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A matter of opportunity

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A MATTER OF OPPORTUNITY

Language and reading development during early childhood for dual-language learners

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In this chapter, we offer an overview of the early literacy development of young dual-language learners (DLLs) – children whose home language differs from the societal language and who represent a large and growing segment of the school-aged population in industrialized nations. We focus on the sociopolitical context of the United States where educational practices and policies have been largely designed with monolingual English-speaking children in mind, but where schools are increasingly serving multilingual children. While speaking two or more languages has been shown to facilitate heightened development in some cognitive and early literacy skills, especially phonemic and metalinguistic awareness, at scale, there is a paradox to be addressed. While some DLLs develop their literacy skills to the same levels as their majority-culture, monolingual peers, on average, achievement data suggest that these readers struggle to attain English literacy skills to age-appropriate levels even after many years of schooling. To make visible the types of language interactions that must be fostered as part of early literacy initiatives that attempt to address this paradox, we focus on three developmental periods in this chapter: from birth to preschool entry (age 0–3); the preschool years (age 3–5); and the early elementary school period from kindergarten to grade 3 (age 5–8). For each, we highlight a key context of language and literacy development: the family and community (0–3); the preschool classroom where children engage in play with peers and teachers that builds language skills (3–5); and the elementary school classroom where children participate in formal literacy instruction (5–8). In each context, we underscore the 'inputs' – opportunities to be exposed to and to participate in language interactions – that foster DLLs' oral language and literacy development ('outputs').

In this chapter, we offer an overview of what we know about early literacy development of young dual-language learners (DLLs) – children whose home language differs from the societal language and who represent a large and growing segment of the school-aged population in industrialized nations. In providing the overview, we focus on the socio-political context of the United States where educational practices and policies have been largely designed with

monolingual English-speaking children in mind, but where schools are increasingly serving multilingual children. While speaking two or more languages has been shown to facilitate heightened development in some cognitive (e.g., executive functioning, Calvo & Bialystok, 2014) and early literacy skills, especially phonemic and metalinguistic awareness (Yoshida, 2008), at scale, there is a paradox to be addressed. While some DLLs develop their literacy skills to the same levels as their majority-culture, monolingual peers, on average, achievement data suggest that these readers struggle to attain English literacy skills to age-appropriate levels even after many years of schooling (Kieffer, 2011; Mancilla-Martinez & Lesaux, 2011). Indeed, it appears that in the USA and other Western industrialized nations, DLLs' low achievement is about more than language learning; their difficulties are linked, in part, to the influences of poverty on development. To this end, many DLLs' majority-culture peers growing up in low-income households show similar academic profiles (Kieffer, 2011; Lesaux & Kieffer, 2010). For educators and policymakers the goal must be two-fold: (1) to understand the developmental processes through which children acquire two (or more) languages and how these experiences influence early literacy development; and (2) to understand the overlap in the early learning and academic needs of DLLs and their monolingual peers. With this knowledge, educators and policymakers might envision how the language-learning contexts (preschool classrooms, childcare settings, homes, communities) where young DLLs (and their monolingual English peers) are educated can better support their future participation in the K-12 classroom, the workplace and society.

Chapter outline

Given that language development is cumulative and takes different forms at different ages and stages, and because the contexts in which children are exposed to language and literacy expand throughout early childhood, we focus on three developmental periods in this chapter: from birth to preschool entry (age 0–3), the preschool years (age 3–5) and the early elementary school period from kindergarten to grade 3 (age 5–8). For each, we focus on a key context of language and literacy development: the family and community (0–3); the preschool class-room where children engage in play with peers and teachers that builds language skill (3–5); and the elementary school classroom where children participate in formal literacy instruction (5–8). In each context, we highlight the 'inputs' – opportunities to be exposed to and to participate in language interactions – that foster DLLs' oral language and literacy development ('outputs'). In so doing, we hope to make visible the types of language interactions that must be fostered as part of early literacy initiatives that target this population. In our discussion of early elementary school literacy learning we focus on reading development; research on DLLs' writing skill development is very limited and does not support synthesis.

In addition, given the purpose of the volume and today's demographic data, we focus on the children who are members of the two largest and fastest growing subpopulations of second-language learners in US schools and in other industrialized nations with a rich history of immigration: students who immigrated before kindergarten and children of immigrants born in the country in which they are being educated (Hernández et al., 2008). We also place an emphasis on research conducted with children negotiating Spanish and English, children who constitute 72 per cent of the DLL population, and a population that is expected to grow rapidly over the next ten years in the USA (Aud et al., 2011). We conclude this chapter by suggesting future research avenues that might further describe the nature of biliteracy development in young children.

From birth to preschool entry (0–3): bilingual development during infancy and toddlerhood

Typical language development – in any language – begins at birth (see Figure 3.1 for milestones) and the maxim that 'more language exposure is linked with more language learning' holds for both monolingual and bilingual populations (Song et al., 2012 for a discussion). This exposure may occur via interactions with caregivers/family – considered the primary mechanism – and with the wider community (e.g. at the park, public transportation, grocery store).

Language development in the home or child-care setting

In any language, the *quantity* and *quality* of a caregiver's speech directed at the child influences language development. 'Quantity' refers to both the amount of language a child is exposed to *and* to the relative exposure to each language, for instance Spanish and English. Unsurprisingly, a number of studies now document the strong relationship between the frequency with which young DLLs (e.g. age 30 months) have been exposed to Spanish and English and their phonological, grammatical and vocabulary skills in each of these languages (Hindman and Wasik, 2015; Hoff et al., 2012; Parra et al., 2011). Because they are acquiring words in two or more languages, these children may well experience less overall input in *each* language, despite being exposed to an equal (or greater) number of words than a monolingual infant (Hoff et al., 2012). This balance of language exposure appears to influence productive and receptive language skills. For example, Hoff and colleagues find that by 30 months of age, toddlers showed greater relative skill in producing the language they heard more often than in comprehending it – a trend that was reversed for the language they heard less frequently (Hoff et al., 2014).

Defining what we mean by 'the quality of language inputs' is a much more complex endeavour than defining quantity. In brief, research suggests that high-quality language is: directed at the child and in response to her behaviour, and includes a diversity of words, phrases and sentence structures (Ramírez-Esparza et al., 2014; Rowe, 2012). The diversity of the caregiver's speech (i.e. using many different types of words and grammatical structures) and the frequency with which she uses these words and structures therefore contributes to gains in a bilingual toddler's vocabulary size and syntactic skill in the first and second language (Parra et al., 2011).

As we might expect, there are differences in young DLLs' individual rates of language learning and proficiency, some of which is about normal variation, and some of which in fact mirrors patterns of social division in the USA (Rowe et al., 2012; Weisleder and Fernald, 2014). Research demonstrates that children growing up in low socioeconomic status (SES) households are, on average, exposed to less child-directed, complex and diverse language; and, by age 3, have smaller vocabularies (Hoff, 2013). These differences are of practical significance for DLLs in the USA, who are disproportionately growing up in poverty and for whom recent research shows variation in the quality of their language experiences. For example, in a study of 29 low-SES Spanish-speaking families followed over a single day, amounts of child-directed speech differed radically: one caregiver spoke more than 12,000 words to an infant while another used only 670 words (Weisleder and Fernald, 2014). And other research reminds us that older siblings of infants and toddlers are sources of language exposure; in Spanish-speaking families where school-aged siblings are enrolled in English-speaking elementary schools, toddlers are exposed to more English (Bridges and Hoff, 2014).

Language development in the community

We use the term 'community' to refer to people outside of a child's immediate circle of caregivers and household members – store clerks, librarians and other children's parents and siblings that a given child may interact with on a day-to-day basis. While a number of studies have shown that infants and young children are 'selective learners' and resist information provided by speakers with a foreign accent (Buttelmann et al., 2013), this may not be the case for infants growing up in more diverse communities. Howard and colleagues found that 19-month-olds from monolingual, English-speaking homes who were often exposed to linguistic diversity in their neighbourhoods (e.g. parks, bus rides, grocery stores) were more likely to imitate the actions of a Spanish speaker, signalling an openness to learning from those who did not share their language background (Howard et al., 2014). In contrast to learning from caregivers through direct interaction, this study and others suggest that infants and toddlers may *also* be able to learn through 'overheard speech' (Gampe et al., 2012) and by observing others (Gaskins and Paradise, 2010). While not without controversy, this research points to the need for additional studies that would explore how neighbourhood characteristics shape language-learning opportunities for very young DLLs.

Summary: language exposure the homes and the community

The contexts in which young children are acquiring language are diverse, and the child's exposure to one or more languages varies. Given this, bilingualism can be conceptualized as a continuum of proficiency in a first and second language that begins when an infant is exposed to an additional language. From this perspective, children entering preschool classrooms bring a range of language resources that can be leveraged as they develop literacy skills; however, even conversationally proficient children – whether in a first or second language – require additional language development to support literacy skills.

Early childhood education settings (3–5): bilingual and biliterate development during the preschool years

From age 3 to 5, young DLLs are not only acquiring language orally – they are also beginning to map sounds from spoken language to the written word, and to realize the function of print as emerging readers and writers (Figure 3.2 describes typical development). For DLLs, oral language, phonological awareness and print knowledge – all targets in a high-quality preschool classroom – are strong and independent predictors of later reading skill (Puranik et al., 2011). However, US Census data suggests that DLLs are underrepresented in preschool and centre-based childcare, with the children of undocumented immigrants posting the lowest levels of enrolment (Yoshikawa and Kalil, 2011).

While early education offers a mechanism for supporting young DLLs' early literacy development, if preschools are to support DLLs, there is much work to do, particularly for those children growing up in poverty. Studies conducted with DLLs (mostly Spanish-speaking) in English-dominant Head Start classrooms suggest that while, on average, they make gains in English vocabulary – at rates that outpace some monolinguals – they nevertheless demonstrate English vocabulary skills far below their English-speaking peers in the US upon preschool completion (Hindman and Wasik, 2015; Lonigan et al., 2013). In the domain of instruction, this suggests that much more attention to language development is needed. While an appealing approach is to simply teach English vocabulary, Hindman and Wasik
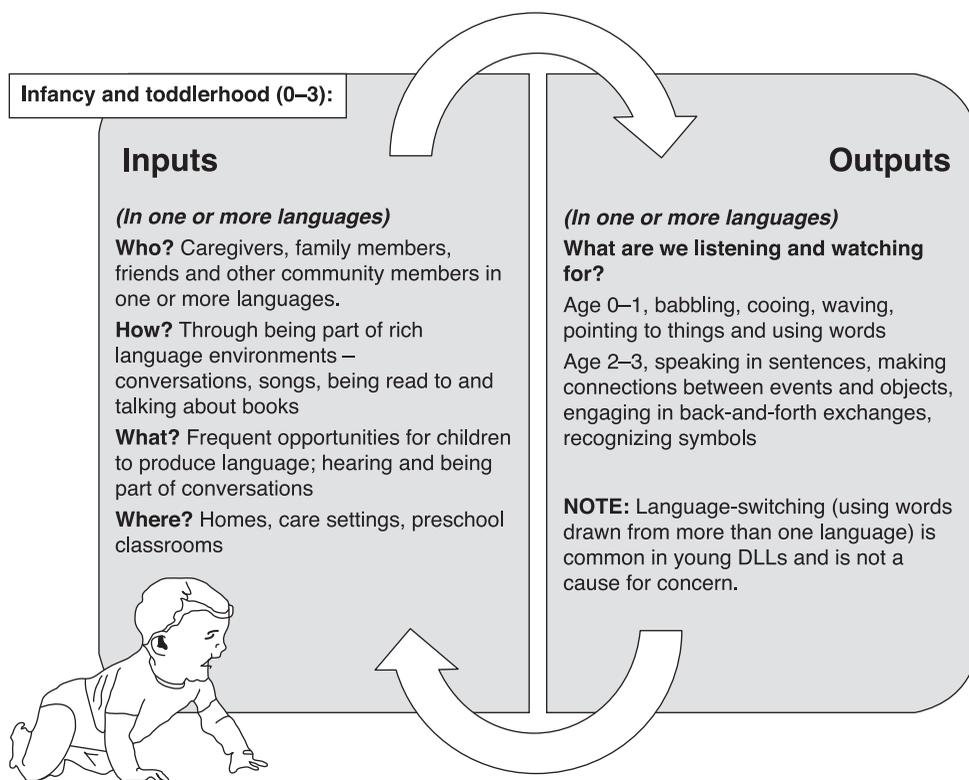
Infancy and toddlerhood (0–3):

Inputs

(In one or more languages)

Who? Caregivers, family members, friends and other community members in one or more languages.

How? Through being part of rich language environments – conversations, songs, being read to and talking about books

What? Frequent opportunities for children to produce language; hearing and being part of conversations

Where? Homes, care settings, preschool classrooms

Outputs

(In one or more languages)

What are we listening and watching for?

Age 0–1, babbling, cooing, waving, pointing to things and using words

Age 2–3, speaking in sentences, making connections between events and objects, engaging in back-and-forth exchanges, recognizing symbols

NOTE: Language-switching (using words drawn from more than one language) is common in young DLLs and is not a cause for concern.

Figure 3.1 Language inputs and outputs that support language development from birth to age three for DLLs

(2015) suggest that this is an oversimplification given their finding that Spanish-speaking four-year-olds also demonstrated low levels of knowledge of Spanish vocabulary. This evidence points towards a broader need for this population to be exposed to rich content and ideas – to keep knowledge building at the core of any language-learning instruction (see also Pinkham et al., 2012). The importance of language development during the preschool years is underscored by the finding that those DLLs who are considered English proficient upon school entry keep pace with their monolingual English peers in kindergarten and beyond (Halle et al., 2012). Therefore, the question of *how* to create these classrooms rich in language-learning opportunity is a crucial one.

Language exposure in the preschool classroom: teachers' inputs

Children's opportunities for extended talk with educators, particularly talk that goes beyond the 'here and now' and includes the opportunity for back-and-forth conversation, is the single most important element of the preschool language learning environment. However, in preschool classrooms with high numbers of DLLs who are at risk for later reading difficulties, these opportunities may be infrequent (Cheatham et al., 2015). For example, in a study conducted in a large Head Start programme in a semi-urban area serving large numbers of Latino children, Jacoby and Lesaux (2014) found that language interactions

where children were afforded multiple conversation turns and discussed topics beyond those in the immediate environment (e.g. engaging in pretend play or narrating a past event) comprised only 22 per cent of all observed lessons. Consistent with prior studies (Dickinson et al., 2008) most teacher–child interactions demanded and/or resulted in one-word answers from children. Shedding light on promising levers for improvement, the authors found that some instruc-tional formats, particularly those involving small group, teacher-led activities, were more likely to elicit extended talk from the young DLLs in the study – talk that is related to later reading achievement (Dickinson et al., 2008; Jacoby and Lesaux, 2014).

While the studies in this area have traditionally focused exclusively on language *inputs*, researchers are also increasingly attending to the impact of children's language *outputs* on their own language development. For instance, Bohman et al. (2010) in a large-scale study with 757 children found that language exposure alone did not exert as much of an impact on DLLs' pre-kindergarten and kindergarten English and Spanish language development as did children's language usage (output) and exposure (input) combined. The authors also found that these relationships were not stable over time: input is important as a child first begins to use a language, but amount of language output is important for developing language over time.

Promoting language during the preschool years: a cautionary tale

The ways in which early educators and preschool teachers design language-learning oppor-tunities for, and interact with, young DLLs may depend greatly on their own understanding of second-language acquisition. Theories describing the stages of language development for DLLs have long included a 'silent period' or stage (also referred to as 'non-verbal', 'receptive' or 'pre-productive' phase) in which the child elects to produce no (or very little) oral lan-guage as she begins to acquire the language of the classroom. Many policies and practices in early childhood education have been shaped by the idea that *all* children acquiring a second language pass through this stage (Le Pichon and de Jonge, 2015; Roberts, 2014). Many educators therefore do not expect DLLs to produce language upon classroom entry and may not place DLLs in situations where language production is necessary (Roberts, 2014). However, it is not clear that there is a lock-step progression, or that all DLLs experience a silent period. Therefore, educators should consistently provide children with rich language inputs, and supported opportunities for outputs (Le Pichon and de Jonge, 2015), while they are acquiring familiarity with the language of the classroom (see Figure 3.2).

Elementary schooling (5–8): DLLs' reading development in the first years of formal schooling

As beginning readers, young children in the early elementary grades are acquiring many of the specific skills and competencies that make up this thing called 'reading'. At the same time, many DLLs must also rapidly acquire English-language skills. We turn in this section to focus explicitly on the research that examines DLLs' reading development in classroom settings where monoliteracy is the norm, which is the case in most US schools (for a description of typical development, see Figure 3.3).

Becoming a reader: developing code and meaning-based skills

In this section, we focus on two broad sets of skills and competencies. One set, 'code-based skills', revolves around the skills and competencies needed to read the words on the page

Early childhood (3–5):

Inputs

(In one or more languages)

Who? Caregivers, family members, friends and other community members

How? Through conversations, songs, by being read to, and talking about books, by looking at other forms of print

What? Focused on child's needs and interests; occurs over multiple turns (extended discourse) that require the child to produce increasingly more language as she/he responds; exposes children to a diverse range of words and phrases

Where? Home, neighbourhood, pre-K classrooms, early education and care setting

Outputs

(In one or more languages)

What are we listening and watching for?

– Talk that is about the past or the future

– Engagement and active participation in shared book reading

– Pretend play and narrative story telling also support language development

– 'Writing' – notes, letters, name, etc.

NOTE: Some DLLs (not all!) may produce no/little English when first entering an English-only care setting. This is ok – they need supports, scaffolds and a nurturing environment to start producing and practising language.
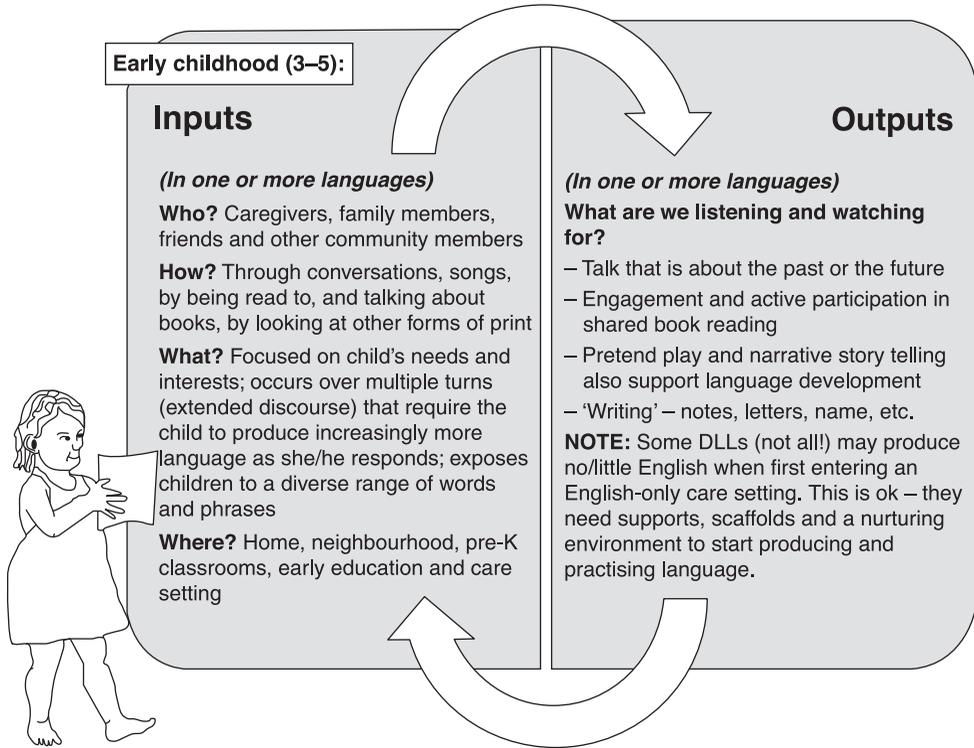
Figure 3.2   Language inputs and outputs that support language and literacy development during early childhood for DLLs

and the other, 'meaning-based skills', around the skills and competencies needed to understand what children are reading.

Code-based skills

For all children learning to read, whether monolingual or bilingual, phonological processing skills, one's ability to work with and process the sounds of the language, are central to the development of accurate and efficient word reading. For the DLLs, phonological awareness is likely to be language specific at the onset, i.e. working with the sounds of her own language. However, as the child comes to understand how sounds are related to printed letters, this metalinguistic knowledge that printed words are representations of sounds and map to words in oral language can be transferred from one language to another (López, 2012; Yoshida, 2008). What may not transfer, depending on the similarity between the child's language systems (e.g. Spanish and Czech have little in common), are the language-specific spelling patterns (for additional discussion on transfer, see the following sections). If phonics instruction is adequate, by the end of second grade in school settings, both DLLs and their native English-speaking peers should show mastery or near-mastery of grade-level word reading skills.

Meaning-based skills

There is often a gap between DLLs' ability to read the words on the page and ability to make meaning from text (Mancilla-Martinez and Lesaux, 2011), especially over time, as texts become more complex. These differences are due in large part to the nature of these skills; code-based skills are discrete, highly susceptible to instruction and can be taught to achieve mastery (for a discussion see Chapter 23 in this volume). In contrast, meaning-related skills (such as having the relevant background knowledge and linguistic knowledge to make sense of a text, sometimes called academic language) are not mastery-oriented and cannot be taught in a short period of time (Snow and Uccelli, 2009).

Outside of their distinct nature, why do these meaning-based skills pose a particular challenge for DLLs? In short, most meaning-related skills hinge on language comprehension. In particular, DLLs' oral language, vocabulary and listening comprehension skills in English tend to be underdeveloped compared to those of their monolingual peers, especially those growing up in middle-income families. This is not to suggest that these skills do not follow linear trends or that DLLs are not experiencing language growth over time; in fact, mirroring trends identified among preschool DLLs, Mancilla-Martinez and Lesaux (2011) found that from age 4.5 through middle-school entry, Spanish-speaking DLLs' oral language skills (including vocabulary) grew at a rate that exceeded the monolingual norm. However, despite this rate of growth, these students, who entered school with vocabulary levels that were far below their English-speaking counterparts, were not able to 'catch up' (Mancilla-Martinez and Lesaux, 2011) under typical instructional circumstances, which involve limited focus on developing language skills and competencies. This is also the case for many of their monolingual peers growing up in poverty.

We noted at the outset of this chapter that bilingualism is often associated with higher cognitive functions and we don't want to lose that thread in our discussion of underdeveloped language and literacy skills. It appears that bilingual readers use all language and cognitive resources acquired in both a first and second language when they read and write (Hopewell and Escamilla, 2014). For instance, when reading in English a student might encounter the name, Nina, to refer to the main character. If the child is a Spanish speaker, she may, at first, read the word as '*niña*' (meaning 'girl' in Spanish), and interpret the sentence to be about a girl rather than about the character, Nina. She will have to 'override' these Spanish-language resources (a process that occurs instantaneously) and access those she has developed in English both to decode the word and to understand the sentence, a task that draws on her executive functioning skills. It is this recursive moving between languages that is thought to lead to increased executive functioning skills (and slightly slower performances on some language tasks) among DLLs.

Language and literacy exposure in the elementary classroom

While simply reading text has long been thought to be a critical mechanism for language and vocabulary development (Stanovich and Cunningham, 1993), this relationship may not be so straightforward for DLLs and for many of their peers who are academically vulnerable. That is, acquiring language from text requires an age-appropriate level of text comprehension, which, in turn, depends on having adequate knowledge of the text's language. Only as students become able readers do they acquire language and knowledge from text. Yet, though conversationally proficient, many DLLs have had little opportunity to acquire the language found in texts – language known as 'academic language', in either a first or additional language (Scarcella,
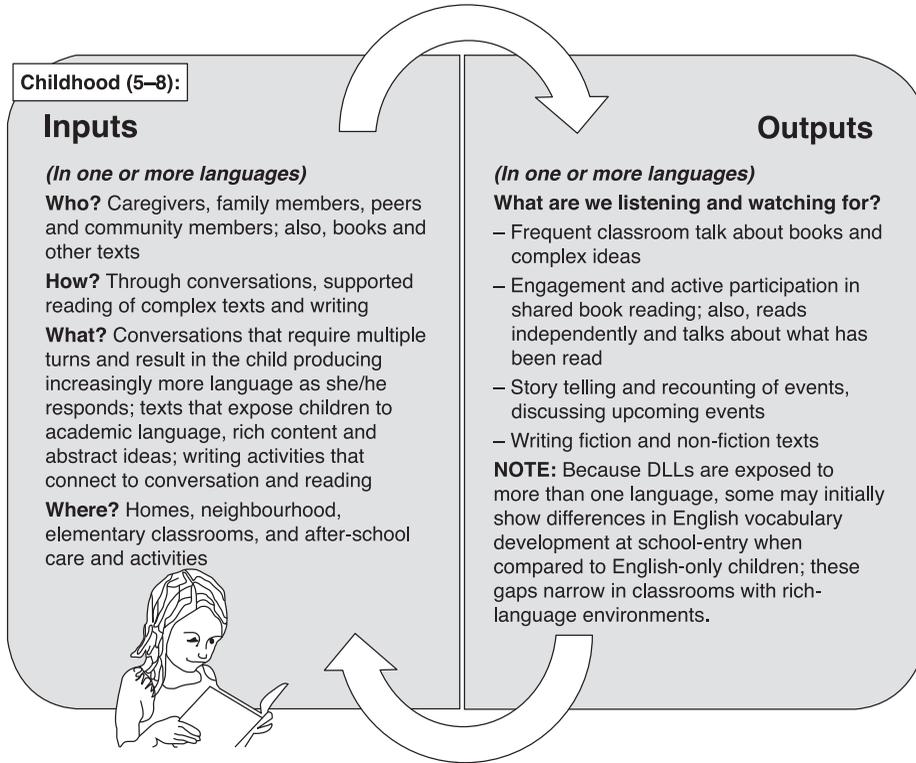
Childhood (5–8):

Inputs

(In one or more languages)

Who? Caregivers, family members, peers and community members; also, books and other texts

How? Through conversations, supported reading of complex texts and writing

What? Conversations that require multiple turns and result in the child producing increasingly more language as she/he responds; texts that expose children to academic language, rich content and abstract ideas; writing activities that connect to conversation and reading

Where? Homes, neighbourhood, elementary classrooms, and after-school care and activities

Outputs

(In one or more languages)

What are we listening and watching for?

– Frequent classroom talk about books and complex ideas

– Engagement and active participation in shared book reading; also, reads independently and talks about what has been read

– Story telling and recounting of events, discussing upcoming events

– Writing fiction and non-fiction texts

NOTE: Because DLLs are exposed to more than one language, some may initially show differences in English vocabulary development at school-entry when compared to English-only children; these gaps narrow in classrooms with rich-language environments.

Figure 3.3   Language inputs and outputs that support language and literacy development from age five to eight in DLLs

2003; Uccelli et al., 2015). Academic language skill includes knowledge of vocabulary; but it also includes an awareness of sentence structures, words used to link ideas and create cohesion in texts (connectives), awareness of how texts are organized and the ability to manipulate words by shifting their grammatical categories (morphology) (for additional discussion see Uccelli et al., 2015).

Given their challenges accessing texts, classroom talk is the cornerstone of a language-building approach for DLLs. In our own work, we have found that supporting teachers to make use of more diverse and complex vocabulary can be accomplished by providing them with professional development that emphasizes the centrality of classroom discussion to student achievement, as well as with instructional materials that emphasize the use and instruction of complex academic language (Gámez, 2015; Lesaux et al., 2014). By selecting topics and texts that require the use of complex language to discuss, teachers and students are compelled to use this language when speaking and writing. Figure 3.3 outlines language inputs and opportunities for language use that support literacy development for DLLs and their monolingual classmates.

Implications for policy, practice and research

To draw out the implications of the extant research base for policy and practice and next steps in research, we necessarily start by reminding the reader that the story of DLLs in the

USA is not a straightforward one. That is, while research has documented initial gaps in depth and breadth of vocabulary knowledge in DLL children (Bialystok et al., 2005) compared to national norms, explaining this gap is challenging because research has only recently begun to parse the effects of SES from the effect of growing up learning two or more languages.

Disentangling the effects of low-SES and dual/second language learning

More research that aims to explain the relationships between and among DLL status and low SES is needed. For now, however, there are important implications for practice; that is, while we have typically focused on the needs of DLLs separate from the needs of their monolingual peers, emerging research suggests that there are substantive and practical reasons to consider classroom-level efforts to improve language and literacy outcomes – rather than relying on intervention targeting subgroups. For example, using the nationally representative ECLS-K dataset, Kieffer (2011) demonstrated that kindergarten DLLs showed similar trajectories in reading through fifth grade, and similarly low-performance levels, as English speakers from homes at comparable socioeconomic levels. Conversely, limited but insightful research suggests that when comparing the vocabulary learning trajectories of DLLs and monolingual children all of middle SES, DLLs can achieve the same levels of vocabulary through the elementary school years (Umbel et al., 1992).

Theorizing the design of interventions that enrich language environments

As we continue to focus on unanswered questions, we also remind ourselves that at each developmental stage, hearing and producing language (inputs and outputs) matter greatly and have significant implications for how we educate caregivers and teachers about these relationships. Of particular interest are interventions that have sought to shape educators' and parents' understanding of children's language development as a mechanism to enrich children's language-learning contexts, with a particular focus on the back-and-forth exchange that is so important (see Han et al., 2014; Landry et al., 2014; Rowe, 2012). That is, supporting adults to respond to children as they begin to produce language and fostering adults' skills to engage children in extended conversations are particularly important and fruitful avenues for preparing DLLs to become readers and writers. There are many questions to be answered about *how* to support these adults. For example: What intensity and type of intervention best supports parents and educators of DLLs? What additional adult-level factors must be considered for a school-based intervention targeting DLLs' language and literacy development to succeed at scale?

Clarifying the importance of fluent language models

As we consider supporting the large and growing population of DLLs to develop strong early literacy skills, we are mindful that, over the years, parents and early educators providers have received conflicting messages about which language(s), native and/or English, should be employed to prepare children for school. In fact, it is well established that children's language acquisition in any language depends primarily upon a strong foundation – what's most important is for children to have caregivers who use high-quality language, irrespective of the language itself (Place and Hoff, 2011). When speaking in a native language, parents appear to use more diverse language with their young children than when using a second language (Hoff et al., 2014). However, given the sociopolitical context of the USA, a common practice

has been for caregivers, who want the best for their child, to focus on providing English exposure – even if they are not native English speakers – leading to a loss or stagnation of the child's native language development and compromised opportunities for extended talk due to the caregiver's developing English (Hammer et al., 2009). Indeed, in the press to support young DLLs' early literacy skills, a knowledge-building approach to language development – one that places extended conversations about concepts and facts and in turn builds language that maps to the texts used in the elementary grades, as early as kindergarten – is crucial. In turn, this means supporting adults to use the language – native or otherwise – that will best facilitate and provide such learning opportunities.

Understanding the relationship between cross-linguistic transfer and literacy

Finally, we note that the question of how to support today's DLLs hinges to some degree on how we understand the relationship between the languages a child has acquired. The concept of transfer – of leveraging linguistic knowledge, both conceptual and phonological, from a first language to learn an additional language – is worth a brief discussion. Some empirical work suggests that Spanish–English DLLs who know more vocabulary in Spanish (vocabulary breadth) often know more vocabulary in English (Uccelli and Páez, 2007), and are more apt to demonstrate skill in decoding and comprehending English texts (Proctor et al., 2012). Nevertheless, other work has failed to identify these relationships (Hammer et al., 2014). For example, Gottardo and Mueller (2009) found that later English reading comprehension was only supported by English vocabulary skills, not by these skills in Spanish. In the realm of interventions, we also note that Spanish instruction is strongly linked with vocabulary learning in Spanish, but appears not to influence English vocabulary skills, speaking skills or reading proficiency (Cena et al., 2013). In part, these differences are likely an artifact of the diverse numbers of measures used, the differences in the samples (age, language proficiency levels, SES) and in the design of the study (some were longitudinal, others cross-sectional) (Goodrich et al., 2013). It may also be the case that cross-linguistic transfer only impacts on reading comprehension skills when the learner has reached a 'threshold' of first and second ability (Leider et al., 2013). Given this, questions remain about which linguistic skills show evidence of transfer at which developmental periods, and for which learners.

Conclusion

The growth of the DLL population in the United States and in other industrialized nations offers opportunities for creating a citizenry where a diversity of languages and cultures coexist; but also presents challenges for an educational system that has been designed around monolingual learners. While adult–child interactions that develop language and literacy differ in type and texture across development, we emphasize the fundamental role of language inputs and outputs at all stages and ages. Whether at home or in the classroom, DLLs' literacy achievement hinges to an extent on rich opportunities to hear and to produce oral and written language in a first and/or additional language.

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