clinician.

It is true that "Individuals shall engage in only those aspects of the profession that are within the scope of their competence, considering their level of education, training, and experience" (ASHA Principles of Ethics II, Rule B). So, without the appropriate knowledge and skills, we ethically cannot provide services. Yet, this does not discharge our responsibilities in this area. The ASHA Principles of Ethics further state, "Individuals shall not discriminate in the delivery of professional services" (ASHA Principles of Ethics I, Rule C). Thus, this ethical principle essentially mandates that clinicians continue in lifelong learning to develop those knowledge and skills required to provide culturally and linguistically appropriate services, rather than interpret Principles of Ethics II, Rule B as a reason not to provide the services. This document sets forth those knowledge and skills needed to provide culturally and linguistically appropriate services. It can be used to identify one's strengths and weaknesses, and to develop a plan to fill in any gaps in one's knowledge and skills in this area (ASHA, December 2001).

## Cultural Competence

- 1.0 **Role:** Sensitivity to cultural and linguistic differences that affect the identification, assessment, treatment, and management of communication disorders/differences in persons. This includes knowledge and skills related to:
- 1.1 Influence of one's own beliefs and biases in providing effective services.
- 1.2 Respect for an individual's race, ethnic background, lifestyle, physical/mental ability, religious beliefs/practices, and heritage.
- 1.3 Influence of the client's/patient's traditions, customs, values, and beliefs related to providing effective services.
- 1.4 Impact of assimilation and/or acculturation processes on the identification, assessment, treatment, and management of communication disorders/differences.
- 1.5 Recognition of the clinician's own limitations in education/training in providing services to a client/patient from a particular cultural and/or linguistic community.
- 1.6 Appropriate intervention and assessment strategies and materials, such as food, objects, and/or activities that do not violate the patient's/client's values and/or that may form a constructive bridge between the client's/patient's home culture and community or communication environment.
- 1.7 Appropriate communications with clients/patients, caregivers, and significant others, so that the values imparted in the counseling are consistent with those of the client/patient.

- 1.8 The need to refer to/consult with other service providers with appropriate cultural and linguistic proficiency, including a cultural informant/broker, as it pertains to a specific client/patient.
- 1.9 Ethical responsibilities of the clinician concerning the provision of culturally and linguistically appropriate services.
- 2.0 **Role:** Advocate for and empower consumers, families, and communities at risk for or with communication/swallowing/balance disorders. This includes knowledge and skills related to:
- 2.1 Community resources available for the dissemination of educational, health, and medical information pertinent to particular communities.
- 2.2 High risk factors for communication/swallowing/balance disorders in particular communities.
- 2.3 Prevention strategies for communication/cognition/swallowing/balance disorders in particular communities.
- 2.4 The impact of regulatory processes on service delivery to communities.
- 2.5 Incidence and prevalence of culturally based risk factors (e.g., hypertension, heart disease, diabetes, fetal alcohol syndrome) resulting in greater likelihood for communication/cognition/swallowing/balance disorders.
- 2.6 Appropriate consumer information and marketing materials/tools for outreach, service provision, and education.

## Language Competencies of the Clinician

- 3.0 **Role:** Ability to identify the appropriate service provider for clients/patients.
- 3.1 *Bilingual/multilingual clinician.* Native or near-native proficiency in the language(s) spoken or signed by the client/patient. Knowledge and skills related to the impact of the differences between the dialect spoken by the clinician and by the client/patient on the quality of services provided.
- 3.2 *Clinician without native or near-native proficiency in the language(s)/dialect(s) spoken or signed by the client/patient.*

  Knowledge and skills related to:

  1. Obtaining information on the features and developmental characteristics of the language(s)/dialect(s) spoken or signed by the client/patient (see Language section).
  2. Obtaining information on the sociolinguistic features of the client's/patient's significant cultural and linguistic influences.
  3. Developing appropriate collaborative relationships with translators/interpreters (professional or from the community):
     1. Maintain appropriate relationships among the clinician, the client/patient, and interpreter/translator.
     2. Ensure that the interpreter/translator has knowledge and skills in the following areas:
        1. Native proficiency in client's/patient's language(s)/dialect(s) and the ability to provide accurate interpretation/translations.
        2. Familiarity with and positive regard for the client's/patient's particular culture, and speech community or communicative environment.
        3. Interview techniques, including ethnographic interviewing.

4. Professional ethics and client/patient confidentiality.
5. Professional terminology.
6. Basic principles of assessment and/or intervention principles to provide context to understand objectives.

## Language

- 4.0 **Role:** Obtain knowledge base needed to distinguish typical and disordered language of clients/patients. This includes knowledge and skills related to:
- 4.1 Sociolinguistic and cultural influences, including:
    1. Client's/patient's speech community or communication environment, including its discourse norms, and the impact of topic, participant, setting, and function on language use.
    2. Effective interviewing techniques so caregiver/parent and/or client/patient feels comfortable providing accurate and complete information.
    3. Impact of social and political power and prestige on language choice and use.
    4. Impact of sociolinguistics on code-switching and code-mixing.
    5. Language socialization patterns that affect language use in the client's/patient's speech community. Types of language socialization patterns include narrative structure; importance of labeling; attitudes toward appropriateness of child-adult and child-child communications, ways of gathering information, and ways of giving commands such as known questions and veiled commands/indirect speech acts.
    6. Cultural differences and similarities held by both client/patient and clinician, with resultant impact on language use in all communicative environments.
    7. Impact of client's/patients attitudes, values, and beliefs toward non-oral approaches to communication such as augmentative/alternative communication, sign language, and assistive listening devices.
- 4.2 Language and linguistics, including:
    1. Typical language development in simultaneous and sequential bilinguals.
    2. Normal processes of second-language acquisition, including language transfer, language attrition, interlanguage, and affective variables.
    3. Difference between an accent and a dialect, and a language and a dialect.
    4. Patterns of language recovery following neurological insult.
    5. Grammatical constraints on code-switching and code-mixing.
    6. Typical development in the client's/patient's language(s)/dialect(s) in all areas (see 4.3).
- 4.3 Identifying, obtaining, and integrating available resources to determine what is typical speech/language development in the client's/patient's speech community and communication environment, including:
    1. Research on the client's/patient's culture(s), speech community, or communication environment.
    2. Interview with a parent or other caregiver on how the client's/patient's speech/language development compares to peers in his/her speech community or communication environment.
    3. Interview with a family member or other person who knew the client/patient previously, to describe and compare the client's/patient's language skills before the insult or injury that may have led to an acquired language disorder.
    4. Family history of speech/language problems or academic difficulties.

5. Cultural informant/broker to gain insight into the impact of culture on the client's/patient's communication skills.
6. Linguistic/sociolinguistic informant/broker from the client's/patient's speech community or communication environment, such as for grammaticality judgments and for judgments based upon sociolinguistic considerations related to the client's/patient's speech community or communication environment.
7. Use of speech/language data provided by translator/interpreter.
8. Clinician's personal knowledge base.
9. Application of the clinician's clinical judgment to synthesize, evaluate, analyze, and make determinations based upon all the data/information gathered.

- 5.0 **Role:** Identification/assessment of typical and disordered language. This includes knowledge and skills related to:
- 5.1 *Foundational content:*
    1. Current research and preferred practice patterns in the identification/assessment of language disorders/delays.
    2. Legal, regulatory, ethical, and professional guidelines relating to language assessment.
    3. Appropriate criteria for distinguishing a disorder from a difference by using the norms of the client's/patient's speech community as the standard.
    4. Appropriate ethnographic interviewing techniques, such as knowing effective ways to ask for crucial but sensitive information so the caregiver/parent and/or client/patient is comfortable enough to provide that information.
    5. Impact on language use by the client/patient with regard to topic, participants, setting, and function on the linguistic interaction, based upon knowledge of the standards of communicative competence in the client's/patient's speech community or communication environment (see 4.3).
- 5.2 *Assessment materials/tests/tools:*
    1. Appropriate use of published test materials in language assessment, including standardized norm-referenced tests and criterion-referenced tests, including analyzing normative sampling limitations, general psychometric issues, especially related to validity and reliability, and inherent cultural and linguistic biases in these test materials.
    2. Application of appropriate criteria so that assessment materials/tests/tools that fail to meet standards be used as informal probes, with no accompanying scores.
    3. Inherent problems in using translated tests so that translated tests are used only as informal probes, with no accompanying scores.
    4. Appropriate use of alternative approaches to assessment, including dynamic assessment, portfolio assessment, structured observation, narrative assessment, academic and social language sampling, interview assessment tools, and curriculum-based procedures, including analysis of validity, reliability, and inherent cultural and linguistic biases.
    5. How cultural and linguistic biases in assessment tools impact on an appropriate differential diagnosis between a language disorder and a language difference.
        1. Cultural biases include question types, content, specific response tasks, and test formats that are not commonly used in the client's/patient's speech community or communication environment.
        2. Linguistic biases include differences in when certain features of language are acquired and/or in certain linguistic forms that may not be common, or

present at all, in the language(s) and/or dialect(s) spoken or used by the client/patient.

- 5.3 Differential diagnosis:
    1. How linguistic features and learning characteristics of language differences and second-language acquisition are different from those associated with a true learning disability, emotional disturbance, central auditory processing deficit, elective mutism, or attention deficit disorder (diagnoses that might be confused with a linguistic or cultural difference or second-language learning).
    2. Preparation of written reports that incorporate information about the client's/patient's cultural and linguistic influences.
    3. Determination of whether a language disorder is present based upon one's clinical judgment after reviewing and analyzing all the critical information (see 4.3).
    4. Determination of the severity level of any identified language disorder.
    5. Ethical issues raised if scores are provided for tests that are psychometrically flawed, translated and not adapted, culturally biased, and/or linguistically biased.
- 6.0 **Role:** Treatment/management of disordered language. This includes knowledge and skills related to:
    1. Current research and best practices in the treatment/management of language disorders/delays, including various delivery models and options for intervention.
    2. Appropriate language(s)/dialect(s) to use in treatment and management.
    3. Impact of the client's/patient's current and historical language/dialect exposure and experience.
    4. Standards of the client's/patient's speech community or communication environment in determining discharge/dismissal criteria, rather than base that decision on the client/patient mastering the clinician's or interpreter's/translator's language(s)/dialect(s) and language socialization practices.
    5. Integration of the client's/patient's attitudes, values, and beliefs toward non-oral approaches to communication such as augmentative/alternative communication, sign language, and assistive listening devices when those approaches are incorporated into treatment.
    6. Consideration of client's/patient's and/or parent's/caregiver's desire and need for fluency in the native language and/or English when considering the language for intervention.
    7. Legislative and regulatory mandates and limitations to resources that may impact the language used for intervention.

## Articulation and Phonology

- 7.0 **Role:** Identification/assessment of individuals at risk for articulation/phonological disorders. This includes knowledge and skills related to:
    1. Current research and best practices in the identification/assessment of articulation/phonological disorders in the languages(s) and/or dialect(s) spoken by the client/patient.
    2. Phonemic and allophonic variations of the language(s) and/or dialect(s) spoken in the client's/patient's speech community and how those variations affect a determination of disorder or difference.
    3. Difference between an articulation disorder, phonological disorder, an accent, a dialect, transfer patterns, and typical developmental patterns.

4. Standards of the client's/patient's speech community or communication environment to determine whether he or she has an articulation or phonological disorder/delay. Identifying and using available resources to determine what is typical speech development in the client's/patient's speech community or communication environment (see 4.3).

- 8.0 **Role:** Treatment/management of individuals with articulation or phonological disorders. This includes knowledge and skills related to:
    1. Current research and best practices in the treatment/management of articulation and phonological disorders/delays in the languages(s) and/or dialect(s) spoken by the client/patient.
    2. Community standards of typical articulation and phonology patterns, so that in treatment/management, dialect and accent features are not treated as articulation or phonological disorders.
    3. Standards of the client's/patient's speech community in determining discharge/dismissal criteria so that discharge/dismissal is based upon whether the client/patient is speaking his/her dialect appropriately.

## Resonance/Voice/Fluency

- 9.0 **Role:** Identification/assessment and treatment/management of individuals at risk for resonance, voice, and/or fluency disorders. This includes knowledge and skills related to:
    1. Current research on preferred practice patterns in the identification/assessment and treatment/management of resonance, voice, and/or fluency disorders.
    2. Community standards of typical resonance, voice, and/or fluency patterns.
    3. Application of the standards of the client's/patient's speech/communication

## Swallowing

- 10.0 **Role:** Identification/assessment and treatment/management of individuals at risk for swallowing/feeding disorders. This includes knowledge and skills related to:
    1. Current research and preferred practice patterns in the identification/assessment of swallowing/feeding disorders.
    2. Community standards of typical swallowing/feeding patterns and preferences.
    3. Incorporation of the client's/patient's dietary preferences, related to the identification/assessment of swallowing/feeding disorders.
    4. Application of the standards of the client's/patient's community for dismissal/discharge criteria.

## Hearing/Balance

- 11.0 **Role:** Identification/assessment of clients/patients with or at risk for hearing/balance disorders. This includes knowledge and skills related to:
    1. Current research and preferred practice patterns in the identification/assessment of hearing/balance disorders.
    2. Application of the community standards and beliefs regarding hearing/balance impairment.
    3. Culturally and linguistically appropriate assessment materials, tools, and methods.

4. Inherent problems in using speech testing materials (e.g., word lists, speech discrimination lists) that have been translated, not adapted, and/or not fully researched and are not reflective of the phonological patterns of the client's/patient's language/dialect.
5. Influences of language and speech differences, including issues related to bilingualism and dialectal differences between the client/patient and the clinician on hearing evaluation decisions, such as in speech recognition tests in quiet and noise. (See sections 7.0 and 8.0.)
6. How other factors (e.g., the color and consistency of cerumen) may influence findings on otoscopic examination and external canal management.

- 12.0 **Role:** Treatment/management of individuals at risk for hearing/balance disorders. This includes knowledge and skills related to:
    1. Current research and preferred practice patterns in the treatment/management of those hearing/balance disorders that are more prevalent in certain racial/ethnic communities and which are more prevalent due to cultural variables.
    2. Application of the community standards and beliefs regarding hearing/balance disorders.
    3. Attitudes and beliefs related to the treatment/management of hearing/balance disorders, such as attitudes toward using a manually coded system of communication; and assistive listening devices such as hearing aids, FM units, and cochlear implants.
    4. Application of the standards of the client/patient speech community for dismissal/discharge criteria.
    5. Components of a culturally appropriate audiological rehabilitation program.
    6. Availability of personal assistive devices such as earmolds and hearing aids with greater cosmetic appeal for varying skin tones.

## Terminology

**Accent:** (1) A set of shared variables, related to pronunciation, common to a particular speech community. It is standard practice to distinguish *accent* from *dialect*. Accent refers only to distinctive features of pronunciation, whereas *dialect* refers to distinctive lexical, morphological, and syntactical features. (2) A set of phonetic traits of one language that is carried over into the use of another language a person is learning (foreign accent).

**Bidialectalism:** The use of two different dialects of a given language. In terms of linguistic structure, one dialect of any language is not "superior" to another; however, from a social point of view, several dialects are considered to be prestigious and others are considered to be non-prestigious.

**Bilingualism:** The use of at least two languages by an individual. The degree of proficiency in the languages can range from a person in the initial stages of acquisition of two languages to a person who speaks, understands, reads, and writes two languages at native or near-native proficiency.

**Code mixing:** (1) Code-switching. (2) Term used to describe the mixed-language utterances used by a bilingual individual. It involves the utilization of features of both languages (usually at the lexical level) within a sentence (intra-sentential level).

**Code switching:** The juxtaposition within the same speech exchange of passages belonging to two different grammatical systems. The switch can be intrasentential, within a sentence (Spanish-English switch: *Dame a glass of water. "Give me a glass of water")*. It can be intersentential, across sentence boundaries (Spanish-English switch: *Give me a glass of water. Tengo sed. "Give me a glass of water. I'm thirsty"*). The switches are not random; they are governed by constraints such as the Free Morpheme Constraint and the Equivalency Constraint. Many who are bilingual and/or bidialectal are self-conscious about their code switching and try to avoid it with certain interlocutors and in particular situations. However, in informal speech it is a natural and powerful feature of a bilingual's/bidialectal's interactions.

**Communication environment:** The communicative environment of users of assistive or augmentative communication systems, and some forms of manual communication.

**Communicative competence:** The ability to use language(s) and/or dialect(s) and to know when and where to use which and with whom. This ability requires grammatical, sociolinguistic, discourse, and strategic competence. It is evidenced in a speaker's unconscious knowledge (awareness) of the rules/factors which govern acceptable speech in social situations.

**Cultural informant/broker:** A person who is knowledgeable about the client's/patient's culture and/or speech community and who provides this information to the clinician for optimizing services.

**Culturally diverse:** When an individual or group is exposed to, and/or immersed in more than one set of cultural beliefs, values, and attitudes. These beliefs, values, and attitudes may be influenced by race/ethnicity, sexual orientation, religious or political beliefs, or gender identification.

**Dialect:** A neutral term used to describe a language variation. Dialects are seen as applicable to all languages and all speakers. All languages are analyzed into a range of dialects, which reflect the regional and social background of their speakers.

**Linguistic/sociolinguistic informant/broker:** A trained and knowledgeable person from the client's/patient's speech community or communication environment who under the clinician's guidance can provide valuable information about language and sociolinguistic norms in the client's/patient's speech community and communication environment. A properly trained informant/broker can provide information such as grammaticality judgments as to whether the client's/patient's language and phonetic production is consistent with the norms of that speech community or communication environment; information on the language socialization patterns of that speech community or communication environment; and information on other areas of language, including semantics and pragmatics.

**Interlanguage:** An intermediate-state language system created by someone in the process of learning a foreign language. The interlanguage contains properties of L1 transfer, and overgeneralization of L2 rules and semantic features, as well as strategies of second-language learning.

**Interpreter:** A person specially trained to translate oral communications or manual communication systems from one language to another.

**Language loss (also known as language attrition):** A potential consequence of second-language acquisition whereby a person may lose his/her ability to speak, write, read, and/or understand a particular language or dialect due to lack of use or exposure.

**Linguistically diverse:** Where an individual or group has had significant exposure to more than one language or dialect.

**Sequential bilingualism (also known as successive bilingualism):** Occurs when an individual has had significant exposure to a second language after the first language is well established.

**Simultaneous bilingualism:** Occurs when a young child has had significant exposure to two languages simultaneously, before one language is well established.

**Speech community:** A group of people who share at least one speech variety in common. Members of bilingual/bidialectal communities often have access to more than one speech variety. The selection of the specific variety depends on such variables as the participants, the topic, the function, and the location of the speech event.

**Translator:** A person specially trained to translate written text from one language to another.

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**Index terms:** multicultural issues

**Reference this material as:** American Speech-Language-Hearing Association. (2004). *Knowledge and Skills Needed by Speech-Language Pathologists and Audiologists to Provide Culturally and Linguistically Appropriate Services* [Knowledge and Skills]. Available from www.asha.org/policy.

AMERICAN
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# Clinical Management of Communicatively Handicapped Minority Language Populations

Reference this material as: American Speech-Language-Hearing Association. (1985). *Clinical Management of Communicatively Handicapped Minority Language Populations* [Position Statement]. Available from www.asha.org/policy.

Index terms: multicultural issues

DOI: 10.1044/policy.PS1985-00219

## Introduction

In 1984, the American Speech-Language-Hearing Association adopted the position paper "Clinical Management of Communicatively Handicapped Minority Language Populations." This followed what is believed to have been one of the most extensive development and review processes ever undertaken in the creation of an Association position statement. This position paper was drafted five times over a 3-year period and had as many peer reviews before professional consensus was achieved.

The initial draft was developed in 1982 as a concept paper, as part of the ASHA-sponsored Bilingual Language Learning System (BLLS) project, and was revised following review by the project's staff, advisory committee, and internal staff consultants.

The concept paper was reviewed by the ASHA Committee on the Status of Racial Minorities from which the second draft, a position paper, was derived. The draft position paper was submitted to approximately 750 ASHA members for a "limited" peer review. (Limited peer review typically involves dissemination to only 20–30 members.) These included members who are bilingual and or bicultural, members who serve minorities, the BLLS Advisory Committee, and the BLLS Trainers. This peer review resulted in approximately 500 pages of responses.

The revision process for the third draft followed the limited peer review and took 106 person hours to complete. The third draft was submitted to the Executive Board for approval for widespread peer review. However, the Executive Board required clarification of various areas of the draft.

In response to the Executive Board, a fourth draft was developed and published in the *Asha* journal for widespread peer review (*Asha*, June 1984). The paper was revised for the fifth time, incorporating comments received following review by the entire membership.

The fifth draft was approved by the Executive Board in August 1984 and submitted to the Legislative Council in November. The Legislative Council approved the position paper overwhelmingly.

Members of the Committee on the Status of Racial Minorities who endured long hours and intensive meetings in the preparation of this statement were Sandra L. Terrell (Chair), Maureen E. Aides, M. Parker Anderson, Hermozene Brown, Lorraine Cole (ex officio), Regina B. Grantham, Gail A. Harris, Barbara G. Loera, the 1983 monitoring Vice President for Planning, Patricia R. Cole and the 1984 monitoring Vice President for Planning, Carol P. Leslie.

## Statement of Need

The special needs of minority language populations (native speakers of languages other than English) were the source of national controversy even before the Bilingual Education Act was enacted nearly two decades ago. Professionals in bilingual education, regular education, special education, linguistics, sociology, second language instruction, psychology, learning disabilities, as well as speech-language pathology and audiology, have debated innumerable issues, approaches,

theories, and philosophical positions regarding minority language populations. As a result of this widespread controversy, there has been considerable confusion among these various professionals concerning this population.

According to the 1980 Census, 34.6 million or 15% of the U.S. population is composed of native speakers of various minority languages. It is estimated by ASHA that approximately 3.5 million of these speakers have speech, language, or hearing disorders that are unrelated to the use of a minority language. Researchers and clinicians are only beginning to amass a knowledge base on the characteristics of normal language development in various minority languages, bilingual language learning, second language acquisition, dominance testing, bilingual assessment and remediation of communication disorders, and the applications of emerging computer technology for use with minority language groups. Therefore, it would be premature to propose in this paper optimum strategies for identification, assessment, and intervention of communication disorders among minority language populations.

However, it is firmly established that most ASHA members are aware of their limitations in language proficiency and in their knowledge of diverse cultures which restrict their competence to serve minority language populations. According to the 1982 ASHA Self Study Survey, 77% of the certified speech-language pathologists indicated a need for more knowledge and skill to serve bilingual-bicultural populations. Given that the minority language population is ever increasing, there is an immediate need for professionals to either upgrade their own levels of competence or to employ alternative strategies to address the needs of the communicatively handicapped among the various minority language populations. Thus, it is the purpose of this paper to recommend competencies for assessment and remediation of communication disorders of minority language speakers and to describe alternative strategies that can be utilized when those competencies are not met.

It is obvious that assessment and remediation of some disorders of communication are not hampered by the client's use of a minority language. For example, assessment of pure tone hearing thresholds, auditory brainstem response, acoustic reflexes, and other similar services may not necessitate much communication exchange between the examiner and the client. Likewise, assessment of the physical support for speech, assessment of anomalies affecting speech such as cleft lip and palate, palatal insufficiency, oral malocclusion, etc., also may be conducted without proficiency in the minority language. These examples are by no means exhaustive, but are provided to emphasize that there are clinical services that can be provided appropriately by a monolingual English professional to a minority language speaker. However, because the effectiveness of the professional is dependent on interpersonal skill in addition to technical skill, the overall professional-client relationship is affected when communication is limited.

For many other aspects of speech, language, and hearing, assessment and remediation are much more complicated by the client's use of a minority language. For example, the phonemic, allophonic, syntactic, morphological, semantic, lexical, and pragmatic characteristics of a minority language cannot be adequately

assessed or remediated without knowledge of that language. Further, auditory discrimination and speech reception thresholds may be difficult to assess without the ability to test in the minority language.

Voice qualities, such as harshness, breathiness, loudness, pitch, and the production of clicks and glottal stops, vary across languages. These factors may make it difficult to rule out vocal pathology when the examiner is unfamiliar with the vocal characteristics common to a given language.

Hesitations, false starts, filled and silent pauses, and other dysfluent behavior may be exhibited by a bilingual speaker due to lack of familiarity with English. Thus, differential diagnosis of true stuttering from normal dysfluency may be difficult if the examiner is unfamiliar with the client's use of the minority language.

Identification of prosodic or suprasegmental problems is extremely difficult if the examiner is not familiar with the prosodic characteristics of the minority language. Even when the examiner is familiar with the given language, dialect differences *within* that language may be a confounding variable in assessment.

There are also cultural variables that may influence how speech-language pathology and audiology services are accepted by minority language populations. Differences between minority cultures and the general population in traditions, customs, values, beliefs, and practices may affect service delivery. Thus, speech-language pathologists and audiologists must provide services with consideration of such cultural variables, in addition to consideration of language differences.

Thus, it is apparent that the assessment and remediation of many aspects of speech, language, and hearing of minority language speakers require specific background and skills. This is not only logical and sound clinical practice, but it is the consensus set forth by federal mandates such as the Education for All Handicapped Children Act of 1975 (PL 94-142) and the Bilingual Education Act of 1976 (PL 95-561: Title VII of the Elementary and Secondary Education Act of 1965); legal decisions such as Dianna v. Board of Education (1973), Lau v. Nichols (1974), Larry P. v. Riles (1977) and the Martin Luther King Junior Elementary School Children v. Ann Arbor School District Board (1979); and the policies and practices of many professional agencies and organizations such as the National Association for Bilingual Education, the National Center for Bilingual Research, the Center for Applied Linguistics, and the National Hispanic Psychological Association.

Even state regulations are being developed to acknowledge the need for specific competencies to serve minority language populations. In California, for example, school districts are being encouraged by the State Education Agency to require resource specialists, speech-language pathologists and school psychologists to pass a state-administered oral and written examination on Hispanic culture, Spanish language, and assessment methodology before they conduct assessments for Spanish-speaking children with limited English proficiency. Other states and U.S. territories with education legislation which address the special needs of minority language populations include: Alaska, American Samoa, Arizona, Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, New York,

Oregon, Puerto Rico, South Dakota, Tennessee, Texas, Trust Territory of the Pacific Islands, Utah, Vermont, Washington, Wisconsin and Wyoming (American Speech-Language-Hearing Association, 1982).

## Continuum of Language Proficiency

There are scores of different minority languages spoken in the United States. But within each group of minority language speakers there is also a continuum of proficiency in English. In the provision of services to minority language speakers with communication disorders, the continuum is particularly relevant. The continuum includes speakers who are:

- Bilingual English Proficient,
- Limited English Proficient,
- Limited in both English and the Minority language.

Depending on the client's English language proficiency on the continuum, recommended competencies for the professional vary.

## Competencies

### *Bilingual English Proficient*

There are bilingual individuals who are fluent in English or who have greater control of English than the minority language. Such individuals can be regarded as bilingual English proficient.

For individuals who are bilingual English proficient and exhibit a communication disorder in English, it is *not* essential that the speech-language pathologist or audiologist be proficient in the minority language to provide assessment and remediation services *in English*. However, the speech-language pathologist must have certain competencies to distinguish between dialectal differences (due to interaction from the minority language) and communication disorders. These competencies include understanding the minority language as a rule-governed system, knowledge of the contrastive phonological, grammatical, semantic, and pragmatic features of the minority language, and knowledge of nondiscriminatory testing procedures (refer to "Social Dialects: A Position Paper," *Asha*, September 1983).

It is recognized that some bilingual English proficient speakers who do not present a true communication disorder may seek the services of a speech-language pathologist. If the bilingual individual has a foreign dialect and seeks to acquire a more standard production of English, the speech-language pathologist may provide elective clinical services. (Refer to "Social Dialects: A Position Paper," *Asha*, September 1983.)

### *Limited English Proficient*

Some bilingual individuals and monolingual individuals are proficient in their native language but not in English. Assessment and intervention of speech and language disorders of limited English proficient speakers should be conducted in the client's primary language. This is consistent with federal mandates (PL 94-142 and Title VII of PL 95-561), legal decisions (such as Dianna v. Board of Education, Lau v. Nichols and Larry P. v. Riles), and the education regulations of many states.

To provide assessment and remediation services *in the minority language*, it is recommended that the speech-language pathologist or audiologist possess the following competencies:

**Language Proficiency:** Native or near native fluency in both the minority language and the English language.

**Normative Processes:** Ability to describe the process of normal speech and language acquisition for both bilingual and monolingual individuals; and how those processes are manifested in oral and written language.

**Assessment:** Ability to administer and interpret formal and informal assessment procedures to distinguish between communication difference and communication disorders.

**Intervention:** Ability to apply intervention strategies for treatment of communication disorders in the minority language.

**Cultural Sensitivity:** Ability to recognize cultural factors which affect the delivery of speech-language pathology and audiology services to minority language-speaking community.

### *Limited in Both Languages*

There are bilingual individuals who are truly communicatively handicapped, possessing limited communication competence in both languages. For such individuals, speech and language should be assessed in both languages to determine language dominance. Thus, the same competencies listed for limited English proficient speakers are recommended for assessment for this group of speakers. The most appropriate language for intervention would be determined from the assessment.

If the most appropriate language for intervention is the minority language, then the competencies recommended for serving limited English proficient speakers should be met to provide therapy. If the most appropriate language for intervention is English, proficiency in the minority language may not be necessary to provide therapy.

It is important to note that the determination of bilingual dominance in communicatively handicapped individuals may be particularly difficult. It is stressed that both objective and subjective measures should be utilized to determine if the client's dominant language is either English or the minority language.

### *Alternative Strategies for Use of Professional Personnel*

It is recognized that not all speech-language pathologists and audiologists possess the recommended competencies to serve limited English proficient speakers. Following are some strategies for procuring speech-language pathologists who do meet the afore-mentioned competencies when there are none on staff.

1. Establish Contacts

   Bilingual speech-language pathologists or audiologists can be hired by school districts and other clinical programs as consultants to evaluate and remediate minority language speakers on an as needed basis.
2. Establish Cooperative

A clinical cooperative can be developed to allow a group of school districts or clinical programs to hire an itinerant bilingual speech-language pathologist or audiologist whose primary responsibility is to serve a specific minority language population.

3. Establish Networks

   Strong ties could be established between professional work settings and university programs that have bilingual speech-language pathology or audiology programs so that there can be an interchange of existing resources. Once such a liaison is established, it can facilitate recruitment of speech-language pathologists or audiologists who are competent to serve minority language populations after they graduate.

4. Establish CFY and Graduate Practicum Sites

   Graduate students or recent graduates from bilingual communication disorders programs, under the direct supervision of a bilingual speech-language pathologist or audiologist, could be used to assist personnel in schools and other clinical facilities in assessment and intervention of limited English-proficient individuals.

5. Establish Interdisciplinary Teams

   A team approach can be implemented which includes the monolingual speech-language pathologist or audiologist and a bilingual professional equal (e.g., psychologist, special education teacher, etc.) who is knowledgeable of nonbiased assessment procedures and language development of the particular minority language.

An agency contracting the services of a speech-language pathologist or audiologist to serve limited English-proficient speakers may not be in a position to evaluate the professional's competencies. Therefore, when employing the preceding alternative strategies, efforts should be made to assure that the speech-language pathologist does, indeed, possess all of the recommended competencies. This may require consulting resources outside the agency during the interview process. Furthermore, it should never be presumed on the basis of race, ethnicity, or surname, that a speech-language pathologist or audiologist is competent to serve a given minority language population.

### *Use of Interpreters or Translators*

Interpreters or translators could be used with minority language speakers when the following circumstances exist: (a) when the certified speech-language pathologist or audiologist on the staff does not meet the recommended competencies to provide services to limited-English proficient speakers; (b) when an individual who needs services speaks a language which is uncommon for that local area; and (c) when there are no trained professionals readily available with proficiency in that language that would permit the use of one of the previously described alternative strategies. Individuals who could serve as interpreters or translators can include (1) professional interpreters from language banks or professional interpreting services, (2) bilingual professional staff from a health or education discipline other than communication disorders, or (3) a family member or friend of the client.

If the use of interpreters or translators is the only alternative, the speech-language pathologist or audiologist should:

1. Provide extensive training to the assistant on the purposes, procedures and goals of the tests and therapy methods. The assistant also should be taught to avoid the use of gestures, vocal intonation, and other cues that could inadvertently alert the individual to the correct response during test administration.
2. Pre-plan for an individual's services to insure the assistant's understanding of specific clinical procedures to be used.
3. Use the same assistant(s) with a given minority language client rather than using assistants on a random basis.
4. Use patient observation or other nonlinguistic measures as supplements to the translated measures, such as (1) child's interaction with parents, (2) child's interaction with peers, (3) pragmatic analysis.

It is recommended that the speech-language pathologist and audiologist state in their written evaluations that a translator was used and the validity of the results may be affected.

## Future Directions

It is stressed that the competencies and alternative strategies delineated herein are interim in an effort to address the crisis that presently exists in the delivery of services to minority language populations. Therefore, these competencies and alternative strategies may be subject to revision or expansion as our professional knowledge base continues to increase. In addition to promoting the continued advancement of knowledge, it should be the ultimate goal of the profession to increase the percentage of speech-language pathologists and audiologists who are competent to serve minority language populations. This can be accomplished by (1) stimulating bilingual student recruitment efforts, (2) promoting relevant continuing education activities, and (3) promoting the topic of minority language populations within professional education.

The establishment of competencies in the area of service delivery to minority language populations is not intended to impose prohibitions or a “hands off” philosophy for those who do not meet those competencies. But it is the professional responsibility of the speech-language pathologist and audiologist to judge their own minority language proficiency, clinical knowledge base, and cultural sensitivity in terms of the competencies delineated in this paper. Where there are deficiencies that can be reversed, it is incumbent on professionals to upgrade their level of competence through professional and continuing education programs, independent study of the growing literature on minority language populations, and ongoing involvement within the community of minority language speakers. Otherwise alternative strategies should be implemented to serve minority language speakers.

Because the competencies and alternative strategies discussed in this paper are interim, multicultural research and continued development of techniques and materials for assessment and intervention need to be priorities of professionals who provide services to these populations. Professionals also should stimulate further

development and implementation of creative alternatives in order to provide appropriate and effective speech-language pathology and audiology services to minority language speakers.

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AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

**IDEA ISSUE BRIEF**

# Culturally and Linguistically Diverse Students

## What the 2006 IDEA Part B Final Regulations Say:

The 2006 IDEA regulations continue to support appropriate service delivery to culturally and linguistically diverse (CLD) populations. Areas of practice that remain the same include the following:

- Assessment and other evaluation materials should not be racially or culturally discriminatory.
- Assessment and other evaluation materials are to be provided in the child's native language or other mode of communication unless it is clearly not feasible to do so.
- A child must not be determined to be a child with a disability if the determinant factor is lack of appropriate instruction in reading or math, or limited English proficiency.
- Parents are entitled to an interpreter at the IEP meeting if needed to ensure that the parent understands the proceedings.
- When developing an IEP, in the case of a child with limited English proficiency, the language needs of the child as they relate to their IEP must be considered.

An addition to the 2006 regulations on evaluation procedures (§300.304) requires that assessment and other evaluation materials are administered "in the form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally." For CLD students, the "form" in which evaluation procedures are administered will vary. The addition of this new language emphasizes the allowance of variance from standard testing procedures, when necessary, in order to appropriately evaluate a student.

Additionally, the 2006 IDEA regulations made significant steps toward addressing problems with inappropriate identification and disproportionate representation by race and ethnicity of children as children with disabilities. A provision was added requiring states to review ethnicity data in addition to race data to determine the presence of disproportionality (§300.646). In the event that significant disproportionality is determined, the state will not only be required to review and revise policies, procedures, and practices, but also will require the local education agency (LEA) to reserve the maximum amount of funds under §613(f) of the statute to provide early intervening services to children in the LEA, "particularly, but not exclusively" to those in groups that

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were significantly over-identified. The LEA also will be required to publicly report on the revision of policies, practices, and procedures. These regulations clearly define steps that states must take to address the problem of disproportionality in special education. In particular, mandating that funds under §613 (f) are to be used for early intervening services is an excellent strategy for states with this problem. Research has shown that early intervening strategies assist in reducing the number of inappropriate referrals to special education. Long-term effects of reducing disproportionality using early intervening services include reduced paperwork as well as a reduced caseload for special education personnel.

### Implications for ASHA Members

The statute, IDEA 2004, continues to emphasize the need for appropriate evaluation procedures for CLD students. The 2006 regulations emphasize the allowance of variance from standard testing procedures when necessary to appropriately evaluate a student. Use of non-standardized testing procedures, such as portfolio assessments or spontaneous language samples, can provide valuable qualitative information on the child's communication skills. When evaluating English language learner (ELL) students, it is important for speech-language pathologists (SLPs) to carefully review the child's language history to determine the language of assessment. If it is determined that the child should be evaluated in a language other than English, the SLP must use all available resources, including interpreters when necessary, to appropriately evaluate the child.

In addition, states are facing more stringent repercussions if their school districts are found to have a disproportionate number of CLD students in special education. SLPs will need to ensure that their assessment strategies for these students in particular are appropriate and that they yield the most reliable results.

### What ASHA Members Can Do

ASHA members must ensure that their assessments for all students, especially CLD students, are appropriate and yield valid results. SLPs and audiologists must advocate at the state and local levels for identification, assessment, and eligibility policies and procedures for CLD students to assist in eliminating the issues of disproportionality. ASHA members must also advocate for inclusion in the development and provision of early intervening services at www.asha.org/members/slp/schools/prof-consult/RtoI.htm and www.asha.org/about/leadership-projects/multicultural/issues/da/.

Research has shown that early intervening strategies assist in reducing the number of inappropriate referrals to special education. Long-term effects of reducing disproportionality using early intervening services include reduced paperwork, as well as a reduced caseload for special education personnel. ASHA members are encouraged to continue developing the knowledge and skills needed to provide culturally and linguistically appropriate services, as well as advocate for resources in order to provide effective services. ASHA has a number of resources on its Web site at http://www.asha.org/about/leadership-projects/multicultural/ that focus on service delivery to CLD populations. There are also a number of continuing education programs that provide information on best practice for working with ELL students, bilingual populations, and other CLD students.

# F. ASHA RELEASES A SIDE-BY-SIDE COMPARISON ANALYSIS ON 2006 IDEA PART B FINAL REGULATIONS

ASHA has prepared a detailed analysis that focuses on certain sections of the 2006 IDEA Part B final regulations that have an impact on speech-language pathologists and audiologists practicing in a school setting. The document is in the form of a "side-by-side comparison analysis," comprised of the 2006 IDEA Part B final regulations; the 1999 IDEA Part B regulations; and ASHA's summary and impact analysis of the changes. The regulations and ASHA's summary and impact analysis that have been provided specifically target English Language Learners.

Please address specific questions and comments about the regulations to Catherine Clarke, ASHA's Director of Education and Regulatory Advocacy, at cclarke@asha.org or by phone at 800-498-2071, ext.4159. For practice-related IDEA issues or concerns, please contact Kathleen Whitmire, PhD, ASHA's Director of School Services, by e-mail at kwhitmire@asha.org or by phone at 800-498-2071, ext. 4137.

The full document, titled *2006 IDEA Part B Regulations: A Side-by-Side Comparison Analysis,* can be found on ASHA's website at the below URL address. The actual regulation and ASHA's summary and impact analysis can be found on the page number referenced in bold italics.

http://www.asha.org/NR/rdonlyres/D4D44C27-2C5E-4454-AB7B-DC6B8AA0F4C/0/2006IDEARegulationsComparison.pdf

## Subpart A

## Definitions

**300.27 Limited English Proficient- *pg. 7***
The regulations refer to the definition defined in the ESEA. In the discussion section, the exact language is outlined. The discussion also indicated that each state is responsible for determining the qualifications of bilingual personnel and interpreters for children with limited English proficiency,

**300.34 Related Services (c) (4) Interpreting Services- *pg. 9***
Although the definition refers to services for children who are deaf or hard of hearing, in the discussion section, ED clarified the requirements to provide services to students who are limited English proficient by citing the following references:

- Implementation of Title VI of the Civil Rights Act of 1964 requires that "recipients of Federal financial assistance ensure meaningful access to their programs and activities by students who are LEP.
- Department policy memoranda, including
    - 9/27/91 memorandum, "Department of Education Policy Update on Schools' Obligations Toward National Origin Minority Students with Limited English Proficiency"
    - 12/3/85 guidance document, "The Office for Civil Rights' Title VI Language Minority Compliance Procedures"
    - 5/70 memorandum, "Identification of Discrimination and Denial of Services on the Basis of National Origin"

**Subpart B**

**Other Provisions Required for State Eligibility**

**300.173 Over identification and disproportionality-** ***pg. 63***
New section added that states,

> The State must have in effect, consistent with the purposes of this part and with section 618(d) of the Act, policies and procedures designed to prevent the inappropriate over identification or disproportionate representation by race and ethnicity of children as children with disabilities, including children with disabilities with a particular impairment described in §300.8.

**Subpart C**

**Evaluations and reevaluations**

**300.304 Evaluation procedures-** ***pg. 68***
Assessment and other evaluation materials are to be provided and administered in the child's native language or other mode of communication **"and in the form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally"** unless it is clearly not feasible to do so.

Analysis:
For ELLs and other culturally and linguistically diverse children, the "form" in which evaluation procedures are administered will vary. The addition of this new language emphasizes the allowance of variance from standard testing procedures when necessary in order to appropriately assess academic, developmental, and functional skills. The discussion section further stated that the provision stating, "unless it is clearly not feasible to do so," **"should not be improperly used to limit evaluations in a child's native language."** ED also mentioned in the discussion section that **"it is standard test administration practice to include in the evaluation report the extent to which an assessment varied from standard conditions, including the language or other mode of communication that was used in assessing a child."**

**Subpart F**

**Reports—Program Information**

**300.646 Disproportionality-** ***pg. 94***
The final regulations added a provision requiring states to review ethnicity data in addition to race data to determine the presence of disproportionality. The 2006 regulations also require states to include a review of disproportionality with respect to disciplinary actions. In the event that significant disproportionality is determined, the state will not only be required to review and revise policies, procedures, and practices, but they will also require the LEA to reserve the maximum amount of funds under 613(f) to provide early intervening services to children in the LEA, "particularly, but not exclusively" to those in groups that were significantly over identified. Additionally, the LEA will be required to publicly report on the revision of policies, practices, and

procedures. This is stricter than the previous 1999 regulations on disproportionality and is supported with funding to address the problem.

Analysis:
These regulations more clearly define steps that States must take to address the problem of disproportionality in special education, in particular with the mandate of funds for early intervening services. Research has shown that early intervening strategies assist in reducing the number of inappropriate referrals to special education, especially among culturally and linguistically diverse students. In their discussion, ED indicated that each State must determine what should be considered "significant disproportionality." ED referenced their provided guidance to states on methods for assessing disproportionality, which can be found at: *http://www.ideadata.org/docs/Disproportionality%20Technical%20Assistance%20Guide.pdf*.

# G. INFORMATION ABOUT INTERPRETERS & TRANSLATORS (I/T)

***Definitions:***

**Interpreter:** An interpreter is someone who verbally translates spoken language from one language to another.

**Translator:** A translator translates written documents from one language to another.

**Interpretation:** Interpretation can be simultaneous or consecutive. In simultaneous interpretation, the interpreter conveys a message in the other language at the same time as it is presented by the clinician or the client. In consecutive interpreting, there is a pause between the clinician's or client's statements and the translation into the other language.

***IDEA and Interpreters & Translators:***

IDEA '04 specifies that collaboration with an interpreter or translator (I/T) is necessary to assess children when the specialists do not share their primary/native language. Although the law does not specify the language of intervention, all conferences and legal documents that pertain to a child in special education must be delivered in the family's primary language, in verbal or written form. If an interpreter is used to translate special education proceedings, legal requirements for providing information in the family's primary language may be met by tape recording the interpreted proceedings and giving the original cassette to the parent. Schools should retain a copy of the cassette for their records.

Legal mandates provide little information regarding how interpreters should be utilized or who should be utilized as an interpreter. Schools may be tempted to utilize untrained staff, faculty, or family members to interpret special education proceedings. The use of untrained bilingual persons as interpreters should be avoided, as this could result in errors and unreliable outcomes (Langdon, 2002). Problems arising from use of untrained interpreters include misinterpretation; errors due to limited knowledge of vocabulary, grammar, and syntax of the language or dialect; and misunderstandings due to lack of familiarity with the culture of the family. Problems arising from use of untrained family members as interpreters may include pressure being placed on the child to perform in a certain way, or a reaction of embarrassment from the child. In order to function properly in their role, interpreters and translators must be trained in the I/T process and have proficiency in English and the translated language.

***ASHA and Interpreters & Translators (ASHA position on I/T):***

ASHA's Code of Ethics prohibits discrimination in the delivery of professional services on the basis of race or ethnicity, gender, age, religion, national origin, sexual orientation, or disability. The Clinical Management of Communicatively Handicapped Minority Language Populations states that interpreters or translators can be used with minority language speakers when the following circumstances exist:

- when the certified speech-language pathologist or audiologist on staff does not have the recommended competence to provide services to speakers with limited English proficiency

- when an individual who needs services speaks a language that is uncommon for his/her local area
- when there are no trained professionals readily available with proficiency in a language that would permit the use of one of the previously described alternative strategies.

In order to reduce misuse of interpreters and translators for conferences, assessment, or interviews, specific procedures should be followed. There has been much research by Langdon and Cheng (2002) with regards to selection, and use of an I/T before, during, and after assessment. In addition, the speech-language pathologist should be trained on how to properly utilize an I/T.

# II. Informational Materials Regarding Articulation

## A. INFORMATION ON ARTICULATION AND DISORDERS OF ARTICULATION FOR PARENTS AND TEACHERS OF CLD STUDENTS

### What Is Articulation?

## Articulation

**<u>Articulate:</u> 1. In speech, to execute the movements and adjustments of the speech organs necessary to make a speech sound. 2. Able to satisfactorily express oneself with words; easy and fluent verbal expression of thoughts, attitudes, feelings, etc. (Nicolosi, 1989).**

An individual has an articulation problem when he or she produces sounds, syllables, or words incorrectly so that the listener does not easily understand what is being said. For example, children who say "ring" as "wing" are substituting /w/ for /r/. Another example of a substitution is the interchanging of /th/ for /s/ so that "soup" is pronounced "thoup." Substitutions are the most frequent speech errors. When a sound is said inaccurately, but sounds something like the intended sound, it is called a distortion. The child may also omit sounds. The articulation disorder affects the student's ability to accomplish the listening and speaking grade level standards or TEKS. It may also impact the student's oral reading, spelling, and relations with peers. In a school environment, articulation therapy refers to the remediation process for correcting errors of specific speech sounds that impede the learning process.

### Are some sounds easier to produce than other sounds?

Defined most simply, a phoneme is a speech sound. Phonemes differ across regions of the United States. These are what we hear as a region's "accent" or "dialect." An example of this is the way a Texan may pronounce the /r/ in comparison with someone who is native to New York.

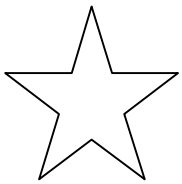
Phonemes are produced by moving the articulators of the mouth. These include lips, tongue, and teeth. Varying sounds can be made when articulators are used either together or alone. The earliest sounds a child makes are usually either bilabial or lingua-alveolar. Bilabial sounds refer to using both lips, as in the /p/, /b/, and /m/ phonemes. Lingua-alveolar refers to using the tongue and the ridge of tissue behind the teeth, as in the /t/ or /d/ phonemes. This explains why a baby's first words may be "dada" or "mama." As a child develops, his mouth grows. Sounds requiring elaborate tongue placement are very difficult for a young child due to the size of his mouth and the amount of control he has over his tongue movement (Weiss & Gordon, 1987). Later-developing sounds include /r/, /s/, /z/, /th/, /sh/, and /ch/.

## Why do some children exhibit articulation errors?

Learning speech sounds begins at a very early age. Sounds are learned as the child listens to the speech around him/her. Frequent ear infections during this important listening period may result in later articulation errors. Articulation problems may also be directly related to dental problems or physical handicaps, such as cerebral palsy, cleft palate, or hearing loss. While it is possible that the above issues may result in speech errors, not all causes are readily identifiable.

## What should I do if I suspect a child has an articulation problem?

Consult with your speech-language pathologist (SLP) to determine whether the errors you are hearing are developmentally appropriate for that child's age. If not, or if you note a number of sound errors, contact the person in charge of the Student Support Team (SST) and ask that the child be added to the meeting's agenda for discussion with parents and teacher(s). It is recommended that the hearing and vision screening and the parent and teacher Articulation Observations be completed before concerns are addressed by the SST. The SST may make recommendations for interventions by the general education teacher and/or SLP; see "Classroom Considerations and Articulation Intervention Recommendations" in Section II-B of this manual. If these interventions are not deemed successful in a reasonable time period or if the child presents with an obvious disability, a referral for a Full and Individual Evaluation (FIE) for special education may be warranted. With parental notice and consent, the SLP will then begin the process of evaluating the child. If the child exhibits an articulation disorder that interferes with mastery of grade level objectives or TEKS, an Individual Education Program (IEP) may be designed for the child so that remediation of the error(s) can be addressed.



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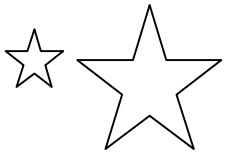
Weiss, C., & Gordon, E. (1987). *Clinical Management of Articulatory and Phonological Disorders,* 2nd ed. Baltimore: Williams & Wilkins.



# Articulation and CLD Speakers of English

## Variations in English

Some children speak a different variant form of English from others in the community. These include those children who speak English which is influenced by another language, and those who speak a dialectal form of English. Children who speak a variant form of English, and who make articulation "errors" in English which are typical of others in their group, do not have an articulation disorder, they have an articulation difference. Of course, not all members of a particular group will speak in the same way, but there are generalizations that have been made from studying large groups of speakers. Here are a few things to consider when referring children from different backgrounds for articulation concerns.*

## Spanish-Influenced English

Some variations include:

- Addition of schwa sound — "Stamp" becomes "estamp."
- "Sh" becomes "ch," and "y" becomes "j" — "She" becomes "chee," and "yellow" becomes "jellow."
- Consonants are devoiced, "z" becomes "s" and "j" becomes "ch" — "His" becomes "hiss," and "job" becomes "chob."
- "N" become "ng" — "fan" becomes "fang."
- Continuant sounds are stopped, "v" becomes "b," unvoiced "th" becomes "t," and voiced "th" becomes "d" — "Vase" becomes "base," "thought" becomes "taught," and "though" becomes "dough."

## Asian-Influenced English

Some variations include:

- Addition of schwa sound — "Blue" becomes "balue," and "beak" becomes "beaka."
- Final consonants are left off — "keep" becomes "key."
- Syllables might be left off of multi-syllabic words — "Potato" becomes "tato."
- "R" and "l" are interchanged - "Red" becomes "led," and "curl" becomes "cull."
- Continuant sounds are stopped — "Thought" becomes "taught," "though" becomes "dough," "vase" becomes "base," and "fan" becomes "pan."
- Change of stressed syllable — "Re `lieve" becomes "`re lieve."
- "Ch" becomes "sh" — "Chair" becomes "share."

*Speech variants of groups are from the book *Cultural and Linguistic Diversity Resource Guide for Speech-Language Pathologists,* by Brian Goldstein. San Diego: Singular Publishing Group, 2000.

# When Is a Sound Error a Concern*?

**(Spanish speakers)**

**By age 3:** m

**By age 4:** p, b, t, d, n, ñ, k, x, ch

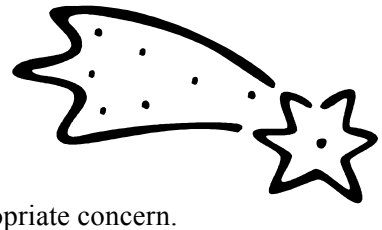
**By age 5:** g, s, r (flap/tap)

**By age 6:** rr (trilled)

By age 7: blends

***Resource:**
**Data for the typical acquisition of phonemes is taken from Chapter 52, *Spanish Speech Acquisition* by Brian A. Goldstein. *The International Guide to Speech Acquisition.* McLeod, Sharynne. Thomson Delmar Learning. 2007.**

# Going Forward with a Concern



Check the statements below that would be indicative of an appropriate concern.

1. _____ A 1st grade Hispanic student who pronounces “base” for “vase.”

2. _____ A Chinese 4th grader who often substitutes “r” for “l” in words, saying “brew” for “blue.”

3. _____ A Hispanic 3rd grader who pronounces “thick” for “sick.”

4. _____ An Asian 2nd grader who omits some final consonants; for example, pronounces “key” for “keep.”

5. _____ A Hispanic kindergartener who says “tat” for “cat.”

6. _____ A Vietnamese 1st grader leaves out syllables in some multisyllabic words; for example, pronounces “tato” for “potato.”

Practice:

What are two common sound substitutions that Spanish-speaking children use when acquiring English?

What forms should be completed prior to a referral of a CLD student for speech evaluation?

# Suggestions for Parent/Teacher Presentations

**Forums for Presentations**

- Staff Meetings
- Grade Level Meetings
- Team Leader Meetings
- Student Support Team
- Brown Bag Luncheon
- PTA Meetings
- Brochures for Teachers/Parents

**Topics for Presentations**

- What Is Articulation?
- Articulation and CLD Speakers of English
- When Is a Sound Error a Concern? (Spanish Speakers)
- Going Forward with a Concern
- How to Implement Classroom Intervention Recommendations

**Resources for Parents and Teachers**

- Speech-Language Pathologist at Local Campus
- ASHA Website (www.asha.org) **[Site Location:** Home > The Public > Speech, Language & Swallowing > Development >**]**
- Pre-referral Intervention Recommendations

# B. PRE-REFERRAL CONSIDERATIONS FOR STUDENTS FROM CLD BACKGROUNDS WITH SUSPECTED ARTICULATION DISORDERS

In the process of determining whether or not a CLD student has a need for articulation assessment, preliminary information about the student's background and educational history, as well as parent and teacher concerns, will need to be gathered. Of particular interest is language history; home language and school language use should be clearly described.

In this section, two sets of pre-referral forms are provided, reflecting the practices of two different school districts; each district will want to develop forms that satisfy the requirements of their programs/campuses.

We would like to thank Humble ISD for granting permission to share their pre-referral forms; these are District A forms.

We would like to thank Aldine ISD for granting permission to share their pre-referral forms; these are District B forms.

# District A Forms

31.1043

**Request for Assistance**
**Child Study Team for**
**English Language Learners**

____ **Initial Request** ____ **Reevaluation Request**

Student _____ DOB_____Campus ____ Grade ____

Parents _____ Phone _____ _____
Home Work

Address _____

_____

Current Special Ed. Services, if applicable: _____

The following information must be attached:

_____ Home Language Survey Form

_____ Language Profile

_____ Copy of current and previous report cards/grades

_____ Core Team Data, including LPAC meeting results

_____ Copy of results of IDEA IPT

_____ If reevaluation, copy of any previous assessment(s)

_____ Work Samples of problematic area(s)

_____ TAAS/TAKS or other test scores

_____ Copy of school attendance records

Question to be answered:

_____
Counselor/LSSP/Diagnostician/Speech Pathologist

## Child Study Team for English Language Learners
## Language Profile

Name:_____ Grade: _____ Age:_____

School:_____ Teacher: _____ Room:_____

Length of Residency in the U.S.: _____ Country of Origin:_____

Current Program Placement:
Reg. Ed._____ Bil. Ed._____ ESL_____ Migrant Ed._____ Other_____

_____ Check here if student was eligible for ESL/Bilingual but parent waived program services.

Grades enrolled in bilingual education program (circle those that apply):
Preschool K 1 2 3 4 5 6 7 8 9 10 11 12

Grades enrolled in ESL program (circle those that apply):
Preschool K 1 2 3 4 5 6 7 8 9 10 11 12

Has student attended school in a foreign country? _____ Yes _____ No
If yes, for how long? _____ When? _____
What was the language of instruction? _____

---

_____
Date of Interview

**Language Use**
Parent Interview _____ by phone _____ in person

1. _____ First language learned by student
2. _____ Language most frequently used by student at home
3. _____ Language most frequently used by parents with student
4. _____ Language most frequently used by adults with each other at home
5. _____ Language most frequently used by student with siblings

Does student have routine exposure to another language other than English?
(ex. Summers spent in another country; relatives visiting or residing in the home who speak another language)
If yes, describe: _____

_____

_____

Form completed by _____ Date:_____

Date:

Office Use Only
Assigned to:_____
Timeline:_____
App: Yes No

**Child Study Team for English Language Learners**
**Recommendations**

**Student**_____ **Grade**_____ **Campus**_____ **Language(s)**_____

**PERTINENT INFORMATION**: **Date of Birth**_____

**RECOMMENDATIONS**

( ) Team recommends assessment for Language Proficiency.

( ) Team recommends special education assessment to include:

( ) Special education assessment is not warranted for the following reasons:

( ) Other action/discussion:

**ACTION NEEDED**

The Campus should

_____ (a) schedule Determination of Need. ARD
_____ (b) schedule Core Team for further interventions.
_____ (c) schedule Core Team to consider Special Education assessment.
_____ (d) obtain parent permission for regular education screening for ____Language Proficiency.
_____ (e) call _____ to arrange assessment when permission is obtained.
_____ (f) other:

**SIGNATURE** **POSITION**

## District B Forms

*School District Name*

**Pre-Referral Information For A Culturally and Linguistically Diverse (CLD) Student**

Student Name: _____ Sex _____ Date of Birth _____

School: _____ Grade C.A. ___ _____

Parent/Guardian _____

Address Home Phone Work Phone _____ _____
Home Campus Contact Person: _____ _____

**THE FOLLOWING INFORMATION MUST BE COMPLETED WHEN PRIOR TO REFERRING A CLD STUDENT FOR ASSESSMENT. PLEASE ORGANIZE INFORMATION IN THE FOLLOWING ORDER:**

_____1. Copy of LEP Student Assessment Form (LPAC documentation) (pink folder found in cumulative folder) All pages

_____2. Copy of Testing Data Found in Cumulative Folder (contains TAAS, TAKS, ITBS, Aprenda, Logramos Information, etc.)

_____3. Woodcock-Munoz Language Scale (WMLS) –**need first 2 subtests in both English and Spanish to be assessed. Include answer document & score sheet by AGE NORM.**

_____4. Parent Questionnaire (**English or Spanish Form**)

_____5. Teacher Questionnaire

_____6. Current and Previous Years Report Card (including any out of country data)

_____7. Campus **I**ntervention **A**ssistance **T**eam Report

_____8. Work Samples (including independent writing, free writing, spelling, and math computation)
**(Only 3–5 samples please) (<u>No multiple choice or Benchmarks</u>)**

**Please submit to: *(your district's personnel)***

| Date Received | Date Staffed | Date Returned to School |
|---|---|---|
| _____ | _____ **or** Incomplete Information Returned to School _____ (Date) | _____ |

**Documents are reviewed and staffed weekly. Requests are not reviewed until all information is received**.

*School District Name*

**Pre-Referral Information For A Culturally and Linguistically Diverse (CLD) Student**

Date _____

Student Name: _____

ESL/Bilingual Teacher Name: _____

Area(s) of Concern: _____

_____

_____

**HEALTH CONCERNS:** Yes ____ Explain _____
No ____

**ACADEMIC HISTORY:** (Please include school(s) student has attended include dates of attendance).

| School | State/Country | Years |
|---|---|---|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

**Circle every grade in Bilingual** PK K 1 2 3 4 5 6 7 8 9 10 11 12

**Circle every grade in ESL** PK K 1 2 3 4 5 6 7 8 9 10 11 12

Has parent denied bilingual? Yes ____ No _____
Has parent denied ESL? Yes _____ No _____

**A.** Previously Tested for Special Education? *Yes____ No____ Date____
(Including if testing was for Speech only) *Yes____ No____ Date____

***If yes, please attach a copy of Full Individualized Evaluation (FIE)**
**(Your campus Assessment Specialist/Speech Pathologist would be your resource for this information).**

*School District Name*

**Pre-Referral Information For A Culturally and Linguistically Diverse (CLD) Student**
**Teacher Questionnaire (pg. 1 of 2)**

Student Name _____

1. What are your concerns regarding this student?_____

_____

_____

2. What are the student's strengths? _____

_____

3. Are you adjusting work for this student? ___ Yes ___ No
   a. If so, how much and in what subjects? _____
   b. How long have you adjusted in this manner? _____

4. Have you contacted the parents to voice your concern? ___ Yes ___ No
   If so, what was their reaction?

_____

_____

5. If the student is in a bilingual program please specify the percentage of time the student receives instruction in **SPANISH and in ENGLISH** in each of the following subject areas:

| | % Eng. | % Span. | | % Eng. | % Span |
|---|---|---|---|---|---|
| Reading | _____ | _____ | Social Studies | _____ | _____ |
| Lang.Arts. | _____ | _____ | Science | _____ | _____ |
| Math | _____ | _____ | | | |

6. Is the student a behavior problem? __ Yes __ No Please explain. _____

_____

_____

7. Is the student absent or tardy frequently? __ Yes __ No
   Is he out of school for extended periods of time? __ Yes __ No

8. Does he come to school frequently tired and/or hungry? __ Yes __ No

9. Do you have other students like him/her in the classroom? __ Yes __ No
   How many? _____

10. Has the student attended other schools in the United States? __ Yes __ No
If so, where and for how long? Was the program bilingual? Were there educational concerns? _____

**(Teacher Questionnaire pg. 2 of 2)**

11. Does the student socialize with all students or does he/she remain with fellow bilingual/ESL friends? _____

_____

12. Does the student have any articulation concerns? __ Yes __ No
If so, provide examples _____

| Contexts | Only English | Mostly English | Equal Use | Mostly Other | Only Other |
|---|---|---|---|---|---|
| Informal language with peers (playground, cafeteria, bus, etc.) | | | | | |
| Informal language with adults (halfway play areas, cafeteria, off-campus) | | | | | |
| Formal language with peers (classroom, lab library, etc.) | | | | | |
| Formal language with adults (classroom, lab library, etc.) | | | | | |

_____ _____

(Teacher's Signature) (Date)

*School District Name*

**Pre-Referral Information For A Culturally and Linguistically Diverse (CLD) Student**
**Parent Questionnaire (pg. 1 of 2)**

Student Name:_____ Sex Date of Birth _____
School:_____ Grade _____ _____

Parent/Guardian _____ Work Phone# _____
Home Phone# _____

1. a. What is your child's country of origin? How long did he/she live there? _____
   b. What is parent's country of origin? _____

2. Do you go for frequent visits to your country? ___ Yes ___ No
   Do you stay for extended periods of time? ___ Yes ___ No

3. What language did your child learn to speak first? _____

4. a. How long has your child lived in the United States? _____
   b. If coming from another country, did your child speak any English before coming to the United States? _____

5. In what language did your child learn his/her basic concepts, basic vocabulary and sentence structure? _____

6. What language is most frequently used by your child at home? _____

7. What language is most frequently used by you (parents) with child at home? _____

8. What language is most frequently used by adults with each other at home? _____

9. What language does the student use with siblings at home? _____

10. Has your child been educated in another country before? ___ Yes ___ No
    a. What grades did he/she attend in school? _____
    b. How many years did he/she attend school? _____
    c. Did he/she attend school regularly daily? ___ Yes ___ No

11. Has his/her schooling been interrupted for more than a week? ___ Yes ___ No
    If so, when and for what length of time? _____

12. Please list the schools your child has attended.

| **School** | **State/Country** | **Years** |
|---|---|---|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

**(Parent Questionnaire pg. 2 of 2)**

13. Have any of his/her previous teachers ever expressed concerns about his/her schoolwork? Please explain. _____

14. Has he/she ever had special education testing before in any of his/her other schools?
___ Yes ___ No What were the results? _____ .

15. Have there been any changes in his/her behavior since living in the United States?
_____
_____

16. Have you noticed words that are hard for your child to pronounce in your language?
___ Yes ___ No Some examples: _____

17. a. Is it difficult for strangers to understand what your child is saying? ___ Yes ___ No
b. Is it difficult for family members to understand what your child is saying? ___ Yes ___ No
Some examples: _____

18. Have you noticed hoarseness or other problems in the sound of your child's voice?
___ Yes ___ No

19. Is your child able to describe personal experiences accurately? ___ Yes ___ No

20. Is your child able to answer appropriately when asked questions? ___ Yes ___ No

21. Can your child follow two and three part instructions? ___ Yes ___ No

22. Please provide additional information that you would like to let us know about your child? (Health concerns, medical history, school related behaviors).
_____
_____
_____
_____

_____ _____
(Parent Signature) (Date)

*School District Name*

**Pre-Referral Information For A Culturally and Linguistically Diverse (CLD) Student**
**Spanish Parent Questionnaire**

Nombre del Estudiante: _____ Sexo ___ Fecha de Nacimiento _____

Escuela_____ Grado_____

Padre/Guardian_____ Teléfono (Trabajo)_____
Teléfono (Casa) _____

1. a. ¿En qué país nacio su hijo(a)? _____
   b. ¿En qué país nacieron los padres del estudiante? _____

2. ¿ Visitan el país de origen frequentemente? ___ Sí ___ No
   ¿ Se quedan por mucho tiempo? ___ Sí ___ No

3. ¿Cuál fue el primer idioma que su hijo(a) aprendio hablar ? _____

4. a. ¿Cuánto tiempo a vivido su hijo(a) en los Estados Unidos? _____
   b. ¿Sú hijo(a) hablaba inglés antes de venir a los Estados Unidos? ___ Sí ___ No

5. ¿En qué idioma aprendio su hijo(a) los conceptos o destresas basicas de vocabulario y estructura de oraciones? _____

6. ¿Qué idioma usa su hijo(a) más frequentemente en la casa? _____

7. ¿Qué idioma usan los padres más frequente en la casa? _____

8. ¿Cuándo hablan en la casa que idioma usan los adultos con más frequencia? _____

9. ¿En la casa qué idioma usa el(la) estudiante con sus hermanos(as)? _____

10. ¿Fue su hijo(a) educado en otro país? ___ Sí ___ No
    a.¿Qué grados o niveles escolares asistio? _____
    b. ¿Cuántos años asistio a la escuela? _____
    c. ¿Asistia a la escula todos los días? ___ Sí ___ No

11. ¿Fue interumpida la educación de su hijo(a) por más de una semana? ___ Sí ___No
    ¿Por cuánto tiempo? _____

**(Spanish Parent Questionnaire)**

12. Favor de enumerar las escuelas que su hijo (a) asistio.
    Escuela Estado/País Anõs
    _____ _____ _____
    _____ _____ _____
    _____ _____ _____
    _____ _____ _____

13. ¿En años pasados, maestros han expresado qué su hijo(a) tenia dificultades de aprendizaje o dificultades académica? Favor de explicar o elaborar. _____

14. ¿Fue evaluado(a) su hijo(a) para el programa de educación especial? ___ Sí ___ No
    ¿Cuál fue el resultado de la evaluación? _____

15. Han notado cambios de conducta o comportamiento en su niño(a) desde que vive en los Estados Unidos? _____
    _____

16. ¿Tiene su hijo(a) dificultad pronunciando palabras en español? ___ Sí ___ No
    Ejemplos de palabras que no pronuncia correctamente. _____

17. a. ¿Es difícil para desconocidos entender lo que dice su hijo(a)? ___ Sí ___ No
    b. ¿Es difícil para miembros de la familia entender lo que dice su hijo(a)? __ Sí __ No
    Favor de escribir ejemplos _____

18. ¿Ha notado ronquera u otros problemas en el sonido de la voz de su hijo(a)? __ Sí __ No

19. ¿Puéde su hijo(a) describir experiencias personales con exactitud? ___ Sí __ No

20. ¿Puéde su hijo(a) responder apropiadamente cuando se le hacen preguntas? ___Sí __ No

21. ¿Sigué su hijo(a) direciones de dos y tres pasos? ____ Sí _____ No

22. Favor de incluir cualquier información que used quiera proveer acerca de su hijo(a).
    (Ejemplo: datos sobre la salud del estudiante, la conducta, pasatiempos favoritos, etc.)
    _____
    _____
    _____
    _____

_____ _____
(Firma de Padre/Guardian) (Fecha)

## Speech-Language History Addendum for Children from CLD Backgrounds

Name: _____ Date: _____
Language(s):_____

Country/state previously resided: _____ If applicable, time in U.S.A.: _____

| Place | Child's age | Language(s) spoken |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

Main language(s) used in home:_____/ _____/_____

Language(s) used between child and: Parent_____ Parent_____
Siblings _____ Other family members _____ School/Daycare_____
Other (please specify) _____

What language did the child speak first?
□ English □ Language(s) other than English:_____ □ No preference

What age was the child when he/she began to learn/speak the other language? _____ years

Which language do you (parent) feel is the child's strongest language currently?
□ English □ Language(s) other than English:_____ □ No preference

With whom does the child speak with most often (check all that apply)?
□ Father □ Mother □ Family Members □ School/Daycare □ Other _____

What is the child's language preference when listening to the radio or watching TV?
□ English □ Language(s) other than English:_____ □ No preference

What is the child's language preference when reading or writing (if applicable)?
□ English □ Language(s) other than English:_____ □ No preference

How often does the child hear others use each language in the home?
*English*: □ Frequently □ Sometimes □ Not at all
*Other*:_____ □ Frequently □ Sometimes □ Not at all

How often does the child speak with people outside of the home?
*English*: □ Frequently □ Sometimes □ Not at all
*Other*:_____ □ Frequently □ Sometimes □ Not at all

Has the child attended a bilingual education program? ____? If yes, how many years?_____

Has the child attended an English as a second language program? If yes, how long? _____

Do adults understand what the child says?
*English*: □ Frequently □ Sometimes □ Not at all
*Other*:_____ □ Frequently □ Sometimes □ Not at all

What language does the child feel most comfortable with/speak most fluently (in your observation)?
*Social contexts*: □ English □ Other_____
*Academics*: □ English □ Other_____

Does the child initiate verbal interactions?
□ Frequently □ Sometimes □ Not at all □ Depends on partner

Describe the child's experiences in English and other languages: _____
_____

How does the child's language development compare to other children's?
_____
_____

Additional concerns/comments:_____
_____

You may wish to consider utilizing a professionally produced checklist, such as the *Bilingual Classroom Communication Profile* (published by Academic (1993), available in Goldstein (2000), p. 132. This list would be utilized to gain case history information primarily from teachers, and asks them to give information about a student's specific language skills.

## C. CLASSROOM CONSIDERATIONS AND ARTICULATION INTERVENTION RECOMMENDATIONS FOR STUDENTS FROM CLD BACKGROUNDS

The following suggestions may be given to classroom teachers and/or parents as recommendations for stimulating sound production prior to referral for a Full and Individual Evaluation (FIE) for Special Education Services. The SLP should check for level of understanding of each recommendation through the Student Support Team (SST) meeting.

| **Consideration or Recommendation:** | **Check if Attempted** | Results |
|---|---|---|
| 1. Be sure student's hearing has been checked within last 3 months. | | |
| 2. Determine if more than one language is spoken in the home. | | |
| 3. Consider whether sounds in question may be dialectal variations. | | |
| 4. Discuss with parent and teacher the developmental appropriateness of sound errors in question. | | |
| 5. Determine if the student recognizes a difference between the correct and error sounds. Say a word with the error sound and with the correct sound and ask if student knows the correct production. For example, "rain" and "wain" | | |
| 6. Teacher or parent may talk with the student about the error sound and what he/she may do differently. For example, raising the tongue tip to say /l/ instead of rounding lips for /w/, for the w/l substitution. Be sure the parent or teacher emphasizes the "sound" and not the "letter" targeted: /l/ instead of /el/. | | |
| 7. Reinforce correct productions of words containing target sound(s). It is recommended that this be done privately or without calling undue attention to the student's error sounds. | | |
| 8. Allow student to record a sample of his/her speech and identify correct or error sounds. | | |
| 9. Provide practice times for teacher, parent, or peer to model correct production of the sound. | | |
| 10. When the student is using the sound correctly in some contexts, the following may be helpful reinforcing activities:<br>• Ask student to cut pictures from magazines or draw pictures of words containing the error sound(s).<br>• Make a list of words that contain error sound(s) for the student to read and practice.<br>• Use words from student's reading material, spelling lists, and everyday vocabulary for practice.<br>• Student, parent, or teacher may keep a list of difficult words to practice at specific times. | | |
| 11. It is recommended that attempts to stimulate or reinforce correct sound production be discontinued any time the child shows a resistance to the activities or frustration with attempts to make correct sounds. The teacher or parent may reconvene the Campus Assessment Team with these concerns. | | |

## D. RESOURCES FOR CULTURAL AND LINGUISTIC DIVERSITY

### Phonemic Inventories Across Languages

Languages across the world have unique phonemic systems. For individuals learning English as a second language, it is common for the phonemic system of their first language to influence the production of sounds in English. ASHA's policy documents state that SLPs and audiologists must consider the sound systems of all the languages used by a client in order to provide appropriate assessment and treatment services.

ASHA's Office of Multicultural Affairs has compiled information on the phonemic systems for the following languages:

- Arabic Phonemic Inventory (PDF format)
- Cantonese Phonemic Inventory (PDF format)
- English Phonemic Inventory (PDF format)
- Korean Phonemic Inventory (PDF format)
- Mandarin Phonemic Inventory (PDF format)
- Spanish Phonemic Inventory (PDF format)
- Vietnamese Phonemic Inventory (PDF format)

*Please remember that dialectal differences exist for each language and should be considered when using the phonemic charts*.

**Speech-language pathologists** can use this information to:

- Identify sounds in a client's phonological system for languages other than English.
- Determine phonemic influences of a client's native language on English.
- Identify sounds from the client's first language that may not exist in English or identify sounds in English that do not exist in someone's native language.
- Recognize that even if there are similar sounds across two languages, they may not be used the same way. For example, in some languages a sound may only be used at the ends of words and not as a word-initial sound.

**Audiologists** can use this information to:

- Correlate the client's audiogram and the sounds of the client's language(s).
- Recognize and respond to amplification needs.
- Identify the affect of the individual's phonemic system on speech audiometry assessment.
- Modify materials and procedures during speech audiometry assessment.

If you have any questions please contact the Office of Multicultural Affairs at multicultural@asha.org

## ARABIC PHONEMIC INVENTORY

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Palatal | Velar | Uvular | Pharyngeal | Glottal |
|---|---|---|---|---|---|---|---|---|---|---|
| **Plosive** | b | | | t d<br>t̪ d̪ | | | k | q | | ʔ |
| **Nasal** | m | | | n | | | | | | |
| **Trill** | | | | r | | | | | | |
| **Tap or Flap** | | | | ɾ | | | | | | |
| **Fricative** | | f | θ ð<br>θ̪ ð̪ | s z<br>s̪ | | ʃ | | χ ʁ | ħ ʕ | h |
| **Affricate** | | | | | ʤ | | | | | |
| **Glides** (Approximant) | w | | | | | j | | | | |
| **Liquid** (Lateral Approximant) | | | | l | | | | | | |

/t̪/, /d̪/, /s̪/, and /ð̪/ reflect emphatic consonants. According to IPA guidelines, these emphatic consonants may be transcribed as /tˤ/, /dˤ/, /sˤ/, /ðˤ/.


Reference:
Amayreh, M. (2003). Completion of the Consonant Inventory of Arabic. *Journal of Speech, Language, and Hearing Research, 46*, 517–529.
Amayreh, M., & Dyson, A. (1998). The acquisition of Arabic consonants. *Journal of Speech, Language, and Hearing Research, 41*, 642–653.
Saleem, A., & Dyson, A. (2003, November). *Arabic Preschool Phonological Screening Test—Revised (APPST–R)*. Poster session presented at 2003 Annual Convention of the American Speech-Language-Hearing Association, Chicago.

## Facts on Arabic Phonology*

- There are three "levels" of Arabic:[1]
  - Modern Standard Arabic—used in religious ceremony and literature,
  - Educated Spoken Arabic—used in schools and public arenas, and
  - Colloquial Arabic—used at home and in community; significant dialectal variability exists among colloquial forms.
- Dialectal variations in phonology are evident in Arabic. It is important to recognize this when assessing an Arabic speaker.
- Arabic has emphatic consonants, such as /t̲/, /d̲/, /ð̲/, and /s̲/. Emphatic consonants are described as those sounds that are produced with the root of the tongue retracted toward the pharyngeal wall.[2]
- In postvocalic environments the /r/ is trilled; however, in prevocalic environments the /r/ is tapped.[3]
- Phonemes in Arabic that are not found in English include the following:
  - /t̲/, /d̲/, /ð̲/, /s̲/, /χ/, /ʁ/, /ħ/, /ʕ/, and /ʔ/.[4]
- Phonemes in English that are not found in Arabic include the following:
  - /p/, /v/, /ɹ/, /ʒ̲/, /g/, and /ŋ/.
- Research indicates that for Arabic-speaking children in Jordan, medial consonants have a higher incidence of accuracy than initial or final consonants.[5]

*Information based on a dialect of Arabic used in Jordan.

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[1] Amayreh, M. (2003). Completion of the Consonant Inventory of Arabic. *Journal of Speech, Language, and Hearing Research, 46*, 517–529.
[2] Amayreh, M., & Dyson, A. (1998). The acquisition of Arabic Consonants. *Journal of Speech, Language, and Hearing Research, 41*, 642–653.
[3] *Ibid.*
[4] *Ibid.*
[5] *Ibid.*

**CANTONESE PHONEMIC INVENTORY**

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Palatal | Velar | Labial-Velar | Glottal |
|---|---|---|---|---|---|---|---|---|---|
| **Plosive** | p $p^h$ | | | t $t^h$ | | | k $k^h$ | kw $k^hw$ | |
| **Nasal** | m | | | n | | | ŋ | | |
| **Trill** | | | | | | | | | |
| **Tap or Flap** | | | | | | | | | |
| **Fricative** | | f | | s | | | | | h |
| **Affricate** | | | | ts $ts^h$ | | | | | |
| **Glides** (Approximant) | | | | | | j | | w | |
| **Liquid** (Lateral Approximant) | | | | l | | | | | |


Reference:
Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.
Fung, F., & Roseberry-McKibbin, C. (1999). Service delivery considerations in working with clients from Cantonese-speaking backgrounds. *American Journal of Speech-Language Pathology, 8*, 309–318.
International Phonetic Association. (1999). *Handbook of the International Phonetic Association: A guide to the use of the International Phonetic Alphabet*. Cambridge, United Kingdom: Cambridge University Press.

## Facts on Cantonese Phonology

- Cantonese is a tonal language. Each syllable has a tone and each tone will change the semantics of a word. The number of tones in Cantonese is widely debated (between 6 and 9); however, much of the literature reports six tones:[1]
  - high falling,
  - middle rising,
  - middle level,
  - low falling,
  - low rising, and
  - low level.
- Words are monosyllabic.[2]
- There are no consonant clusters.[3]
- There are six consonants used in final position:[4] /t/, /k/, /p/, /m/, /n/, and /ŋ/.
- Dialectal variations:[5]
  - Initial /n/ and /l/ are often interchangeable.
  - Initial /ŋ/ is often deleted.
- Developmental phonological processes in Cantonese include the following:[6]
  - affrication,
  - assimilation,
  - cluster reduction,
  - deaspiration,
  - final glide deletion,
  - fronting,
  - initial /h/ deletion, and
  - stopping.

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[1] Fung, F., & Roseberry-McKibbin, C. (1999). Service delivery considerations in working with clients from Cantonese-speaking backgrounds. *American Journal of Speech-Language Pathology, 8*, 309–318.
[2] *Ibid*.
[3] *Ibid*.
[4] So, L. (1996, July). Cantonese phonology and its influence on intervention. *ASHA Division 14 Newsletter*.
[5] *Ibid*.
[6] So, L., & Dodd, B. (1995). The acquisition of phonology by Cantonese-speaking children. *Journal of Child Language, 22*, 473–495.

## Facts on Cantonese Phonology

- Phonemes in English that are not found in Cantonese include the following:
  - /b/, /d/, /g/, /v/, /z/, /ʃ/, /ʒ/, /ɹ/, /ʧ/, /ʤ/, /ð/, and /θ/.
- In addition to final consonant deletion, common substitution errors for Cantonese speakers learning English are as follows:[7]
  - /s/ for /θ/ in initial position;
  - /f/ for /θ/ in final position;
  - /d/ for /ð/ in initial or medial position;
  - /s/ for /z/ in initial, medial, or final position;
  - /f/ for /v/ in initial or medial position;
  - /w/ for /v/ in initial or medial position;
  - /l/ for /r/ in initial, medial, or final position; and
  - /s/ for /ʃ/ in initial, medial, or final position.
- Some of the Cantonese sounds, which are not found in English, have similar correlates in English:

| Cantonese | English |
|---|---|
| /$p^h$/ | /b/ |
| /$t^h$/ | /d/ |
| /$k^h$/ | /g/ |
| /$ts^h$/ | /ʧ/ |
| /ts/ | /ʤ/ |

[7] Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.

## KOREAN PHONEMIC INVENTORY

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Retroflex | Palatal | Velar | Glottal |
|---|---|---|---|---|---|---|---|---|---|
| **Plosive** | p b $p^h$ | | | t d $t^h$ | | | c $c^h$ | k g $k^h$ | |
| **Nasal** | m | | | n | | | | | |
| **Trill** | | | | | | | | | |
| **Tap or Flap** | | | | | | | | | |
| **Fricative** | | | | s | | | | | h |
| **Affricate** | | | | | | | | | |
| **Glides** (Approximant) | | | | | | | j | | |
| **Liquid** (Lateral Approximant) | | | | l | | | | | |

Reference:
Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.

## Facts on Korean Phonology

- Common characteristics of Korean speakers learning English include the following:[1]
  - nasalized final stops if appears prior to a nasal sound,
  - /r/ and /l/ are often interchangeable, and
  - monotone stress.
- There are no consonant clusters in word-initial or word-final positions.[2]
- Fricatives and affricates do not appear in word-final position.[3]
- Phonemes in English that are not found in Korean include the following:
  - /ŋ/, /f/, /v/, /θ/, /  /, /z/, /ʃ/, /ʒ/, /ʧ/, /ʤ/, /ɹ/, and /w/.

[1] Cheng, L. (1991). Assessing Asian language performance: Guidelines for evaluating limited-English proficient students (2nd ed.). Oceanside, CA: Academic Communication Associates.
[2] *Ibid*.
[3] *Ibid*.

## MANDARIN PHONEMIC INVENTORY

| | Bilabial | Labiodental | Dental | Alveolar | Alveopalatal | Postalveolar | Retroflex | Palatal | Velar | Glottal |
|---|---|---|---|---|---|---|---|---|---|---|
| **Plosive** | p $p^h$ | | | t $t^h$ | | | | | k $k^h$ | |
| **Nasal** | m | | | n | | | | | ŋ | |
| **Trill** | | | | | | | | | | |
| **Tap or Flap** | | | | | | | | | | |
| **Fricative** | | f | | s | ɕ | | ʂ ʐ | | x | |
| **Affricate** | | | | ts $ts^h$ | tɕ $tɕ^h$ | | tʂ $tʂ^h$ | | | |
| **Glides** (Approximant) | | | | | | | | | | |
| **Liquid** (Lateral Approximant) | | | | l | | | | | | |


Reference:
Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.
Fang, X., & Ping-an, H.. (1992). Articulation disorders among speakers of Mandarin Chinese. *American Journal of Speech-Language Pathology, 1*(4), 15–16.

## Facts on Mandarin Phonology

- Mandarin is a tonal language. Each syllable has a tone and each tone changes the semantics of a word. The tones are as follows:[1]
  - high level,
  - rising,
  - falling–rising,
  - falling, and
  - neutral.
- There are no consonant clusters.[2]
- Words are monosyllabic.[3]
- The sounds /n/ and /ŋ/ are the only consonants that can occur in word-final position.[4]
- Phonemes in English that are not found in Mandarin include the following:
  - /v/, /z/, /&/, /ʼ/, /(/, /)/, /θ/, /ð/, and /*/.
- In addition to final consonant deletion, common substitution errors for Mandarin speakers learning English include the following:[5]
  - /s/ for /θ/ in initial, medial, or final position;
  - /f/ for /θ/ in final position;
  - /d/ for /ð/ in initial or medial position;
  - /z/ for /ð/ in initial or medial position;
  - /f/ for /v/ in initial or medial position; and
  - /w/ for /v/ in initial or medial position.

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[1] Cheng, L. (1991). Assessing Asian language performance: Guidelines for evaluating limited-English proficient students (2nd ed.). Oceanside, CA: Academic Communication Associates.
[2] Slobin, D. I. (1992). *The crosslinguistic study of language acquisition* (Vol. 3). Hillsdale, NJ: Erlbaum.
[3] Cheng, L. (1991). Assessing Asian language performance: Guidelines for evaluating limited-English proficient students (2nd ed.). Oceanside, CA: Academic Communication Associates.
[4] Fang, X., & Ping-an, H. (1992). Articulation disorders among speakers of Mandarin Chinese. *American Journal of Speech-Language Pathology*, *1*(4), 15–16.
[5] Cheng, L. (1991). Assessing Asian language performance: Guidelines for evaluating limited-English proficient students (2nd ed.). Oceanside, CA: Academic Communication Associates.

**SPANISH PHONEMIC INVENTORY**

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Palatal | Velar | Glottal |
|---|---|---|---|---|---|---|---|---|
| **Plosive** | p b | | | t d | | | k g | |
| **Nasal** | m | | | n | | ɲ | | |
| **Trill** | | | | r | | | | |
| **Tap or Flap** | | | | ɾ | | | | |
| **Fricative** | | f | | s | | | x | |
| **Affricate** | | | | | ʧ | | | |
| **Glides** (Approximant) | w | | | | | j | | |
| **Liquid** (Lateral Approximant) | | | | l | | | | |

Reference:
Goldstein, B. (2000). *Cultural and linguistic diversity resource guide for speech-language pathologists.* San Diego, CA: Singular.

## Facts on Spanish Phonology

- The following consonant clusters are used in Spanish; these do not occur in word-final position:[1] /pl/, /pɾ/, /bl/, /bɾ/, /tɾ/, /dɾ/, /kl/, /kɾ/, /gl/, /gɾ/, /fl/, and /fɾ/.
- There are five consonants used in word-final position:[2]: /l/, /ɾ/, /d/, /n/, and /s/.
- In intervocalic environments, the allophonic variations for /b, d, g/ are /ß, ð, ɣ/.[3]
- Dialectal variations in Spanish phonology exist. It is important to recognize this when assessing a Spanish speaker.
- By age 4, normally developing monolingual Spanish speakers acquire most sounds of the language except for /g/, /f/, /s/, /ɲ/, /r/, and /ɾ/.[4]
- Phonemes in English that do not occur in Spanish include the following:
  - /ŋ/, /v/, /ð/, /θ/, /z/, /ʃ/, /ʒ/, /h/, /ʧ/, /ʤ/, and /ɹ/.
- The Spanish vowel system is much smaller than that of English; they are similar to the short vowels of English. Spanish vowels are the following: /i/, /ɛ/, /ɑ/, /u/, and /ɔ/.[5]

- Spanish developmental norms[6]

| 3;3 | 3;7 | 3;11 | 4;3 | 4;7 | 4;11 | 5;7 | >5;7 |
|---|---|---|---|---|---|---|---|
| /p,b,t/ | /k,w,m,n/ | /j,l/ | /f/ | / ʧ,d,g,ɾ/ | /x,ɲ/ | /s/ | /r/ |

Data were normed on 120 Spanish-speaking children of Mexican descent living in California. Spanish was reported as the primary language. Data reflect 90% accuracy of phoneme production.

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[1] Bedore, L. (1999). The acquisition of Spanish. In O. Taylor & L. Leonard (Ed.), *Language acquisition across North America: Cross-cultural and cross-linguistic perspectives* (pp. 157–207). San Diego, CA: Singular.
[2] *Ibid.*
[3] Jimenez, B. C. (1987). Acquisition of Spanish consonants in children aged 3-5 years, 7 months. *Language, Speech, and Hearing Services in Schools, 18*, 357–363.
[4] Acevedo, M. (1993). Development of Spanish consonants in pre-school children. *Journal of Communication Disorders, 15*, 9–15.
[5] Langdon, H. W., & Cheng, L. R. L. (1992). *Hispanic children and adults with communicative disorders: Assessment and prevention*. Rockville, MD: Aspen Publishers.
[6] Jimenez, B. C. (1987). Acquisition of Spanish consonants in children aged 3-5 years, 7 months. *Language, Speech, and Hearing Services in Schools, 18*, 357–363.

**VIETNAMESE PHONEMIC INVENTORY**

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Retroflex | Palatal | Velar | Glottal |
|---|---|---|---|---|---|---|---|---|---|
| **Plosive** | p b | | | t d $t^h$ | | ʈ | c | k g | |
| **Nasal** | m | | | n | | | ɲ | ŋ | |
| **Trill** | | | | r | | | | | |
| **Tap or Flap** | | | | | | | | | |
| **Fricative** | | f v | | s z | ʃ ʒ | | | x | h |
| **Affricate** | | | | | | | | | |
| **Glides** (Approximant) | | | | | | | j | w | |
| **Liquid** (Lateral Approximant) | | | | l | | | | | |

Additional sounds not found on the chart: /kp̂/ and / ŋm/.

Reference:
Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.
Hwa-Froelich, D., Hodson, B. W., & Edwards, H. T. (2002). Characteristics of Vietnamese phonology. *American Journal of Speech-Language Pathology, 11*, 264–273.

## Facts on Vietnamese Phonology

- There are three major dialects of Vietnamese that are geographical in nature: northern, central, and southern.[1]
- Vietnamese is a tonal language. Each syllable has a tone and each tone changes the semantics of a word. Vietnamese tones include the following:[2]
  - level,
  - breathing rising,
  - breathing falling,
  - falling–rising,
  - creaky rising (low rising), and
  - low falling (low constricted).
- There are no consonant clusters.[3]
- Words are primarily monosyllabic, although some multisyllabic words exist.[4]
- There are six consonants used in final position: /p/, /t/, /k/, /m/, /n/, and /ŋ/.[5]
- Phonemes in English that are not found in Vietnamese are as follows:
  - /θ/, /ð/, /ʧ/, and /ʤ/.
- A number of dialectal variations exist in Vietnamese. The following phonemes only occur in some dialects:[6]
  - /z/—Northern dialect,
  - /j/—Central and Southern dialects,
  - /ʃ/—Central and Southern dialects,
  - /j/—Central and Southern dialects, and
  - /ɾ/.

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[1] Hwa-Froelich, D., Hodson, B. W., & Edwards, H. T. (2002). Characteristics of Vietnamese phonology. *American Journal of Speech-Language Pathology, 11*, 264–273.
[2] Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.
[3] *Ibid.*
[4] Hwa-Froelich, D., Hodson, B. W., & Edwards, H. T. (2002). Characteristics of Vietnamese phonology. *American Journal of Speech-Language Pathology, 11*, 264–273.
[5] Cheng, L. (1991). *Assessing Asian language performance: Guidelines for evaluating limited-English proficient students* (2nd ed.). Oceanside, CA: Academic Communication Associates.
[6] *Ibid.*

First Language Influence on English Phonemes

II-E.2

| Language | p | p | b | b | t | t | d | d | k | k | g | g | f | f | v | v | ɵ | ɵ | ð | ð | s | s | z | z | ʃ | ʃ | tʃ | tʃ | dʒ | dʒ | m | m | n | n | l | l | r | r |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amharic | | | | p | | | | t | | | | k | | | | f | | s | d,z | ɵ | | | s | s | | | | ʃ | ʒ | tʃ | | | | | | | R | |
| Arabic | p= | | | p | t= | | | t | | | | k | | | | f | s | s | d | ɵ,z | | | | s | | | | | ʒ | tʃ,ʒ | | | | | | ℜ l | R | |
| Cantonese | | | | p | | Ø | | t,Ø | | Ø | | k | | | w | f | f,t | f | d | f,ɵ | | | s | s | s | s,tʃ | | | | tʃ | | Ø | | Ø | n | Ø | w | |
| Catalan | p= | | | p | t= | Ø | | t,Ø | k= | | | k | | | | f | | f | d | ɵ | | | | s | | s,ʒ | ʃ | | ʒ | tʃ | | | | | | | R | |
| Creole French | p= | | | p | t= | Ø | | t,Ø | | | | k | | | | f | t | t,f | d | Ø,d | | | | s | | tʃ | ʃ | | tʃ | tʃ,ʒ | | | | Ø | | ℜ l | w,R | |
| Czech | p= | | | p | t= | Ø | | t,Ø | k= | | | k | | | w | f | t,s | t,s | d,z | ɵ,d | | | s | s | | | ʃ | | tʃ | | | | | Ø | | Ø | R | |
| Dutch | p= | | | p | t= | | | t | k= | | | k | | | | f | t | t,s | d | ɵ,d | | | | s | | | | | | tʃ | | | | | | | w | |
| Farsi | | | | p | | Ø | | t,Ø | | Ø | | k | | | w | f | t | t | d | d | | | | s | | | | ʃ | | tʃ,ʒ | | | | Ø | | | R | |
| French | p= | | | p | | Ø | | t,Ø | | | | k | | | | f | s,f | s,f | d,z | ɵ,z | | | s | s | tʃ | tʃ | ʃ | ʃ | ʒ | tʃ,ʒ | | | | Ø | | Ø | R,w | |
| German | p= | | | p | t= | | | t,Ø | | | | k | | | w | f | s | s,t | d,z | ɵ | | | s | s | | | ʃ | | tʃ,ʒ | tʃ | | | | Ø | | | R | |
| Greek | p= | | | p | t= | Ø | | t,Ø | k= | | | k | | | b | f | | t | d | ɵ | | | | s | s | s | | | | tʃ,ʒ | | | | | | Ø | R | |
| Guajarati | p= | | v | p | t= | Ø | | t,Ø | k= | | | k | p | | w | f | t | t | d | d | | | | s | s | | | | | tʃ,ʒ | | | | | | ℜ l | R | |
| Hebrew | | | | p | t= | Ø | | t,Ø | | | | k | | | | f | t,s | t,s | d,z | d,z | | | | s | | | | ʃ | | | tʃ | | | | | | ℜ l | R,w | |
| Hindi | p= | | | p | t= | Ø | | t,Ø | k= | | | k | p | | w | f,Ø | t | t | d | d | | | | s | | | | | ts | | tʃ,ʒ | | Ø | | Ø | | Ø | R | |
| Hungarian | p= | | | p | t= | Ø | | t,Ø | | | | k | | | w | f,Ø | t | t,s | d | ɵ,d | | | s | s | | | | | | tʃ | | | | Ø | | Ø | R | |
| Indonesian | p= | | | p | t= | Ø | | t,Ø | k= | | | k | | | w | f | t | t | d | ɵ,d | | | s | s | s | s | | ts | | tʃ,dz | | | | | | | R | |
| Italian | p= | | | p | t= | Ø | | t,Ø | k= | | | k | | | | f | t | t | d | ɵ,t | | | s | s | | s | ʃ | | tʃ | tʃ | | | | Ø | | Ø | R | |
| Japanese | | | v | p,v | | Ø | | t,Ø | | | | k | | | b | f,b | s | s | d,z | z,ɵ | | | dʒ | s | | | | ʃ | ʒ | ʒ,tʃ | | | | Ø | r,d | Ø | l,R | |
| Korean | | | | p,v | | Ø | | t,Ø | | | | k,Ø | | p | b | f,b | t,s | s,t | d | ɵ,d | | | dʒ | s | | | | | | tʃ,ʒ | | | | | r | Ø | l,R | |
| Malayalam | p= | | | p | t= | | | t | | | | k | | | w | | t | t | d | d | | | s | s | | | | | | tʃ | | | | | | | R | |
| Malaysian | | | | p | t= | Ø | | t,Ø | k= | | | k | | | w | f | t | f,t | d | d | | | | s | s | | | ʃ | | tʃ | | | | | | Ø | R | |
| Mandarin | | | | p | | Ø | | t,Ø | | | | k,Ø | | | w | f | s,t | s,t | d,z | ɵ,z | | | dʒ | s | | | | ʃ | | tʃ,ʒ | | | | Ø | r | Ø | R | |
| Polish | p= | | | p | | Ø | | t,Ø | | | | k | | | | f | t | t,s | d | t,ɵ | | | s | s | | | | | | tʃ | | | | Ø | | Ø | R | |
| Portugese | p= | | | p | t= | Ø | | t,Ø | | Ø | | k | | | | f | s,t | f,t | d,ɵ | ɵ | | z | | s | | | ʃ | ʃ | tʃ | tʃ,ʒ | | | | Ø | | Ø | R | |
| Punjabi | p= | | v | p | t= | Ø | | t,Ø | | | | k | | | w | f | t | t | d | d,ɵ | | | dʒ | s | | | | t | | tʃ | | | | | | | R | |
| Romanian | p= | | | p | t= | Ø | | t,Ø | | | | k | | | | f | t,s | t,s | d,z | d,z | | | | s | | | | | | tʃ | | | | | | | R | |
| Russian | p= | | | p | t= | Ø | | t,Ø | k= | | | k,Ø | | | w | f | s,t | s | d,z | ɵ,z | | | | s | | | ʃ | ʃ | tʃ | tʃ | | | | Ø | | Ø | R | |
| Spanish | | | b,v | p,v | | Ø | | t,Ø | | Ø | | k,Ø | | | b | f,Ø | s,t | t | d | ɵ,d | | | s | s | tʃ | tʃ | ʃ | ʃ | j,ʒ | ʃ,ʒ | | n,Ø | | Ø | | Ø | R | |
| Tagalog | p= | | | p,v | t= | Ø | | t,Ø | | Ø | | k | p | p | b | b,f | t | t,s | d | ɵ,d | | | s | s | s | s | | ts | | tʃ,dz | | | | | | | R | |
| Taiwanese | | | | p | | Ø | | t,Ø | | | | k,Ø | | | b | f | s | ɵ | d | | | | dʒ | s | | | | ʃ | | tʃ | | Ø | | | d,w | Ø | | |
| Tamil | p= | | | p | t= | Ø | | t,Ø | | | | k | | | w | f | t | t | d | d | | | | s | | | | | | tʃ,ʒ | | | | | | | R | |
| Thai | | | | p | t= | Ø | | t,Ø | | Ø | k | k | | | w | f | t | f,t | d | d,ɵ | | | s | s,d | tʃ | tʃ | ʃ | ʃ,t | tʃ | tʃ,ʒ | | | | Ø | r | Ø | l,R | |
| Turkish | | | | p | | | | t,Ø | | | | k | | | | f | t | t | d | d,ɵ | | | s | s | | | | | tʃ | tʃ | | | | | | | R | |
| Urdu | p= | | | p | t= | Ø | | t,Ø | | | k= | k | | | w | f | t | t | d | d | | | | s | | | | | | tʃ | | | | | | | R | |
| Vietnamese | p= | | | p,Ø | t= | Ø | | t,Ø | | Ø | k= | k,Ø | | Ø | | f,Ø | t | t,Ø | d,z | ɵ,t | | | dʒ | s,Ø | s | s | | ʃ | ʒ,tʃ | ʒ,tʃ | | | | Ø | | Ø | | | |

Adapted for PISD use by Marianela T. Blandon

Source: Foreign Accent Norms of American English for 40 of the World's Languages by Arthur J. Compton, Ph,D

Initial position

Final position

Ø omission

= unaspirated

R rolled /r/

ℜ l fronting of a back /l/

# III. Data Collection for Student Support Team

## A. HEALTH INFORMATION

Health information forms are essential to completing a comprehensive evaluation but are district-specific and therefore not included in this manual.

## B. PARENT AND TEACHER INFORMATION

**General student information from the teacher** is essential to completing a comprehensive evaluation but is district-specific and therefore not included in this manual.

**General student information from the parent** is essential to completing a comprehensive evaluation but is district-specific and therefore not included in this manual.

Parent/Teacher Articulation Observation forms in English and Spanish are provided on the following two pages.

## C. STUDENT SUPPORT TEAM DELIBERATIONS

Student support team deliberations are essential to completing a comprehensive evaluation. The forms are district-specific and therefore not included in this manual.

## D. RESULTS OF CLASSROOM INTERVENTIONS

Results of classroom interventions, including the student's response to focused interventions, are essential to completing a comprehensive evaluation. The forms are district-specific and therefore not included in this manual.

# Parent/Teacher Articulation Observations

Student: _____Date of Birth: _____ Child's Age: _____
Campus: _____
Person Completing Form: _____Date Form Completed: _____

**Directions:** Listen as your child/student engages in conversation with you. Indicate which sounds you note the child is producing incorrectly (+ indicates correct, – indicates incorrect). You may circle the words indicating the sound is said incorrectly in the beginning, middle, or end of the word. You may consider any words the child says with the indicated sound, not just those listed.

| **Sound** | + | – | **Sound** | + | – |
|---|---|---|---|---|---|
| /p/ as in pig, apple, cup | | | /f/ as in food, coffee, off | | |
| /b/ as in baby, web | | | /v/ as in vote, oven, stove | | |
| /t/ as in toy, water, bat | | | /s/ as in sock, missing, ice | | |
| /d/ as in doll, middle, bed | | | /z/ as in zoo, fuzzy, fuzz | | |
| /k/ as in king, pocket, rake | | | /sh/ as in shoe, wishing, fish | | |
| /g/ as in goat, buggy, tag | | | /zh/ as in pleasure | | |
| /m/ as in mad, hammer, thumb | | | /ch/ as in chair, watching, pitch | | |
| /n/ as in name, funny, fan | | | /j/ as in judge, engine | | |
| /ng/ as in finger, ring | | | /th/ (soft) as in thing, healthy, tooth | | |
| /r/ as in run, carrot | | | /th/ (hard) as in those, brother, bathe | | |
| /er/ as in early, nurse, fur | | | /w/ as in way, anyway | | |
| /l/ as in lion, pillow, tall | | | /y/ as in yellow, canyon | | |
| /h/ as in hat, anyhow | | | **Number of missed sounds:** | | |

**To the parent:** Do you feel the sound errors you noted are typical for children who are your child's age? Yes or No (Please circle.)

**Please list** at least 20 words your child has difficulty pronouncing:_____
_____
_____
_____

**To the teacher:** Do you feel these sound errors adversely affect the student's educational performance? Yes or No (Please circle.)
If yes, please comment:_____
_____
_____

# Observaciones de Articulación Tomadas por los Padres/Maestros

Estudiante: _____ Fecha_____
Fecha de nacimiento: _____ Edad: _____
Escuela:_____
Persona completando este formulario: _____

**Direcciones:** Escuche a su hijo(a)/estudiante durante el tiempo que conversa con Ud. Preste atención a como su hijo(a)/estudiante pronuncia las palabras. Indique cuales sonidos nota que su hijo(a)/estudiante no pronuncia bien. Marque con una **[X]** en el **"Si"** si su hijo pronuncia el sonido bien o marque con una **[X]** en el **"No"** si su hijo pronuncia el sonido mal.

| **Sonido** | **C.** | **Sonido** | | |
|---|---|---|---|---|
| | | | Si | No |
| "p" como en: pato, sopa | | "f" como en: foco, sofá | | |
| "b" como en: beso, caballo | | "s" como en: zapato, rosa, más | | |
| "t" como en: tía, pato | | "ll" o "y" como en: llave, calle, yo, ayuda | | |
| "d" como en: dos, vestido, sed | | "ch" como en: chico, leche | | |
| "k" como en: casa, boca | | "rr" como en: ratón, perro | | |
| "g" como en: gato, lago | | "ñ" como en: niño | | |
| "m" como en: mesa, cama, | | /x/ o "j" como en: jabón, caja, reloj | | |
| "n" como en: no, mano, pan | | /w/ o "gw" como en: hueso | | |
| "r" como en: toro, comer, | | | | |
| "l" como en: lápiz, pelota, sal | | | | |

***Recuerde que algunos de los consonantes ("b", "d", "g") tienen diferentes sonidos entre vocales(**como el sonido "d" en "dolor" no es igual que en "nido" o la "b" en boca no es igual que "llave"). **Otros cambios y omisiones de consonantes pueden existir y ser aceptable de acuerdo a su dialecto.**

Por favor escribe algunas palabras que son difíciles de pronunciar para su hijo(a)/estudiante:____
_____
_____
_____
_____

# IV. Standardized Assessment of Articulation

# A. GUIDELINES FOR ADMINISTERING STANDARDIZED TESTS OF ARTICULATION TO STUDENTS FROM CLD BACKGROUNDS

1. Guidelines for administering the standardized test:
   a. It is important to follow the standardized instructions in the manual. Deviations from the standardized procedure must be reported and results interpreted in light of those modifications.
      (1) This is true for formal tests of articulation in English and Spanish. According to most manuals, it is not appropriate to report scores if procedures or test items have been altered or modified.
      (2) The SLP should always consider if test items are culturally/linguistically appropriate when working with a student with a CLD background. For example "pelota," "bola," "balón" all mean "ball" in different Spanish dialects.
   b. The most common concern in test administration is children being unable to name the pictures.
      (1) The most commonly used solution is to ask the child to imitate the word.
      (2) Differences between spontaneous and imitated words must be considered.
      (3) Kresheck & Socolofsky (1972), Templin (1957), Siegel et al. (1963), and Paynter & Bumpas (1977) all compared spontaneous naming and imitation of words without clear results as to a difference in how the child produces the word. The question as to whether or not it would clinically make any difference has not been answered.
      (4) Goldstein, Fabiano, & Iglesias (2004) found that elicitation procedures did not artificially alter severity scores or PCC in Spanish-speaking children. They recommended that SLPs obtain imitated responses to examine errors patterns in children's production. Furthermore, obtaining imitated productions provides information on a child's stimulability (Powell & Miccio, 1996; Stoel-Gammon & Stone, 1990) which can be instrumental in determining prognosis (Fokes, 1982) and goal implementation.
      (5) At a minimum, the speech-language pathologist (SLP) should record whether the production occurred in spontaneous naming or an imitation of the word.

2. Guidelines for transcribing standardized tests:
   a. Every word that has any articulation error should be transcribed in its entirety using either diacritical markings or an expanded phonetic alphabet.
   b. Words articulated without error need not be transcribed.

3. Guidelines for completing the test protocol:
   a. All identifying information should be completed.
   b. If it is appropriate to report standardized scores, report only percentile ranks.
   c. Age scores should not be entered on the form.

4. Guidelines for assessing CLD speakers of English:
    a. Assessment will be guided by student's cultural and linguistic background.
    b. Articulation and phonological assessment may be administered only in the student's native language if exposure to other language(s) (e.g., English) is negligible (Goldstein, 2000).
    c. When more than one language is spoken by the student, articulation skills should be assessed in all languages.
    d. Interpretation of results must consider the influence of each phonological system on the other(s) (i.e., dialectal variation).
    e. Determination of articulation impairment cannot be based only on the phonology of English/L2.
    f. If the student's articulation skills are within normal limits in the primary language (L1), then impairment does not exist.
    g. Dialectal variations cannot be considered as articulation errors. It is crucial to review phoneme production in light of expected/possible first language or dialectal interference. For example, b/v (Spanish-influenced English) or w/v (Farsi-influenced English).
    h. If non-standard productions of English phonemes are attributed to first language or dialectal influence, **they should not** be considered "errors." Again, dialectal variations need to be omitted from the count of "error" phonemes. For this reason, it is generally not appropriate to calculate standard scores or percentile ranks since the standard procedure has been modified. **Therefore, the data collected via administration of the standardized English articulation measure will need to be described in a narrative form rather than as scores/ranks.**
    i. On the FIE report, include a brief explanation indicating which phonemes were articulated in "error" and which phonemes were misarticulated due to first language influence and/or dialectal interference.
    j. Assessment utilizing an interpreter: The FIE report is written by the SLP in light of the information obtained via the interpreter. The SLP should ask the interpreter appropriate questions to obtain the information required to complete the evaluation and make proper recommendations.

## B. STANDARDIZED TESTS OF ARTICULATION

# Goldman-Fristoe 2* Test of Articulation

## Goldman-Fristoe 2 Test Information

### GFTA-2

- Purpose is to assess an individual's articulation of consonant sounds used in Standard American English.
- The test samples both spontaneous and imitative sound production.
- There are three sections included in the test: sounds-in-words, sounds-in-sentences, and stimulability.
- Normative information is available for interpreting the results of the sounds-in-words section.
- No reading is required of the examinee.

### Sounds-in-words section

- Takes approximately 5 to 15 minutes to administer.
- Contains 34 picture plates with 53 target words.
- Tests 61 consonant sounds in initial, medial, and final position.
- Tests 16 consonant clusters in initial position.

### Sounds-in-sentences section

Provides semi-structured observation of the examinee's spontaneous sound production by asking the examinee to retell one or two simple picture-based stories.

### Stimulability section

Assesses examinee's ability to correctly produce a previously misarticulated sound after the examinee watches and listens to the examiner's production.

### Notations:

- Substitution: Write substituted sound in cell
- Omission: Mark cell with an Ø
- Distortion: Write 2 in cell for mild distortion, write 3 in cell for severe distortion
- Addition: Write additional sound plus the correct sound

### GFTA-2 norms information

- Normed for ages 2-0 through 21-11
- Normed on a nationwide sample of 2,350 examinees. This sample matched most recent U.S. Census data on gender, race/ethnicity, region, and mother's education.
- Added standard scores: mean = 100; standard deviation = 15
- There is not a precise age at which use of any given consonant sound "turns on."
- 23 of 25 sounds are included on the test. The two sounds not included are:
  /hw/: Not phonemic in most dialects and not normally a focus in therapy.
  /ʒ/: Least frequently occurring consonant; not a high priority in therapy, and the words that contain this sound are typically outside of a young child's vocabulary.

*Goldman, R., & Fristoe, M. (2000). *Goldman-Fristoe Test of Articulation,* 2nd Edition. American Guidance Service.

## *Scoring*

***Standard scores:***

- *A standard score indicates the distance of an individual's raw score from the average, taking into account the variability of scores among examinees of that age.*
- *Distribution of articulation errors across ages are greatly skewed, so counting the number of errors will not create a normal distribution at most ages.*
- *Percentiles should be used.*

***Percentile rank:***

- *A percentile rank indicates the percentage of individuals in the reference group who performed at or below the examinee's level.*
- *In the case of articulation, percentiles may be a more appropriate way of representing the child's ability than standard scores.*
- *Percentiles are an ordinal or rank order measurement, rather than an interval scale of measurement (standard score).*
- *Percentiles cannot be arithmetically manipulated.*

**Standardization**

- May–November 1999; done to collect data to develop national norms.
- 2,350 examinees between ages 2-0 and 21-11 were tested at more than 300 sites nationwide.
- A random sampling procedure selected 1,175 males and 1,175 females.
- The authors looked at genders separately because of the gender differences in developmental growth of articulation abilities.
- There was an even distribution by region and socioeconomic status (based on mother's education).
- Special education children were included in representation.

**Internal reliability: the internal consistency of the items or tasks on the test**

- High internal reliability reflects that all items of the test are measuring the same type of performance or content domain.
- GFTA-2 task is to look at consonant articulation ability.
- The median reliability was .96 for females and .94 for males.

**Standard Error of Measurement (SEM):**

- When the individual's standard score on a test is banded by its SEM, there is a 68% chance that individual's true score falls within this interval.
- Median of SEM on the sounds-in-words section is 3.0 for females and 3.7 for males.

**Test/re-test:**

- The test was administered twice to 53 examinees ranging from ages 4-6 to 7-0.
- Interval between tests ranged from the same day to 34 days; median interval was 14 days.
- Same examiner administered both tests.
- The percent of agreement for presence of error between the first and second testing for each test item was high. See Table 6.3 on p. 53 in test manual.

**Interrater reliability: Two examiners tested the same sample of 30 people twice.**

- Their agreements ranged from 100% to 70%.
- For more than half of the judgments, the 2 examiners were in 90% or greater agreement.
- See Table 6.4 on p. 54 in test manual.

**Content validity: Do the items tested adequately sample the domain that the test says it measures?**

- GFTA-2 tests 23 of 25 consonants; the 2 not included are on lower intervention priority; 16 more commonly occurring consonant clusters are used.

**Construct validity: Is the test measuring what the test says it measures?**

- GFTA-2 claims to measure the ability to correctly articulate consonants and consonant clusters.
- The evidence is provided by the developmental progression of total raw scores and of item scores.
- Table 6.5 on p. 55 in the test manual shows a steady decrease in mean raw scores as measured by the number of articulation errors.
- Table 6.6 on p. 56 in the test manual indicates the age at which 85% of the standardization sample correctly produced the consonant.

## Goldman-Fristoe 2 Ages for Concern

| # GFTA errors | Female (yr.-mo.) | Male (yr.-mo.) |
|---|---|---|
| 3 | 11 | 13 |
| 4 | 10 | 11 |
| 5 | 9-6 | 11 |
| 6 | 8-6 | 10 |
| 7 | 8-3 | 9 |
| 8 | 8 | 8-6 |
| 9 | 7-9 | 8-3 |
| 10 | 7-6 | 8-3 |
| 11 | 7-3 | 8 |
| 12 | 7 | 7-9 |
| 13 | 6-8 | 7-9 |
| 14 | 6-8 | 7-9 |
| 15 | 6-6 | 7-6 |
| 16 | 6-2 | 7-3 |
| 17 | 6-2 | 7 |
| 18 | 6 | 7 |
| 19 | 5-10 | 6-10 |
| 20 | 5-6 | 6-8 |
| 21 | 5-4 | 6-8 |
| 22 | 5-4 | 6-6 |
| 23 | 5-4 | 6-4 |
| 24 | 5-4 | 6-4 |
| 25 | 5-4 | 6-2 |
| 26 | 5-2 | 6 |
| 27 | 5-2 | 5-10 |
| 28 | 5-0 | 5-8 |
| 29 | 4-10 | 5-8 |
| 30 | 4-10 | 5-4 |
| 31 | 4-10 | 5-4 |
| 32–33 | 4-8 | 5-2 |
| 34–35 | 4-6 | 5-0 |
| 36–37 | 4-6 | 4-10 |
| 38–39 | 4-4 | 4-8 |
| 40–41 | 4-2 | 4-6 |
| 42–43 | 4-0 | 4-4 |
| 44 | 3-10 | 4-2 |
| 45–46 | 3-10 | 4-0 |
| 47–48 | 3-8 | 3-10 |
| 49 | 3-6 | 3-8 |
| 50 | 3-6 | 3-6 |

f/v 8 errors
k/g 11
l 9
sh 3
ch 3
s/z 10
r 9
th 5

# Arizona Articulation Proficiency Scale, 3rd Revision* (Arizona 3) Information Sheet

## Test

- Simple picture presentation format (42 line drawing pictures)
- Administration and scoring can take 2 to 10 minutes.
- Scoring is done by a total score on a scale 1 to 100.
- Column labeled "90% Mastery Age" lists the youngest age group in which 90% of the participants were able to produce the sound correctly.
- Test covers all major speech sounds in the English language, including initial and final consonants, blends, diphthongs, and vowels (67 sounds tested).

## Four major purposes of the Arizona 3 assessment

- Determine whether a child is eligible for services.
- Determine whether an in-depth assessment is needed in related areas.
- Identify strengths and weaknesses of the child.
- Develop an individualized therapy program for the child.

## Recording errors

- Record type of error for substitution
- Omissions (Ø)
- Distortions (X)
- Tongue Thrust (TT)
- Protrusional lisp (pro)
- Lateral lisp (lat)

## Scoring the test

- **Total score:** based on the frequency of occurrence value for the speech sounds produced correctly. This score is put in normative context by comparing it to same age groups and also gender in some cases.
    - Each sound is weighted according to how frequently it occurs in American speech. Sound values were determined by the Barker (1960) and Barker & England (1962) studies.
    - The total of all 67 values adds up to 100.
    - This weighted value leads to more generalization on how the sound will impact the examinee's intelligibility on a daily basis.

- **Standardized score:** The total score can be used to compare individuals to their age peers. Mean of 100; standard deviation of 15.
    - For ages 1-6 to 5-11, the normative scores are in separate tables depending on gender.
    - For ages 6-0 to 18-11, gender has not proved to be a clinical relevant factor in development; for this group total score is comparedto age norms.

- **Z-scores:** Mean of 0 and standard deviation of 1
  Example: If an examinee scores a –1 Z-score, it means they are one standard deviation below the mean.

- **Normal curve equivalents:** Convert percentiles to interval scores to compare individuals or groups.

- **Percentile rank:** Placement of the examinee's performance in the normative sample. Authors of this test recommend use of standardized Z-scores and standard scores for this measure.

- **Optional assessment tasks:** These tasks are not formally standardized (except the word reading administration) but are tasks that can be used to gather more informal information.
    - Word Reading Administration: alternate method for administering the standard Arizona 3 by allowing the examinees to read a list of printed words
        - Make sure the examinee reads slowly to be able to record errors.
        - This is not meant to be a reading task; if the examinee has difficulty reading the words, go back to pictures.
        - You can still calculate total and standardized scores.

    - Language Screening Task: small sample of the examinee's overall language and cognitive skills
        - The picture cards provide brief questions or verbal prompts related to language developmental milestones.
        - The language screening items show an age range within which children should be able to produce specific responses (50% at a younger age and 90% at an older age).

    - Continuous Speech Language Sample: can collect a short sample of the examinee's spontaneous utterances
        - Two additional cards are shown after the standard articulation picture cards.
        - The cards show groups of children involved in a variety of activities.
        - These cards are designed to encourage the examinee to describe the activities they see or recollections of their own activities.
        - The examiner should record verbatim the sample given by the examinee. No more than about 100 words need to be recorded. With younger children you might only get a couple of utterances.
        - All articulation errors should be noted.

    - Speech Intelligibility Interpretation Values: The total score can be converted into an intelligibility rating. Since each sound is weighted according to its impact in everyday speech, the total score can be generalized to show how much the articulation errors impact intelligibility. This is NOT age-normed because it is a descriptive element. Descriptive information would not change based on the child's age.

    - Level of Articulatory Impairment: Used for evaluating assessment results. The table defines ranges to represent mild, moderate, or severe levels of articulatory impairment. These ratings should be used as rough estimates based on the performance of the normative sample and using the standard deviation as the criterion for each level.

    - Percentage of Improvement Scores: Used to evaluate and retest to determine the percentage of improvement an examinee has made after a therapy plan has been put in place. There is a formula to follow that is provided on the last page of the test booklet.

    - Developmental Age Scores: Relates the total score to a normative group with the closest mean total score. *The use of this score is discouraged because it is often misunderstood.*

## Standardization

- Re-standardized on a sample of 5, 515 individuals who represent the U.S. population in the years 1998–1999, according to
    - Geographic region (32 sites in 20 different states)
    - Ethnicity
    - Parents' education level
    - Equal number of girls and boys from 18 months to 19 years

## Test Reliability

- Standard Error of Measurement:
    - Estimate of how much an individual examinee's scores may vary in a range around the actual score.
    - It is important to keep this range in mind when looking at qualification.

- Internal Consistency:
    - Estimate of how clearly the individual test items are intercorrelated and ordered in difficulty across a set of students in a single study.
    - Estimates have been high across the variety of ages.
    - The study reported numbers ranging from .96 to .78, with a median of .925 for ages 1-6 through 1-11. The lower estimates were with older age groups.

- Rater Reliability:
    - Interrater reliability: consistency of test scores in scoring by different examiners
        - Mean interrater reliability over 3-year study was a coefficient of .82 with a range of .68 to .99; achieved by 16 examiners on 13 subjects in three phases of study.
    - Intrarater reliability: consistency of test scores in scoring by the same examiner
        - In a study of 29 children (1976), the examined intrarater reliability of 5 children was 95% averaged across all target sounds.

- Test-Retest Reliability:
    - 259 examinees, ages 1-6 to 19-5; test-retest interval was 1 week
    - Median correlation was $r = .97$

## Test Validity

- Articulation test was administered to 45 children ages 6–12; articulation ranged from normal to severely impaired.
- One additional minute of spontaneous speech was tape recorded.
- Ten judges did the rating. The speech sample ratings were correlated with the Arizona total scores and there was a correlation of .92.
- This high correlation indicates a valid measure of articulatory proficiency.
- The Arizona 3 was compared to the Goldman-Fristoe 2: 612 examinees, ages 1-6 to 16-11. The correlation score was $r = .88$.

*Fudala, Janet B., Arizona Articulation Proficiency Scale, Third Revision, Western Psychological Services, 2000.

## Spanish Preschool Articulation Test (SPAT)
## Information Sheet

**History:**

- Author: Lance Tsugawa, M. S., CCC
- Spanish translation by Hermelinda Gonzalez Gomez
- Copyright 2002, Lexicon Press

**SPAT**

- Purpose is to assess specific phonemes.
- Examines Spanish-speaking preschool age children.
- Examines specific phonemes in words only.
- Normative information is available for interpreting the results of specific phonemes in words.
- No reading is required of the examinee.

**Assessment**

- Takes approximately 5 to 10 minutes to administer.
- Test contains 13 stimulus picture cards.
- Test contains 26 pictures.
- Protocol contains 40 words.
- 17 initial phonemes; 19 medial phonemes; 4 final phonemes
- Notations of variation of production of 5 of the specific phonemes

**Test Administration**

- Standard testing procedures utilized.
- Child sits directly in front of examiner.
- Test booklet is open with pictures facing child.
- Examiner requests that child name each picture.
- If the child is unable to name the picture, the examiner will instruct the child by stating, "Say (picture name)."

**Notations**

- After each response, errors are indicated by placing an **X** in the appropriate cell on the protocol
- Omissions are denoted by a minus (-)
- Substitutions are denoted by indication of phoneme produced e.g., t/k
- Distortions are denoted by a d2 or d3

**SPAT Norms information**

- Norms for ages 2-6 to 5-5
- Sample population included 300 Latino children who attended the Migrant Head Start program in Washington County, Oregon.
- Fifty children were tested at six-month intervals.
- Primary language was Spanish.
- Majority were monolingual Spanish speakers with some exposure to English in environment.

**Scoring**

***Standard Scores:***

- Standard scores derived using a mean of 100 and standard deviation of 15.

- Standard score of 85 or above may be considered within normal limits.

**Spanish Phonological Information**

- Includes Spanish phonemes such as the single tap /r/ and the trill /r/.
- Allows for some dialectal variations.
- Contains descriptions for consonantal sounds.

**Use**

- May be used as a screening instrument.
- Paraprofessionals and trained aides may use the SPAT to screen observing standard test procedures.

**Tables**

- Data related to raw scores, standard deviations, and age groups
- Percentiles and standard scores
- Sample population information by age groups and gender
- Age of customary sound acquisition to be used as a reference only
- Age of customary sound acquisition for the sample population

**Contextual Probes of Articulation Competence-Spanish (CPAC-S)**
**Information Sheet**

**History:**

- Authors: Brian Goldstein, Ph.D, and Aquiles Iglesias, Ph.D.
- Copyright 2006, Super Duper Publications
- www.superduperinc.com $278.00; kit includes CPAC-S Normative Data Manual (2009)

**CPAC-S**

- Purpose is to provide a comprehensive clinical management program to probe production of all Spanish phonemes in a variety of phonetic and phonological contexts, examine performance across different speech production levels, and help plan intervention.
- Includes two assessments: The Quick Screen and the Full Assessment.
- The Quick Screen contains 17 items, which are highlighted on the score sheets in yellow.
- The Full Assessment provides a comprehensive analysis of phonological skills.
- The clinician will be able to determine which specific segmental and/or phonological process probes need to be administered upon completing the screen or assessment.
- Norm-referenced for ages 3; 0-8; 11; standard score and percentile ranks.

**The Quick Screen**

- Takes approximately 5 to 10 minutes to administer.
- Contains 17 items.
- The purpose of this screening assessment is to make an immediate link between the client's errors and the consonant and phonological probes.
- The items corresponding to the Quick Screen are highlighted in yellow on the assessment form.

**The Full Assessment**

- Takes approximately 20 to 25 minutes to administer.
- Contains 64 items.
- Probes all the Spanish consonants and a large number of phonological patterns.
- A CD-ROM (both Windows® and Macintosh®) is included, and all forms are reproducible. The CPAC-S uses Adobe® Acrobat® Reader®. Forms may also be copied from the manual.

**Test Administration**

- The quick screen and /or comprehensive assessment is administered first to assess the client's articulatory and phonological performance.
- Upon completion of the assessment, the SLP can utilize that information to gather a contextual view of articulation and phonology in words, clusters, and sentences.
- The CPAC-S probes include 19 consonant probes.
- There are ten phonological pattern probes designed to assess phonological patterns commonly occurring in speech.

**Notations**

- The assessment form contains the phonetic transcription showing the allophones of the consonant sounds. There is a space for transcription of the client's response during the assessment.
- The next column provides information regarding all the phonemes in the stimulus word that are found in the initial position.

- If there is an error, you make the appropriate mark using traditional scoring notations: Distortion—X, Substitution—record the substituted phone, Omission—record "-", Addition—record "+" and the added phone.
- The next column allows you to record the phonological process, if any, observed in the initial position of the target word.
- The next column is for recording all phonemes in the stimulus word that are found in the Final position.
- The last column under the Final phonemes tested provides a space for the clinician to record what type of phonological process, if any, the client produced during the assessment.

**Development of the CPAC-S**

- The assessment component is designed specifically for children. However, it is appropriate for clients in the age range from preschool through adult.

**Scoring**

- There is a response analyzer available for the CPAC-S**.** You must first purchase the CPAC™-S Normative Data Manual. Then, go to www.superduperinc.com/analyzer and enter the unique product key found on the inside cover of your manual. The CPAC™-S Analyzer generates standard scores and percentile ranks. Additionally, the analyzer will identify and score dialectal variations as correct responses.

**Spanish Phonological information**

- Normative data of the percentage-of-occurrence of phonological patterns in 3- and 4-year-old Spanish-speaking children is provided.
- Percentage-of-occurrence of phonological patterns in 5-year-old Spanish-English bilingual children data is provided.
- Segmental acquisition in Spanish-speaking children is provided.
- Table of Phonemes and Allophones of spoken Spanish is provided.
- Table of description of Mexican, Cuban, and Puerto Rican Spanish dialects is provided.
- Table of Frequency-of-Occurrence of Phonemes on the assessment compared with Spoken Spanish is provided.
- Table of description of the phonological patterns assessed is provided.
- It is recommended for the clients' dialect to be taken into account when his/her phonology is assessed.

**Use**

- May be used as a screener.
- May be used as a full assessment tool.
- Bilingual Spanish/English-speaking speech-language pathologists may administer the test.
- The monolingual SLP may collaborate with a trained interpreter to administer the test.
- It is recommended that the examiner become familiar with the dialectical background of the client to understand the influences on his/her articulation and phonology skills.

**Standardization**

- 1127 Spanish-speaking examinees between ages 3;0 and 8;11 were tested in 4 regions nationwide as well as in Puerto Rico and Mexico .
- There was some inequality in the distribution of participants by region and gender; however, authors note that the differences had "little impact on the normative data as evidenced in the means." (p. 27). Age, ethnicity, SES, and mother's education level were also accounted for in the distribution

- 10% of the sample were children receiving special education services—3% were identified as speech impaired

## Internal reliability:

- High internal reliability reflects that all items of the test are measuring the same type of performance or content domain.
- Internal reliability (Cronbach's alpha) for age groups ranged from a low of .89 (7:0 – 7:11) to a high of .97 (3:0 – 3:5, 4:0 – 4:5, 4:6 – 4;11)

## Test/re-test reliability:

- The test was administered twice to 32 examinees ranging from ages 3;0- 8;11.
- Interval for retest was 14 – 30 days.
- Correlations between test and retest were high and significant (Pearson's r = .94, Spearman's rho = .92)

## Interrater reliability:

- Three trained examiners each scored the results for 35 children.
- Their agreements ranged from .98 - .99, indicating very high consistency

**Content validity: Do the items tested adequately sample the domain that the test says it measures?**

- Systematic construction of items was noted. Frequency of occurrence of phones in the assessment corresponded to data regarding frequency of occurrence of phonemes in spoken Spanish.

**Construct validity: Is the test measuring what the test says it measures?**

- The measure was designed to target phonological patterns as they occur in Spanish, using multiple opportunities for production of each targeted pattern.

**Sensitivity and Specificity: How well does the test identify impairment?**

- The test was administered to a clinical group 161 children with diagnosed speech sound disorders, and a control group of 161 children matched for age and gender (with no speech impairment)
- With a 1 SD cutoff score, the measure correctly identified 91% of the children with speech sound disorders, and 94% of the typically developing children.
- Using a 1.5 SD cutoff score, the measure correctly identified 80% of the children with speech sound disorders, and 98% of the typically developing children.

# C. USE OF DEVELOPMENTAL NORMS FOR ASSESSMENT OF CLD AND NON-STANDARD DIALECT SPEAKERS

Cultural diversity and dialectal differences must be addressed when determining eligibility as Speech Impaired. The Texas Speech-Language Hearing Association Task Force on Cultural and Linguistic Diversity (CLD) advocates the use of probes, informal evaluations, and the use of developmental norms along with formal evaluations during assessment of articulation and phonology of English language learners and speakers of non-standard dialects.

Developmental norms must be used with caution and should never be the only criteria used in the decision-making process.

The following steps are recommended:

- Once standardized and formal assessments are complete, list phonemes in error for each language assessed.
    - For speakers of non-standard English:
        - Review dialectal differences.
    - For English language learners:
        - Review production of English phonemes in error that may be attributed to native language influence.
        - Keep in mind that some phonemes may not exist in the individual's native language and therefore may influence production in English.
        - Interpreters may help in development of probes for target phonemes in error.
- Verify which phoneme errors are considered appropriate both linguistically and developmentally and probe those phonemes.
- Use the provided probes or create a list of 10 probes for each phoneme in error.
- Count how many words the child produced **incorrectly per number of words;** this will yield a percentage (%) of incorrectly produced phonemes.
- Determine if the phonemes in error are considered to be significant.
- If the student produced the probed phoneme in error more than 50% of the time, it is considered to be significant.
- Age norms should be appropriate for the population that you are assessing. It is important to recognize the individual's cultural background and research the best possible developmental norm references.
- When age norms are not available, consider early targets for bilingual speech as suggested by Gildersleeve-Neumann, 2005, based on studies by the following authors: Davis & MacNeilage, 1995; Gildersleeve-Neumann, 2001; MacNeilage et al.; Stoel-Gammon, 1995, 1991. These early sounds are stops, nasals, and glides at the labial and coronal places of articulation (e.g., stops /p/, /b/, /t/, /d/; nasals /n/, /m/; glides /j/ /w/), mid- and low-front and central vowels.

**References**

Gildersleeve-Neumann, C. (2005). A framework for speech sound intervention. *Perspectives on Communication Disorders in Culturally and Linguistically Diverse Populations*, 12 (2), 10–13.

**Resources for Articulation Assessment of Students from CLD Backgrounds**

Cheng, L. (1991). *Assessing Asian language performance* (2nd ed.). Oceanside, CA.: Academic Communication Associates.

Goldstein, B. (2000). *Cultural and linguistic diversity resource guide for speech-language pathologists.* San Diego: Singular Thomson Learning.

Gildersleeve-Neumann, C. (2005). A framework for speech sound intervention. *Perspectives on Communication Disorders in Culturally and Linguistically Diverse Populations*, 12 (2), 10–13.

McLeod, S. (Ed.). (2007). *The international guide to speech acquisition*. Clifton Park, NY: Thomson Delmar Learning.

Peña-Brooks, A., & Hegde, M. N. (2000). *Assessment and treatment of articulation & phonology disorders in children.* Austin: Pro-Ed.

## D. PHONOLOGICAL CHARACTERISTICS OR INFLUENCES OF SPECIFIC LANGUAGES: REFERENCE TABLES

| Reference | Page | Table | Title |
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| *Cheng, 1991* | 27 | 2-2 | Mandarin Initial Consonants |
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| | 31 | 2-10 | Possible Phonetic Interferences of Mandarin in Learning English |
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| | 81 | Figure 4-3 | Classes of Words in Chamorro |
| *Goldstein, 2000* | 12 | 1-6 | Some Features of AAE Phonology |
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| | 22 | 1-14 | Characteristics of Spanish-Influenced English |
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| | 26 | 1-18 | Phonological Acquisition in Spanish Speakers |
| | 27 | 1-19 | Age of Acquisition of Phonemes in Spanish |
| | 38 | 1-27 | Consonant Inventory and Acquisition of Jordanian Arabic |
| | 39-41 | | Information about Mandarin, Cantonese, Vietnamese, Laotian, Hmong, Khmer, Korean, Japanese, Pilipino, Hawaiian/Hawaiian Creole |
| *Peña-Brooks, 2000* | 155 | Figure 3.1 | Chronology of the Active Duration and Eventual Suppression of Various Phonological Processes |
| | 157 | 3-5 | Percentage of Occurrence of Phonological Processes in Children 3-0 to 5-0 |
| | 157 | 3-6 | Percentage of Occurrence of Phonological Processes for Three Chronological Age Groups |
| | 210 | 5-2 | The Phonological Characteristics of African American English |
| | 223 | 5-5 | Major Articulatory and Phonologic Characteristics of Spanish-Influenced English |
| | 230 | 5-7 | Major Articulatory and Phonological Characteristics of English Influenced by Asian Languages |

**References**


Cheng, L. (1991). *Assessing Asian language performance*, 2nd ed. Oceanside, CA.: Academic Communication Associates.

Goldstein, B. (2000). *Cultural and linguistic diversity resource guide for speech-language pathologists.* San Diego: Singular Thomson Learning.

Peña-Brooks, A., & Hegde, M. N. (2000). *Assessment and treatment of articulation & phonology disorders in children.* Austin: Pro-Ed.

# E. WEBSITES FOR PHONEMIC REPERTOIRES OF VARIOUS LANGUAGES

The following website, "Speech Accent Archive," contains the phonemic repertoires of hundreds of languages. Printable charts are available. Furthermore, some description is made of the influence of each language on English articulation (the resulting dialectal variations). Audio clips are presented with the descriptions.

This is a carefully monitored and continuously updated site (George Mason University linguistics department).

http://accent.gmu.edu/

The following website, "Phonetics: The Sounds of English and Spanish," contains animated libraries of the phonetic sounds of English, German, and Spanish. It can be a useful tool in both therapy and assessment.

http://www.uiowa.edu/~acadtech/phonetics/#

The website "Wikipedia" is a continuously updated public encyclopedia which contains information regarding the linguistic and phonetic structures of many languages.

http://.en.wikipedia.org

# V. Criterion-Referenced/Informal Assessment of Articulation

# A. INSTRUCTIONS FOR CRITERION-REFERENCED ASSESSMENT OF ARTICULATION

## Spanish Articulation Measures (SAM) Information Sheet

**History**

- Author: Larry J. Mattes
- Copyright 1995, Academic Communication Associates
- www.acadcom.com $75.00

**SAM**

- Purpose is to informally assess Spanish consonants and phonological processes.
- Section 1 consists of four general measures:
    - *Spontaneous Word Production Task*
    - *Word Repetition Articulation Screening*
    - *Sound Stimulability in Syllables*
    - *Articulation in Conversational Speech*
- Section 2 includes seven criterion-referenced probes (e.g., stridents, nasals, velars).
- Section 3 includes 21 word-repetition tasks (specific consonants or consonant clusters).
- The *Spanish Articulation Observation Record* can be completed by the classroom teacher.
- Normative data are reported from the research literature (test is not standardized).

**Assessment**

- Takes approximately 5 to 15 minutes to administer.
- Contains 40 stimulus pictures.
- Assesses the production of the 18 Spanish consonants commonly used by Spanish speakers in the United States.
- All forms are reproducible.

**Test Administration**

- It is recommended that the *Spontaneous Word Production Task* be administered first. Depending on the initial information obtained, additional measures from the inventory may need to be conducted.
- The contents can be modified to meet the local dialect.
- Transcribe all words the child provides.
- Present prompts, as necessary, to elicit responses.
- *Spontaneous Word Production Task:* Child's task is to label each picture.
- *Word Repetition Articulation Screening:* Child repeats words read by the examiner.
- *Sound Stimulability in Syllables:* Child repeats syllables modeled by the examiner.
- *Articulation in Conversational Speech:* Transcribe first 100 words of natural conversation.
- *Spontaneous Production Probes:* Word level (child labels pictures), sentence level (child makes up sentences for the pictures).
- *Word Repetition Probes:* Child repeats words modeled by the examiner.

**Notations**

- Record a check mark in the "transcription" column if the word is produced correctly.
- Record consonant misarticulations in the appropriate column.
- Record a plus (+) if the consonant being tested is produced correctly.
- Record a minus (–) if the consonant is produced incorrectly.
- Record a check mark for each occurrence of a process.

**Development of the SAM**

- Field tested primarily in public school setting with bilingual education programs in California.
- SAM can be used with children as young as 3 years of age.

**Scoring**

- Results should not be the sole criteria for determining one's eligibility.
- Results should always be used in conjunction with data obtained from other assessment instruments and with information obtained from conversational samples.

**Spanish Phonological Information**

- Brief descriptions of how to assess the speech production in Spanish are provided.
- Brief descriptions of the phonological processes that exist in Spanish are provided.
- Allows for dialectal differences in the Spanish language.

**Use**

- May be used as a supplemental articulation assessment instrument.
- Speech-language pathologists can administer the SAM.
- Classroom teachers or trained paraprofessionals (with guidance from an SLP) can administer the test.

**Spanish Language Assessment Procedures (SLAP), 3rd Edition**
**Information Sheet**

**History**
- Author: Larry J. Mattes
- Copyright 1995, Academic Communication Associates
- www.acadcom.com $79.00
- Comes with manual/test plates and 2 different sets of protocols; one for language assessment and one for assessment of speech sound production.

**SLAP**
- is a criterion-referenced test that assesses the structural and functional aspects of language.
- Contains 3 components:
    - Criterion-referenced assessment of Spanish communication
        - Individual tasks are designed to measure specific basic skills such as: naming, describing noun functions, categorizing, describing similarities and differences, following auditory directions, providing verbal solutions to problems, and story-retelling.
    - Assessment of Spanish speech-sound production
        - Assesses children's production of 18 Spanish consonants in words and sentences (samples clusters as well).
    - Communication sampling and identification of communicative disorders
        - Provides guidelines for collection and analysis of communication samples in Spanish.

**Assessment**
- Speech-sound assessment subtest is for use with children between 3 and 8 years of age. This is an informal inventory of speech sound production.
- Takes 15 to 30 minutes to administer.
- Contains 3 sections: Sounds in Words, Consonant Clusters, and Sounds in Sentences.
- Consonants are assessed in all positions of words.
- There are a total of 74 items in the 3 sections. Section A (Sounds in Words—33 items) can be administered as a screener).

**Test Administration**
- Section A is administered to assess the child's spontaneous production of 18 Spanish consonants and six clusters at the word level. Children complete sentences or name pictures. Verbal prompts are given as necessary; prompts are indicated.
- Section B is designed to assess imitative production of /l/, /s/, and /r/ clusters and should be utilized when a cluster on part A is misarticulated.
- Section C is designed to assess production of speech sounds in sentences that the child repeats.

**Notations**
- Section A:
    - Place a check in the blank beside the word if there are no errors.
    - Transcribe misarticulated words in the blanks.
    - Note errors on section A in the grid provided.

- Section B:
    - Place a check beside words containing clusters that are correctly articulated.
    - Transcribe errors in blanks besides words containing clusters.
- Section C:
    - Underline misarticulated sounds/words in sentences.
    - Transcribe errors in blanks provided.

**Scoring**

- It is suggested that a score be utilized for the Sounds in Sentences subtest. This score would be total number of correct words produced out of 75, which is noted in the space provided below the subtest.

**Spanish Phonological Information**

- A review of developmental norms is provided on page 62 to assist in determining whether performance is age-appropriate.

**Use**

- Tasks should be administered by fluent speakers of Spanish. Bilingual instruction aides and paraprofessionals may be utilized when a professional is not available; however, these individuals must be trained on the measure and supervised by a speech-language pathologist.

## The PLS-4 Spanish Articulation Screener
## Information Sheet

### History

- Author: Zimmerman, I., Steiner, V., Pond, R.
- Copyright 2002, The Psychological Corporation
- www.harcourtassessment.com $235.00 (*Articulation Screener is on backside of Record Form)*

### PLS-4 Screener

- This standardized measure can quickly screen a child's articulation when errors are noted.

### Assessment

- Takes approximately 2 to 5 minutes to administer (contains 40 stimulus words).
- Assesses the production of the 20 speech sounds in different positions of words.

### Test Administration

- Administer all 40 items in order to obtain a "raw score."
- The child imitates the words modeled by the examiner.
- It can be administered to children ages 2 years 6 months through 6 years 11 months.
- Instruct the child to sit quietly in front of the examiner.
- Say "*escucheme y repite las palabras…"* (Listen to me and repeat the words…).

### Notations

- Record a (1) if the target sound was produced correctly.
- Record a (0) if the target sound was incorrectly produced (substituted, omitted, distorted).
- Transcribe all words the child provides.

### Development of the PLS-4 Screener

- Sample population consisted of 834 children ages 2-6 through 6-11.
- Based on the data collected, each phoneme was grouped into an age level. The age level placement was determined when 84% of the children tested produced that target phoneme correctly. This included the target phoneme as a set (initial, medial, and final).

### Scoring

- The distribution of raw scores was analyzed for each age group.
    1. Scores above –1.5 SD (the 7th percentile or above) were considered normal.
    2. Scores at or between –1.5 and –2 SD (2nd–6th percentile) were considered below the scores obtained by same age peers.
    3. Scores below –2 SD (below the 2nd percentile) were considered significantly below the scores obtained by same age peers.
- Total the scores of (1) obtained from the 40 test items (score only the target sounds). Refer to **Table 4.1** in the manual for interpretation of the raw score.
- Results indicate if performance is "Typical," "Further Evaluation Is Indicated," or "Further Evaluation Strongly Suggested."

### Spanish Phonological Information

- Notes related to children speaking Puerto Rican dialect can be found on the bottom of the *Record Form*.

### Use

- May be used as a supplemental articulation assessment instrument.

**Articulation Test: Vietnamese**
**Information Sheet**

**Description**

- This instrument can be found in the book *Assessing Asian Language Performance: Guidelines for Evaluating Limited-English-Proficient Students*.
- Author: Li-Rong Lilly Cheng
- Second edition, copyright © 1991
- Academic Communication Associates, Inc, P.O. Box 4279, Oceanside, CA 92052
- The book contains information about Vietnamese, Cantonese, Mandarin, Japanese, Khmer, Korean, and other languages.

**Vietnamese Articulation Test**

- Found at the back of the book (Appendix H).
- Chart contains IPA symbol, spelling, key word in Vietnamese, and English translation of word.
- Mark whether production of phoneme was in isolation or within a word.
- Notate comments.
- There are no pictures.
- Protocol contains 27 consonants and 11 vowels.

**Scoring:** There is no information on scoring. Simply make note of production in designated column.

**Use**

- May be used as a screening instrument.
- Must be administered by a native speaker.
- Pictures can be found to accompany some of the words but not all.

## B. RATIONALE FOR INFORMAL ASSESSMENT

The primary reason for completing informal assessment is to determine if the standardized test (usually a single word test) adequately tapped the child's skills. To determine if the single word test accurately represented the child's errors, a comparison needs to be made between the child's performance in single word and connected speech samples on an informal measure. If there is a difference, then it could be assumed that the single word, standardized test did not tap the child's true difficulties. If the single word and spontaneous samples are similar, then it can be assumed that the standardized test was an accurate representation of the child's skills. Of great importance is determining if there is a *difference* in the scores on the single word and connected speech samples. Of lesser importance is the level of scores independent of a comparison. In the event of a difference, there is evidence to suspect the accuracy of the standardized test for determining the presence of an articulation disorder. Following are some examples of informal measures:

1) Point-to-Point Comparison
   Point-to-point comparison is a quick, side-by-side look at what parents, teachers, the SLP,and the standardized measure show. If all are in agreement, there is no need to complete further testing. If differences are noted, then more informal assessment may be indicated. If there is an apparent difference between single words and connected speech, one of the following informal measures is recommended. The results of these measures provide an indication of the magnitude of the difference between single words and connected speech, and objectively document professional judgment.

   *Example:*
   Ralph scores in the 11th percentile on the GFTA—not in the range of concern. Parent and teacher indicate he can't produce /r/, /l/, /st/, /sp/, /sk/, /str/, /sl/, /sw/, /skw/, /f/, /v/, and /th/. On the GFTA, he didn't miss /f/ or the /s/ blends. The single word test may not be an accurate measure of his number of errors. One of the following measures is indicated:

2) Percentage of Consonants Correct
   This is a procedure that tells if the single word measure differs from the connected speech sample in the percentage of correct consonants. If different, the single word test score is underestimating the difficulties. It is the *difference* between single word and connected speech that is a concern. If the PCC on the connected sample is 15 points more than the PCC on the single word test, the standardized test may not be representative of the child's skill. The difference of 15 points was selected by looking at the data in the tables for severity presented in the referenced article.† The general point difference for the levels of severity was 20 points. The TSHA Guidelines team took a conservative 15 points as the difference to use, but this criterion has not been empirically established. Districts should feel free to revise the criterion if they wish.

†Shriberg, L., & Kwialkowski, J. (1982, August). "Phonological Disorders III: A Procedure for Assessing Severity of Involvement," *JSHD (Journal of Speech and Hearing Disorders),* 256–270.

*Example:*
Sam scores in the 12th percentile on the GFTA—not in the range of concern. A point-to-point look indicates more errors in connected speech than in single words. His PCC on the GFTA is 86%, and his PCC on the spontaneous sample is 78%. The levels are different, but there are only 8 points of difference. These results support the results of the GFTA.

*It is suggested that the 15-point difference be interpreted by the speech-language pathologist with some flexibility. When percentiles on standardized measures are close to levels indicating concern, the SLP may elect to use a smaller difference. All decisions should be supported by data.

3) Error Consistency Index (CI)†
This measure reveals how consistent the child's errors are. It assesses the variation of the child's production of consonants. If articulation were normal, all consonants would be produced consistently and the consistency index would be 0 for both single words and connected speech. The higher the consistency index, the more inconsistent the child's productions. If the single word and connected speech samples differ by 15 or more points on the consistency index, then the single word test was not an accurate representation of the child's articulation skills. This is a good measure for students who pronounce words differently with every production. Articles using this measure have suggested that a consistency index of 19 or higher indicates a concern. The TSHA Guidelines Team recommends using a more conservative difference of 15 points; however, this has not been empirically established. Districts should feel free to revise the criterion, but a baseline criterion should be established.*

*Example:*
Claude scores at the 25th percentile on the GFTA—not in the range of concern. His teacher indicates she can't understand him in class half the time. A Consistency Index on the GFTA words and the connected sample reveals a CI on the GFTA of 5, while the CI on the connected speech sample is 35. This information supports teacher data.

*It is suggested that the 15-point difference be interpreted by the speech-language pathologist with some flexibility. When percentiles on standardized measures are close to levels indicating concern, the SLP may elect to use a smaller difference. All decisions should be supported by data.

There are other informal measures, such as ratings of intelligibility, not covered here. The measures described above are recommended by the TSHA Guidelines team. Documentation and consistency are critical.

Tyler, A. (2002). Language-based intervention for phonological disorders. *Seminars in Speech and Language, 23,* 69–82; and Tyler, A., Lewis, K. & Welch, C. (2003). Predictors of phonological change following intervention. *American Journal of Speech Language Pathology, 12,* 289–298.

# C. INSTRUCTIONS FOR INFORMAL EVALUATION FOR MEASURES OF ARTICULATION

## Comparing Single Word Sample to Connected Speech Sample

1. A single word sample will be obtained from the administered standardized/formal test. **(All words containing errors should be transcribed in their entirety.)**

2. A connected speech sample of 50 to 100 words will be collected. The examiner may elicit the connected sample by verbalizing a story illustrated by a series of pictures and asking the child to retell the narrative. The story should be age appropriate, should be presented using the mean length of utterance for the child's age/grade level, and should include most or all of the phonemes expected for age or grade level. *Stories for Eliciting Speech Samples* (www.mindworksresources.com) offers appropriate photo stimuli for collecting a connected speech sample in English. Stories from the Goldman-Fristoe Test of Articulation 2 "Sounds in Sentences" subtest (http://ags.pearsonassessments.com/) may be used for young children. If all phonemes are not elicited, the examiner should ask the child to make up a sentence regarding a target picture.

3. The SLP performs a point-to-point comparison.
   a) First, record the sounds produced in error on the single word articulation test.
   b) Next, record the sounds in error in the connected speech sample.
   c) Then, compare the sounds in error for the two samples. If the same sounds are in error, it would suggest that the standardized test is a good representation of the child's articulation. If error sounds do not match, a more comprehensive informal procedure is indicated.

4. When warranted, determine which of the following Informal Procedures (IP) will be used:
   a. Percentage of Consonants Correct (PCC)
   b. Consistency Index (CI) (also known as the Error Consistency Index)

5. The IP should be completed on both the single word sample (from the formal articulation test) and connected speech sample using the steps recommended for the selected procedure.

6. If the IP connected speech sample score is worse than the IP single word score by 15 points or more, this indicates a concern. (If there is less than a 15-point difference, the examiner may utilize another informal procedure if the first procedure did not adequately tap the child's difficulties.) If the connected sample IP score is not worse than the single word IP score, then the formal articulation test may be adequately tapping the child's skills.

7. "Concern" or "No Concern" should be marked on the checklist.

# Point-to-Point Comparison

It is suggested that one of the easiest ways of comparing the Single Word Articulation (SWA) tests with a spontaneous speech sample is to compare the sounds in error in the two samples.

First, record the sounds produced in error on the Single Word Articulation test.

Next, record the sounds in error in the spontaneous word sample (SWS). The parent/teacher form can provide data for this. Then compare the sound in error for the two samples. If the same sounds are in error in single words and connected speech, the standardized test is a good representation of the sample. If the errors are not the same, the SLP completes one of the more comprehensive types of informal assessment.

The following table will assist in making the analysis.

| **Comparison of Single Word Articulation and Spontaneous Speech Sample Error Sounds** | | |
|---|---|---|
| Single Word Articulation Test (SWA) | Spontaneous Word Sample (SWS) | Comparison |
| Initial Position Errors | Initial Position Errors | Produced in error on SWA, but correct on SWS |
| | | Produced in error on SWS, but correct on SWA |
| Medial Position Errors | Medial Position Errors | Produced in error on SWA, but correct on SWS |
| | | Produced in error on SWS, but correct on SWA |
| Final Position Errors | Final Position Errors | Produced in error on SWA, but correct on SWS |
| | | Produced in error on SWS, but correct on SWA |

## Percentage of Consonants Correct (PCC)

The following steps are completed to determine the percentage of consonants correct as suggested by Shriberg & Kwiatkowski, 1982.

1. Tape record a connected speech sample of between 50 and 100 utterances.

2. Determine the meaning of each word to make certain that correct analysis can be completed.

3. Calculate the Percentage of Consonants Correct as follows:
   a. Use only consonants, not vowels (syllabic r's are considered vowels. That is, /r/ is counted if it starts or is not the only vowel in the syllable; e.g., "her" has an initial consonant and a vocalic r, which is not counted as a consonant; "hair" has an initial consonant, a vowel, and a final consonant /r/.
   b. Do not score target consonants in the second or successive repetitions of a syllable (e.g., in "f-fish," score only the first /f/).
   c. Do not score target consonants in the third or successive repetition of adjacent words unless articulation changes. For example, if the child said /tap/, /tap/, /tap/ for "stop," only the first two words of the series would count. However, if the child said /tap/, /tap/, /stap/, all three would be counted.
   d. Do not score target consonants in words that are completely or partially unintelligible or whose gloss* is highly questionable.
   e. Consider the following types of changes as incorrect:
      i. deletions of a target sound
      ii. substitutions of another sound
      iii. partial voicing of initial target consonant
      iv. distortions, no matter how subtle
      v. additions of sounds
      vi. Initial /h/, final /n/, and /ng/ deletions are scored as incorrect only when they are in stressed syllables.
      vii. Questionable articulation should be scored in the incorrect category.
      viii. Words should be glossed for dialect or as they are said in conversation.

4. The percentage of consonants correct is calculated by dividing the number of correct consonants produced by the total number of consonants produced and multiplying by 100.

The following guidelines are used in determining concern: After identifying the percentage of consonants correct for single words and a connected speech sample, subtract the connected speech sample percentage from the single word percentage. If the difference is 15 points or greater, the result indicates an area of concern.

**Gloss* refers to what the SLP interprets a word to mean. The word should not be glossed if it is unintelligible.

| Percentage of Consonants Correct Scoring Sheet<br>Spanish Preschool Articulation Test (SPAT) | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| 1. cama (bed) | | 2 | |
| 2. caballo (horse) | | 3 | |
| 3. baño (bathroom) | | 2 | |
| 4. tenedor (fork) | | 4 | |
| 5. gato (cat) | | 2 | |
| 6. llave (key) | | 2 | |
| 7. pan (bread) | | 2 | |
| 8. lápiz (pencil) | | 3 | |
| 9. nieve (snow) | | 2 | |
| 10. luna (moon) | | 2 | |
| 11. vaca (cow) | | 2 | |
| 12. dulces (candy) | | 4 | |
| 13. pelota (ball) | | 3 | |
| 14. jugo (juice) | | 2 | |
| 15. pared (wall) | | 3 | |
| 16. autobús (bus) | | 3 | |
| 17. sol (sun) | | 2 | |
| 18. agua (water) | | 1 | |
| 19. huevo (egg) | | 2 | |
| 20. mesa (table) | | 2 | |
| 21. rojo (red) | | 2 | |
| 22. perro (dog) | | 2 | |
| 23. chango (monkey) | | 3 | |
| 24. cuchara (spoon) | | 3 | |
| 25. foca (seal) | | 2 | |
| 26. sofá (sofa) | | 2 | |
| **Total Words**<br>____26___ | **Total Accurate Words**<br>_____ | **Total Consonants**<br>__62__ | **Total Consonants Correct**<br>_____ |

**PCC= <u>Number of Correct Consonants</u> X 100= PCC =_____ / X 100 = _____**
**Total Number of Consonants**

**WWA=<u>Total Words Accurate</u> X 100= WWA=_____ / X100 = _____**
Total Words

| Percentage of Consonants Correct Scoring for Contextual Probes of Articulation Competence—Spanish | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| jabón (soap) | | 3 | |
| lápiz (pencil) | | 3 | |
| diez (ten) | | 2 | |
| gorra (cap) | | 2 | |
| reloj (watch) | | 3 | |
| queso (cheese) | | 2 | |
| boca (mouth) | | 2 | |
| dos (two) | | 2 | |
| dedo (finger) | | 2 | |
| gato (cat) | | 2 | |
| jugo (juice) | | 2 | |
| café (coffee) | | 2 | |
| silla (chair) | | 2 | |
| casa (house) | | 2 | |
| llave (key) | | 2 | |
| leche (milk) | | 2 | |
| rojo (red) | | 2 | |
| papá (father) | | 2 | |
| ratón (mouse) | | 3 | |
| baño (bathroom) | | 2 | |
| doce (twelve) | | 2 | |
| pelo (hair) | | 2 | |
| mesa (table) | | 2 | |
| sofá (sofa) | | 2 | |
| vaso (glass) | | 2 | |
| mamá (mother) | | 2 | |
| bote (row boat) | | 2 | |

| Percentage of Consonants Correct Scoring for Contextual Probes of Articulation Competence—Spanish | | | |
|---|---|---|---|
| | | | |
| media (sock) | | 2 | |
| techo (roof) | | 2 | |
| plancha (iron) | | 4 | |
| brazo (arm) | | 3 | |
| fruta (fruit) | | 3 | |
| crema (cream) | | 3 | |
| trece (thirteen) | | 3 | |
| flecha (arrow) | | 3 | |
| clase (class) | | 3 | |
| flaco (thin) | | 3 | |
| globo (balloon) | | 3 | |
| martillo (hammer) | | 4 | |
| muñeca (doll) | | 3 | |
| peinilla (comb) | | 3 | |
| bolsillo (pocket) | | 4 | |
| chocolate (chocolate) | | 4 | |
| policía (police) | | 3 | |
| caballo (horse) | | 3 | |
| cuchara (spoon) | | 3 | |
| manzana (apple) | | 4 | |
| correa (belt) | | 2 | |
| lámpara (lamp) | | 4 | |
| cartera (purse) | | 4 | |
| pescado (fish) | | 4 | |
| conejo (rabbit) | | 3 | |
| zapato (shoe) | | 3 | |
| pantalón (pants) | | 5 | |
| camisa (shirt) | | 3 | |

| Percentage of Consonants Correct Scoring for Contextual Probes of Articulation Competence—Spanish | | | |
|---|---|---|---|
| | | | |
| nevera (refrigerator) | | 3 | |
| jugete (toy) | | 3 | |
| estufa (stove) | | 3 | |
| escoba (broom) | | 3 | |
| escalera (stairs) | | 4 | |
| habichuela (bean) | | 3 | |
| teléfono (telephone) | | 4 | |
| medicina (medicine) | | 4 | |
| Total Words 63 | Total Accurate Words _____ | Total Consonants 176 | Total Consonants Correct _____ |

| Percentage of Consonants Correct Scoring Sheet<br>Preschool Language Scale-4th Edition Articulation Screener (PLS-4) Spanish | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| 1. bebé (baby) | | 2 | |
| 2. lobo (fox) | | 2 | |
| 3. mesa (table) | | 2 | |
| 4. cama (bed) | | 2 | |
| 5. tío (uncle) | | 1 | |
| 6. pato (duck) | | 2 | |
| 7. palo (stick) | | 2 | |
| 8. sapo (frog) | | 2 | |
| 9. huevo (egg) | | 2 | |
| 10. agua (water) | | 1 | |
| 11. niño (boy) | | 2 | |
| 12. no (no) | | 1 | |
| 13. luna (moon) | | 2 | |
| 14. botón (button) | | 3 | |
| 15. copa (2) | | 2 | |
| 16. boca (mouth) | | 2 | |
| 17. lápiz (pencil) | | 3 | |
| 18. ala (wins) | | 1 | |
| 19. sol (sun) | | 2 | |
| 20. llave (key) | | 2 | |
| 21. calle (street) | | 2 | |
| 22. falda (skirt) | | 3 | |
| 23. café (coffe) | | 2 | |
| 24. sí (yes) | | 1 | |
| 25. piso (table) | | 2 | |
| 26. vaso (bus) | | 2 | |
| 27. chivo (goat) | | 2 | |

| Percentage of Consonants Correct Scoring Sheet<br>Preschool Language Scale-4th Edition Articulation Screener (PLS-4) Spanish | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| 28. chanclas (sandals) | | 5 | |
| 29. gato (cat) | | 2 | |
| 30. lago (lake) | | 2 | |
| 31. chico (small) | | 2 | |
| 32. cacho (piece) | | 2 | |
| 33. día (day) | | 1 | |
| 34. nido (nest) | | 2 | |
| 35 pared (wall) | | 3 | |
| 36 jabon (soap) | | 3 | |
| 37 rojo (red)) | | 2 | |
| 38. rana (frog) | | 2 | |
| 39. cara (face) | | 2 | |
| 40. perro (dog) | | 2 | |
| **Total Words**<br>__40__ | **Total Accurate Words**<br>_____ | **Total Consonants**<br>__72_ | **Total Consonants Correct**<br>_____ |

**PCC= Number of Correct Consonants X 100= PCC =_____ / X 100 = _____**
**Total Number of Consonants**

**WWA=Total Words Accurate X 100= WWA=_____ / X100 = _____**
**Total Words**

| Percentage of Consonants Correct Scoring Sheet<br>Spanish Articulation Measures (SAM) | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| 1. vestido (dress) | | 4 | |
| 2. chimenea (chimney) | | 3 | |
| 3. dedos (fingers) | | 3 | |
| 4. falda (dress) | | 3 | |
| 5. guitarra (guitar) | | 3 | |
| 6. cuchillo (knife) | | 3 | |
| 7. lápiz (pencil) | | 3 | |
| 8. máscara (mask) | | 4 | |
| 9. nariz (nose) | | 3 | |
| 10. pared (wall) | | 3 | |
| 11. reloj (watch) | | 3 | |
| 12. zapato (shoe) | | 3 | |
| 13. teléfono (telephone) | | 4 | |
| 14. huevos (egg) | | 3 | |
| 15. jaula (cage) | | 2 | |
| 16. llanta (tire) | | 3 | |
| 17. araña (spider) | | 2 | |
| 18. televisión (T.V.) | | 5 | |
| 19. dólar (dollar) | | 3 | |
| 20. pastel (cake) | | 4 | |
| 21. estufa (stove) | | 3 | |
| 22. pasta (pasta) | | 3 | |
| 23. escalera (stairs) | | 4 | |
| 24. clavo (nail) | | 3 | |
| 25. plato (plate) | | 3 | |
| 26. flor (flower) | | 3 | |
| 27. plátano (banana) | | 4 | |
| 28. bruja (witch) | | 3 | |
| 29. tres (three) | | 3 | |
| 30. dragón (dragon) | | 4 | |

| Percentage of Consonants Correct Scoring Sheet<br>Spanish Articulation Measures (SAM) | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| 31. abrigo (jacket) | | 3 | |
| 32. libro (book) | | 3 | |
| 33. candado (lock) | | 4 | |
| 34. guante (glove) | | 3 | |
| 35. campana (bell) | | 4 | |
| 36. carta (letter) | | 3 | |
| 37. estrellas (stars) | | 5 | |
| 38. bicicleta (bicycle) | | 5 | |
| 39. árbol (tree) | | 3 | |
| 40. barco (boat) | | 3 | |
| **Total Words**<br>__40___ | **Total Accurate Words**<br>_____ | **Total Consonants**<br>__133__ | **Total Consonants Correct**<br>_____ |

**PCC= Number of Correct Consonants X 100 PCC =_____ / X 100 = _____**
**Total Number of Consonants**

**WWA=Total Words Accurate X 100= WWA=_____ / X100 = _____**
**Total Words**

| Percentage of Consonants Correct Scoring Sheet<br>Spanish Language Assessment Procedures (SLAP) | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| 1. chico (small) | | 2 | |
| 2. agua (water) | | 1 | |
| 3. pared (wall) | | 3 | |
| 4. peine (comb) | | 2 | |
| 5. zapato (shoe) | | 3 | |
| 6. tijeras (scissors) | | 4 | |
| 7. avión (airplane) | | 2 | |
| 8. casa (house) | | 2 | |
| 9. foco (lightbulb) | | 2 | |
| 10. guitarra (guitar) | | 3 | |
| 11. bigote (mustache) | | 3 | |
| 12. dientes (teeth) | | 4 | |
| 13. vestido (dress) | | 4 | |
| 14. lápiz (pencil) | | 3 | |
| 15. libro (book) | | 3 | |
| 16. árbol (tree) | | 3 | |
| 17. teléfono (telephone) | | 4 | |
| 18. mesa (table) | | 2 | |
| 19. camión (bus) | | 3 | |
| 20. niño (boy) | | 2 | |
| 21. lámpara (lamp) | | 4 | |
| 22. flor (flower) | | 3 | |
| 23. reloj (clock) | | 3 | |
| 24. perro (dog) | | 2 | |
| 25. llave (key) | | 2 | |
| 26. cuchillo (knife) | | 3 | |
| 27. jarra (pitcher) | | 2 | |
| 28. conejo (rabbit) | | 3 | |

| Percentage of Consonants Correct Scoring Sheet<br>Spanish Language Assessment Procedures (SLAP) | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total # of Consonants** | **Number of Consonants Correct** |
| 29. hueso (bone) | | 2 | |
| 30. tres (three) | | 3 | |
| 31. estrella (star) | | 4 | |
| 32. brazo (arm) | | 3 | |
| 33. plato (plate) | | 3 | |
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| **Total Words**<br>__33_ | **Total Accurate Words**<br>_____ | **Total Consonants**<br>__92_ | **Total Consonants Correct**<br>_____ |

**PCC= Number of Correct Consonants X 100 PCC =_____ / X 100 = _____**
**Total Number of Consonants**

**WWA=Total Words Accurate X 100= WWA=_____ / X100 = _____ Total Words**

| Percentage of Consonants Correct Scoring for Goldman-Fristoe 2 | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| house | | 2 | |
| tree | | 2 | |
| window | | 3 | |
| telephone | | 4 | |
| cup | | 2 | |
| knife | | 2 | |
| spoon | | 3 | |
| girl | | 3 | |
| ball | | 2 | |
| wagon | | 3 | |
| shovel | | 3 | |
| monkey | | 3 | |
| banana | | 3 | |
| zipper | | 2 | |
| scissors | | 3 | |
| duck | | 2 | |
| quack | | 3 | |
| yellow | | 2 | |
| vacuum | | 4 | |
| watch | | 2 | |
| plane | | 3 | |
| swimming | | 4 | |
| watches | | 3 | |
| lamp | | 3 | |
| car | | 2 | |
| blue | | 2 | |
| rabbit | | 3 | |
| carrot | | 3 | |

| Percentage of Consonants Correct Scoring for Goldman-Fristoe 2 | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| orange | | 3 | |
| fishing | | 3 | |
| chair | | 2 | |
| feather | | 2 | |
| pencils | | 5 | |
| this | | 2 | |
| bathtub | | 4 | |
| bath | | 2 | |
| ring | | 2 | |
| finger | | 3 | |
| thumb | | 2 | |
| jumping | | 4 | |
| pajamas | | 4 | |
| flowers | | 4 | |
| brush | | 3 | |
| drum | | 3 | |
| frog | | 3 | |
| green | | 3 | |
| clown | | 3 | |
| balloons | | 4 | |
| crying | | 3 | |
| glasses | | 4 | |
| slide | | 3 | |
| stars | | 4 | |
| five | | 2 | |
| Total Consonants | | 153 | |
| Total Consonants Correct | | | |
| PCC = Number of Correct Consonants X 100 PC = X 100 = Total Number of Consonants | | | |

| Percentage of Consonants Correct Scoring for Arizona 3 | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| horse | | 2 | |
| baby | | 2 | |
| bathtub | | 4 | |
| pig | | 2 | |
| cup | | 2 | |
| nine | | 2 | |
| train | | 3 | |
| monkey | | 3 | |
| comb | | 2 | |
| cake | | 2 | |
| wagon | | 3 | |
| dog | | 2 | |
| table | | 3 | |
| red | | 2 | |
| cat | | 2 | |
| jumping | | 4 | |
| shoe | | 1 | |
| fish | | 2 | |
| television/TV | | 5/2 | |
| stove | | 3 | |
| ladder | | 2 | |
| ball | | 2 | |
| airplane | | 4 | |
| yellow | | 2 | |
| cold | | 3 | |
| bird | | 2 | |
| fork | | 2 | |
| knife | | 2 | |

| Percentage of Consonants Correct Scoring for Arizona 3 | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| car | | 1 | |
| ear | | 0 | |
| ring | | 2 | |
| trees | | 3 | |
| this/that | | 2 | |
| chair | | 1 | |
| green | | 3 | |
| watch | | 2 | |
| thumb | | 2 | |
| mouth/teeth | | 2 | |
| zipper | | 2 | |
| nose | | 2 | |
| sun | | 2 | |
| house | | 2 | |
| steps | | 4 | |
| nest | | 3 | |
| carrots | | 4 | |
| books | | 3 | |
| Total Number of Consonants in Sample | | 110/107 | |
| Total Consonants Correct in Sample | | | |
| PCC = Number of Correct Consonants X 100 PC = X 100 = Total Number of Consonants | | | |

| Percentage of Consonants Correct Scoring for Connected Speech Sample | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
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| Percentage of Consonants Correct Scoring for Connected Speech Sample | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
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| Percentage of Consonants Correct Scoring for Connected Speech Sample | | | |
|---|---|---|---|
| **Word** | **Transcription** | **Total Number of Consonants** | **Number of Consonants Correct** |
| | | | |
| | | | |
| Total Number of Consonants in Sample | | | |
| Total Consonants Correct in Sample | | | |
| PCC = Number of Correct Consonants X 100 PC = X 100 = Total Number of Consonants | | | |

## Error Consistency Index (CI)*

A measure of phonology which may be helpful in looking at children's articulation, especially when trying to look at the difference between conversational speech and single word articulation, is the **consistency** with which children produce errors. One way of measuring consistency is through the use of the **Consistency Index.** This is a measure of overall consistency defined as a raw number that reflects the total number of different substitutions which occur across the 23 phonemes of the language. It takes into account errors in all three positions.

To calculate the **Consistency Index**, the examiner takes a sample of the child's speech. Using a table, the examiner looks at the errors which occur for each sound. For example, the child produces the /s/ sound three times in initial position, three times in final position and one time in medial position. In the initial position, it is produced one time as an /s/ and twice as a /t/. In the medial position it is produced as a /z/, and in the final position, it is produced one time as a /t/ and is omitted twice. The following entries would then be made on the table below in the row for the /s/ sound:

| Calculation of the Consistency Index | | | | |
|---|---|---|---|---|
| Target | Substitutes | | | Total |
| | Initial | Medial | Final | |
| s | t | z | t, Ø | 3 |

In computing the total, you count each different substitution as one. So the t, z, and Ø (omission) each count as an error for a total of 3. You do not count a substitution twice. So, although the /t/ occurs in both initial and final position, it is counted only one time.

The same procedure is then completed for each sound. The total is the total number of sounds that are substituted for the total 23 phonemes.

A low consistency index score reflects fewer errors per phoneme; a high score reflects a lack of consistency in the child's production. If no sound errors exist in the student's speech, the **Consistency Index** would be zero. Currently no normative data exist, but this measure appears to be a very promising practice.The TSHA Task Force on Eligibility recommends considering a 15-point or greater difference in consistency from single words to conversational speech to be of concern.

*Derived from Tyler, A. (2002). Language-based intervention for phonological disorders. *Seminars in Speech and Language* 23, 69–82; and Tyler, A., Lewis, K. & Welch, C. (2003). Predictors of phonological change following intervention. *American Journal of Speech Language Pathology* 12, 289–298.

# Calculation of the Consistency Index

| Target | Errors | | | Total |
|---|---|---|---|---|
| | Initial | Medial | Final | |
| m | | | | |
| n | | | | |
| ng | | | | |
| p | | | | |
| b | | | | |
| t | | | | |
| d | | | | |
| k | | | | |
| g | | | | |
| w | | | | |
| f | | | | |
| v | | | | |
| voiceless th | | | | |
| voiced th | | | | |
| s | | | | |
| z | | | | |
| sh | | | | |
| h | | | | |
| ch | | | | |
| j | | | | |
| l | | | | |
| r | | | | |
| y | | | | |
| **Total of all errors:** | | | | |

## Assessment of Intelligibility*

The procedure for determining an intelligibility score includes tape recording a randomly selected 100 consecutive word sample from the student during contextual speech. The score is the percentage of words understood from the sample. For example, from a 100-word sample, the student spoke 35 utterances that appeared to be words but were not understandable to the listener. The student's intelligibility would be 65%, based on the fact that 65 of 100 words were understood.

For this procedure, transcribe a recorded sample by writing down each word that is intelligible and indicating a blank (_) for each word that is not intelligible. Calculate the score by totaling the number of blanks and subtracting that total from 100, resulting in the percentage of intelligibility.

Another possible method is to count syllables. If this procedure is used, each unintelligible syllable in the utterances would be indicated with a blank space. The intelligibility score would then be calculated on the basis of 11/2 syllables representing one word. In the sentence sample, "Me (_) (_) ball (_)", the three blanks would represent three unintelligible syllables or two unintelligible words. This procedure is most useful for young children with a high level of unintelligibility.

Note that an intelligibility score of 100% does not necessarily indicate perfectly normal articulation, but rather 100% understandable articulation even though articulation errors may be present. According to Weiss, a student whose intelligibility score is more than 10 percentage points below expected for chronological age indicates a concern.

Weiss' Guideline for Analyzing Intelligibility Scores*:

| Intelligibility Score | Chronological Age Equivalent |
|---|---|
| 25–49% | 18 months |
| 50–59% | 24 months |
| 60–74% | 30 months |
| 75–89% | 36 months |
| 90–99% | 42 months |
| 100% | 48 months |

*Adapted from Weiss, C. E., Gordon, M. E., & Lillywhite, H. S. (1987). *Clinical Management of Articulatory and Phonological Disorders,* 2nd ed. St. Louis, MO: C. V. Mosby.

# D. PHONEME-SPECIFIC PROBES

The following measures provide multiple lists of probes that are designed to assess Spanish consonants in all positions of words. These probes may be utilized to gain data regarding the consistency of students' errors and may assist in establishing therapy targets. Consider phonemes in error 50% or more of the time significant.

Spanish Articulation Measure (SAM)

Contextual Probes of Articulation Competence-Spanish (CPAC-S)

Spanish Probes for Articulation Assessment—Alief ISD Bilingual Assessment Team. See Alief ISD website to download probes.

## E. CONSIDERATIONS FOR EXCEPTIONS TO STANDARD PROCEDURES FOR EVALUATING ARTICULATION DISORDERS*

1. **Lateral production of sibilant sounds (s, z, sh, ch, j):** Lateral production of sibilants does not occur in typically developing children and is considered "deviant" when it does occur. Therefore, it is possible that a student's performance on standardized testing may not be considered "in the range of concern," but an articulation disorder may exist when this error is present. The SLP should carefully consider the information from the teacher about the significance or impact of the distortion or lateralization on classroom performance. In addition, parent information should be considered. Since the SLP typically has a more sensitive ear for even slight distortions, caution should be used when identifying students with slight lateralized production of sibilants as students with a disability. Informal testing should be completed to support the consistency of lateralization at the conversation level.

*Note: these exceptions are not required, but are recommendations of the TSHA Eligibility Guidelines developers. Individual districts may choose to accept or add other exceptions.

## F. "OTHER LANGUAGES" ARTICULATION ASSESSMENT

- Schedule interpreter.
- Find information on "other" language.
- Test in English. Discern dialectal errors.
- Use information from all sources to determine which phonemes appear to be in error.
- With help from interpreter, develop list of words to be used for assessment and for probes.
- Have culturally appropriate topics prepared for conversational sample (PCC).

# VI. Making a Recommendation for Eligibility as Speech Impaired with an Articulation Disorder

## A. ARTICULATION DISORDER CHECKLIST FOR CLD SPEAKERS OF ENGLISH

Student:_____ SLP:_____
Date of Birth:_____ CA:_____ Campus:_____ Date:_____

| Evaluation Tool | Results | Data Supports Concern? | |
|---|---|---|---|
| | | Yes | No |
| Sounds identified in error by teacher: | Errors identified by teacher & on formal test: | | |
| Sounds identified in error by parents: | Errors identified by parent & on formal test: | | |
| Standardized test in English:<br><br>Sounds in error: | Sounds of concern: | | |
| Standardized test in Spanish:<br>Percentile:<br>Sounds in error: | Sounds of concern: | | |
| Formal/CRT Test in _____:<br>(language)<br>Sounds in error: | Sounds of concern: | | |
| Phonemes probed & percentages in error: | Judged significant: >50 | | |
| SLP opinion – sounds in error: | Errors identified by SLP & on formal test: | | |
| Dialectal influences: | | | |

If all the measures reported above express concern or if all express no concern, the data needed has been collected and FIE may be written and ARD held. If there is any disagreement in concern, continue the evaluation by performing an informal assessment using a procedure listed below.

| Comparison of Single Word Articulation to Spontaneous Speech | | | |
|---|---|---|---|
| Procedure Used: PCC, CI, PP<br><br>Sample obtained from: | | | |
| Single Word Response | | | |
| Continuous Speech Sample | | | |
| # of points difference between Single Word Responses and Continuous Speech Sample | | | |

| B. GUIDELINES FOR DETERMINING A DISORDER<br>FOR CLD SPEAKERS OF ENGLISH | |
|---|---|
| ***Parameters Assessed*** | ***Disorder Criteria*** |
| **Informal Evaluations**<br><br>o Parents' Evaluation<br>o Teacher's Evaluation<br>o Dialectal influences/Phoneme contrast<br>o Phoneme Probe<br>o (10 word minimum)<br>o Percentage of Consonants Correct<br>o Consistency Index<br><br>**Standardized Tests in English**<br>o **GFTA-2**<br>o **Arizona-3**<br><br>**Formal Tests in Spanish**<br>o Spanish Pre-School Articulation Test (SPAT)<br>o Spanish Articulation Measures Revised (SAM) [non-standardized]<br>o Contextual Probes of Articulation Competence-Spanish (CPAC-S)<br>o Pre-School Language Scale–4 (PLS-4) Articulation Screener<br>o Spanish Language Assessment Procedures (SLAP) | Parent data<br>Teacher data<br>Dialectal influences/phoneme contrast<br>SLP opinion<br><br>*and*<br><br>Results on English standardized tests<br><br>Results on formal test in Spanish (refer to appropriate developmental age norms; consider significant when the error is at the end of the age range for that phoneme.)<br><br>*and*<br><br>Results on informal assessment (phoneme probe in language other than English) 50% or more in error<br><br>_____<br><br>If the above are not in agreement, select from the following informal measures for additional data:<br><br>Percentage of Consonants Correct yields a difference of 15 points or greater for single words than for spontaneous speech<br><br>***or***<br><br>Consistency Index > or = 15-point difference from single words to conversational speech |

# C. DOCUMENTATION OF ADVERSE EFFECT OF AN ARTICULATION DISORDER ON ACADEMIC ACHIEVEMENT AND FUNCTIONAL PERFORMANCE AND NEED FOR SPECIALIZED INSTRUCTION

Once it has been determined that an articulation disorder exists, the next step for the multidisciplinary team is to determine if there also exists an adverse effect on the student's academic achievement and/or functional performance as a result of the articulation disorder. Consultation among the parent, teacher(s), and speech-language pathologist is essential in determining what, if any, impact the articulation disorder is having on the student. This determination can be achieved by consideration of the expected grade level curriculum, the Prekindergarten Guidelines (for preschool students), the Texas Essential Knowledge and Skills (TEKS), and the status of the student's participation in the classroom and interactions with adults and peers as observed by the speech-language pathologist and reported by parents and teachers.

*For example:*
Correlations to Prekindergarten Guidelines II (Language and Communication Domain) C—Speech Production Skills indicates that "young children must learn to vocalize, pronounce, and discriminate among the sounds of the alphabet and words of language" with the expected outcome being that the "child's speech is understood by both the teacher and other adults in the school." Although young children are continuing to develop speech sounds into their early school years, being understood must be considered as a factor.

For school age students, reference may be made to the TEKS for specific areas to target related to articulation. Section 110.10, Texas Essential Knowledge and Skills for English Language Arts and Reading, Elementary, implemented in 2009–10, includes a number of references to articulation skills. For example, TEKS §110.11 (23) to 110.16 (28) indicate that students are expected to "speak clearly.…" In addition, competent articulation skills are essential to many other TEKS. The multidisciplinary team has the responsibility of determining the impact on academic achievement and functional performance, and the speech-language pathologist has the responsibility of reporting such findings. Complete TEKS can be located on the Texas Education Agency website, www.tea.state.tx.us.

The next responsibility of the multidisciplinary team is to determine whether the specialized skills of a speech-language pathologist are required for the student to make academic progress. Although classroom teachers are trained and adept at instruction in phonemic awareness and assisting children in learning sound-symbol connections, it is often the case with a student with an articulation disorder that the specific training needed for a child to learn reduction of phonological processes or the skills needed to produce specific sounds are not skills directly addressed in the classroom. However, when the student is stimulable to produce error sounds with some ease, the classroom teacher and parent may be the best intervention providers. Determination of the need for specialized services may be identified by some or all of the following impacts of the articulation disorder:

- the student's level of concern with the difference
- the student's willingness to participate in classroom discussion and to interact verbally with teachers and peers
- the degree to which the speech differences call attention to the student's communication
- the impact on the student's intelligibility
- the impact on reading, writing, spelling, or other academic skills

Results of these considerations should be included in the Full and Individual Evaluation (FIE) report.

# D. REPORTING ASSESSMENT RESULTS

**Sample in which the student would meet guidelines following formal testing and use of probes:**

David, age 5 years 5 months, is in a bilingual kindergarten classroom and was referred for articulation difficulties. The Spanish Preschool Articulation Test (SPAT) was administered to assess articulation skills at the single word level in Spanish. David had difficulty with the phonemes /k, g, f, s, l, r, ñ, rr/, and "ch," which resulted in a score at the 3rd percentile, which is below the range expected for his age according to district guidelines. Parent and teacher observations noted the same errors along with several others, including the phonemes /w, p, d/. SLP opinion noted errors in production of the phonemes /k, g, f, s, l, r, rr, ñ/.

Articulation testing in English was informally assessed as the student's skills in this language were judged to be negligible. Imitation of simple vocabulary indicated that errors were evident in words containing the phonemes /k, g, f, s, l, r/.

Phonemes in error on the SPAT were probed. It was noted that production of the phonemes /f, g, k, r, ñ, s/ were in error 100% of the time, and /l/ and "ch" were in error 90% of the time. Probe of target phonemes confirms difficulties noted on the SPAT. Therefore, it is recommended that the ARD Committee consider eligibility for David as a student with a Speech Impairment due to an articulation disorder.

**Sample in which the student would not meet guidelines following formal testing and use of probes:**

Yesenia, age 6 years 2 months, is an ESL student in the first grade referred for articulation difficulties. Spanish was determined to be Yesenia's dominant language, but she is conversing in English at a basic level.

The Goldman-Fristoe Test of Articulation-2 (GFTA-2) was administered. Yesenia was able to name all but five pictures spontaneously, and all phonemes were accurately articulated. Dialectal errors were noted and included b/v, sh/ch, and t/th.

The Spanish Articulation Measure (SAM) was also administered and assessed articulation skills at the single word level in Spanish. Yesenia misarticulated the phonemes /l, g, rr/, and "ch". Parents noted difficulty with /rr/. Teacher reported difficulty with /l, r, w, d, v/, and "th". SLP opinion noted difficulty with /rr/.

Phonemes in error on the SAM were probed. It was noted that production of the phonemes /g, l/ were in error 30% of the time, "ch" was in error 20% of the time, and /rr/ was in error 100% of the time. Probe of target phonemes confirms difficulty with /rr/, but given Yesenia's age, this would be considered developmentally appropriate and not disordered according to district guidelines. Therefore, Yesenia does not meet eligibility criteria at this time as a student with a Speech Impairment.

**Sample in which the student would meet guidelines following formal testing, use of probes, and use of PCC:**

Jose, age 7 years 2 months, is a second grade student in a bilingual classroom referred for articulation difficulties. Spanish was determined to be Jose's dominant language. The Goldman-Fristoe Test of Articulation-2 (GFTA-2) was administered. It was noted that approximately 50% of the words were elicited in imitation. Dialectal errors were noted and included b/v, sh/ch, and t/th. Misarticulation of the phonemes /s, z, r, l/, and related blends was also noted.

The Spanish Articulation Measure (SAM) was administered to assess articulation skills at the single word level in Spanish. Jose misarticulated the phonemes /l, s, r, rr/. Parents noted difficulty with /rr, d, x, w, l, s, g, f/, and said overall he was difficult to understand. Teacher reported difficulty with /l, r, w, d, m, p, rr/, and "ch". SLP opinion noted difficulty with /rr, r/ and inconsistent errors in conversational speech.

Phonemes in error on the SAM were probed. It was noted that production of the phonemes /s, r, l/ were in error 30% of the time and /rr/ was in error 100% of the time. Probe of target phonemes confirms difficulty with /rr/, but given Jose's age, this would be considered developmentally appropriate and not disordered according to district guidelines.

Because of the disagreement in data of what was reported by the formal testing, probes, and parent/teacher/SLP data, the Percentage of Consonants Correct for single words and conversation was administered to determine if a discrepancy exited in the two contexts. Results indicate that there is a significant difference in conversation (55%) compared with single words (75%). Therefore, it is recommended that the ARD Committee consider eligibility for Jose as a student with a Speech Impairment due to an articulation disorder.