

# **Common Questions by Speech and Language Therapists / Speech-Language Pathologists about Bilingual / Multilingual Children and Informed, Evidence-based Answers**

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The Multilingual-Multicultural Affairs Committee of the



<https://ialpasoc.info/committees/multilingual-and-multicultural-affairs-committee/>

## Contents

When can developmental language disorder be determined for bilingual / multilingual children?	3
What are the (cognitive) benefits of bilingualism / multilingualism? Can children with Developmental Language Disorder learn more than one language?	4
Which factors should the Speech and Language Therapist / Speech-Language Pathologist consider when assessing a linguistically diverse child?	6
What are guidelines for the speech-language assessment of bilingual/multilingual children?	8
What are the best approaches to intervention for bilingual children?	12
References	15

## **When can developmental language disorder be determined for bilingual / multilingual children?**

Multilingualism can be defined in many ways. It is not easy to define who is multilingual, since language is a dynamic, complex, social tool that develops over time, and is used for a variety of different purposes with a variety of persons (Scharff Rethfeldt, 2013). Terminology in studies of second language (L2) acquisition often refers to age effects, effects of exposure to diverse languages, or age of onset of languages including concepts of early and late bilingualism, simultaneous and sequential/successive bilingualism, and the number of languages being learned (Goldstein, 2019; Montrul, 2008). These labels are problematic when attempting to classify a multilingual child's strengths and weaknesses or language dominance.

Although language dominance is most often used to indicate greater skill in one language over the other, multilingualism exists in a continuum, meaning that multilingual children may possess skills that are superior in one language, with other skills superior in another language (Goldstein, 2019; Thordardottir, 2011, 2015, 2019; Kohnert, 2010; Paradis, Genesee, & Crago, 2011). This is related to the fact that languages develop according to different schedules, and also to the fact that children live different experiences in each of their language environments. The difference between simultaneous and sequential is far from clear, also in terms of developmental features. Age of onset for languages, frequency and duration of input, language dominance, distributed language skills and weaknesses and strengths across language domains, even attrition etc. need to be considered. It also needs to be taken into consideration, that language dominance and therefore competence might change. For example, when a child becomes more proficient in a new language, these skills may exceed those of his or her heritage language(s) (also referred to as "minority language", "community language", "home language", "family language", "mother tongue", "L1").

The most essential consideration is that early identification of a disorder is essential to ensure successful language development, academic progress, quality of life and participation. First of all, the child's family should be asked if difficulties have been observed and if this child's development differs from that of siblings and peers of the same age. It is also important that children's progress be compared with other multilingual learning children, and not with monolingual learners who have been exposed exclusively to one of the languages in question from birth.

A developmental language disorder (DLD) is ideally diagnosed only when both/all languages are assessed, given that a DLD will appear in all languages spoken by the child. Obtaining information on the child's development and abilities in all languages as part of a full pre-assessment or case-history information is crucial for an evidence-based diagnosis. However, in reality, a direct assessment of all languages is often not feasible for various reasons and is not undertaken (Thordardottir & Topbas, 2019). Some of the difficulties that have been reported in obtaining a diagnosis of a multilingual child include the following: (a) the scarcity of standardized tests that contain bilingual or multilingual norms; (b) the challenge of the number of multilingual

clinicians who are able to administer and analyze assessment tools, and (c) the absence of information regarding a child's exposure to languages in question and their effects on test performance. Multilingual assessment, therefore, frequently involves a combination of direct and indirect assessment procedures, including observations. Procedures have also been proposed that estimate the likelihood that a language impairment exists based on formal measurement of only one language, given that this scenario is common in clinical practice (Thordardottir, 2015).

Identification of a communication disorder in a bilingual or multilingual individual requires careful consideration of numerous factors that influence language (Scharff Rethfeldt, 2013). A true communication disorder will be evident in each language used by an individual. However, a skilled clinician will appropriately account for the process of language development, language loss, the impact of language dominance fluctuation, and the influence of multiple language acquisition and use when differentiating between a disorder and a difference.

## **What are the (cognitive) benefits of bilingualism / multilingualism? Can children with Developmental Language Disorder learn more than one language?**

Bilingual / Multilingual children develop their cognitive abilities while having some experiences that differ from monolingual children. As already noted, there are many environmental factors, like the quality and quantity of linguistic input, that impact on the child's development of each language in a bilingual/multilingual setting. In addition to child external factors, child internal factors also affect the rate and eventual attainment of languages in bilingual settings. Among children with language disorders and cognitive deficits, language proficiency will vary as part of the degree of the impairment and the developmental level of the child.

One would expect that these child-external factors would affect not only the linguistic but also metalinguistic skills. Although a meta-analysis by Adesope and colleagues points to this (Adesope et al., 2010), Barac and colleagues (2014) have later reviewed that the advantages in metalinguistic skills are inconsistent where bilingual children sometimes have an advantage, sometimes perform at an equal level to their monolingual peers, and sometimes suffer from a bilingual cost. These are explained by multiple child-external and internal factors, including the languages involved, context of their usage, language proficiency, and assessment tasks. Accordingly, Barac and colleagues call for more detailed research on the subject.

There is also accumulating amount of research on the possible more general cognitive advantage in bilingual children. Cognition refers to a mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. It covers functions such as attention, executive functions, memory, and language. Of these, executive functions are among the most intensively investigated in relation to the possible cognitive advantage in bilingual children and they refer most often to

processes of inhibition, working memory, and shifting (Miyake et al., 2000). Research examining the relationship between language experience and cognition has pointed to selective advantages for bilingual children compared to their monolingual counterparts in tasks requiring executive control (reviewed in Barac et al. 2014 and Schirmbeck et al., 2020; meta-analysis by Adesope et al. 2010). This has been explained by the demands of mastering and controlling multiple language systems (Green 1998) that would have an effect on executive functions as well as brain plasticity (Bialystok & Poarch, 2014). More detailed explanations put forward cover the areas of executive attention (Bialystok, 2017) inhibitory control, conflict monitoring, shifting, and general cognitive performance (reviewed in von Bastian et al., 2016).

However, the bilingual advantage on executive functions has not always been replicated (e.g., Arizmendi et al, 2018; Dunabeitia et al., 2015; Gathercole et al., 2014; Karlsson et al., 2015). Further, if the tasks pose excessive demands on language, for example in understanding complex instructions, typically developing sequentially bilingual preschool and school-aged children may perform at a lower level than their monolingual peers (Rosselli et al., 2010). Thus, taking into account the various forms of multilingualism, developmental changes, and multiple processes involved in a single task, it is unlikely that an overall bilingual advantage will be uncovered by future studies (Kovács, 2016; Lehtonen et al., 2018; Paap et al., 2015; Poarch & Krott, 2019).

The cognitive advantages have yet to be studied in bilingual / multilingual children who have cognitive and/or language disorders. Kohnert (2010) has suggested that both monolingual and bilingual children with developmental language disorder (DLD) share similar nonverbal challenges (Kohnert et al., 2009). For example, Ebert (2014) showed that nonverbal auditory working memory partly explains the difficulties of sentence repetition in school-aged multilingual children with DLD and that executive function tasks can be used to differentiate bilingual TD and DLD children (Ebert & Pham, 2019; see however, Laloï et al., 2017) with no bilingual DLD advantage emerging in tasks of attention (Boerma et al., 2017a; Engel de Abreu et. al, 2014; Ebert et al., 2019). Marton and colleagues (2019) suggest that bilingualism and DLD could have shared effects on cognitive control functions. Last, Crespo and colleagues (2019) suggested based on their findings on typically developing children that a “robust language system may be required for dual language exposure to influence executive function”. In sum, the research on bilingual advantage in children with DLD is too scarce to allow for conclusions.

Even though there may be neither cognitive advantages nor disadvantages linked to bilingualism/multilingualism, it is important to keep in mind that knowing or learning more than one language is an advantage of itself. Bilingualism/Multilingualism is an ability that allows an individual to communicate with more people, connect to diverse cultures, and therefore provides more opportunities to view and reflect the world. As a consequence, also individuals affected by a language disorder do benefit from being raised or educated in more than one language.

## **Which factors should the Speech and Language Therapist / Speech-Language Pathologist consider when assessing a linguistically diverse child?**

The age of exposure to a second language environment has been found to be a strong predictor of language proficiency in the new language (Bylund, 2009), but the sensitive period for learning L2 is considered fairly long (Granena & Long, 2012). However, the quantity and quality of input are considered even more important factors (Thordardottir, 2019; Unsworth, 2016). Consequently, it is common that children can possess different language abilities in their languages and across language domains (Montrul, 2013). Some children can also be stronger in general in the new language and some children in their first language. This can also change over time. It is important to be aware that not all children placed in bilingual contexts become highly proficient in both languages (Thordardottir, 2017), even in the case of early exposure to the language (Hoff, 2017).

Contexts of linguistic diversity require specific knowledge of assessment practices of language disorders. This encompasses the need to investigate the social setting and cultural contexts in addition to the diverse communication competencies and linguistic knowledge. The latter depends on the individual languages involved.

In the case of a cultural and linguistic mismatch between the assessor and the child, the outcome may not only be a diagnosis of divergent or poor performance. Assessors may over-compensate for this mismatch and attribute poor performance to language differences and therefore under-identify a language disorder. On the other hand, assessors may over-identify a language disorder when there are actually language differences only. Assessment procedures claim to be fair when they are evaluated to have reduced biases. Linguistic bias is common due to the diversity and wide variation of languages.

Languages differ in many different ways. Typologies of languages have been shown to affect not only the acquisition of a new language through cross-linguistic influence but also maintenance of the heritage language (Cuza & Pérez 2015, Scharff Rethfeldt, 2011, Meir et al., 2017; Jarvis & Pavlenko, 2008; Fabiano-Smith & Goldstein, 2010). Linguistic typology classifies languages according to their structural and functional features. For example, the vast majority of languages can be divided into three types according to the dominant order of the subject (S), object (O) and verb (V): SVO (e.g. English, Chinese), VSO (e.g. Arabic, Welsh), and SOV (e.g. Japanese, Turkish). Second language learners may have difficulty with the acquisition of case marked languages if the first language lacks these functions (Yager et al., 2015). On the other hand, languages sharing many grammatical or phonological features or cognates are easier to learn together.

Some languages have fixed word orders like English (SVO: *John likes Mary*), and others have free word orders, like Russian. In English, “likes John Mary” (VSO) is ungrammatical, while in Russian all combinations may be grammatical (e.g., SVO, OVS, SOV, VSO, VOS, OSV). However, grammaticality of word order may be dependent on

other variables such as tense. Languages also differ with respect to the placement of adjectives: before or after the noun (e.g., English: a *long* pencil / a *blue* pencil; French: un *long* crayon, but un crayon *bleu*). (see Haspelmath et al., 2005 for more examples).

Practitioners must be aware of syntactic, morphological, phonetic, phonological, socio-pragmatic, and semantic differences across languages when assessing bilingual or multilingual speakers.

Because languages differ so much in their structures, it is important to compare the language performance of bilingual / multilingual children to norms for that language in terms of the sequence of development. Even though bilingual / multilingual children will not follow monolingual norms in terms of the speed of development, simultaneous bilinguals do follow a language-specific sequence of development in each language (Thordardottir, 2015). For this reason, bilingual / multilingual children should not necessarily be expected to have acquired the same grammatical structures in both languages. Additional or second language learners may use more explicit learning strategies than younger bilinguals, comparing the structures of both languages.

Children with a language disorder may have difficulty with several aspects of the new language for vocabulary, syntactic structure, and morphology (Boerma et al., 2017; Blom et al., 2013). Consequently, comparison and careful consideration are needed when interpreting assessment results from bilingual / multilingual speakers / hearers, with factors in both assessment and intervention.

Difficulties might be found not only in the acquisition of the additional or second language in bilingual / multilingual children. The above-mentioned factors might also affect the acquisition and maintenance of the first language (e.g., Anderson, 2012; Cuza & Pérez-Tattam, 2015; Montrul & Sánchez-Walker, 2013). Under the influence (direct or indirect) of another language, children might have some problems with morphology in the first language(s).

Bilingual / Multilingual children might go through attrition in their heritage language (loss of some linguistic properties) or incomplete acquisition of certain (e.g. grammatical) properties. For example, bilingual / multilingual children might have difficulties with gender marking in their heritage language (e.g., Anderson, 2012; Rodina & Westergaard, 2017). Bilingual children who acquire a heritage language with rich morphology in tandem with a society language which has sparse case morphology might be less accurate in producing the correct cases in their heritage language (e.g., Janssen & Meir, 2018). The heritage language (the minority language) seems to be more vulnerable to reduced input and bilinguals show smaller vocabularies in their heritage language as compared to monolinguals in the country of origin (e.g., Mieszkowska et al., 2017).

Retention of the heritage language can be challenging without sufficient exposure, and shift in language dominance can be rapid, even if the heritage language is one of high status in general (e.g., Scheidnes & Tuller, 2016). Maintaining the language is even more challenging in a minority language environment, when the language has few speakers and low status in the society. Keeping a minority language in use involves

special and often high effort. Sometimes children's heritage language may be lost (Polinsky, 2007). This process is known as language attrition. This process can occur when children are isolated from, or not exposed to, their heritage language. This attrition can also happen in different degrees, depending on the possibilities and motivation to use the language. In many cases, there may not be loss of heritage language skills, but slowed continued progress. Bilingual instruction has been shown to protect heritage language skills and may be important for language maintenance (Castilla-Earls, et al., 2019). Research also shows that exposure is a valid indicator of dominance of relative proficiency in each language (Köpke & Genevskaja-Hanke, 2018) and attrition may be only temporary if there is a quick return to more balanced use of the heritage and society language(s). It is positive to encourage families to continue to use their heritage language(s) when their child is learning a new language, as there are positive factors in bilingualism / multilingualism.

## **What are guidelines for the speech-language assessment of bilingual/multilingual children?**

First of all: The aim of the clinical assessment should be kept in mind, questioning:

For which purpose is the assessment?

- Is it for school orientation in comparison with a monolingual group, with a possible identification of the need for language tuition?,
- Is it for linguistic analysis within an individual regarding the skills in one language compared to the skills in the other?, or
- Is it for clinical diagnostics in order to identify a possible communication disorder that would need individual speech-language therapy?

For clinical assessment purposes, combining several different frameworks is recommended. The frameworks suggested (see De Lamo White & Jin, 2011; Grech & McLeod, 2012) are often overlapping and nested and have advantages as well as challenges in terms of assessing multilingual children:

- Norm-referenced standardized tests** can work only as directional tools with a suitable comparison group. They are most often not recommended in the assessment of bilingual children.
- In the **criterion-referenced measures**, skills are compared to a criterion set beforehand, not norms. Criterion can be set individually (e.g phonologically understandable speech, certain level of grammaticality in speech, is able to follow instructions in everyday life situations etc.). European Framework of Reference for languages is based on this notion and can be adapted for example to assessment of children's language skills in kindergartens.



• **Language processing tasks** typically include non-word repetition, auditory short-term memory and phonological discrimination. They are thought to be less dependent on accumulated linguistic knowledge but are not completely language independent either. Non-word repetition especially has been found to be promising in differentiating bilingual children with DLD from their typically developing peers (e.g Thordardottir & Brandeker, 2013).

• **Dynamic assessment** has various opportunities and task types. It is based on the zone of proximal development and investigates the learning potential of the child, unlike static assessment tools. These tasks can also guide decisions for intervention. Dynamic assessment often requires a lot of experience from the assessor.

• **Socio-cultural approaches** are based on a notion that language and environment can't be separated. In this approach, questionnaires and interviews are often used. The child is also preferably assessed in his/her own environment.

• **A Holistic framework** combines several assessment methods, which is often the most recommended way of approaching the challenging task of assessing multilingual individuals.

Assessment must determine areas of strength and weakness in both/all languages and across diverse language domains. Shifts in skills over time should also be observed. It should also be kept in mind, that balanced bilinguals / multilinguals with equally strong competence in their two or more languages are rare (Baker, 2011).

Goldstein (2019) and Scharff Rethfeldt (2013) have provided guidance for the assessment of bilingual speaking children. Certain history areas must be considered for evidence-based assessment. The case history provides an opportunity to learn about the child's exposure to languages and environments in which each language is used. Information regarding who speaks which language, the frequency in which language is spoken, and the environments in which the languages are spoken are important. In addition, knowledge of a child's language development in the native language (or other languages learned or spoken) is important. An interview of family members is an important component of the assessment process. Scharff Rethfeldt (2013) proposed a pool of questions that have been translated into diverse languages in case of language mismatch between clinician and caregivers.

It is important for speech and language therapists (SLT) / speech-language pathologists (SLPs) to acquire the knowledge, skills, and attitudes required to competently evaluate and address the language needs of bilingual / multilingual children. As an SLT/SLP establishes a rapport with a child, seeking opportunities to communicate with the primary caregiver, case managers, and cultural brokers in the community is valuable. Essential clinical strategies include successful work with interpreters, selection of appropriate tests and assessment tools, and accessing resources about the language proficiency of primary languages spoken at home (McNeilly, 2019).

Once a child's history is completed, assessment can begin. The difficulty in utilizing standardized tests with bilingual / multilingual children is that normative references are largely available for only monolingual children (Rimikis et al., 2013). The use of standardized assessments and thus the use of material developed with a monolingual mindset and/or applying normative data that has been developed with monolingual children is seriously questionable, as this will increase construct, method, and item bias and subsequently the risk of misdiagnoses (Scharff Rethfeldt, 2019). Because bilingual / multilingual children are a tremendously heterogeneous population, the development of a "bilingual or even multilingual norm" may not be possible.

Because of lack of applicable norms, informal assessment is often the only approach that is available. However, the direct application of monolingual norms with bilingual / multilingual children leads to over-diagnosis of bilingual children (Bedore & Peña, 2008), although it can be appropriate in some cases, notably for children with a strong dominance in one language (Thordardottir, 2011). Procedures have been proposed that use different cut-off criteria for bilingual children, prorating the cut-off values based on the child's particular exposure history (Thordardottir, 2015). Comparison of each language with monolingual norms will also provide an idea of dominance and of functioning in a monolingual environment (Thordardottir, 2017). One approach is to use standardized test material in an informal way. In this approach, the examiner administers the stimulus items from a test without using the scores required to determine an overall score that is required by the test. When this mode of testing is used, it is important to employ item analysis to determine which items on the test present difficulty.

It is also important to acknowledge cultural differences in test taking skills as not all children will have experience taking tests. When testing these children, more explanations may need to be provided, practice items and stimuli may need to be repeated and reword test items reworded. It may also be necessary to test beyond the test's ceiling (i.e., above the point where administration of the test would stop if it were being scored according to the instructions in the test manual). The examiner may also ask children to explain their answers in order to determine if they have understood the question. It is necessary to keep in mind that modifications of this kind invalidate any norms that come with the test, as children in the norming sample were administered the test following a strict protocol (Thordardottir, 2015).

Other methods of informal assessment are the use of parent questionnaires, comparing data from the child being evaluated with published data on similar children, and the analysis of narratives/conversational samples. One possibility to consider is using more criterion referenced approaches (Baker, 2011), where the child is profiled on specific language skills and their development is assessed comparing them to themselves. It is important to keep in mind that formal tests were not designed to be used as informal measures, and that some normative reference bases are required to interpret informal data. While these informal approaches are often the only methods available, it must be emphasized that they represent approximations that are subject to a larger error margin than carefully designed tests that are appropriate for the population being tested.

The narrative approach to assessment is a useful and positive approach for language assessment. Narratives can provide information about a child's knowledge of vocabulary, grammatical structures, and story structure (Squires et al., 2014). However, it is essential to consider the cultural differences in the style and structure of narratives when assessing children from different language backgrounds (Bliss & McCabe, 2011). Narratives can be described in terms of the structure of the entire story (macrostructure) and the specific types of words and sentences that make up the story (microstructure). School-age children typically create stories that include macrostructure elements: characters, setting, an initiating event, plans developed in response to the initiating event, actions to carry out the plans, a consequence, and internal responses felt by the characters in response to the initiating event or consequence (Stein, 1988). Children with typical language development are more successful in narrative production than children with a developmental language disorder (DLD). Findings also showed that the presence of macrostructure scores in a child's heritage language in kindergarten act to predict macrostructure scores in the society language in the first grade. In fact, a number of recent studies have found the macrostructure of narratives to be fairly unaffected by bilingualism (e.g. see Gagarina et al, 2016: the Special Issue "Narrative Abilities of Bilingual Children" in Applied Psycholinguistics) – therefore, pronounced difficulty in telling a story is a sign of language difficulty or impairment, depending on its severity.

Dynamic Assessment is another alternative assessment method (Gillam et al., 2014; Gutiérrez-Clellen & Peña, 2001). The goals of dynamic assessment are to profile learners' abilities; to observe learners' modifiability; to induce active, self-regulated learning; and to inform intervention. Dynamic assessment allows the assessor to tap future skills or the child's modifiability (i.e., change through mediation). Modifiability involves three factors: child responsiveness (how the child responds to and uses new information); examiner effort (quantity and quality of effort needed to make a change); and transfer (generalization of new skills). All three factors are critical in determining if a child fails on a task because of experience or ability.

The usual format for dynamic assessment for diagnostic purposes is test-teach-retest. In the test phase, the examiner determines the child's areas of weakness and the base level of functioning, without any aid or assistance. In the teach phase, the assessor models the target behaviors and strategies in meaningful contexts, makes the child aware of how the strategies are to be applied, allows the child to lead some of the time, and increases demands as the skills are mastered. In order to determine how the child has progressed after the 'teach' phase, s/he is retested, measuring examiner effort (i.e., how much aid is needed by individuals to maximize their performance), child responsiveness (i.e., how rapidly the child changes in response to teaching), and transfer (i.e., the generalization of the task to other tasks and other domains). Dynamic assessment has been used successfully to differentiate children's lack of experience from their lack of ability. Thus, it may be a positive approach for assessment of bilingual speaking children.

A young bilingual child's vocabulary can also be assessed by using total vocabulary and conceptual scoring (Gross, Buac, & Kaushanskaya, 2014; Pearson, Fernandez,

Levedag & Oller, 1997). An example of total vocabulary scoring follows when a Spanish/English-speaking child's vocabulary skills are assessed for describing a picture of a ball through the use of code switching to convey meaning (striped, round, big, red): "Striped"... "round" ..."grande" ..."rossa." If this child were scored for only English, the score would be "2." If credited for the child's native language (Spanish) and second language (English), the score would be "4." If only one language is considered, the child's true vocabulary knowledge would not be considered.

Conceptual vocabulary scoring is frequently undertaken using the Mac-Arthur-Bates parent report checklist that refers to the number of concepts the child has produced a word for, regardless of language. Thus, if the child has said pajama in French and also in English, that word counts only once towards the conceptual vocabulary score. Studies, across several languages, have indicated that conceptual vocabulary should be roughly comparable to monolingual vocabulary norms (Pearson et al., 1993), with variation expected across particular languages and a child's knowledge in languages (Thordardottir et al., 2006).

Tests that target language processing rather than language knowledge (vocabulary size or syntactic structures) have been shown to accurately distinguish children with and without DLD, for both bilingual and monolingual speakers (Armon-Lotem & Meir, 2016; Thordardottir & Brandeker, 2013; Fleckstein et al., 2018; Chiat & Polišenská, 2016; Summers et al., 2010). These tests include nonword repetition and sentence imitation. Nonword repetition involves the ability to perceive, store, recall and reproduce phonological sequences. Children with DLD are much more greatly affected by word-length than are TD children, and in this respect, DLD children clearly differ from both monolingual and bilingual children with TD (Thordardottir & Brandeker, 2013)

## **What are the best approaches to intervention for bilingual children?**

For bilingual / multilingual children, the purpose of intervention is to systematically improve their communication skills in both languages through intervention carried out by a culturally and linguistically competent professional. To do so, a six-step process for intervention is proposed that is highly recommended for bilingual children: choose goals, choose targets, choose the goal attack strategy, choose the intervention approach, choose the language of intervention, and monitor progress.

There is a fairly small, but growing, research base on the efficacy of treatment and assessment for bilingual children. Taken together, available studies indicate that targeting both languages in some way is beneficial as it supports both languages and does not slow down overall learning. No studies to date have indicated that a monolingual treatment is superior (Thordardottir, 2010, 2017). Current studies have also indicated that, in order to advance both languages, both must be directly targeted. For particular language structures, such as vocabulary items or syntactic structures, the evidence is clear that teaching targets in one language does not give rise to these same targets in the other language (Thordardottir et al., 2015; Restrepo et al., 2013).

However, carry-over to the other language has been shown for more abstract skills that draw on a common underlying metalinguistic awareness, such as incorporating more complex sentences (that have already been acquired) into narratives (Peterson et al., 2006; Thordardottir, 2017). In actual clinical practice, a direct focus on both languages may not be feasible due to lack of suitable personnel. Bilingual treatment has been created through a collaboration with parents, with mixed results (Tsybina & Erics-Brophy, 2010; Thordardottir et al., 2015). An important consideration in this respect appears to be the necessity to ensure that a strong focus is included on both / all languages.

For children who speak a first and a second language (thus with fairly late introduction of the second language), main approaches have been described: a Bilingual Approach (with skills common to both languages receiving attention) or a Cross-linguistic Approach (with attention directed at specific linguistic features or social uses of each language separately) (Kohnert, 2010). Within both of these approaches, it is essential to maintain a child's first language to allow children to communicate and learn from family and friends and to maintain their native culture, values, and beliefs.

**Bilingual approach:** The approach supports goals that address areas common to both languages, along with errors found with equal frequency in both languages. Two bilingual approaches have been described (Gutierrez-Clellen, 1999). The first consists of the heritage language being maintained and strengthened in the child's home while the therapist works with the academic or society language. The second consists of the concurrent translation of sentences in one language that are repeated in the other language. In one program, children were provided with lessons in bilingual books that introduced narrative and new vocabulary items in their heritage language. The following day, the same material was presented in the school language. Some SLTs/SLPs have used the two languages in one session. Others have used both languages in different sessions. It is important to assess learning to determine the best approach.

**Cross-linguistic approach:** This approach focuses on the linguistic skills unique to each language, with targets on errors noted in a specific language. Support for this approach comes from studies that have shown that in order to advance basic skills in a particular language, that language needs to be directly targeted (Thordardottir et al., 2015; Restrepo et al., 2013). Indeed, basic skills such as vocabulary items and syntactic structures do not transfer directly from one language to the other. Also, because each language of a young bilingual child is acquired according to the specific schedule of that language, the items that need to be worked on may differ markedly between the languages. Intervention focusing on a particular language has been done in different ways, for example by targeting two languages in different sessions (Thordardottir, Ellis Weismer & Smith, 1997; Restrepo et al, 2013) or in different settings by the SLT/SLP and the parent (Tsybina & Eriks-Brophy, 2010).

Carryover and generalization are important factors in learning. To assure carryover or generalization of intervention goals, the SLT/SLP may also provide children with support for repeating what was learned during the session. SLTs/SLPs can also ask family members to repeat in their own language what was learned in the therapy

session to promote the use of both languages. Another approach is to ask a child to teach the SLT/SLP one word from their heritage language in each session. This acts to contribute to a sense of acceptance.

It may also be important to request an interpreter if the SLT/SLP requires this support. Collaboration with interpreters requires that the SLT/SLP remains responsible for planning the session, selecting culturally relevant materials, and appropriately administering assessment and treatment (ASHA, 2018). The skills necessary for an interpreter are proficiency in the child's language, familiarity and a positive attitude to the child's culture, and understanding the importance of following the guidance of the SLT/SLP (ASHA, 2004). However, it is important to note that research is lacking on the efficacy of the use of interpreters or on the specific roles that they should assume in assessment or therapy.

There are also some published assessment tools and measures for bilinguals, like questionnaires and word lists to screen or test children's articulation and phonology in a variety of other languages.

- A multilingual device has been developed, Speakaboo (2019), for phonological assessment across several languages for practitioners who don't (?) speak the child's heritage language, see <http://www.speakaboo.io/introduction>
- The Bilingual-English-Spanish-Assessment test (BESA) was developed for Spanish-speaking children's assessment (Peña, Gutiérrez-Ciellen, Iglesias, Goldstein, & Bedore, 2018).
- Grech and McLeod (2012) offer information on multilingual speech and language development.
- Hua and Dodd (2006) offer information on phonological development and disorders in children, based on a multilingual perspective.
- Hambly, Wren, McLeod, & Roulstone (2013) offer information on the influence of bilingualism on speech production. Guidelines for school-based assessment are offered by Caesar & Kohler (2007).
- Scharff Rethfeldt (2013) offers a tool for pre-assessing multilingual children's case history and linguistic developmental profile (Bilingual Patient's Profile and Culturally Diverse Case History and Pre-assessment Information – Children). Adapted versions are available in diverse languages, such as Arabic, Bulgarian, English, French, Mandarin Chinese, Russian, and Turkish, see [logo-mobil.net](http://logo-mobil.net)
- Information on approaches to teaching within bilingual and multilingual classrooms are offered by Levey and Polirstok (2011).
- LITMUS Assessment Battery for the assessment of language abilities of bilingual children in a variety of languages: parental questionnaire (PABIQ questionnaire), nonword-repetition tasks (quasi-universal and language-specific), LITMUS sentence repetition tasks, narrative tasks (LITMUS MAIN), receptive and expressive vocabulary (LITMUS CLT), etc. (for more detail see Armon-Lotem et al., 2015), see [bi-sli.org](http://bi-sli.org)

A tutorial is available for speech pathologists that wish to assess the speech sound and phonology of children with whom they do not share a language (McLeod, et al, 2017).

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