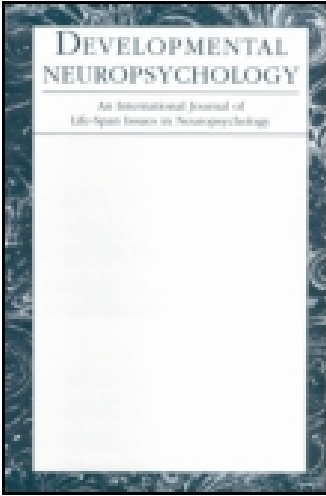


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Six Principles of Language Development: Implications for Second Language Learners

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Six Principles of Language Development: Implications for Second Language Learners

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The number of children growing up in dual language environments is increasing in the United States. Despite the apparent benefits of speaking two languages, children learning English as a second language (ESL) often face struggles, as they may experience poverty and impoverished language input at home. Early exposure to a rich language environment is crucial for ESL children's academic success. This article explores how six evidenced-based principles of language learning can be used to provide support for ESL children.

Speaking multiple languages is the norm, not the exception in many parts of the world. Approximately 66% of children throughout the world are being raised bilingual (Associated Press, 2001). In the European Union (EU), 54% of the population can hold a conversation in at least two languages and 25% is able to speak three languages (European Commission, 2012). Even in the United States, roughly 12.9% of individuals over the age of five reported that they spoke a language other than English at home in 2013, representing an increase of 117% since 1990 (U.S. Census Bureau, 2013). Having the ability to speak more than one language

can be advantageous in an increasingly globalized world, as it allows for a greater number of communicative partners and better job opportunities. Further, being bilingual may offer children and adults cognitive advantages, including benefits in executive function (Bialystok, 2011; Engel de Abreu, Cruz-Santos, Tourinho, Martin, & Bialystok, 2012; but see Valian, 2012), spatial working memory (Luo, Craik, Moreno, & Bialystok, 2013), and metalinguistic awareness (Bialystok & Barac, 2012). These cognitive advantages may be a result of bilinguals' experience with juggling two languages, a process that is thought to recruit inhibitory control mechanisms (Bialystok, 2011; Freeman, Shook, & Marian, in preparation; Werker, 2012).

As the world's bilingual population grows, it is important to note that learning a second language (L2) per se does not lead to language confusion or difficulty succeeding in an academic environment (McCabe et al., 2013; Pearson, Fernandez, & Oller, 1993). Despite this evidence, being bilingual is often perceived as a handicap in the United States (Hakuta, 1986; McCabe et al., 2013), likely because children of immigrant parents who make up the bulk of L2 learners tend to also be of lower socioeconomic status (SES). The poverty rate in 2010 for immigrant families was 23%, compared to 13.5% for native-born families (Camarota, 2012). Many children of immigrant families come to the United States without knowing much English and grow up in poverty. These English as a Second Language (ESL) children who start school with smaller English vocabularies than their monolingual English-speaking peers often fall behind (Hoff, 2013; Hoff, Core, et al., 2012; Oller & Eilers, 2002) and sustain poorer learning trajectories throughout the school years (National Center for Education Statistics, 2005). Finding ways to augment proficiency in the L2 could greatly impact ESL children's learning trajectories and chances of academic success (Espinosa, 2013; Hammer, Jia, & Uchikoshi, 2011; McCabe et al., 2013).

Why does poverty influence language development in L2 learners? One possible explanation is that children from low-income households have smaller vocabulary sizes because they receive less language input from their parents than do middle-class children (Hart & Risley, 1995; Hoff, 2006; Hoff, Laursen, & Bridges, 2012). On average, the number of words children hear per hour at ages 10 months through 3 years differs dramatically across SES: 616 words in the welfare group compared to 1,251 words in the working class group and 2,153 words in the professional group (Hart & Risley, 1995). Importantly, vocabulary size is one of the best predictors of academic achievement and general intelligence (e.g., Anderson & Freebody, 1981). Early language input may have similar and even more dramatic consequences for L2 learners since children growing up in bilingual environments hear less input in *each* of their languages (Hoff, Core, et al., 2012), which is evidenced by the relationship between ESL children's English vocabulary size and their performance on a standardized test of English reading (Garcia, 1991; Proctor, Carlo, August, & Snow, 2005; Saviile-Troike, 1984).

This article focuses on children in preschool through the early primary grades who first acquire a language other than English at home and later learn English as a second language in school (Hammer, Lawrence, & Miccio, 2008). We introduce six evidence-based principles of language development (Table 1) that, if translated into practice by caregivers, teachers, and practitioners (e.g., pediatricians, speech-language pathologists) both in the home and in school classrooms, may fuel language development in ESL children. These six principles incorporate multiple factors that impact language acquisition based on existing research on language development in monolingual children and children learning an L2.

TABLE 1
Six Principles of Second Language Development

Principle 1	Children learn what they hear most.
Principle 2	Children learn words for things and events that interest them.
Principle 3	Interactive and responsive rather than passive contexts promote language learning.
Principle 4	Children learn words best in meaningful contexts.
Principle 5	Children need to hear diverse examples of words and language structures.
Principle 6	Vocabulary and grammatical development are reciprocal processes.

SIX PRINCIPLES OF LANGUAGE LEARNING APPLIED TO L2

A large literature on monolingual language development provides a useful guide on how to foster strong language skills in L1 acquisition (e.g., Harris, Golinkoff, & Hirsh-Pasek, 2011; Parish-Morris, Golinkoff, & Hirsh-Pasek, 2013), but less is available on ESL. Because ESL children's early language skills have consequences for their later academic achievement (Miller et al., 2006) and because the number of ESL children entering school is increasing (Batalova & McHugh, 2010), understanding the factors that promote L2 acquisition is imperative.

Principle 1: Children Learn What They Hear Most

Frequency matters; children learn what they hear most. A concern for ESL children growing up in impoverished environments is that the amount of input a child hears in *each* language may affect vocabulary size in *each* language (Gollan, Montoya, Cera, & Sandoval, 2008; Hoff, Core, et al., 2012; Pearson, Fernandez, Lewedeg, & Oller, 1997). Research suggests that ESL children tend to have a smaller vocabulary size in each language compared to their monolingual peers (Bialystok, Craik, Green, & Gollan, 2009; Pearson et al., 1993), although the combined or conceptual vocabulary size of both languages is often equal to that of monolinguals (Hoff, Core, et al., 2012; Pearson et al., 1993). ESL children, who already have an established L1, may face additional struggles that bilingual children who simultaneously acquire two languages do not experience. For example, ESL children are likely to rely on their L1 during the initial stages of L2 acquisition (White, 1996), experiencing negative transfer or interference from the L1 to the L2. Receiving a large amount of L2 input is especially important for ESL children, as they may need extra support.

Why is amount of input important for language learning? As early as 8 months, infants extract regularities, such as word boundaries, from the stream of speech input surrounding them. For example, infants can track transitional probabilities of neighboring speech syllables (i.e., the likelihood that one syllable follows another) in a continuous stream of speech (Saffran, Aslin, & Newport, 1996). This statistical ability is robust and helps children not only detect neighboring sounds and find words in their primary language(s), but also detect words in foreign languages to which they have never been exposed (e.g., Hay, Pelucchi, Graf Estes, & Saffran, 2011). To extract regularities, sufficient input must be present, and the frequency with which children hear words affects their ability to acquire words (Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). In addition, the amount of language input affects processing speed, or the rate at

which children recognize spoken words. Processing speed, in turn, likely affects children ability to grasp the meaning of new words uttered in linguistic context (Weisleder & Fernald, 2013).

Statistical learning is likely to be used by ESL children, as studies have shown that infants can track speech sounds in foreign languages (e.g., Hay et al., 2011). Even after children learn to isolate phonemes, stress patterns, and words in the initial stages of acquisition, large quantities of L2 input are needed to acquire syntactic structures. Amount of language input also affects language processing speed and trajectories of vocabulary learning in bilingual children. Input quantity children received at 18 months related to word recognition and vocabulary size at 24 months, such that those who received more input at 18 months were faster in word recognition and knew more words at 24 months (Hurtado, Marchman, & Fernald, 2008).

Because amount of language input is especially important for ESL children who already have an established L1 (Hammer et al., 2008; Hoff, Core, et al., 2012), parents and practitioners who work with ESL children must provide them with large amounts of language input in both languages as early as possible, to prevent future language difficulties that ESL children frequently face. Although research suggests that amount of language input matters, it remains subject to future research to investigate how much L2 input is necessary for ESL children to catch up to their monolingual peers in their academic achievement.

Principle 2: Children Learn Words for Things and Events That Interest Them

Bloom (1993) argued that children are likely to learn words for things they find interesting or salient. In her words, “Language learning is enhanced when the words a child hears bear upon and are pertinent to the objects of engagement, interest, and feelings . . .” (Bloom, 1993, p. 19—Principle of Relevance). The learner’s interest plays an essential role in any type of learning. Importantly, what is appealing to an infant may be different from what is interesting to a child. Here, we consider how *perceptual* and *social* factors may promote L1 and L2 development. The Emergentist Coalition Model (ECM) of language development suggests that children have access to a number of co-occurring cues for word learning, but hone in on cues that they are particularly drawn to at different developmental time points (Golinkoff & Hirsh-Pasek, 2006; Hollich et al., 2000). Infants may initially map labels only to salient objects and may not learn the names of objects they consider boring. Indeed, 10-month-old infants rely on perceptual saliency when attaching labels to objects (Pruden, Hirsh-Pasek, Golinkoff, & Hennon, 2006).

By 18 months, infants begin to use social cues from the speaker such as eye gaze and object handling to attach labels to referents (Hollich et al., 2000). Infants initially lack the skills required to coordinate attention between objects and social partners; however, their ability to maintain *joint attention*, or the mechanism of sharing common referents within a dyad, becomes well consolidated by the age of 18 months (Bakeman & Adamson, 1984). Once infants acquire the capacity to engage in joint attention, adults can manipulate objects to sustain the child’s interest, which facilitates word learning. Indeed, the amount of time dyads spent in joint attentional episodes during six months of home observation, beginning with the child’s first birthday, was positively related to the child’s vocabulary size at 18 months (Tomasello & Todd, 1983; see also Tomasello, Mannle, & Kruger, 1986). Research suggests that children whose parents *follow* their child’s interest to an object, creating a joint attention situation, are more likely to learn the label for that object than when parents *redirect* their children’s attention to another referent (Akhtar, Dunham, & Dunham,

1991; Tomasello & Farrar, 1986). This process scaffolds children's challenge in linking linguistic symbols to their referents (Baldwin & Markman, 1989; Carpenter, Nagell, & Tomasello, 1998; Tomasello & Farrar, 1986).

Although both monolingual and bilingual children must monitor and respond to pragmatic cues to avoid miscommunication, bilingual children are known to have heightened sensitivity to social and pragmatic cues. In fact, Yow and Markman (2011) found that 3- and 4-year-old bilingual children were more adept at using gesture and gaze direction to locate a hidden object than monolingual children. Brojdie, Ahmed, and Colunga (2012) also demonstrated that bilingual children rely more on pragmatic cues such as eye gaze than their monolingual counterparts when learning novel words. We may be able to boost ESL children's language knowledge by utilizing their existing sensitivity to social cues and piquing their interest in language through engaging activities.

Principle 3: Interactive and Responsive Rather Than Passive Contexts Promote Language Learning

Frequent language input matters but the social context in which language learning takes place is also important to consider. For example, hearing words—even if presented in an interesting format like television—does not guarantee that language learning will occur (Kuhl, Tsao, & Liu, 2003; Roseberry, Hirsh-Pasek, Parish-Morris, & Golinkoff, 2009). Interactions that involve periods of joint focus, positive affect, sensitivity, cooperation, and acceptance provide children with the scaffolding necessary to facilitate language acquisition (Bornstein, Tamis-LeMonda, Hahn, & Haynes, 2008; Clarke-Stewart, 1973; Katz, 2001; Tamis-LeMonda & Bornstein, 2002; Tamis-LeMonda, Kuchirko, & Song, 2014; Tomasello & Farrar, 1986).

Infants and young children learn language in contexts in which their vocalizations, gesture, and facial expressions evoke responses from the people around them. That is, infants appear to thrive in social interactions—and learn language—when they engender contingent responses from their interlocutors. By contingent, we mean responses that promptly follow infant action within a brief period of time (Tamis-LeMonda et al., 2014).

An empirical investigation examined whether English-reared 9-month-olds can learn Mandarin phonemes through live social interaction, televised, or audio-only presentation. Infants learned phonemes only from live interaction, suggesting that contingent social interaction can play a causal role in speech perception (Kuhl et al., 2003). Similarly, Roseberry, Hirsh-Pasek, and Golinkoff (2013) tested 24- to 30-month-old children's ability to learn novel verbs in one of three conditions: live interaction training, socially contingent video training, and non-contingent video training. Only the children in the live interaction training and contingent video training condition successfully learned novel verbs, highlighting the significance of social contingency in language learning. Contingency, or parental responsiveness more generally, has been found to facilitate word learning across various cultures (Tamis-LeMonda et al., 2014).

Socially contingent contexts may be beneficial for language development due to *co-regulation*, or the process by which communication between individuals is continuously modified depending on the actions and needs of their partners (Fogel, 1993). Co-regulation allows parents to scaffold their child's learning based on their needs. For example, when a mother talks to her baby in an excited voice (e.g., "Where is the teddy bear?"), the baby may immediately look at the toy box and

giggle. This mutually regulated exchange between the parent and infant has also been referred to as coordination, reciprocity, reciprocal engagement, mutual responsiveness, attunement, and synchrony (Harrist & Waugh, 2002). Infants at 7 months who were given more opportunities for co-regulated communication had larger vocabularies 7 months later than children who were less exposed to co-regulated communication (Lunden & Silven, 2011). Co-regulated playful interactions provide an opportunity to present vocabulary in a meaningful manner, which in turn fosters L1 and L2 development (Hirsh-Pasek & Golinkoff, 2003; Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009; Lunden & Silven, 2011; Singer, Golinkoff, & Hirsh-Pasek, 2006).

The ESL literature also demonstrates a link between early interactive parenting and later language ability. Frequency of story-book reading and children's vocabulary in their L1 and L2 were found to be related. Caregivers who frequently read to children in English or Spanish and used labeling questions (e.g., "What do you call this little animal?") during book reading were more likely to have children with a greater vocabulary in both languages (Quiroz, Snow, & Zhao, 2010). These findings indicate that by asking engaging questions and establishing interactive learning environments, caregivers can provide a positive influence on children's vocabulary development in both the L1 and the L2.

Within an interactive environment, the mindset of caregivers is also important. Mexican-American mothers who saw themselves as an important participant in their children's language learning were more likely to actively listen to their children, interact with them, label objects and ideas, and create opportunities for interaction with others (Hammer, Miccio, & Rodriguez, 2004). Such interactions in turn have an impact on ESL children's language development (Patterson, 2002).

In sum, research demonstrates that quantity and quality of interactive environments have implications for children's later language development (Cartmill et al., 2013). Types of interactions that benefit children's language development include joint focus, positive affect, and appropriate scaffolding that changes depending on the child's development and interest. Asking questions about things children are interested in and engaging in shared book reading may foster both L1 and L2 acquisition (Hoff & Naigles, 2002; Raikes et al., 2006).

Principle 4: Children Learn Words Best in Meaningful Contexts

"Strategies that introduce young children to new words and entice them to engage in meaningful contexts through semantically related activities are much needed" (Neuman & Dwyer, 2009, p. 384). This insight is in line with research on memory: adults retain information long-term when it is presented in integrated contexts rather than as a set of isolated facts (Bartlett, 1932; Bransford & Johnson, 1972). This same idea can be applied to learning an L2 for ESL children. Meaningful connections between words are also fostered when thematic play is used as a prop for language development. For instance, children who often engage in thematic play such as picking up a cup and pretending to drink out of it are more likely to have a larger receptive vocabulary (Tamis-LeMonda & Bornstein, 1994).

Experimental research comparing vocabulary learning in meaningful versus less meaningful contexts is limited. Yet, correlational studies in language, play, and memory research converge to suggest that teaching vocabulary in integrated and meaningful contexts enriches children's background knowledge and hence their mental lexicons (Hirsh-Pasek et al., 2009). Encouraging

children to play with objects that come from the same superordinate category is a form of “guided play” in which adults scaffold children’s active exploration in service of a learning goal (Weisberg, Zosh, Hirsh-Pasek, & Golinkoff, 2013). Since parents and teachers provide input that makes language learning possible, it is crucial to understand guided play environments that are designed to stimulate children’s curiosity and acquisition of language (Christie & Roskos, 2006; Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, 2011; Weisberg et al., 2013).

Children who are given an opportunity to use vocabulary in a playful context learn more effectively than those children who learn only under explicit instruction. Han, Moore, Vukelich, and Buell (2011) investigated how play intervention affected low-income children’s vocabulary knowledge. The control group spent 30 minutes in a storybook session and received explicit vocabulary instruction. The play group spent 20 minutes in a storybook session and heard the associated definitions but also had 10 minutes to engage in play with props that corresponded to words from the story. Following the reading, they heard the word “bake,” for example, while shown a picture elucidating the meaning of the word in the storybook. They were then offered a “child-friendly” definition of *bake* and asked to repeat it and point to an instance of the concept. Subsequent vocabulary tests revealed that the play group remembered more of the target vocabulary and had more children who reached vocabulary benchmark levels on the standardized Peabody Picture Vocabulary Test (Han et al., 2011).

Guided play approaches promote superior learning, retention, and academic achievement compared to direct instruction (Burts et al., 1992; Burts, Hart, Charlesworth, & Kirk, 1990; Lillard & Else-Quest, 2006; Roskos, Tabors, & Lenhart, 2004, 2009; Schweinhart & Weikart, 1988; Schweinhart, Weikart, & Larner, 1986). In guided play contexts, children’s interests serve as the foundation for learning. Educators structure an environment around a general curricular goal by encouraging children’s natural curiosity, exploration, and play with learning-oriented objects or materials (Fein & Rivkin, 1986; Fisher et al., 2011; Hirsh-Pasek et al., 2009; Marcon, 2002; Weisberg et al., 2013). Conversations between adults and children in a playful context build on children’s interests and offer them new lexical concepts that are more likely to be retained than unbidden verbal explanations (e.g., Golinkoff, 1986).

ESL children not only face the challenge of learning a new language but also learning a new culture. Thus, instructional methods that incorporate individual experiences of ESL students may benefit L2 learning. Reading programs involving open discussion around characters and themes of the story allow students to make connections between the story and students’ experiences and cultural backgrounds. Such reading programs allow ESL students to deeply engage in the material and develop their literacy abilities (Tharp, 1982). Meaningful learning environments and instructional methods that are tailored to the individual needs of ESL students should be beneficial in developing their L2.

Principle 5: Children Need to Hear Diverse Examples of Words and Language Structures

A growing body of research emphasizes the importance of *diversity* in linguistic input to foster rich language outcomes. Mothers’ use of rare words and the breadth of children’s vocabulary in kindergarten and second grade are strongly related (Weizman & Snow, 2001; see also Pan, Rowe, Singer, & Snow, 2005). Similarly, when fathers use diverse vocabulary in interactions

with their children at 6 months of age, their children have more advanced communication skills at 15 and 36 months (Pancsofar, Vernon-Feagans, & The Family Life Project Investigators, 2010). More recently, Rowe (2012) reported that the diversity of vocabulary input toddlers receive at 18 months is related to children's later vocabulary ability at 42 months even when controlling for SES, amount of input, and children's vocabulary skill at 18 months.

Receiving multiple sources of language input is also crucial in facilitating a deeper grasp of language. Seven-month-olds do not recognize a word when the gender of the speaker (Houston & Jusczyk, 2000) or the tone of voice varies (Jusczyk & Aslin, 1995; Singh, 2008; Singh, Morgan, & White, 2004). Thus, receiving input from multiple speakers will likely promote the formation of abstract phonological representation of words (Richtsmeier, Gerken, Goffman, & Hogan, 2009). Hearing English from different speakers and the amount of English input provided by native speakers explains the variation found in children's English skills (Place & Hoff, 2011), suggesting that an optimal language-learning environment for ESL children occurs when they are exposed to diverse input from multiple native speakers.

Similarly, multiple examples of referents must be presented for each word in different contexts. Hearing different examples helps children develop abstract meanings of words (Oakes, Coppage, & Dingel, 1997; Perry, Samuelson, Malloy, & Schiffer, 2010), which encourages children to recognize how words link to categories. For example, seeing different breeds of dogs and hearing the label "dog" helps children extract the essential components of the category and form an adult-like representation of dogs with a deeper semantic understanding of the concept. Indeed, studies using event-related potentials (ERPs) have shown that infants as young as 6 months display the neural signature associated with concept formation (Quinn, Westerlund, & Nelson, 2006). In contrast, if infants are familiarized with highly similar exemplars, they may develop an inaccurately narrow basis for category formation (Smith & Yu, 2008).

Diverse input facilitates not only semantic development but also syntactic development. Verbs stipulate the syntactic structure of a sentence. The verb *eat* is an optional two-argument verb or is a verb that can either omit or preserve its direct object (e.g., *I ate lunch* or *I ate*). However, obligatory two-argument verbs such as *want*, require a direct object (e.g., *I want a prize*). Hearing various verbs in different syntactic frames may help children abstract the components of sentence structure that vary by verb type (e.g., Gleitman, 1990; Hoff-Ginsberg, 1986; Naigles, 1996; Pinker, 1994). Hoff and Naigles (2002) found that variation in the syntactic complexity of mothers' utterances also correlates with children's productive vocabulary.

Rich language input and sensitive social interactions offered together provide a powerful combination for language development. A longitudinal study on teacher-child conversations reported that rich language input during free play and group book reading at age 4 correlated positively with children's literacy skills at the end of kindergarten and fourth grade, even when controlling for children's mean length of utterance (MLU) at age 3, as well as parental income, education, and home support for literacy (Tabors, Snow, & Dickinson, 2001).

Diverse input appears to have benefits at the phonological, semantic, syntactic, and literacy level of children's L1 and L2. However, the need for diverse input is a more complex issue for ESL children, as some ESL children may not have access to rich language input at home. Intervention programs for L2 learning are beginning to address these concerns by focusing on creating increasingly diverse linguistic experiences. Multisensory structured language (MSL) teaching, for instance, encourages a learning experience using auditory, visual, and tactile-kinesthetic input (Schneider & Evers, 2009). The program asks instructors to explicitly indicate

multiple contexts in which a word can be used. As MSL uses various strategies at once, assessing the effects of providing diverse examples per se is difficult. Nevertheless, ESL learners at risk for learning disabilities who received MSL achieved a higher level of English proficiency than those who received traditional instructional methods (Sparks et al., 1998). The implication for practice is that exposure to various words in a variety of contexts in the L2 is beneficial for ESL children as well as for monolingual children.

Principle 6: Vocabulary and Grammatical Development Are Reciprocal Processes

The final principle is based on the notion that children rarely learn new words and their meanings in isolation. The ECM of language learning predicts that after overcoming the initial bias of favoring perceptual saliency to learn words, children began to rely on linguistic cues such as sentence context (Golinkoff & Hirsh-Pasek, 2006, 2007; Hollich et al., 2000). The idea that children use the syntactic structure of a sentence to learn new words is a mechanism known as *syntactic bootstrapping* (e.g., Dionne, Dale, Boivin, & Plomin, 2003; Fisher, Klinger, & Song, 2006; Gillette, Gleitman, Gleitman, & Lederer, 1999; Hirsh-Pasek & Golinkoff, 1996; Landau & Gleitman, 1985; Naigles, 1990). Children use syntactic bootstrapping in learning new vocabulary, just as children use vocabulary knowledge to learn the structure of language (i.e., semantic bootstrapping) (e.g., Pinker, 1994).

Studies illustrate that vocabulary and grammar develop simultaneously (Dionne et al., 2003). The relationship between vocabulary and grammar has been investigated in a large sample of children between 16 to 30 months ($N = 1,461$), using the MacArthur Communicative Development Inventory vocabulary and grammatical complexity scores. Results showed that expressive vocabulary predicted grammar knowledge, suggesting that vocabulary and grammar are “developing in synchrony across the first few years of life” (Dixon & Marchman, 2007, p. 209).

The reciprocity between vocabulary and grammar can be understood in two ways. First, by noting the linguistic context in which words appear, children gain information about a word’s part of speech (Imai et al., 2008). For example, the sentence “Sally borked John” suggests a different meaning for “bork” than the sentence “Sally has a bork.” The former suggests that “bork” is a transitive verb, whereas the latter implies that “bork” must be a noun. Indeed, when one teaches contextual cues as part of a word learning intervention, L2 learners are better at mastering novel vocabulary items (Carlo et al., 2004). Meaning emerges from how words are used in linguistic contexts. Grammatical and morphological cues can signal parts of speech and be used as a *tool* for further vocabulary learning. Second, once a word is known children can detect the nuances in word meaning by observing its use in diverse linguistic contexts (Gillette et al., 1999; Yu & Smith, 2012).

The relationship between grammar and vocabulary learning is also observed in research with children learning two languages. Toddlers’ English vocabulary size predicted English grammar abilities and their Spanish vocabulary size predicted Spanish grammar abilities, supporting the theoretical perspective that “learning in the lexical and grammatical domains of language is continuous and utilizes common mechanisms” (Conboy & Thal, 2006, p. 728). Vocabulary and grammar development in bilingual children proceeds in the same manner as in monolingual children of each language (Conboy & Thal, 2006; Marchman, Martinez-Sussman, & Dale, 2004).

Although only a few studies have investigated the role of syntactic and semantic bootstrapping in L2 acquisition, bilingual children seem to utilize their syntactic and semantic bootstrapping skills to learn new words or grammatical structures in two languages (Conboy & Thal, 2006; de Bot, Paribakht, & Wesche, 1997).

What are some ways in which the acquisition of grammar and vocabulary in ESL children can be facilitated? One way to foster this reciprocal development may be to introduce new words in various syntactic frames. For example, listen-and-do tasks appear to be effective in promoting beginner ESL children's vocabulary and grammar knowledge (Shintani, 2012). In listen-and-do tasks, learners need to first listen to commands and then perform actions to show that they have understood the commands. The study by Shintani (2012) found that children who were engaged in listen-and-do tasks improved their receptive and productive vocabulary knowledge and their understanding of plural and singular forms compared to the control group. Instructional methods that teach vocabulary as an independent list of words devoid of semantic or syntactic context may not be effective in enhancing language development. The presentation of new words in different syntactic contexts will facilitate ESL children's L2 development.

CONCLUSION

Language is crucial for children's academic success—in both reading (Durand, Loe, Yeatman, & Feldman, 2013; Scarborough, 2001) and in the STEM (Science, Technology, Engineering, and Mathematics) disciplines (Levine, Suriyakham, Huttenlocher, Rowe, & Gunderson, 2010; Pruden, Levine, & Huttenlocher, 2011). Language acquisition occurs most effectively in preschool classrooms that mimic the way language learning naturally takes place in the home (Harris et al., 2011). However, since the 1900s, ESL curricula have had limited success in teaching English to young children who may receive impoverished language input in the home (Faltis, 2011; Hoff, Core, et al., 2012). One reason for such findings could be that, although many ESL students speak “conversational” English (e.g., greetings), learning the type of English used in classrooms and performing well on assessments may take more language experience and exposure than some of these children have at home (Cummins, 1984). Another reason may be that general classroom teachers receive little education or support to adapt their instruction to ESL students (Constantino, 1994).

Despite a rich scientific base regarding how to foster ESL students' L1 and L2 development, this information rarely reaches parents and the community at large. Dissemination of information about language development may be affected by the lack of knowledge about the availability of programs such as CANNE—*Criando a Nuestros Niños hacia el Éxito*, the Spanish adaptation of PACE—*Parenting Our Children to Excellence* that aim to reduce the risk of adverse child outcomes by providing effective parenting techniques in socially disadvantaged areas (Dumas, Arriaga, Begle, & Longoria, 2010, 2011). Home visitations in which professionals visit families to provide guidance and working together with pediatricians may be another means to spread this message. *Increased collaboration and communication about scientific research regarding language development between researchers, practitioners, and policy makers is crucial to circulate information and to have an impact on ESL curricula.*

Research on L2 acquisition is continuing to accrue, although much is still unknown. The L1 literature can guide caregivers and educators in designing curricula to foster children's L1 and L2.

Equipped with a set of developmentally appropriate, evidenced-based principles derived from the science of learning, we can promote the academic trajectory of ESL children. We have argued based on the research in the field of language development, that there may be sufficient empirical evidence to offer a toolbox of six principles to promote ESL children's language development and academic success.

Principle 1: Children benefit from increased amounts of language input. That is, the more English children hear, the more likely they are to acquire it. Principle 2: Incorporating information that capture the interests of children may facilitate ESL students' L2 development. Principle 3: Interactive contexts are superior to passive contexts for learning language. Playful learning environments in which children are happily engaged afford opportunities to promote L2 acquisition. Principle 4: Meaningful learning environments are important for language acquisition. Scaffolded interaction and instruction that occur in an integrated context are ideal learning situations. Principle 5: The use of diverse examples and sentence structures promote language development. Hearing different exemplars of words and grammar by different English speakers may help ESL children gain a better grasp of their L2. Principle 6: Vocabulary and grammar play a complementary role in language learning. Learning more vocabulary can enhance children's knowledge of the syntactic structure of their L2 and vice versa. Our six principles of language development bring together the research on language development and offer implications for practice to promote L2 learning. Putting these principles into practice will increase language competences of ESL children and will thus put them on the path to greater academic success from preschool and beyond.

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