

Around the World: Supporting Young Children With ASD Who Are Dual Language Learners

Amman, Jordan: Fatima is home with her 3-year-old Lena. Fatima is about to sit down for lunch with her other daughter, her three nieces, and Lena. Laughter and chatter fill the room. Lena's older cousin Sara is chasing her, and Lena squeals with delight and then signs and says, "tickle" so that her cousin can tickle her again. The table is set, and there is a rich aroma in the room. Over the din, Fatima calls the children, "Yalla wash hands, hannakul" (Come on wash hands, we are going to eat), "Lena where are you? wen Lena?" (Where's Lena). Sara pipes up "She's here xaltu" (She's here auntie). Just as they sit down, Fatima's father calls to say that he and a colleague are on their way to join them for lunch and an afternoon with the grandchildren. Fatima had planned to do a focused play session with Lena but instead she had to quickly set the table for two extra people for lunch. She understands the importance of working on the goals for Lena set by Marwa, the speech-language pathologist (SLP), but within the Jordanian culture, it would be disrespectful to refuse her father and his guest. Her routine is therefore changed, and her father and his colleague join them for a typical loud family lunch. This scenario, especially among many English-Arabic-speaking families, is not unusual. From birth, Lena has been

exposed to both languages; she is a dual language learner (DLL) with autism spectrum disorder (ASD). She is still developing her language and communication skills in Arabic and English. Often, depending on the context and the type of request, Lena communicates in either or both languages.

Lagos, Nigeria: Toda and his aunt are being driven to his school, the Luke Center, which is in a suburb of Lagos. In the car, they listen to a sermon in English by their pastor. Toda has become used to hearing the pastor's voice as he often attends church with his parents, sister, and aunt. After they listen to the sermon, Toda takes hold of his aunt's fingers and makes the sign for music so that his aunt can sing him one his favorite action songs. The song is sung in Yoruba and is a nursery rhyme many young children in Lagos grow up hearing. Although Toda is nonverbal, from birth he has been exposed to both Nigerian-English and Yoruba. While English is the official language, there are more than 500 different languages spoken in Nigeria. Each community uses its own language (e.g., Yoruba, Hausa, or Igbo). When Toda arrives at school, he takes his aunt's hand, and he runs

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DOI: 10.1177/1096250613477870
<http://yec.sagepub.com>
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straight to the swing. His teacher Dotun is watching Toda with his aunt. They are singing the nursery rhyme, and Toda is imitating his aunt's gestures. Dotun has been working on motor imitation with Toda to support his acquisition of signs. She was not aware that Toda is able to imitate actions that accompany the nursery rhyme in Yoruba.

Brooklyn, New York: Jose is sitting on his grandma's lap watching Dora the Explorer® as they wait for Marylyn, the early interventionist, to arrive. Jose knows this episode by heart; it is one of the DVDs he watches over and over again. Other than Dora the Explorer®, his other favorite characters are Handy Manny® and Buzz Light Year®. Jose can repeat scripts and phrases from the different DVDs although his receptive skills are still emerging. Jose's family is from Colombia. His mother, who is a nurse, speaks English and Spanish. She grew up in Brooklyn and speaks English fluently; however, she works long shifts at the hospital and so his grandmother who only speaks Spanish is his primary caregiver.

Lena, Toda, and Jose's stories are all taken from real case histories. They represent the many young children with ASD around the world who are also DLLs. A DLL is a young child who is exposed to and is acquiring two or more languages. Multilingualism is common worldwide, and even in countries like the United States, the number of young children who are DLLs is rising rapidly (Goldstein, 2011; Toppelberg, Snow, & Tager-Flusberg, 1999).

Lena, Toda, and Jose's stories illustrate the many and varied linguistic environments into which a child with ASD may be born. The

purpose of this article is to (a) help families and professionals understand the special learning needs of DLLs with developmental disabilities, particularly ASD, and (b) present evidence-based intervention practices and strategies that are useful for young children and their families in the home. We begin by describing typical language abilities of young children with ASDs. Next, we explore cultural factors that may affect the language environment and acquisition of communication and interaction skills for DLLs. Finally, we present considerations for intervention planning and implementation and best practices that can be used in the home and community for families and professionals working with young DLLs with ASD. The cultural and linguistic considerations presented are in line with Division for Early Childhood (DEC) recommended practices (Sandall, Hemmeter, Smith, & McLean, 2005). In addition, the evidence-based practices presented are in accordance with those identified by the National Professional Development Center (NPDC) on ASD and the National Standards Project (National Autism Center, 2009).

Autism and Language Development

Autism is a neurodevelopmental disability that significantly affects a child's verbal and nonverbal communication skills, social interaction skills, and educational performance (Individuals With Disabilities Education Act [IDEA] (34 C.F.R., Part 300, 300.7 [b] [1])). In line with the American Psychiatric Association's (2000) diagnostic criteria, characteristics of autism can

also include engagement in repetitive activities and stereotyped movements, resistance to environmental change, difficulties with self-regulation, and unusual responses to sensory stimuli. ASDs exist in every country and region of the world and occur in all age, ethnic, and socioeconomic groups (Muhle, Trentacoste, & Rapin, 2004; Van Dyke & The Clinical and Scientific Affairs Council of the American Academy of Physician Assistants [AAPA], 2009). Because the majority of the world's children are born into multilingual environments, the rise in diagnoses of ASD worldwide (Center for Disease Control [CDC], 2012) indicates that many children with ASDs are also DLLs. This is particularly important because the majority of children with ASDs have significant difficulties in learning to understand speech, with delays in both their expressive and receptive language development (Paul, 2007; Tager-Flusberg, Paul, & Lord, 2005).

Although there has been an increase in the diagnosis of ASD in the world, there is very little available research on how ASD manifests in other languages and cultures, particularly in DLLs (Wallis & Pinto-Martin, 2008). Dual language development is dependent on many factors, including the structural differences



between the languages, the amount of exposure to the languages, and the age at which the child begins acquiring his or her second language (Toppelberg & Collins, 2010).

Language delay, or difficulty with acquiring language competence, is one of the many identifying features of ASDs and is often what causes parents to bring their children in for an evaluation. Moreover, recent studies indicate that children who are multilingual and multicultural may be identified and diagnosed later than their monolingual peers (Mandell et al., 2009; Mandell et al., 2010; Morrier & Hess, 2012; Morrier, Hess, & Heflin, 2008). Therefore, awareness of appropriate language development expectations is paramount.

To successfully acquire a language, a child must master the sound system (phonology), the vocabulary (lexicon), word formation (morphology), sentence formation (syntax), phrasal- and sentence-level meaning (semantics), and appropriate usage (pragmatics). DLLs must sort through the language input to discern two separate systems, which may have very different properties. For example, English words are formed by adding morphological markers to words such as -ed to mark past tense, whereas other languages do not work in the same way. Semitic languages such as Arabic and Hebrew use morphology to mark tense in a very different way, and these small units that hold meaning can be added to the beginning, middle, or the end of words.

The defining features of the language of children with ASD are that their language is not only delayed (i.e., more typical of a younger child) but also deviant (disordered). *For example, a child*

like Lena may have the ability to understand hundreds of single words but is unable to use language to express herself. Or, a child such as Jose may be able to repeat long phrases from his favorite movies but not understand what they mean.

However, the presence of a language disorder does not necessarily indicate that being a DLL will be detrimental to overall language acquisition. Children with other developmental disorders such as specific language impairment (SLI; Leonard, 1998) or Down's syndrome (Bird et al., 2005) also display deviant language and are able to acquire two languages. Moreover, the acquisition of one language (L1) can positively influence the acquisition of the second language (L2; for a review of the literature, see Paradis, 2010). Much-needed bilingual studies of language acquisition in the ASD population are just beginning to be conducted. Hambly and Fombonne (2012) studied language delay associated with bilingualism in both typically developing children and those with ASD. Although children with ASDs were shown to have poor

joint attention, which might affect their attention to language input and therefore their speed of language acquisition, their results indicated that bilingual exposure does not delay language acquisition.

It is well attested that typically developing children can benefit from being exposed to two or more languages (Ball, 2010), and that it is important to maintain and support the development of the home language (Toppelberg et al., 1999). However, can the same be said for children with ASD? Before addressing this question, it is crucial to understand the interplay between culture and language, which is relevant for DLLs with ASD.

Autism and Culture

ASD is primarily diagnosed through behavioral observation; therefore, when working with families, it is vital to understand the role of culture and language throughout the intervention process, as behavioral expectations may differ widely (Daley, 2002; Wilder, Jackson, & Smith, 2001). Features such as poor joint attention or not responding to name can be considered classic and universal characteristics of ASD (Lord et al., 2000); nevertheless, other communication skills, such as use of gesture and facial expression, will vary according to the culture.

Partnerships between providers and parents are crucial in the early years. Understanding the child's linguistic and cultural environment is essential, as parents play a vital role in the development of their children (Dawson et al., 2010; McConachie & Diggle, 2007). Although with ASDs equitably across demographic groups, parental



expectations and social norms differ from one culture to another (Dyches, Wilder, Sudweeks, Obiakor, & Algozzine, 2004; Van Dyke & The Clinical and Scientific Affairs Council of the AAPA, 2009). Cultural values, beliefs, norms, and traditions are all highly variable. They will influence the understanding and acceptance of the disability, how family members are involved, the priorities for the family, and the value of different life skills (Jegatheesan, 2011; Jegatheesan, Miller, & Fowler, 2010). In addition, what is considered respectful within one culture may not be perceived as such within other cultures (Barrera, 2000; Lynch & Hanson, 1992).

Children with ASD often have difficulty with their social-communication skills; however, expectations and manifestations of these skills vary from one culture to another. For example, in some cultures, direct eye contact with elders or women is considered inappropriate for children, while in other cultures, it would be considered rude or inappropriate to *not* look at a speaker (Wallis & Pinto-Martin, 2008). Interestingly, there are interventions that include eye contact as a prerequisite to language learning.

In some cultures, same sex adults will shake hands and kiss each other when they are meeting for the first time, but not all men will shake the hand of a woman. Consequently, children who are DLLs must learn to navigate between these different and sometimes conflicting expectations about social interaction, including language use. Therefore, intervention protocols must be flexible to meet the differing cultural needs of the children and their

families while still being effective.

For example, it is important to be aware and considerate of the fact that religion is central to many cultures and influences many social rules and behaviors. In Middle Eastern countries, meeting times and social dates are often scheduled around prayer times. When scheduling visits, rather than giving a specific arrival time, the visitor may say he or she will come over “after Maghreb,” the sunset. He or she would not be expected to arrive immediately after sunset but rather anytime up to an hour after sunset. A culturally different view is that the underlying cause of a neurodevelopmental disorder, such as autism, is a spiritual cause rather than a neurobiological deficit, and therefore the preferred treatment may also be spiritual rather than medical or educational treatment (Brassard & Boehm, 2011). Other groups view children with ASD as being divine blessings. In this way, religion can be a factor in the way that the family perceives the disorder and how they will interact with early childhood practitioners.

The role of the family and the extended family also varies across cultures. For some groups, grandparents and older family members are revered, treated with great respect, and are considered the head of the family. Their word is held with high regard and will influence the upbringing of their grandchildren, including daily or weekly routines. Even within cultural groups, family activities also vary. For example, some families have large noisy gatherings, that last for hours, where everyone is expected to socialize and eat while others have small gatherings or even allow children to eat quietly on their own. Managing these kinds of

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cultural variables is a challenge to some children with ASD who require routine and relative calm regardless of a potential for perceived insult from the family.

To develop positive relationships with families of DLLs with ASD, it is essential to have an understanding of the culture and to have the flexibility to appreciate that mainstream views and recommendations considered during intervention planning may not be the most appropriate. Consequently, expectations of families and examples of activities that can be done at home also need to be culturally relevant and specific. For example, establishing a bedtime routine is important for young children. The mainstream view is that toddlers and preschool children go to bed between 7:00 and 9:00 p.m.; the nonmainstream view is that children do not have a bedtime routine and go to bed much later (Brassard & Boehm, 2011). *Returning to Lena and her family in Jordan, Marwa, the SLP, is aware that Lena often does not go to bed until 10:30 p.m. and as a family they stay up sometimes into the early hours of the morning. Therefore, when helping Lena's mother schedule times for their focused play sessions they decided that it would be best to have the session when Lena first wakes up, when other family members are sleeping, and just before the large family lunch, which is usually late in the afternoon. That way, Lena's mother has quieter times with less distractions and Lena can still spend time with her cousins and grandparents fulfilling her mother's familial expectations.*

In summary, effective partnerships between families and

early childhood providers can only take place when there is an understanding of the influences of language, culture, and family values. Thus, we recommended that providers work closely with parents to assess which languages they use at home and across environments, when they use them, who uses them, what their expectations are for their child, and finally how they understand their child's diagnosis.

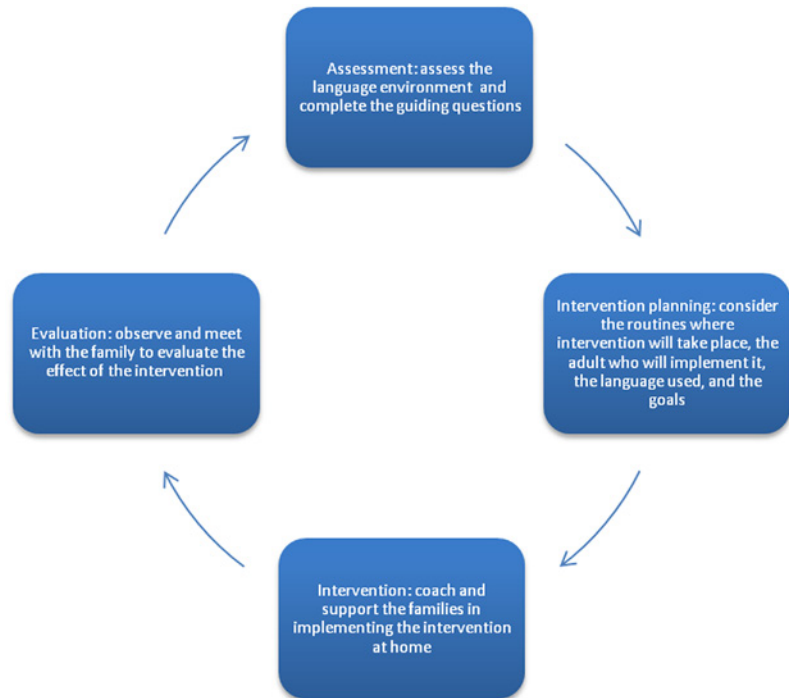
Intervention Considerations and Best Practices

When planning an intervention, it is important to consider the structure of and exposure to the languages involved. In this section, we provide specific evidence-based practices that can be used throughout the intervention process when working with children with ASDs who are also DLLs. We focus on Lena and her family to illustrate the cultural and linguistic considerations during the intervention process and selection of evidence-based practices for children with ASDs. The intervention cycle is shown in Figure 1. We begin with the considerations for assessing the language environment and establishing the culturally significant learning routines.

Assess the Child's Language Environment and Learning Routines

Children who are DLLs will typically move between language environments throughout their day (Andersson & Cunningham-Andersson, 2004). This is influenced

Figure 1
The intervention cycle



Box 1
The Intervention Cycle

There has been an unfortunate common practice, which has little empirical support, of recommending to parents and caregivers that they discontinue exposure to one of the languages (typically the home language) when a child is facing cognitive, language, or learning delays (Toppelberg & Collins, 2010). In cultures where the extended family and community are highly valued, maintaining the child's home language is important because it guarantees access to family and community supports. *In Jose's example, his grandmother is the one who dresses him in the morning, gives him meals, and is with him for most of the day. Therefore, if she is told not to use Spanish with him, this will affect the quality of her social interactions with her grandson and negatively affect Jose's ability to develop social interaction skills. In Toda's story, while English is the official language of Nigeria, using Yoruba is part of Toda's family identity. Songs and stories help Toda to acquire language and communicate with others. Without his aunt's very hands-on caregiving, Toda may have been dismissed by others as completely nonverbal.* Thus, it is not necessarily advantageous to limit a dual language learner with autism spectrum disorder to input from a single language.

Table 1**Guiding Questions for Families of DLLs With ASD When Assessing the Home Language Used During Routines***General home language use:*

- What are the different languages that you speak at home?
- What languages are you most comfortable using when communicating with your child?
- What language is spoken in the home most of the time?
- What language(s) does the child understand?
- What language(s) does the child communicate in?
- What language does your child respond to the most?
- What language does your child use with parents/guardians?
- What language does your child use with siblings?
- What language does your child use with relatives or caregivers?
- Does your child participate in any community group experiences? If so, in which languages?

Language used during routine activities:

- Please tell me about your daily/weekly routine with your child?
- Do you use any made-up words for food, drink, bedtime, and so on?
- Do you use any gestures or signs with your child?

Mealtimes:

- Where does your child sit and eat?
- Who else sits with your child during mealtime?
- What languages are used during mealtimes?

Bath time/shower:

- What games do you play during bath time?
- What songs do you sing during bath time?

Toilet-diaper changes:

- What word do you use for going to the toilet?

Dressing and undressing:

- What do you say while dressing your child?

Note: DLLs = dual language learners; ASD = autism spectrum disorder.

by the language used by different speakers they interact with, as well as any indirect exposure to language from TV, radio, or other media sources. Parents of DLL children with ASD will typically consult with a clinician or SLP about choice of language at home, for services, and in preschool. A clinical recommendation to discontinue exposure to one of the languages is a serious decision because of its lasting consequences (Box 1).

However, in cases where the parents are multilingual but only a subset of those languages are actually used in the child's daily life, then it may be appropriate to

minimize the languages which the child is taught. Such a decision should ideally involve an SLP with expertise in assessing dual language children, consultation with the parents or caregivers, and others who know the child well. Lena's vignette illustrates this very well.

Lena's family switches between Arabic and English throughout the day even within single conversations or sentences. Marwa, the SLP, spent some time with Lena and her family to assess the language environment. She went through a series of questions to guide Lena's parents and grandparents into thinking about language use. For an example

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of appropriate guiding questions, see Table 1. She investigated the range of vocabulary that Lena understands and uses as well as the vocabulary and phrases that family members use with Lena during her everyday routines, such as getting dressed, mealtimes, bath times, and toileting.

When recommendations are made to abandon one of the languages, the linguistic ability of the parents and family should be considered. It is essential to maintain the richness and quality of the linguistic environments of the child (King & Fogle, 2006). Parents should not use a second language if they are uncomfortable or lack fluency. *Returning to Jose’s vignette, instructing Jose’s grandmother to communicate with her grandson in English, when her primary language is Spanish, would be ill-advised and counterproductive. For Jose who easily echoes back what adults say to him, he would benefit from hearing his grandmother speak to him in Spanish rather than English.*

Attend to the Quality of Language Input

The quality of language input is essential for the child with ASD. The most successful DLLs are individuals who engage in frequent and ongoing linguistic and social interactions with native speakers (Brisk & Harrington, 2007). While coaching family members, it is important that the adults interacting with the child are made aware of their language input during routine activities, and particularly when giving verbal praise and reinforcement. This can be done through reflective questioning or using video feedback. The language input should be consistent with the

grammatical rules of the language; children with ASD have difficulty with their social-pragmatic language and are often literal in their comprehension of language.

In some cultures, terms of endearment, used for verbal praise, can be confusing and can have multiple meanings. For example, in Spanish, “Papi” means “Dad” but is also used to address a male child. The same thing happens within some Arabic-speaking communities where the child is addressed by the relationship the child has with the adult, for example, the aunt of the child will call the child “xaltu” (aunt) rather than using the child’s name. Other terms of endearment can also include adjectives and occasionally expletives (swear words) such as skinny one, fatty, and buffalo. In the example of Lena, when her grandfather said to her “inti kalba” (you’re a little dog), she responded “anna Lena” (I am Lena). This can also cause confusion for the child with ASD and should be avoided initially and taught gradually.

For example, Lena’s intervention team assessed her language environment and discovered that the family uses made-up words to mean food (e.g., “hum-mum,” “yum-yum,” and “mum”). Instead when communicating with Lena in English and Arabic, they were advised to use the correct word for food in either language paired with the sign.

Select Culturally Relevant Routines for Natural Environment Training

For young children with ASDs, daily routines and the natural environment are optimum learning opportunities. Routine activities, including the quantity and quality of

language input, vary from one culture to the next. Therefore, during the home visit, it is recommended that the providers find out about daily routines and especially the language environment (examples of such questions are illustrated in Table 1). Some cultures do not consider bath or shower time, a time for play but rather a means to an end. Therefore, when the child is bathing, showering or dressing the parent may use minimal language, although this is a wonderful activity for learning language and social skills. As mentioned above, with Lena and her family, meals may be a time when everyone gathers around a noisy table, and the expectation is for the child with ASD to sit at the table with the family. This can be overwhelming; therefore, initially it may not be an appropriate routine for the child with ASD (although it can be worked toward). It is recommended that routine activities where the child is comfortable but not overstimulated should be set up whenever possible to aid the child in learning and using his or her language and related skills.

Following the assessment team's interview with Lena's family, everyone agreed that two home routines and one community setting would be used for natural environment training (Sundberg & Partington, 1998). These were bath times, snack and breakfast times, and visiting the playground. When discussing the goals with assessment team, her family stressed the importance of Lena playing and working on her objectives at the nearby playground. The assessment team observed Lena in the playground. They saw that Lena could communicate with others through eye gaze and facial

expressions. She responded to requests in Arabic and English using signs paired with sounds ("tickle" in English, "eat" in Arabic, and "up" in English and Arabic). They also observed that Lena requires moderate to maximum support to sit on various equipment. Lena's mother and grandmother who frequently visit the playground with Lena are well attuned to her and can read her facial expressions with ease. The team observed that Lena appears to enjoy spending time at the playground and is interested in other children her age, but the noise and movement going on around her can overwhelm her. The assessment team helped Lena's family to develop goals they could work on with Lena while visiting the playground. They also suggested some songs and activities that could be used with Lena to help her transition from one activity to the next.

In Table 2, we provide a summary of the evidence-based practices that can be implemented as part of the intervention plan with cultural and linguistic considerations and sample activities (also see Figure 2).

Conduct Functional Communication Training

For the child with ASD who is a DLL, a functional means of communication must first be established (Carr & Durand, 1985; Durand & Merces, 2001). As mentioned earlier, this requires identifying the languages essential to the child's daily life and establishing a deeper understanding of his or her language environment. Together with the family, the provider can explore the languages and words used in daily routines such as bath times, saying hello and goodbye, and mealtimes. DLLs and their

Table 2
The Intervention Plan and Recommendations for Lena and Her Family

Recommendations	Sample
NET at the nearby playground	It was agreed that 3 days a week, Lena would go to the playground for natural environment teaching sessions with her mother. Once or twice a week, she would go with her grandmother, sibling, and cousins.
Activities and songs used during NET	Lena's grandmother primarily uses Arabic, and her mother uses both Arabic and English. Specific activities and songs to be sung in both languages were agreed upon.
Alternative augmentative communication	Signs used with Lena should be paired with the word in English or Arabic.
Visual supports using gesture	Lena has difficulty with transitions. It was agreed that the adult playing with Lena would use a 10-s countdown in either language (mother in English and grandmother in Arabic) paired with the gesture for "finished" to help Lena understand that one activity is over and the next will begin.
Visual activity schedule	A visual schedule will be used to help Lena understand the steps she has to do to go to the playground. To help her understand who she is going to the park with, a photo of either Lena with her mother or Lena with her grandmother will be shown to her. Lena's grandmother will provide descriptions and instructions in Arabic, and Lena's mother will provide descriptions and instructions in either language.
Reinforcement	When Lena does something well and is praised, her name and the correct language structure should be used in either language.

Note: NET = Natural Environment Teaching.

bilingual caregivers will typically code switch (alternate between two languages), as is the case with all the children in the vignettes. The home environment is an ideal place to teach functional communication because the language used at home contains multiple references to shared physical, family, social, affective, and communicative contexts (Toppelberg & Collins, 2010) that is helpful for the child who is learning to communicate.

Contextualized language minimizes linguistic and cognitive processing demands (Toppelberg & Collins, 2010), which is a great advantage for children with ASDs. It is important to maximize the multiple language learning

opportunities available in the home that may not be available in other settings. For example, when the child is in the kitchen with his or her mother and she says, "Give me an apple?" the child has the context to support his or her understanding. Yet, that same child asking that same question in a clinical setting may be at a disadvantage because the context is missing.

The young child with ASD needs to have a functional means of making his or her needs known in either or both of the languages (Carr & Durand, 1985; Durand & Merges, 2001). *In the case of Lena who is learning English and Arabic, she used an approximation of the English word "tickle" paired with*

Figure 2
Intervention plan for the playground

- Activities:**
- Climbing up stairs of playground equipment with support
 - Scooping and dumping sand
 - Grasping and dropping objects in a sand box
 - Going down a slide
 - Climbing in/out of a tunnel
 - Pushed on a swing by another child/sibling/parent
 - Playing chase with another child/sibling/parent
 - Peek-a-boo in tunnels with another child/sibling/parent
 - Marching in, on, and around playground structure with otherchildren/sibling/parent

- Songs/Rhymes:**
- “Five little monkeys swinging in a tree” while being pushed on the swing
 - “Itsy bitsy spider” while climbing up the stairs and going down a slide (can be sung in English and Arabic)
 - “If you are happy and you know it” when in the buggy and transitioning back home (can be sung in English and Arabic)
 - “Open flower” sung in Arabic similar to “ring around the rosie”

- Visual supports:**
- Count 1-10 and gesture finish (Arabic and English)
 - Visual schedule to be used showing steps—home, buggy, playground, buggy home



- Concepts:**
- Prepositions (in, on, under)
 - Up/down on the slide/stairs/swing

- Objectives:**
1. Expressive language—requests in Arabic and English paired with the sign:
 - Slide
 - Stairs
 - Swing
 - Push
 2. Fill ins:
 - 1, 2, “3” (in English and Arabic)
 - Ready set “go”
 - Peek-a- “boo”
 - Up and “down”/ (in English and Arabic)
 3. Action words/verbs
 - Come
 - Jump
 - Up
 - Down
 4. Receptive language—following directions in context in Arabic and English
 - Get your shoes
 - Come
 - Climb, go down

- Cultural/Linguistic Considerations:**
- Vocabulary modeled in families’ primary language
 - Songs and rhymes selected from families’ cultural background and primary language
 - Teaching procedures modeled by family trainer (in both languages)
 - Lessons conducted in the playground, which the family frequently visits

the sign because this was also used during her therapy sessions. However, for food items, she used many Arabic words commonly heard at the dinner table. For instance, she used the Arabic words for rice (roz) and eat (akul), but she signed “drink” and used an approximation of the words in both languages. To ensure vocabulary learning takes place, the first step is to make a list of items or activities that are pivotal interests for the child as well as words used across environments (Koegel, Koegel, Harrower, & Carter, 1999). These can then be used to teach the child how to request. The child may use one word in either language or words in each of the different

languages. It is recommended that providers find out whether the family has made up words that they use for different activities, items, or actions. If this is the case, then the recommendation is to use the correct word in either language as this helps the child with consistency and generalization of his or her skills across multiple settings with multiple instructors.

Use Alternative Augmentative Communication in Both Languages

Many young children with ASD have difficulty acquiring spoken language; therefore, it is essential to find alternative and appropriate

methods of communication. Otherwise, essential skills may fail to develop and challenging behaviors are more likely to occur. The goal is to help children with ASD at any age to develop functional communication skills that support them in everyday situations while keeping in mind the culture, linguistic needs, and available family resources. There are several augmentative and alternative communication (AAC) methods for children with autism, including visual/graphic symbols (i.e., Picture Exchange Communication System [PECS]), speech-generating devices on iPads™ and tablets (i.e., voice output), and sign language or total communication. Many of the naturalistic behavioral interventions include the use of sign language to teach young children with autism how to request (Sundberg & Partington, 1998). This is because signs can be modeled, prompted, and shaped, which works in tandem with behaviorally based intervention programs.

When considering AAC devices, it is important to consider factors such as motor ability and cultural-linguistic background (Nunes, 2008). Deciding on whether to use pictures, voice output devices, signs, or a combination of techniques is a daunting task for families. Visual gestures and signs provide extra information that supports children with autism, helping them understand what is being said as well as aiding their vocabulary development (Thompson, Cotnoir-Bichelman, McKerchar, Tate, & Dancho, 2007). Children tend to express more meanings through gestures with families who gesture extensively rather than those who do not (Rowe & Goldin-Meadow, 2009). Therefore, if the DLL's culture uses gestures, then signs may

more easily become part of the child's communication strategy. In addition, the extra visual support helps the child with ASD who is learning more than one language to make the connection that both words refer to the same item or action. *Lena and her grandmother use the sign for "finish" with the word in Arabic so that Lena knows it is time to finish singing. Her mother and siblings use the same sign with the English word to help Lena understand that she will finish playing on the swing, and it is time to leave the playground.*

Provide Visual Supports in Both Languages

Children with ASD often have difficulty attending to relevant stimuli and can be easily overstimulated by external, environmental stimulation such as background noise (Dawson & Osterling, 1997; Scheuermann & Webber, 2002). Visual supports provide children with ASD with environmental structure and predictability, which helps them to be more successful in learning and communicating (Mesibov, Shea, & Schopler, 2005). The use of visual aids such as objects, pictures, and drawings can help children with ASD who are DLLs to function better across multiple environments (i.e., at home, in their educational settings, and in the community; Bernard-Opitz & Häußler, 2011; Hodgdon, 1995). In addition, helping the child predict what will happen and making the information presented as clear as possible facilitates higher rates of engagement (Prendeville, Prelock, & Unwin, 2006). The child with ASD who is a DLL may appear to be noncompliant because he or she is

confused, has not understood what is said to him or her, and he or she does not know what to do.

However, by showing the children their towel and saying, “bath time” this helps the children to understand what is happening. Visual supports also aid generalization across environments and should be used in both languages across multiple settings. If, for example, a picture sequence is used for mealtimes, the narration can be written in both languages. If a choice board is used with the child’s favorite games or snacks, then the words in both languages should be written under the photos to ensure that the same vocabulary is being used by all caregivers (Shogren, Faggella-Luby, Jik Bae, & Wehmeyer, 2004).

Develop Activity Schedules and Visual Supports for Both Languages

Using activity schedules and providing visual supports are important for all children with disabilities, but particularly important for children with ASD who are DLLs. For example, together with the family, a daily schedule can be made and clearly displayed in the home, outlining the daily flow of activities. Activity schedules are highly beneficial for the young child with ASD (Mesibov, Browder, & Kirkland, 2002) and help to provide structure and predictability to the day. This is important for families whose daily routine is inconsistent or overly flexible. Transitions can help the child with autism understand what is happening regardless of the language being used (Kern, Wolery, & Aldridge, 2007). Examples of good transitions are using a 10-s countdown paired with a finish sign

or singing the same song in both languages. Depending on the child’s age and level of functioning, color coding the corresponding word to each language can sometimes help the child differentiate between the two languages. At the same time, this supports his or her comprehension that what is being communicated is the same. It also supports family members in using the same consistent vocabulary across activities.

Music and transition songs can also be useful prompts to highlight the transition expectation and help the child with ASD establish a more predictable routine. Either the same tune can be used while varying the language or the same song can be used and a gesture or sign can be used to link the concept (e.g., the sign for “finish”). It is important to find out from parents the phrases and rhymes they use for games and during routines such as bedtime, bath time, and mealtime. Families could be encouraged to use these rhymes when transitioning between activities, for example, “one two three and up, and out of the bath.”

Conduct the Same Teaching Activities in Both Languages

When planning natural environment teaching, reading the same story or doing the same activity, such as bath time or water play, in both languages helps the child make the links between the two languages. Many children with ASD are slow to generalize their acquired skills and therefore benefit from the consistent repetition of the activity. *In Jose’s example, when eating fruit at home, his grandmother labels the fruit in Spanish and responds back to Jose in Spanish even if he uses English.*

Whereas when he goes to the grocery store with his mother, she uses the English and Spanish labels and responds to Jose in both languages. In Lena's example, her grandmother and mother sing the action songs "If you are happy and you know it" and "Itsy Bitsy Spider" in both languages. The same tune, same actions, but different lyrics help Lena to learn the words in Arabic and English. As Lena's mother is a dual language user, she uses both languages as her daughter. Being exposed to multiple languages is a natural and appropriate language context for the young DLL with ASD and allows for incidental language teaching throughout the day to take place.

Reevaluation and monitoring progress is essential for all children with special needs (Sandall, Hemmeter, Smith, & McLean, 2005) and is the fourth step in the intervention cycle. When reevaluating the children and reviewing their progress with the family, it is a good idea to keep a record of their vocabulary development and understanding in both languages and to establish concepts that have been acquired in one language but not the other. A video library shared with the intervention team over the Internet is a good way to provide detailed and accurate feedback. As in the initial evaluation and planning stages, all caregivers have

considerable information to add for a complete picture of the child's progress.

Conclusion

The needs of young children who are DLLs with ASD must be addressed with care to provide appropriate interventions. While we may not share the same language and culture as the children with whom we work, it is essential that we have an understanding of their culture and have the flexibility to understand that a North American and Western European model for intervention is not necessarily the best or most appropriate (Turnbull et al., 2007). Consequently, expectations of families and the kinds of learning activities that can be done at home need to be culturally relevant and specific. Furthermore, decisions about discontinuing learning or exposure to a language should not be made lightly and only after careful consideration of the personal and family circumstances. Efforts should be made to support the development of competence in the two languages of the DLL with ASD, as this may prove to be more rewarding in terms of the child's long-term well-being, mental health, access to the community, and educational benefits.

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