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

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Content

What terminology is used to describe children that speak more than one language?

Multilingualism (including bilingualism) 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 people (Scharff Rethfeldt, 2023). Studies of multilingualism and second language (L2) acquisition often use the terms simultaneous and sequential/successive bilingualism and early and late bilingualism (Goldstein, 2019; Montrul, 2008), using the effects of age, exposure to different languages, or age of onset of languages to define separate groups of bilinguals. These labels are problematic when attempting to describe 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. This means that multilingual children may demonstrate some strong skills in one language, with other strong skills in another language and furthermore, across the language domains (Goldstein, 2019; Thordardottir, 2015). This is due to the fact that languages develop according to different schedules, and also to the fact that children have different experiences in each of their language environments.

The difference between simultaneous and sequential language acquisition is also far from clear in terms of developmental features. A range of features need to be considered, including the age of onset for each language, the frequency and duration of input, language dominance, distributed language skills, weaknesses and strengths across language domains, and attrition. Language dominance, and competence, may also change over time, with experience. For example, when a child becomes more proficient in a new language, these skills may exceed those of their first language(s).

How is Developmental Language Disorder diagnosed in multilingual children?

Early identification of a disorder is essential to support successful language development, academic progress, quality of life and participation. Firstly, 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 children with similar language experience, and not with monolingual learners who have been exposed exclusively to one of the languages in question from birth.

Children with Developmental Language Disorder (DLD) will experience difficulties in all languages spoken by the child (Kohnert, Ebert & Pham, 2021). DLD will, however, look different across the languages and language domains (Stavrakaki et al., 2021). Therefore, a full pre-assessment or case history requires information on the child's development and abilities in all languages. Structured questionnaires filled in by parents and teachers are often valuable tools in mapping not only the history and present language skills but also language environment the child is living in.

Further, direct assessment of all the child's languages is also advised. However, in reality, this is often not feasible for various reasons, and is not undertaken (Thordardottir & Topbas, 2019). Some of the difficulties that have been reported include:

- the scarcity of standardized tests that contain norms for multilingual children;
- a limited number of multilingual clinicians to administer and analyze assessment tools, and
- a lack of information on the effects of differential levels of language exposure on test performance.

To overcome these challenges in direct assessment, procedures have also been proposed that estimate the likelihood of a language impairment based on formal measurement of only one language and adjusted norms (Thordardottir, 2015). Cautiousness is needed, however, in order when applying these methods, since background variables affecting language performance vary enormously between the multilingual children. Language experiences and hence the dominance especially play an important role. To avoid diagnostic decisions being made solely based on one language (often majority language), minority language skills can be analyzed with the help of a skilled interpreter by using e.g. speech samples. Observation of the child's language use in her/his natural environment is also advised.

Besides drawing conclusions of child's language development and performance, identification of a communication disorder in a multilingual individual requires careful consideration of numerous factors that influence language (Scharff Rethfeldt, 2023). A skilled clinician will appropriately account for typical language development processes, the effects of language experience on skills growth and attrition, effects due to language combination, as well as the fluctuation of language dominance when differentiating between a disorder and a difference.

To conclude, due to the great variation in child intrinsic as well as environmental and situational factors, assessment of multilingual children, frequently involves a combination of direct and indirect assessment procedures.

What are the cognitive benefits of speaking more than one language?

Multilingual children have different experiences to monolingual children while developing their cognitive abilities. As already noted, environmental factors such as the quality and quantity of linguistic input will impact on the child's development of each language in a multilingual setting. In addition to child external factors, child internal factors also affect the rate and eventual attainment of multiple languages. Language proficiency will vary among children with language disorders and cognitive deficits, as part of the degree of the impairment and the developmental level of the child.

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. Executive functions are among the most intensively investigated in relation to cognitive advantage in multilingual 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 multilingual children compared to their monolingual counterparts in tasks requiring executive control (Barac et al. 2014; Adesope et al. 2010). This has been explained by the demands of mastering and controlling multiple language systems (Green, 1998) that would

effect executive functions as well as brain plasticity (Bialystok & Poarch, 2014). Diverse studies have shown that adult bilingual speakers demonstrated advantages over monolingual speakers across various aspects of cognitive control filtered by language (Kroll & Bialystok, 2013).

Although many studies point to certain advantages of bilingual infants in various cognitive domains, e.g., better attention switching, simultaneous learning of two regularities (Kovács & Mehler, 2009) and better memory generalization (Brito & Barr, 2012) as well as to better inhibitory control and cognitive flexibility in pre-school-aged children (Barac et al., 2014), the results have not always been replicated (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). So may simultaneous bilingual children if one of the languages may develop reversibly due to less input (Scharff Rethfeldt, 2023). Thus, considering 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 (Kovàcs, 2016).

Researchers do not yet fully understand what it is about bilingualism/multilingualism that can lead to cognitive differences. Consequently, 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 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. However, the research on bilingual advantage in children with DLD is too scarce to allow for conclusions (Paap et al., 2015; Lehtonen et al., 2018).

Even though there may be neither cognitive advantages or disadvantages linked to learning more than one language, it is important to consider that knowing or learning more than one language is an advantage of itself. Speaking more than one language allows an individual to communicate with more people, connect to diverse cultures, and therefore provide more opportunities to view and reflect the world.

How does speaking more than one language affect metalinguistic skills?

Research on metalinguistic awareness in bilingual children paints a relatively inconsistent picture. Some studies report advantages in performance related to dual language learning. For example, typically developing bilingual children have advanced metalinguistic skills (Bialystok & Barac, 2012), and these advantages become more evident as bilingual fluency increases with increased language exposure. Other studies report equivalent performance for monolingual and multilingual children, and others report lower performance in multilingual children. These inconsistencies are related to features of the languages, typological distance between languages, the instructional context in which children learn and use the languages, language proficiency, and task demands. Results also demonstrate that metalinguistic skills transfer from one language to another, but the size of the cross-linguistic transfer is constrained by language proficiency and nesting structure of the data. Thus, these results point to the importance of evaluating these variables in the investigation of the development of metalinguistic awareness in dual/multiple language learners.

Can children with Developmental Language Disorder (DLD) learn more than one language?

As described above, knowing more than one language allows a person to participate in multiple communities, such as their family and their school. Therefore, children with language disorder also benefit from being raised or educated in more than one language. Children with DLD are able to learn more than one language, given that they are having sufficient opportunities (Kay-Raining-Bird et al., 2016). Acquiring more than one language does not make the severity of the DLD worse either (Paradis, 2010). Multilingual children with DLD have, however, difficulties in linguistic and nonlinguistic processing like their monolingual peers (Ebert & Pham, 2019). Hence, instead of learning one language slower they will learn two or more languages in a lower pace.

Which frameworks are available for speech-language assessment of multilingual children?

It is important for clinicians to acquire the knowledge, skills, and attitudes required to competently evaluate and address the language needs of bilingual / multilingual children.

Firstly, the aim and purpose of the clinical assessment should be considered. For example, is it for identification of the need for language tuition, or for comparison of skills in one language with another for the same child, or for clinical diagnosis?

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 bilingual children:

- **Norm-referenced standardized tests** are often not recommended for multilingual children as there is not a suitable comparison group.
- In **criterion-referenced measures**, skills are compared to a criterion set beforehand, not norms. The Common European Framework of Reference for Languages (Council of Europe, 2022) is based on this notion and can be adapted, for example to assess 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 language experience but are not completely language neutral.
- **Dynamic assessment** is based on measuring the child's zone of proximal development for language learning. The clinician evaluates learning potential by providing prompts and cues to investigate the amount and type of support that the child requires to successfully acquire new language skills. These tasks can also guide decisions for intervention.
- **Socio-cultural approaches** assert that language and environment can't be separated. In this approach, questionnaires and interviews are often used to investigate the child's language use in their own environment.

- **A holistic framework** combines several assessment methods, which is often the most recommended way of approaching the multifaceted task of assessing multilingual children.

Assessment must determine areas of strength and weakness in all languages and across language domains and skills. Shifts in skills over time should also be expected as balanced bilinguals / multilinguals with equally strong competence in their two or more languages are rare (Baker, 2011). This requires adjusting the methods of follow-up assessment in the course of child's development.

Which clinician factors should the SLT/SLP consider when assessing a linguistically diverse child?

Assessing the language of multilingual children requires clinicians to consider the social setting and cultural contexts of language use, in addition to diverse communication competencies and linguistic knowledge of each of the languages. Diagnostic accuracy may be affected when there is a cultural and linguistic mismatch between the clinician and the child. Linguistic bias might occur even when the dialect of the child and clinician differs. 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. Culturally competent clinician must overcome cultural, linguistic and communication barriers that may negatively influence the assessment (Moxley, Mahendra & Vega-Barachowitz, 2004).

Which language exposure factors should the SLT/SLP 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, 2013. However, the quantity and quality of input are considered even more important factors (Thordardottir, 2019; Unsworth, 2016).

Consequently, it is common that children possess different language abilities in their languages and across language domains (Montrul, 2013). Some children may demonstrate stronger skills in the new language, and others in their first language. This can also change over time. Language domains can be affected differently by the exposure, e.g. multilingual children with DLD might need substantially more exposure to develop their receptive vocabulary vs. expressive one compared to their typically developing peers (Smolander et al., 2021).

It is important to remember, that several factors, not only exposure related, have an effect in the development of multilingual children. Hence, not all children learning multiple languages become highly proficient in both/all languages (Thordardottir, 2017), even in the case of early exposure to the language (Hoff, 2017).

Which linguistic factors should the SLT/SLP consider when assessing a linguistically diverse child?

Children with a language disorder may have difficulty with several aspects of their languages such as vocabulary, syntactic structure, and morphology (Boerma et al., 2017; Blom et al., 2013), as their monolingual peers with DLD would have. Difficulties will, however, differ across the languages, language domains and in terms of severity. The diversity and variation between languages may result in assessment bias. Practitioners must be aware of syntactic, morphological, phonetic, phonological, socio-pragmatic, and semantic differences across languages when assessing multilingual speakers.

Typologies of languages have been shown to affect learning a new language through cross-linguistic influence (Jarvis & Pavlenko, 2008; Fabiano-Smith & Goldstein, 2010). Second language learners may for example have difficulty with the acquisition of case marked languages if the first language lacks these functions (Yager et al., 2016). On the other hand, languages sharing many grammatical or phonological features or cognates are easier to learn together.

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). 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).

Because languages differ structurally, it is important to compare the language performance of multilingual children to norms for that language in terms of the sequence of development. Even though 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, multilingual children should not necessarily be expected to have acquired the same grammatical structures in all languages.

Cross-linguistic influence Difficulties mightmight happen from L1 to L2 but also the other way around (e.g., Anderson, 2012; Cuza & Pérez-Tattam, 2016; Montrul & Sánchez-Walker, 2013). Multilingual children might also go through attrition in their first language (loss of some linguistic properties) or incomplete acquisition of certain (e.g. grammatical) properties. Bilingual children who acquire L1 with rich morphology in tandem with L2 which has sparse case morphology might be less accurate in producing the correct cases in their L1 (e.g., Janssen & Meir, 2018).

Retention of L1 may be challenging without sufficient exposure and shift in language dominance can be rapid, even if the first 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. If the first language is a minority language, it is more vulnerable to reduced input, with bilinguals showing smaller vocabularies in their first language as compared to monolinguals in the country of origin (e.g., Mieszkowska et al., 2017).

Keeping a minority language in use involves special and often high effort. Sometimes children's first language may be lost (Polinsky, 2007), known as language attrition. 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 L1 skills, but slowed continued progress in L1 progress. Bilingual instruction has been shown to protect first 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 & Genevska-Hanke, 2018) and attrition may be only temporary if there is a quick return to more balanced use of the first and new language(s). It is positive to encourage families to continue to use their home language(s) when communicating with children learning a new language, as there are positive factors in multilingualism.

How can SLTs/SLPs assess multilingual children?

Wide range of direct and indirect assessment methods are recommended when assessing multilingual children. 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).

Case History and Linguistic Biography

The case history provides an opportunity to learn about the child's quantitative and qualitative exposure to languages and environments in which each language is used. Information regarding the languages spoken by the child's communication partners, the frequency each language is spoken, and the environments in which the languages are spoken are important. An interview of family members is an important component of the assessment process. Scharff Rethfeldt (2023) proposed a pool of questions that have been translated and adapted into diverse languages in case of language mismatch between clinician and caregivers. Case history also includes information about child's language development in all languages as well as family history and possible risk factors.

Standardized Assessments

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). Because multilingual children are a heterogeneous population, the development of a "bilingual norm" or a "multilingual norm" may not be possible.

Because of lack of applicable norms, informal use of assessment tools is often the only approach that is available. When there are normed tests available for a certain language, 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 using different cut-off criteria for bilingual children based on the child's particular exposure history and language dominance have been proposed (Thordardottir, 2015). Comparison of each language with monolingual norms will provide an idea of functioning in a monolingual environment (Thordardottir, 2017). One approach is to use

standardized test material in an informal way. This is often the case when normed tests have not been constructed to the population in question. 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 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 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).

Parent Questionnaires

Other methods of informal assessment are the use of parent questionnaires, comparing data from the child being evaluated with published data on similar children. Parent questionnaires offer a valuable tool in gathering information about early milestones of child's language development, current state of language performance, details about language environment and also family history of language difficulties (Paradis et al., 2017). Parent questionnaires available are several, for example ALEQ, ALDeQ, PABIQ, BIPAQ, Q-BEX (see the resource list).

Criterion Referenced Approaches

One possibility to consider is using more criterion referenced approaches (Baker, 2011) where skills are compared against a predetermined learning goal, performance or other criterion, without considering how some normative sample perform. Criteria can be set individually (e.g phonologically understandable speech, certain level of grammaticality in speech, ability to follow instructions in everyday life situations, etc.). It is important to keep in mind that formal tests were not designed to be used as informal measures and hence the materials used in assessment using criterion reference are often different from the standardized tests. For example speech samples with more or less structured tasks can be used for analyzing certain skills. 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.

Language samples

It is highly recommended to use spontaneous or elicited language samples when assessing multilingual children (Thordardottir, 2015). Collecting language samples can be done in low- or high-structured situations and with different interaction partners.

Speech samples give valuable information about the real-life situations and communication abilities. Many things can be evaluated from these samples in all of the child's languages: morphosyntax (e.g. grammatical complexity or MLU, syntactic complexity), lexical diversity, phonology and language use in context as well as cross-linguistic influence. It needs to be remembered, however, that cross-linguistic comparisons are not straight forward especially at the microstructural level (Kohnert, Ebert & Pham, 2021). Language samples are a valuable tool

for a professional to accumulate their knowledge on language behaviours in a certain population for later identification purposes, especially when samples are collected in a consistent matter. When working with preschool children samples might concentrate more on conversational samples and with older children move onto more narrative approach (Thordardottir, 2015). Language samples are a valuable tool when performing assessment with the help of an interpreter. Samples can be then also pre-recorded in the home environment and analyzed later on (Langdon, 2016).

Narrative Assessment

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 native language in kindergarten act to predict macrostructure scores in L2 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.

Vocabulary Assessments

A young bilingual child's vocabulary can also be assessed by using total vocabulary and conceptual scoring (Gross et al, 2014; Pearson, et al, 1997), with particular relevance when a child uses code switching in their response to convey meaning. A child may use words from their full linguistic repertoire to provide their best answer. For example, to describe a striped, round, big, red ball, a Spanish/English speaking child may say: "Striped"… "round" …"grande" …"rossa." If this child were scored for only English, the score would be "2." If credited for the child's home 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 Communicative Development Inventories checklist* (CDI Advisory Board, 2015) 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)

Dynamic Assessment

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 evaluate emergent skills or the child's modifiability (i.e., change through mediation).

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, they are retested. Procedures can be adapted to different language levels and tasks can differ (receptive language, expressive language, real words, non-words, morphology etc.). Measures of modifiability are also considered, measuring: 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. Dynamic assessment has been used successfully to differentiate children's lack of experience from their lack of ability (Orellana et al, 2019). Thus, it may be a positive approach for assessment of children that speak multiple languages.

Language Processing

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 this is evident in both monolingual and bilingual children (Thordardottir & Brandeker, 2013) Non-word repetition in particular has been found to be promising in differentiating bilingual children with DLD from their typically developing peers (e.g. Thordardottir & Brandeker, 2013) even though it is not completely independent of language exposure either.

Sociocultural Assessment

Sociocultural approach is based on the assumption that a person's language use and influence of the social and cultural environment cannot be separated (De Lamo White & Jin, 2011). Speech-language pathologists use ethnographic paradigms to collect information about a child's community, past cultural experiences, and the family's culture. Information about cultures and systems in schools that children have been exposed to may provide valuable information regarding the behaviors they display (Langdon,1993; Langdon, 2002; Seymour, 1981; Valdes, 1995; McNeilly, 2019). Tools often used are interviews and questionnaires, and children are frequently observed and assessed in their familiar surroundings. Cultural parameters may include, but are not limited to:

- Behaviors not congruent with conventional behaviors in the society?, including different eye contact patterns, the time taken to answer questions, and language use with adults.
- Beliefs pertaining to reasons for testing: who should administer the test, how much effort should be expended on assessment exercises.
- Expectations related to schools: what is required of the child, use of information gathered from the assessment procedures.
- The degree of assimilation, including exposure to school subject matter, level of comfort with new environments and individuals, and adeptness at using methods to demonstrate learning (McNeilly, 2007).
- Assimilation is defined and becoming more like the new culture that accepts the new person. Acculturation is a complex process that involves modifying ones culture by borrowing from another culture as often seen with immigrants to the US that stop speaking their primary language and only speak English to feel more accepted by the dominant culture of the new country (Schwartz, et al., 2010; McNeilly, 2019).

What resources are available for assessing the speech and language skills of multilingual children?

- 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)

- Information on approaches to teaching within bilingual and multilingual classrooms are offered by Levey and Polirstok (2011).

- 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)

- A multilingual device, Speakaboo (2019), for phonological assessment across several languages for clinicians who don't speak the child's language.

- The Bilingual-English-Spanish-Assessment (BESA), developed for language assessment of Spanish-English speaking children (Peña, Gutiérrez-Clellen, Iglesias, Goldstein, & Bedore, 2018).

- LITMUS Assessment Battery (http://bi-sli.org/) 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), sentence repetition tasks, narrative tasks (LITMUS MAIN), receptive and expressive vocabulary (LITMUS CLT), etc. (for more detail see Armon-Lotem et al., 2015).

- Scharff Rethfeldt (2023) 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 Preassessment Information – Children). Adapted versions are

available in diverse languages including Arabic, Bulgarian, Chinese, English, French, Russian, and Turkish (http://logo-mobil.net/free-resources/).

- Paradis, J. (2011) Alberta language environment questionnaire (ALEQ) and Paradis, J., Emmerzael, K., & Sorenson Duncan, T. (2010). Alberta language development questionnaire (ALDeQ):
https://www.ualberta.ca/linguistics/cheslcentre/questionnaires.html

- PABIQ: https://www.bi-sli.org/pabiq (Tuller, L. (2015)

- Q-Bex https://www.q-bex.org/. (Kašcelan, D., Prévost, Serratrice, L., Tuller, L., Unsworth, S. & Da Catt, C., 2021).

What are the best approaches to intervention for multilingual children with speech or language difficulties?

The purpose of intervention is to systematically improve the child's communication skills in all languages. When planning the intervention, it is important to taken into consideration not only the current language needs but also look at the history of language use and make predictions of the future: what might be needed.

There is a small, but growing, research base on the efficacy of treatment for multilingual children. Available studies indicate that targeting all languages in some way is beneficial as it supports both languages and does not slow down overall learning. Taking the first/minority language(s) into consideration also gives better chances for its retention. 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 all languages, all 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 produce the same benefits in the other language (Thordardottir et al., 2015: Restrepo et al.,2013). Cross-linguistic influence has been found to work with intervention predominantly from the first language to the L2 (Paradis & Govindarajan, 2018). In general, 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 (Petersen et al., 2006; Thordardottir, 2017) In actual clinical practice, a direct focus on all languages may not be feasible due to lack of personnel. Bilingual treatment has been created through a collaboration with parents, with mixed results (Tsybina & Erics-Brophy, 2010; Thordardottir et al., 2015).

Carryover and generalization are important factors in learning. To assure these, the SLT may provide support for the child to practice the skills learned during the session. SLTs may ask family members to repeat in their own language what was learned in the therapy session to promote the use of all languages. Another approach is to ask a child to teach the SLT a word from their home language in each session, to contribute to a sense of reciprocal learning. On a sentence level, tasks might involve rehearsing structures with an SLT and then recording the same sentences at home and discussing afterwards again with the therapist.

It may also be important to request an interpreter. Collaboration with interpreters requires that the SLT remains responsible for planning the session, selecting culturally relevant materials, and appropriately administering assessment and treatment (American Speech-Hearing

Association [ASHA], 2018). The interpreter should have 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 (ASHA, 2004). However, research is lacking on the efficacy of the use of interpreters or on the specific roles that they should assume in assessment or therapy.

Use of two approaches to the intervention has been proposed: Bilingual and Cross-linguistic approach (Kohnert, 2010). In the bilingual approach skills common to all languages are being targeted. In the cross-linguistic approach attention is directed at specific features of all languages and give notice to the differences between the languages, for example certain structures or morphological phenomenon. By the age, more explicit learning strategies can be used in these approaches. Especially additional or second language learners may benefit from more explicit learning strategies comparing the structures of all languages. Planning and executing intervention for multilingual children requires, as assessment, at least some ground knowledge of the child's languages, its vocabulary, morphology, syntax and phonology

Bilingual Approach

This approach supports goals that address areas common to all languages, along with errors found with equal frequency in both languages. If an SLT is proficient in both/all languages, bilingual approach might be realized in using all languages in the same session or in different sessions by the clinician. In the case of clinician and patient mismatch, similar features of the language can be targeted via different communication partners, clinician planning the materials and tasks as well giving support and guidance how to use them.

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 can again be done in different ways, for example by targeting the 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). As a third option, differences between the languages can be done pronounced in the same session to underline the distinctiveness of the features of the languages and with bigger children already approaching more of a metalingustic level.

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