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Fostering Dual Language Learners' Participation in Head Start Classroom Conversations Through Code-Switching in Whole Group and Small Group Settings

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ABSTRACT

Research Findings: Children's oral language skills lay the foundation for later literacy and can be fostered through responsive conversations with teachers. However, such conversations are rare in preschool, particularly between teachers and dual language learners (DLLs), or students who speak a minoritized language at home. DLLs benefit when their home language is used and instruction is provided in small groups, but few studies have explored the degree to which preschool teachers *code-switch*, or alternate between languages within a single group context. This study draws on 10 transcribed video-recorded observations of Head Start preschool classrooms to describe five teachers' flexible use of Spanish and English with their Spanish-English DLL students across whole and small group contexts. DLL students' language use was examined to explore the role of group context and teacher code-switching in fostering DLLs' participation in classroom conversations. While relative Spanish use varied widely, all teachers code-switched more frequently in small group than in whole group. The 25 DLL students spoke more, took longer turns, and used more Spanish in small group versus in whole group. *Practice or Policy:* Our results suggest that teacher code-switching and small group instruction create contexts that are conducive to DLLs' participation in classroom conversations.

Oral language skills are foundational to children's later literacy development and school learning (Dickinson & Porche, 2011; Huang et al., 2021; NICHD Early Child Care Research Network, 2005). However, creating a language environment that fosters oral language skills can be challenging in early childhood classrooms. For instance, observational studies have found that teacher-student conversations on topics other than behavior management are relatively rare in early childhood classrooms (Jacoby & Lesaux, 2014; Sawyer et al., 2018). Developing oral language skills in early childhood classrooms is particularly important for dual language learners (DLLs), those children who are learning a minoritized language at home in addition to learning the majority language of schooling, because DLLs who enter kindergarten with less-developed oral language skills are at greater risk of later difficulties in reading comprehension (Mancilla-Martinez & Lesaux, 2017).

An under-studied phenomenon in early childhood classrooms is the degree to which teachers flexibly use both the language of schooling (Standard American English in the United States) and the minoritized languages that DLLs are learning at home. Such alternation between languages within a single social context, which we refer to as *code-switching*, may signal to DLL students that both of their languages can be used for meaning making in the classroom and thus facilitate their greater verbal participation in classroom conversations. Understanding the contextual factors that support

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Spanish-speaking DLLs' oral language development is critical, as 22% of children served by Head Start[1] live in homes where Spanish is the primary language (U.S. Department of Health and Human Services, 2019). The purpose of this study is to investigate teacher and child language practices in Head Start classrooms serving Spanish-speaking DLLs to gain insight into how teachers' code-switching is related to children's language use.

Theoretical Models of Dual Language Learners' Language Development

Young children develop oral language skills via responsive interactions with more experienced language users such as caregivers in the home environment and educators in daycare and school environments. In addition to exposing children to rich and varied language input, these interactions provide opportunities for children to actively use language to make meaning, and are a key driver of children's language development during the preschool years (Barnes et al., 2020; Cabell et al., 2015; Gámez & Levine, 2013; Huttenlocher et al., 2002). Recent studies suggest that children's active language use in school environments is positively associated with oral language development. For example, Hindman et al. (2019) found that children in Head Start classrooms with a greater proportion of child talk during shared book reading made greater gains in receptive vocabulary.

For DLLs, who often have stronger receptive skills than expressive skills in both of their languages (Gibson et al., 2022), opportunities for active language use may be particularly important. One theoretical model that centers the role of active use in language development is the *output hypothesis* in second language acquisition (Swain, 2005). The output hypothesis asserts that language production is not simply the end-product of language learning, but a key component of the learning process. Through active usage of a language, learners will notice gaps in their language skills, test out new language forms, and use language as a tool to make meaning and reflect on language itself. While this hypothesis has primarily been tested in older children and adults who are learning a new language, there is evidence for the importance of output for Spanish-speaking DLLs' skills in each language.

Studies of Spanish-speaking DLLs' have found that the degree to which children use each language with adults is often a stronger predictor of proficiency than exposure alone. In a cross-sectional study of 757 preschool and kindergarten-aged children with exposure to Spanish and English, Bohman et al. (2010) found that while input is essential for acquiring initial skills in a language, child output is needed for growth in that language. Hammer et al. (2012) likewise found that in their sample of 191 Spanish-speaking DLLs, measures of child output to parents and teachers in each language were significant predictors of vocabulary in Spanish and English, even after controlling for language input. In a longitudinal study of toddlers exposed to Spanish and English, Ribot et al. (2018) found that children's language use was predictive of expressive but not receptive English skills.

On its surface, the stance that the process of language learning requires active use seems in tension with stage theories of second language acquisition that claim that a silent or nonverbal stage lasting several months is typical for DLLs who are immersed in a new language environment (Tabors & Snow, 1994). A nonverbal stage is often experienced by DLLs in classroom settings where teachers and peers do not share their home language, and ethnographic researchers have documented the learning that can occur during this period despite the lack of verbal participation in classroom conversations (Bligh & Drury, 2015; Saville-Troike, 1988; Tabors, 1997). However, the idea of a universal months-long silent period for DLLs has implications for classroom practice. For example, it could be misinterpreted as indicating that teachers should *not* engage their DLL students in conversation if they perceive them to be in the nonverbal stage in their language acquisition. Roberts (2014) questions the empirical basis and practice implications stemming from the notion of a silent period. She argues that there are many alternative explanations for why DLLs may be reticent to use language actively in the classroom, from difficulties understanding what is being said to emotional distress. She asserts that engaging DLLs in conversation is a vital part of supporting

their oral language development. This view is bolstered by findings that both monolingual and bilingual children benefit from contingent, back and forth exchanges with adults (Cabell et al., 2015; Romeo et al., 2018), and suggests that more research is warranted on how best to foster DLLs' participation in classroom conversations.

One under-studied approach to engaging preschool-aged DLLs in classroom conversations is to signal that both of their developing languages can be used to communicate and make meaning. For example, teachers who speak the home language of their DLL students may intentionally use DLLs' home language and code-switch between languages to encourage child responses in either or both languages. In fact, recent work (Jarquín Tapia et al., 2022) described how in teacher-child dyadic conversations that incorporated the home language, DLLs talked more than they did in whole group or even small group.

The Importance of Teachers' Spanish Use in Head Start Classrooms

To support the large and growing number of DLLs in Head Start classrooms, Head Start's performance standards stipulate that teachers "with appropriate language competency . . . include teaching practices that focus on both English language acquisition and the continued development of the home language" (Office of Head Start, 2016, p. 27). However, Head Start teachers rarely receive detailed guidance on what this should look like in practice, and the degree to which DLLs' home language is incorporated in Head Start classrooms by teachers who speak their students' home languages is not well understood.

Qualitative studies of purposefully-sampled Head Start classrooms serving Spanish-speaking DLLs have documented the intentional use of Spanish throughout the day to provide emotional and behavioral support (Miller, 2016; Piker & Rex, 2008). Larger-scale studies of classroom language environments have found that Spanish-speaking teachers rarely use Spanish with Spanish-speaking DLLs, and Spanish is used more for directing children's behavior than for instruction (Jacoby & Lesaux, 2014; Limlingan et al., 2021; Sawyer et al., 2018). Despite its low occurrence, studies have shown that for Spanish-speaking DLLs, the degree to which Spanish is used in teacher-child interactions promotes both social emotional and academic gains (Burchinal et al., 2012; Chang et al., 2007). For example, White et al. (2020) found that Spanish-speaking DLLs who received greater home language supports grew more in their Spanish skills, executive functioning, and science skills over the course of the school year. Limlingan et al. (2021) found that the frequency of teachers' Spanish talk predicted prosocial peer play behaviors. These findings point to teachers' proportional use of Spanish as an important predictor of Spanish-speaking DLLs' outcomes.

Despite the evidence showing the benefit of providing instruction in DLLs' home language in preschool classrooms, in practice this is not always feasible for several reasons. First, on a practical level, it would be impossible for all preschool teachers to speak the home languages of all their students given the increasing linguistic diversity in early childhood classrooms (Park et al., 2018). Second, teachers are expected to prepare children for success in the monolingual English environment of American schools; even in contexts where most of the students are bilingual, the teacher still has the responsibility to prepare children for growth in English skills as well as their continued growth in their home language (Head Start Program Performance Standards, 2016, p. 27).

Nevertheless, in settings where teachers have at least some proficiency in their DLL students' home language(s), intentional code-switching between languages may be a useful instructional strategy to foster DLL students' engagement and verbal participation. Although code-switching behaviors and processing in adults and children have been studied extensively by sociolinguists and psycholinguists, early childhood researchers have rarely studied how preschool teachers use code-switching to potentially support DLLs' participation in classroom conversations. In sum, to build on previous research showing the importance of teacher's Spanish use with Spanish-speaking DLLs, attention to the degree to which teachers code-switch and the purposes for which they code-switch may reveal additional facets of teacher language practices that support linguistically diverse students.

Code-Switching in Adult Language Input and Child Output

Code-switching is a rule-governed feature of language use in bilingual speech communities (Poplack, 1980; Zentella, 1997). Adults who are proficient in multiple languages often code-switch as part of their linguistic "toolkit" to more efficiently and effectively convey meaning with bilingual interlocutors (Beatty-Martínez et al., 2020). Code-switches can occur between utterances (e.g., "Do you remember what's the bear's job? *Cuál fue el trabajo? [What was the job?]*"), or within-utterances (e.g., "How about *otra vaca*? [How about *another cow*?]"). Code-switches can also occur at the discourse level between speaker turns (e.g., Student: *Yo fui a Walmart. [I went to Walmart.]* Teacher: Oh, you went to Walmart?)

A few studies have looked at whether code-switching in adult language input is helpful, harmful, or neutral for children's language learning. One study found that parents' within-utterance code-switching with their toddlers was positively correlated with the child's vocabulary, while between-utterance code-switching had no effect (Bail et al., 2015). In contrast, another study found that parents' self-reported code-switching with their 1.5 year-old infants was negatively correlated with the infant's receptive vocabulary (Byers-Heinlein, 2013). A recent study of teacher code-switching in preschool heritage language classes in Singapore found that teacher's within-utterance code-switching was positively associated with gains in children's cognitive flexibility but not gains in the heritage language (Sun et al., 2020). To summarize, the role of code-switched input in child language development remains unclear, and research with preschool-aged children is scarce.

Code-switching is also common in DLLs and has been found to vary by proficiency in each language and the norms of their sociolinguistic context. While younger DLLs (age 2–3) and DLLs with limited proficiency in one of their languages often code-switch to fill lexical gaps (e.g., Greene et al., 2013; Paradis & Nicoladis, 2007), as DLLs gain proficiency in both languages code-switching is deployed for socio-pragmatic purposes and becomes more sensitive to social norms. For example, several studies have found that preschool-aged Spanish-speaking DLLs in the United States tend to switch more from Spanish to English than from English to Spanish, reflecting the higher status of English in the society (Halpin & Melzi, 2021; Montanari et al., 2019; Smolak et al., 2020). Studies of code-switching in preschool-aged DLLs have found that DLLs rarely code-switch in monolingual contexts. In a longitudinal study of DLLs' code-switching in oral narratives elicited in their dominant language (i.e., the language spoken most often and with the most proficiency), Halpin and Melzi (2021) found that only about one third of the children code-switched at each time point, and for those who did, only 9%-14% of utterances contained code-switches. This finding complements earlier work suggesting that DLLs who acquire two languages from birth modify their code-switching frequency to match that of their interlocutor as early as age two (Comeau et al., 2003). These findings suggest that in classroom settings, DLLs' code-switching may mirror the language norms modeled by their teacher. It follows that if teachers signal that both languages can be used for communication and learning, DLLs' may feel at liberty to use either or both of their developing languages to express themselves and thus increase their overall verbal participation.

Functions of Teacher Code-Switching: Meaning Making or Guiding Behavior

Even though sociolinguists have long recognized code-switching as a normative feature of bilingual speech communities, bilingual education and language immersion programs have traditionally promoted language separation in the classroom to create an immersive experience in each language and to protect the heritage language (Legarreta, 1977). Recently, proponents of *translanguaging theory* have mounted critiques of language separation in the classroom. Translanguaging theory posits that the rigid separation of languages is unnatural and limits the resources that teachers and students can use to make meaning (García & Wei, 2014). Recent iterations of translanguaging theory have taken a step further, arguing that separate, named languages are social constructions without distinct psychological representations in the minds of bilingual speakers (Otheguy et al., 2015). For this study, we adopt the "multilingual perspective on translanguaging" articulated by MacSwan (2017), that embraces the

pedagogical potential of drawing on children's linguistic skills across their languages through practices such as code-switching (emphasized in earlier conceptions of translanguaging), while viewing the languages and dialects that children speak as integrated yet distinct language systems.

Studies applying a translanguaging lens have shown how teachers in bilingual classrooms with a presumptive language-separation policy often enact hybrid language practices to support children's *meaning making*, which refers to the teachers' use of linguistic resources to develop and deepen children's conceptual knowledge (Gort & Pontier, 2013; Gort & Sembiante, 2015; Henderson & Ingram, 2018). Gort's and colleagues' examples of translanguaging to support meaning making in dual language classrooms paint a different picture than the literature on teachers' use of Spanish in Head Start classrooms reviewed above, which had suggested that Spanish is primarily used to manage students' behavior (Jacoby & Lesaux, 2014; Limlingan et al., 2021; Sawyer et al., 2018).

These two contrasting functions of classroom code-switching – supporting meaning making versus guiding behavior – partially map onto earlier frameworks of teachers' code-switching based on studies with older students in post-colonial settings in Asia and Africa (for reviews, see, Ferguson, 2003; Lin, 2013; Martin-Jones, 1995). Ferguson (2009) posits that teachers code-switch for three overarching functions: (1) constructing and transmitting knowledge (similar to meaning making), (2) classroom management (similar to guiding behavior), and (3) interpersonal relations. This third function, which Ferguson describes as code-switching to "negotiate teacher identities" and "humanise the classroom climate" might be used in early childhood classrooms to support DLLs' social emotional wellbeing. Though less research has been conducted on the functions of code-switching in early childhood classrooms, one recent exception (Sun et al., 2020) found that in Singaporean heritage-language preschool classrooms teachers' code-switches were more frequently habitual (unintentional) or meant to manage children's language use, rather than to ensure comprehension. Synthesizing research on translanguaging in dual language programs, Spanish use in Head Start classrooms, and functions of teacher code-switching, we expected that teachers in the present study would code-switch for several purposes, including supporting children's meaning making, guiding behavior, and interpersonal relations (i.e., providing social emotional support).

Group Size and Child Language Use

In preschool classrooms, children's time outside of meals and attending to basic needs is typically divided between teacher-led whole group instruction, small group instruction, free choice time, or outside time (Fuligni et al., 2012). There is some evidence that group size matters in terms of children's output. When teachers work with children one-on-one or in small groups, children produce more comments and questions (Morrow & Smith, 1990) and make greater gains in vocabulary (Lowenthal, 1981) by increasing opportunities for in-depth teacher-student conversations (Jacoby & Lesaux, 2017; Lowenthal, 1981; Morrow & Smith, 1990). In one study, Connor et al. (2006) found that teacher-led small groups had a much larger effect on child outcomes than whole group instruction.

In contrast, Neuman and Kaefer (2013) found no effect of group size among children who were randomly assigned to receive a vocabulary intervention in large or small groups. This null finding could be because children were not grouped by ability and the lessons were not targeted to the children's specific needs. Another factor in these mixed findings could be teacher quality. Neuman and Kaefer's within-subject design accounted for teacher quality by using the same teacher for small and whole group lessons, but they also brought in outside expert teachers instead of training classroom teachers to deliver the intervention. Thus, more research is needed on children's verbal participation in whole group and small group lessons when both are delivered by their classroom teacher.

Teacher-led small group conversations may be particularly beneficial for DLLs, as teachers can tailor their language use to meet DLLs' needs and DLLs may feel more comfortable contributing to conversations in small group settings. In a study of literacy instruction in Head Start classrooms serving predominantly Latino children, Jacoby and Lesaux (2014) found that extended discourse – defined as back and forth exchanges between a teacher and one or more children on a topic other than behavior management – was more likely to occur in small group than in whole group lessons. Other

evidence for the effect of small group instruction for DLLs comes from intervention studies in which DLLs who received additional small group instruction made greater gains in English (Farver et al., 2009) or Spanish (Landry et al., 2019; Restrepo et al., 2010). In this study, we investigate whether teacher and child language practices vary across whole group and small group contexts. Specifically, we aimed to build on the research by asking whether the frequency and functions of code-switching differ by the size of the learning group, i.e., small group learning activities versus whole group.

The Present Study

This small-scale exploratory study explores the language practices that five Head Start teachers used to support their DLL students' verbal participation across different group contexts. The teacher language practices of interest were overall quantity of talk, the proportion of Spanish used, the frequency of code-switches, and the function of code-switching (i.e., meaning making versus behavioral guidance and social-emotional support). We operationalized DLLs' verbal participation as the overall quantity of child talk (in words per minute) and children's mean length of turn. We also explored DLLs' proportional Spanish use and code-switching frequency to better understand the extent to which children matched the language norms modeled by their teacher in each group context. A unique contribution is the level of bilingualism within the sample: All but one teacher was bilingual in Spanish and English, and at least half of the children in each of the classrooms were Spanish-speaking DLLs. By focusing on 25 target DLL students in five classrooms who were present in both whole and small group lessons with the same teacher, we addressed the following research questions:

(1) How do teacher language practices vary across *Whole group* versus *Small group with DLLs* in terms of the amount of teacher talk, proportional use of Spanish, and the frequency and function of code-switching?
(2) How does the language use of Spanish-speaking DLLs vary by group context in terms of the amount of talk, mean length of turn, proportional Spanish use, and code-switching frequency?

Based on our review of the literature, we expected that in small group lessons with their Spanish-speaking DLL students, teachers would speak less overall (allowing for greater child participation), use more Spanish, and code-switch more frequently compared to whole group lessons. We also anticipated that teachers would primarily code-switch for behavior and social-emotional support in both group contexts, but that a greater proportion of switches would support meaning making in small group. We predicted that Spanish-speaking DLLs would speak more and take longer turns in small group, and that they would follow their teacher's lead in their Spanish use and code-switching frequency.

Method

Research Sites and Participants

The current study draws on transcribed video-recorded observations (*n* = 10) from a larger research project on teacher-child interactions in racially, ethnically, and linguistically diverse preschool classrooms in the Mid-Atlantic United States. The larger study examined the quality of classroom discourse before and after teachers received professional development (PD) intervention on facilitating classroom conversations (Curenton, 2016); however, all transcriptions used in this present study were collected before the PD had begun, i.e., during baseline and pre-implementation phase. A total of 33 lead and assistant teachers were observed during the baseline and pre-implementation phases, yielding a corpus of 98 transcribed observations of whole group and small group lessons that occurred prior to the professional development intervention. Based on available teacher survey data (*n* = 22), the teachers were 100% female, 31% Latine, and the majority held a bachelor's degree or higher (71%). For the present analysis we purposefully selected a subset of observations in which teachers were

Table 1. Teacher social and demographic characteristics.

	Role	Racial/Ethnic Identity	Highest Degree	Years PK experience	Class % DLL	Target children in WG and DLL SG lessons
Almond Heights						
Jeanette	Lead Teacher	White, Native American & Latina	Master's	8	47%	Adamaris, Christián, Daniel, Diego, Jaime
Yasmín	Lead Teacher	Latina	Bachelor's	6	53%	Celia, Christopher, Daniela, Elízabeth, Jason, Joaquín, Samantha
Fairvale						
Erika	Assistant Teacher	Latina	Bachelor's	not reported	93%	Angel, César, Dylan, Fernanda
Ximena	Lead Teacher	Latina	Bachelor's	12	not reported	Edwin, Emily, Jorge, Rafael, Tanya
Luz	Lead Teacher	Latina	2-year degree	3	100%	Brandon, Melinda, Nicole, Yesenia

Pseudonyms are used for all cities, teachers, and children.

observed to use Spanish with their DLL students. Importantly, this subset was not intended to be representative of the larger study sample or of Head Start classrooms generally, but can provide insights into how Spanish use and code-switching differ by group context.

We selected observations that met the following criteria: 1) the teacher used both Spanish and English with students during the observation; and 2) the teacher had usable recordings of both a whole group lesson and a DLL small group lesson with the same students present in both contexts. This selection process resulted in 10 observations of five teachers (four lead teachers and one assistant teacher) in five different classrooms at two Head Start centers. These particular Head Start centers were uniquely suited to our research questions because they enrolled a high proportion of Spanish-speaking DLL children but did not have an explicit language policy dictating how Spanish and English should be used for instruction. In contrast to studies that have explored how teachers diverge from stated language policies in bilingual education classrooms (e.g., Gort & Pontier, 2013), the teachers at these centers were at liberty to use either or both languages to support their students throughout the school day.

The two Head Start centers were located less than 60 miles from a large metropolitan center and about 20 miles from each other, in small urban cities we refer to as Almond Heights and Fairvale (all names are pseudonyms). Detailed demographic descriptions of the small cities are based on national data from the Census Bureau's American Community Survey. In Almond Heights the median household income was $41,000, or $20,000 below the national median. The population was 42% Black/African American, 28% Caucasian, and 27% Latine. Approximately 21% of the population was born outside of the United States, with the majority born in Latin America. A total of 28% report speaking a language other than English at home, with Spanish being the most widely spoken minoritized language (21.5% report speaking Spanish at home). In contrast, Fairvale had a median household income of $56,000 and a larger Latine community than Almond Heights. Fairvale was 46% Latine, 39% Caucasian, 10.5% Black/African American, and 2.8% Asian. One third of Fairvale's population was born outside of the United States and 47% report speaking a language other than English at home. As in Almond Heights, the most widely spoken minoritized language was Spanish, with 42% of the population reporting that Spanish was spoken at home. Table 1 displays the social and demographic characteristics of each teacher. At Almond Heights the teachers taught full-day classes of 15 students, at Fairvale the teachers taught two half-day classes of 15 students.

Data Collection and Transcription

Participating teachers were video-recorded by graduate-level research assistants (Almond Heights in 2015) or their local education supervisor (Fairvale in 2016) across three different group contexts: *Whole group* (WG), *Small group* (SG), and *Small group with DLLs* (DLLs SG). These lessons were

framed as classroom conversations based on a topic or activity of the teacher's choosing. The topics discussed included forms of transportation, insect life, and mail/letter writing. None of the lessons featured shared book-reading.

For the current study, we analyzed one WG and one DLLs SG lesson for each of the five teachers. We chose to analyze DLLs SG because we wanted to be certain that the students in the small group had been identified as DLLs by their teacher. The WG lessons featured 11 children on average (range: 8–14) and the DLLs SG lessons featured five children on average (range: 4–7). The average length of the videos was 12 minutes, 55 seconds (SD = 2:57, range: 9:26–19:48). Though additional children were present in the WG videos, our analysis focused only on the four to seven target children who appeared in both the WG and DLLs SG videos for two reasons. First, based on their inclusion in the DLL lesson we knew that their teacher considered them to be DLLs. Second, because these children were observed in both lessons, we could compare features of their language use (and the teacher's language use with them) across the two group contexts. A total of 25 target children (14 boys and 11 girls) were present in both WG and DLLs SG contexts and thus were included in our analysis.

The videos were transcribed in CHAT format according to the Children's Data Exchange System conventions (CHILDES; MacWhinney, 2000) by one of two trained bilingual and bicultural undergraduate research assistants who spoke dialects of Spanish from Cuba and Nicaragua, respectively. Following CHAT conventions, each line of the transcripts represented a single utterance by a single speaker. Utterance boundaries were determined by teacher/child intonation and pauses. Child utterances were attributed to specific children based on visual cues in the video and/or verbal cues (such as the teacher using the child's name). In cases where more than one child spoke in unison, utterances were attributed to all the children who could be positively identified as having spoken. Each transcript was then reviewed alongside the video twice more and corrected as needed by two new research assistants (the third author, an undergraduate from Nicaragua, and a master's student who was bilingual and had taught in Argentina but was raised in the U.S.) At this stage, language pre-codes were added to indicate the main language used for each utterance (Spanish or English). Any words within an utterance that diverged from the main language used were tagged. This allowed us to calculate the number of words used in each language and facilitated coding for different types of code-switches as described below. The first author, a bilingual researcher and former Spanish teacher who learned Spanish in Ecuador and Guatemala, verified the accuracy of all ten transcripts prior to conducting the present analyses.

Measures of Teacher and Child Talk

Features of teacher and child talk were derived using CLAN (MacWhinney, 2000). In deriving these measures, we excluded utterances comprised of teachers and children singing or chanting in unison because we were interested in children's participation in naturalistic classroom conversations. First, we used the FREQ command to count the number of total words (tokens) used by each teacher and target child, which was then divided by lesson length to calculate *Tokens per Minute*. This measure was used to index the overall quantity of talk for each speaker in each lesson. Second, we used the MLT command to output the *Mean Length of Turn* in words. *Turns* were defined as consecutive utterances by the same speaker. Because we were interested in DLLs' verbal participation in classroom conversations, we excluded nonverbal turns such as nodding and pointing. Third, we calculated the *Percent Spanish Tokens* for each speaker in each lesson using the FREQ command for words tagged as Spanish or English. For this measure we excluded proper nouns (e.g., the word Walmart) as they were considered to be language neutral.

Coding Transcripts for Type and Function of Code-Switches

Transcripts were coded by the first and third authors for the type of code-switch between languages and main function of each code-switch.

Type of Code-switch

First, a coding scheme was developed by the first and second authors to flag all code-switches between languages. There are two ways researchers conceive of code-switching: a matrix approach (Myers-Scotton, 1993) or an alternation approach (Poplack, 1980). In a matrix approach, one language is considered the base language, into which the second language is inserted, and each insertion is counted as a switch. In contrast, an alternation approach does not view either language as the base, so each time the language changes is counted as a switch. In this project we take an alternation approach because it is consistent with the nature of our data, as teachers often moved between English and Spanish throughout the lesson, and it was not possible to identify a base language across all observations.

Each code-switch was first categorized as either a *Cross-speaker switch* or a *Within-turn switch. Cross-speaker switches* were defined as code-switches that occurred at the speaker/turn boundary. For example, if a teacher posed a question in Spanish and a child responded in English, the child's utterance was coded as a *Cross-speaker switch. Within-turn switches* were defined as code-switches that occurred within a single speaker turn, e.g., when a teacher posed a question in Spanish and then immediately posed the same question in English.[2] To establish interrater reliability for this coding scheme, the first and third author double-coded three transcripts (30% of the data). After reaching 87% agreement (Kappa = .82) the remaining seven transcripts were coded independently.

Function of Teacher Code-switches

After coding for the type of switch, the research team examined teachers' within-turn code-switches to develop a coding scheme characterizing the pedagogical function of each switch. We focused on within-turn switches because we expected them to best capture teachers' intentional alternation and juxtapositioning of languages for pedagogical purposes. We took an etic-emic approach that drew on previous typographies of classroom code-switching with adolescents and young adults (Ferguson, 2003, 2009), recent work on classroom code-switching in preschool classrooms (Sun et al., 2020), and the patterns that emerged from our data. We began with two a priori categories: *Meaning Making* (similar to Ferguson's "constructing and transmitting knowledge") and *Social-Emotional/Behavioral Support* (similar to Ferguson's classroom management and interpersonal relations functions combined). Based on initial coding of the data and following Sun et al. (2020), we added a third code: *Habitual Code-Switches* (see, Appendix A).

Code-switches were coded as *Meaning-Making* if the teacher switched languages within a turn to support children's conceptual understanding or vocabulary development. They were coded as *Social-Emotional/Behavioral Support* if they primarily served to redirect a child's attention, provide comfort or encouragement, or accomplish general classroom management objectives. *Habitual Code-switches* were brief, unintentional switches such as the use of the English word "so" in an otherwise Spanish utterance; these represented 11% of the total within-turn switches. Because we were interested in teacher's use of code-switches for pedagogical purposes, we excluded all *Habitual* code-switches from the analysis. All 10 transcripts were coded for the function of teachers' within-turn switches by both the first and third authors. The two coders were in agreement on 81% of the assigned codes (Kappa = .66) All discrepancies in coding decisions were resolved through discussion until a consensus code was determined.

Results

Preliminary Analyses

Before comparing teacher and child talk across group contexts, we first examined whether there were significant differences in DLLs' participation in classroom conversations between the two Head Start centers. A series of two-sample Wilcoxon rank-sum tests comparing the target DLLs at Almond

Heights (*n* = 12) versus Fairvale (*n* = 13) were conducted on child language use metrics of interest. None of the contrasts were significant (exact probabilities ranged from .129 to 1.00), but it should be noted that the statistical power for detecting significant differences between centers was very limited given the small number of target DLL students at each center.

Teacher Language Practices: WG vs. DLLs SG

Our first research question asks how teacher language practices vary based on group context. In Table 2, we present descriptive statistics characterizing teacher language practices in *Whole group* (WG) vs *Small group with DLLs* (DLLs SG) across the five teachers. Though no significance tests were performed due to the small number of teachers, we note that on average, teachers' overall quantity of talk, as measured by tokens per minute was similar across group contexts. However, teachers' relative Spanish use varied widely across classrooms and group contexts. For example, Ms. Ximena used almost exclusively Spanish in WG but slightly less in SG, while Ms. Yasmín and Ms. Erika used almost exclusively English in WG but slightly more Spanish in SG.

However, each of the five teachers code-switched between languages more frequently in DLLs SG compared to WG. In fact, the average number of code-switches in DLLs SG was more than twice as high for both within-turn code-switches (WG *M* = 12.2; DLLs SG *M* = 27.2) and cross-speaker code-switches (WG *M* = 2.4 DLLs; SG *M* = 9.4). Regarding the function of teacher code-switches, teachers code-switched for the purpose of supporting children's meaning making more than for social-emotional/behavioral purposes. On average, teachers' within-turn code-switches were categorized as *meaning making* 59% of the time in WG and 69% of the time in DLLs SG, with the remaining within-turn code-switches categorized as *social-emotional/ behavioral*. Figure 1 illustrates the raw number of teacher code-switches by function.

Qualitative Examples

The contrasts between teacher talk in WG and DLLs SG are further illustrated in Excerpts 1a – 2b (see, Appendix B for longer annotated excerpts). In Excerpt 1a, Ms. Luz,[3] a native Spanish-speaking teacher, leads a WG lesson on forms of transportation. At the onset of this conversation, she poses a question in English, but when her DLL student Yesenia responds in Spanish, Ms. Luz seamlessly shifts to Spanish for the remainder of the exchange, only switching to English to translate Yesenia's initial contribution to English for the class in line 4.

Ms. Luz: Yesenia, how does daddy go to work?

Yesenia: *Mi papá va con . . . en el bus. [My dad goes with . . . on the bus.]*[4]

Ms. Luz: *¿Tu papá va en el bus? [Your dad goes on the bus?]*

Ms. Luz: Nicole . . . Yesenia's dad goes on the bus.

Table 2. Teachers' language practices in WG and DLLs SG.

| Teacher	Tokens per minute		Percent Spanish tokens		Within-turn code switches		Cross-speaker code switches		Within-turn code-switches coded as meaning making	
	WG	DLLs SG	WG	DLLs SG	WG	DLLs SG	WG	DLLs SG	WG	DLLs SG
Jeanette	92.05	64.24	1.70%	24.66%	11	41	0	20	54.55%	95.12%
Yasmín	89.54	86.30	0.54%	5.03%	3	28	3	11	66.67%	50.00%
Erika	105.81	101.84	1.63%	5.42%	12	22	5	7	58.33%	40.91%
Ximena	65.29	102.09	97.97%	88.21%	7	11	2	4	42.86%	100.00%
Luz	101.42	122.63	47.09%	27.35%	28	34	2	5	71.43%	58.82%
Mean	90.82	95.42	29.79%	30.14%	12.2	27.2	2.4	9.4	58.77%	68.97%
SD	15.75	21.69	42.97%	34.10%	9.52	11.48	1.82	6.50	11.11%	26.91%
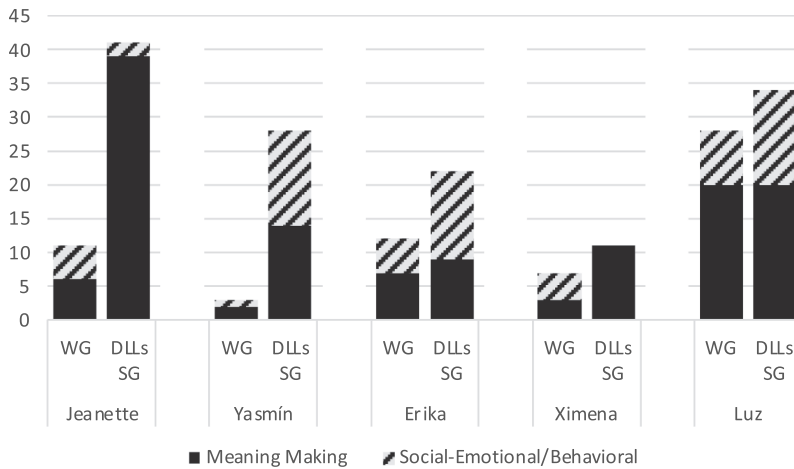
Figure 1. Teacher's within-turn code switches (raw frequency counts) by function in WG vs. DLLs SG.

Yesenia: *Sí, mi papá va en el* bus *de su trabajo y va . . . y va hasta México. [Yes, my dad goes on the* bus *from his work and goes . . . and goes all the way to Mexico.]*

Ms. Luz: *¿Tu papá va en autobús hasta México? [Your dad goes on the bus all the way to Mexico?]*

Excerpt 1a demonstrates how Ms. Luz code-switches between languages to match the language used by Yesenia and to translate Yesenia's reponse, but in general uses fewer code-switches in WG than in DLLs SG.

In Excerpt 1b, the same teacher leads a DLLs SG lesson on comparisons. The students are painting tire tracks with toy cars of different sizes, and Ms. Luz moves flexibly between languages to draw attention to how the tires and tracks differ. She code-switches between English and Spanish five times in Excerpt 1b to support the students' meaning making. She often poses a question in one language and then restates or elaborates on the same question in the other language. For example, Ms. Luz initially questions Brandon, a DLL student whose car is making thin tracks, in English, but then switches to Spanish to help him arrive at the correct answer. Ms. Luz then uses Spanish to pose the same question to Melinda, a DLL student whose car is making thick tracks. When Melinda provides the same response as Brandon, Ms. Luz switches to English to explain the difference between Brandon's and Melinda's tracks.

Ms. Luz: Look, Brandon, are your lines small? Are they skinny or thick?

Brandon: Thick.

Ms. Luz: *Mira, son gruesas o delgaditas? [Look, are they thick or thin?]*

Brandon: *Delgaditas. [Thin.]*

Ms. Luz: *Delgaditas! [Thin!]*

Ms. Luz: *Mira el de Melinda. [Look at Melinda's.]*

Ms. Luz: *Melinda, tus llantas son gruesas o delgaditas? [Melinda, your tires are thick or thin?]*

Melinda *Delgaditas. [Thin.]*

Ms. Luz *Mira el de Brian, éste es delgadito. [Look at Brian's, this is thin.]* It's very thin, yours are wide. So keep painting with your car, then tell me.

Ms. Luz is representative of the teachers in our sample in that she code-switches more frequently in the DLLs SG lesson. However, she stands out in that she is remarkably successful at facilitating classroom conversations in WG, as illustrated by her exchange with Yesenia in Excerpt 1a. This may be related to Ms. Luz's high level of proficiency in each language, allowing her to comprehend and build on children's contributions in either language in WG.

Excerpt 2a and 2b offer a contrasting set of examples featuring Ms. Jeanette, a teacher who has limited Spanish proficiency but nonetheless makes a strong effort to incorporate key words in Spanish, particularly in DLLs SG. In WG (Excerpt 2a), Ms. Jeanette asks students to describe a photograph to seed a discussion about how to join a new social group during free play time. In this segment, the teacher makes repeated efforts to elicit verbal contributions from Diego, one of the five target DLL students included in this WG lesson. The teacher poses several different questions about the photograph, provides extra time to respond, and uses key words in Spanish (Excerpt 2a, lines 9–12). While Ms. Jeanette code-switches to support meaning making in this excerpt (as when she uses the key words *niño* and *niña*), she also uses Spanish to manage the behavior of her Spanish-speaking DLL students (as when she redirects Diego's attention in the last two lines of this excerpt).

Ms. Jeanette: Diego, what do you see in the picture?

Diego: xxx [unintelligible]

Ms. Jeanette: Who is that? Is that a little boy or a little girl?

Ellie & Precious: A little girl!

Ms. Jeanette: I'm asking Diego.

Ms. Jeanette: Is that a little boy or a little girl right here in the blue jacket?

Precious: Little girl.

Ms. Jeanette: Now, he can see it better than you. He's very close.

Ms. Jeanette: A *niña* or *niño*? [A *girl* or *boy* ?]

Ms. Jeanette: *Dónde está niño? [where is boy?]*

Ms. Jeanette: Look, *mira*. [Look, *look*.]

Ms. Jeanette: Attempts to refocus Diego's attention on the picture, as he appears to be looking elsewhere)

Ms. Jeanette: *Aquí, aquí.* [*here, here.*]

In Excerpt 2b we see Ms. Jeanette with the same target DLL students in a DLLs SG lesson in which the children use Playdoh and plastic knives to create "pizzas" and other shapes. Here Ms. Jeanette uses more Spanish and code-switches more frequently to support students' meaning making. For example, she juxtaposes the Spanish word *cuchillo* with the English equivalent knife and echoes Diego's contribution using the Spanish word *corta [it cuts]*. She also code-switches between turns (e.g., when she follows Diego's Spanish contributions with an English utterance, as in Excerpt 2b, lines 3 and 9). This is likely related to her lower level of Spanish proficiency, as she may not have understood Diego and/or may not be equipped to respond spontaneously in Spanish.

Ms. Jeanette: *Cómo dice* sounds like fife? [*how say*, sounds like fife?]

Diego: Teacher. *Yo quiero ese cuchillo. [I want that knife.]*

Ms. Jeanette: N-n-knife.

Christián: Knife.

Ms. Jeanette: *Cuchillo* say knife. [*knife* say knife.]

Christián: Knife!

Ms. Jeanette: Knife.

Diego: *Cuchillo que . . . [Knife that . . .]*

Ms. Jeanette: Don't cut your fingers. *Cuidado, no, cuidado. [Careful, no careful.]*

Diego: *Yo tengo este cuchillo. Este corta. [I have this knife. This cuts.]*

Ms. Jeanette: *Corta. [It cuts.]*

Christián: *Corta. [It cuts.]*

Diego: *Sí corta bien éste. [Yes, this cuts well.]*

Dual Language Learners' Language Use: WG Vs. DLLs SG

Our second research question asks how DLLs' language use varies by group size. Table 3 presents the results of a series of paired Wilcoxon signed rank tests comparing features of child talk in WG and DLLs SG. We used an alpha level of .05 for all tests. All 25 target DLLs were included in the comparison of word tokens per minute, our measure of overall quantity of child talk. However, for the comparison of mean length of turn (MLT), only children with at least two turns in each group context were included ($n = 17$), and for the comparison of percent Spanish tokens and code-switching, only children who spoke in both group contexts were included ($n = 19$).

Children used significantly more tokens per minute in DLLs SG (WG median = .59; DLLs SG median = 2.58, $z(24) = 3.14$, $p = .001$) and their turns were significantly longer in DLLs SG (median = 2.46) versus WG (median = 1.75), $z(16) = 2.63$, $p = .007$). Children also used a greater percentage of Spanish tokens in DLLs SG. The median child used 30% Spanish tokens in DLLs SG and 0% Spanish tokens in WG ($z(18) = 2.08$, $p = .037$). There was no significant difference for children's use of within-turn code switches. But there was a significant difference between children's use of cross-speaker code-switches, with the median child switching languages between speakers twice in DLLs SG and not at all in WG ($z(20) = 3.54$, $p < .001$). See, Table C1 in Appendix C for descriptive statistics for each target DLL student.

To summarize, we found that on average, DLLs spoke more frequently, took longer turns, used more Spanish, and code-switched between speakers more often in DLLs SG than in WG. Notably, six of the target DLLs did not speak at all in WG, yet all 25 target DLLs verbally participated in the DLLs SG lessons.

Qualitative Examples

We again turn to Excerpts 1a – 2b to illustrate how DLLs' language use differed by group context. In Ms. Jeanette's WG lesson the target DLL students contributed fewer tokens and took shorter turns than in DLLs SG. For example, in Excerpt 2a, after his initial unintelligible response, Diego does not

Table 3. Comparing children's language use in WG and DLLs SG using Wilcoxon signed rank tests.

	WG Median	DLLs SG Median	Z	p (exact probability)
Tokens/min	.591	2.576	3.135*	0.001
Mean Length of Turn[a]	1.750	2.464	2.627*	0.007
Percent Spanish[b]	0.00%	30.00%	2.075*	0.037
Within-turn code switches[b]	0.00	0.00	1.204	0.305
Cross-speaker code switches[b]	0.00	2.00	3.471*	< 0.001

[a]Excluding 8 children with fewer than two turns in either WG or DLLs SG (n = 17)
[b]Excluding 6 children who did not speak at all in WG (n = 19)

respond verbally to any of Ms. Jeanette's requests regarding the photo. In fact, Diego utters only six words over three turns throughout the entire 12-minute WG lesson, and none of the five target DLL students use Spanish in this WG lesson.

Diego's reticence to speak in WG stands in stark contrast to his active participation in the DLL SG (Excerpt 2b). Not only does Diego use more words and longer turns than he did in WG, but he also asserts his needs and spontaneously shares prior knowledge about knives (see Excerpt 2b, lines 2, 8, 10b, and 13). He uses Spanish for all but one word in this excerpt and uses Spanish 49% of the time throughout the DLLs SG lesson.

In contrast, Excerpt 1a and Excerpt 1b illustrate how another teacher was successful in fostering high DLL participation in WG conversations. In Ms. Luz's WG lesson (Excerpt 1a), Yesenia talks about how her dad gets to work and travels to Mexico. Unlike Diego in Ms. Jeanette's class, Yesenia speaks more, takes longer turns, and uses more Spanish in WG than DLLs SG. Despite the exceptional WG participation of some of Ms. Luz's DLL students, participation is more balanced among students in DLLs SG. In Excerpt 1b, for example, we see Ms. Luz move quickly from student to student in her SG lesson, asking them about their work and checking their understanding of key concepts. As a result, students such as Melinda and Nicole, who used 0 and 3 words, respectively, in WG, contributed much more frequently in Ms. Luz's DLLs SG.

Discussion

The current study aimed to describe teacher and child talk in Head Start classrooms serving Spanish-speaking DLLs. We were particularly interested in the degree to which teachers used DLLs' home language (Spanish) and code-switched between languages in whole group (WG) and small group (DLLs SG) contexts in order to explore the conditions that foster DLLs' participation in classroom conversations. We drew on 10 transcribed observations of five teachers who used Spanish and English with their DLL students, selected from a corpus of observations from a larger study. In general, we found that teachers code-switched more frequently in DLLs SG lessons compared to WG lessons, and that their DLL students spoke more frequently and used more Spanish in DLLs SG lessons compared to WG lessons.

First, we found that while there was not a consistent pattern regarding teachers' relative Spanish use across group contexts – some teachers used more English in WG while others used more Spanish in WG – teachers code-switched more than twice as much in DLLs SG lessons. One interpretation of this finding is that these group contexts elicited different "language modes," particularly for the four teachers who were native Spanish speakers (Grosjean, 2001, 2015). According to Grosjean, bilingual individuals' language use exists on a continuum from a "monolingual mode" to a "bilingual mode" depending on the language(s) spoken by their interlocutors. It is possible that the presence of monolingual English-speaking students in the WG lessons motivated teachers to move toward a "monolingual mode" and suppress their use of Spanish, while the DLLs SG lessons allowed for teachers to adopt a "bilingual mode" and engage in more frequent code-switches between languages. However, this does not account for the fact that two teachers (Ms. Ximena and Ms. Luz) used more Spanish in WG than DLLs SG. Another possibility is that the WG context was perceived to be more formal in comparison to the more informal DLLs SG context, and the degree of formality is another situational feature that can induce bilingual speakers to assume a more "monolingual mode" (Grosjean, 2001).

A third possibility is that the teachers intentionally increased their use of code-switching in the DLLs SG lessons because they viewed this as a strategy to enhance DLLs' comprehension and support their oral language skills in both languages. This interpretation is supported by our observation that teachers code-switched to support students' meaning making more frequently than they code-switched to attend to students' social emotional and behavioral needs, particularly in the DLLs SG lessons. This finding was somewhat unexpected, as the few studies that have examined the purposes of

teacher code-switching in preschool classrooms suggested that we might find the opposite. For example, Sun et al. (2020) reported that code-switches for the purpose of ensuring comprehension were rare in Singaporean heritage language preschool instruction.

In our data, there were frequent examples of teachers code-switching to juxtapose translation equivalents or provide a key word in the other language in the DLLs SG lessons. We saw this with Ms. Jeanette, the teacher who was not a native Spanish speaker but nevertheless used 25% Spanish word tokens in DLLs SG. For example, when introducing a new animal figurine in DLLs SG, Ms. Jeanette said "I'm not sure how to say the name, like *el cabra*, it's like a goat." Another example can be found in Ms. Erika's DLLs SG lesson. Ms. Erika, an assistant teacher whose native language was Spanish but who used mostly English with her students, code-switched in the following excerpt to validate a student's idea, and model the English equivalent.

Ms. Erika: What shape am I cutting?

Dylan: Triangle.

Ms. Erika: Triangle. It can be. What it can use for the triangle?

Dylan: *La alita. [The little wing.]*

Ms. Erika: *Las alitas*. The wings. Right? You can do the wings with this.

The intentional use of code-switching for pedagogical purposes is not a new idea. For example, Jacobson's *New Concurrent Approach* that was developed beginning in the 1970s advocated for the use of code-switching in bilingual classrooms, so long as switches only occurred between sentences, were initiated by the teacher, and both languages were used for equal amounts of time (see, Faltis, 1989 for an overview). While the teachers in our sample did not strictly adhere to the principles prescribed by Jacobson, their language practices in the DLLs SGs illustrate how code-switching can be used as an instructional strategy to support DLLs' meaning making.

Second, we found that the DLL students who were present in both group contexts spoke more and used more Spanish in the DLLs SG lessons than in the WG lessons. The DLL students' greater verbal participation in DLLs SG could be partially due to the fact that these lessons brought together children from the same language background. Previous research has found that for preschool-aged children who are new to English, forming small groups with peers who share their language background can provide a comfortable setting for these children to express themselves, thus avoiding the "silent period" in the classroom (Meyer et al., 1994). It may be that the DLL students simply felt more at ease in the informal SG setting and thus were more active participants. In the WG lessons, often only a few students dominated the conversation, and many students did not speak at all. It may be that WG lessons are a particularly challenging conversational context for DLL students who are not yet confident using their voice in the classroom. This seemed to be the case for Diego, the student of Ms. Jeanette who barely spoke in WG but was much more talkative in DLLs SG.

DLLs' greater verbal participation in DLLs SG could also have been supported by their teachers' more frequent code-switching in this setting. When teachers flexibly alternate between DLLs' languages, this could enhance DLLs' understanding and provide more points of entry to the conversation using either or both languages. This was illustrated in Excerpt 1b, discussed above, in which Ms. Luz poses a question in English to Brandon. When he does not provide the correct response, she reformulates the question in Spanish, and he then provides the correct response in Spanish.

Intriguingly, even though the DLL students used more Spanish in DLLs SG than in WG, they rarely code-switched within a turn in either setting. The DLL students were more likely to code-switch between speakers (e.g., respond in English to a Spanish initiation), and they did so more frequently in DLLs SG than in WG. These findings are consistent with previous research on child

code-switching which has found that preschool-aged DLLs rarely code-switch in settings where only one language is used and are aware of social norms regarding the status of each language (e.g., Halpin & Melzi, 2021).

Limitations and Future Directions

While the findings from this small-scale exploratory study raise intriguing questions for future work, they should in interpreted with several limitations in mind. First, while we observed that teachers code-switched more frequently and DLLs participated more in the DLLs SG lessons, we cannot disentangle the role of teacher language practices and group context in DLLs language use. Relatedly, our finding that teachers code-switched more for meaning making functions reflect only their within-turn switches. It may be that additionally coding teacher's cross-speaker switches would reveal a different proportion of code-switches supporting meaning making. Second, while none of the classrooms observed had an explicit language model that teachers were obliged to adhere to, the DLLs SG lessons were specifically for their Spanish-speaking DLL students. Therefore, differences in the degree to which teachers used Spanish in these lessons could be due to teachers' perception that Spanish is permitted in this context. While this may account for the differences in teacher code-switching that we observed, it doesn't alter the conclusion that providing this space for DLL students allowed for greater participation and active language use. Third, one question we did not answer in this study is if the non-DLL students in each classroom also spoke more in SG compared to WG lessons. There were also technical limitations. In some cases, the camera angle did not always capture all students and so some students' turns may be undercounted. To avoid this, future studies should ensure that all student participants appear within the video frame if the aim is to transcribe each child's contributions verbatim. Finally, our analysis was limited by the small sample size and the restricted amount of information we had for the teachers and students. For example, differences in teacher quality may have influenced DLLs' verbal participation, but measures of teacher quality were not available. Because these data were collected several years prior to the current analysis, it was not possible to return to the site to fill in missing information or collect direct measures of child language.

Despite these limitations, this study lays the groundwork for future inquiries into teachers' use of code-switching in preschool classrooms to support their DLL students. With access to a larger sample that includes measures of child language outcomes, future studies could examine the associations between teacher code-switching, DLLs' language use, and DLLs' language outcomes in each language. Future work could also examine whether small group conversations elicit greater DLL participation even when teachers do not speak their students' home language. Another future direction for this line of research would be to build on Michaels and O'Connor's (2015) conception of "talk moves" to identify particular teacher moves that use code-switching to encourage and facilitate DLLs' participation and language development. Identification of such moves could provide more concrete guidance to early childhood educators who speak the languages of their DLL students and are striving to support DLLs in both their home and school languages.

Implications for Practice

Our findings carry important implications for early childhood educators tasked with supporting DLLs' oral language development in the classroom. Given the importance of active language use to build language skills, teachers can facilitate DLLs' verbal participation in several ways. First, they can invite DLL students who seem reluctant to speak in whole-group settings to participate in small-group conversations with other students who share their language background. Second, teachers who speak the home language of their students can flexibly code-switch between English and their students' home language to support children in learning new words and concepts and to elicit talk from students with

emergent skills in each language. Even teachers who are themselves emergent learners of their students' home language can signal its importance by using key words and phrases and asking students to teach them new words.

In conclusion, our findings suggest that small groups comprised of Spanish-speaking DLL students are spaces in which teachers code-switch more frequently and DLL students take on a more active role in classroom conversations. In fact, in another study we found that dyadic conversations may be an even better context for DLLs conversation than both SG or WG (Jarquín Tapia et al., 2022). Our study also contributes to the literature by describing the ways in which early childhood educators from different language backgrounds flexibly alternate between their DLL students' languages in preschool settings without an explicit language model. We build on insights from diverse disciplines and theoretical frameworks with the aim of inspiring future studies on this topic. We know that oral language skills acquired in preschool are predictive of DLLs' later literacy skills, and that rich, responsive interactions with teachers can play an important role in this trajectory. This study illustrates how teachers' use of code-switching in the context of small group instruction can foster DLLs' active participation in classroom conversations, laying the foundation for DLLs' language and literacy development in their home and school languages.

Notes

1. Head Start is a federally-funded preschool program that serves children under age 5 whose households are within 200% of the federal poverty level.
2. Though not included in the present analysis, *Within-turn switches* were further categorized as between-utterance switches (also known as inter-utterance switches), within-utterance switches (also known as intra-utterance switches), or one-word switches (see, Appendix A for the coding scheme).
3. All names are pseudonyms.
4. Italicized text indicates Spanish in the original transcript. English translations enclosed in brackets [] follow each utterance containing Spanish.

Disclosure Statement

The second author is the creator of the professional development intervention that was used in this study.

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Appendices
Appendix A

Coding Scheme for Code-switches

General Coding Notes

- A single utterance can have more than one code
- Skip utterances that contain ONLY:
  - Unintelligible words
  - Nonverbal communication
  - Proper nouns and neologisms that are used across both languages
  - Words that are common to both English and Spanish (e.g., shh, no, umm, uhm, okay . . .)
  - Utterances that are spoken in unison (in these cases, ONLY code the first utterance and not the subsequent utterances that are in unison with the first utterance)

Level 1 codes	Level 2 codes (apply to teacher and student switches)	Level 3 codes (only apply to teacher switches)
$CSS		
$WTS	BUS	MMA
	WUS	SEB
	OWS	HAB

Level 1 codes		
Code	Name	Definition
$CSS	Cross speaker switch	A code-switch that occurs at the speaker/turn boundary.
		Apply this code to an utterance that begins a speaker's turn and uses a *different* language from that used by the previous speaker.
		*Note: When coding for CSS, ignore one-word switches in the utterance being coded and the previous utterance. In these cases, consider only the **main language used** to determine whether a CSS has occurred.*
		However, if either utterance includes a within-utterance switch, then base the determination on the last language used in the previous utterance and the first language used in the utterance being coded.
$WTS	Within-turn switch	A code-switch that occurs within a speaker's turn.
		Apply this code to an utterance in which the speaker switches to a new language. This may occur at the start of an utterance or within an utterance. There may be more than one in a single utterance.

Level 2 codes (following $WTS)		
$BUS	Between utterances switch (aka **inter**-utterance switch)	A code-switch that occurs at the utterance boundary. Apply this code when a speaker begins a new utterance in a different language from their previous utterance *Note: if the previous utterance included only one-word switch(es), consider only the main language used to determine whether a BUS has occurred.*
$WUS	Within utterance switch (aka **intra**-utterance switch)	A code-switch that occurs within an utterance and is not a one-word switch (see below).
$OWS	One-word switch	A code-switch that consists of a single word within an utterance. *Note: Unlike the other types of switches above, each one-word switch only counts as one switch, not two switches (one to the new language and another back to the original language).* If there are multiple one-word switches in an utterance, use multiple codes for that utterance.

Level 3 codes (only apply to TEACHER within-turn switches)		
$MMA	Meaning Making (conceptual)	Teacher switches languages to **support students' meaning making** (and/or conceptual development), including switches that: • Provide a deeper understanding of a concept • Provide the translation equivalent of a word or words in the other language • Model the use of target words related to the content of the lesson • Pose questions to students regarding conceptual or vocabulary knowledge • Working with a child one on one to teach them a particular concept or skill • Basically, if teacher is engaging in talk that is rooted in the **concepts and/or vocab** she is trying to teach, it counts as MMA
$SEB	Social-Emotional/ Behavioral Support	Teacher switches languages to **support students' social-emotional wellbeing or behavior**, including switches that: • Redirect a child's attention • Provide comfort or encouragement • Help children resolve conflicts • Accomplish general classroom management objectives (sit down, wait your turn, etc.) • Preview classroom procedures (first we will do x, then we will do y) • Ask students to put away or take out materials, wash hands, line up • Use ritualized language (daily greetings) • Model social routines and pragmatic language- Good morning/goodbye/ thank you/you're welcome, etc, • Use terms of endearment (Carlitos) • Refer to social roles (mami, prima, etc) • Nominate a student to speak
$HAB	Habitual Code-switches	• Following Sun et al. (2020): Teacher uses a word (or words) in the other language (e.g., 'so') for no apparent affective or instructive reason. • Apply to switches that seem like brief unintentional slips into the other language, usually for function words

Appendix B

Excerpt 1a. Ms. Luz's WG lesson.

Transcript			Annotation
1	Ms. Luz	Yesenia, how does daddy go to work?	In the context of a WG conversation on forms of transportation, Ms. Luz poses a question to Yesenia in English.
2	Yesenia	*Mi papá va con . . . en el bus. [My dad goes with . . . on the bus.]*	Yesenia answers the question in Spanish.
3	Ms. Luz	*¿Tu papá va en el bus? [Your dad goes on the bus?]*	Ms. Luz does not comment on Yesenia's shift to Spanish and mirrors back her response, signaling that she heard and understood her.
4	Ms. Luz	Nicole . . . Yesenia's dad goes on the bus.	Ms. Luz turns to the rest of the class and restates Yesenia's answer in English, perhaps to make sure it was understood by everyone, and perhaps to model the English equivalent. She then looks back at Yesenia.
5	Yesenia	*Sí, mi papá va en el* bus *de su trabajo y va . . . y va hasta México. [Yes, my dad goes on the* bus *from his work and goes . . . and goes all the way to Mexico.]*	Yesenia elaborates on her initial contribution, sharing that her dad not only takes the bus to work, he takes the bus all the way to Mexico. She uses the English pronunciation of the word bus and makes a gesture depicting an airplane.
6	Ms. Luz	*¿Tu papá va en autobús hasta México? [Your dad goes on the bus all the way to Mexico?]*	Ms. Luz again mirrors back Yesenia's contribution in the form of a question, signaling her active listening and inviting Yesenia to say more. She also models the Spanish word for bus (autobús).
			Yesenia nods her head yes, providing a nonverbal affirmative response and ending the exchange.

Excerpt 1a. (Continued).

Transcript			Annotation
7	Ms. Luz	*¿Cómo podemos viajar a otro país? [How can we travel to another country?]*	Ms. Luz addresses this question to the whole class, perhaps to elicit the word airplane and talk about the concept of flying as a form of transportation.
			Pablo raises his hand.
8	Ms. Luz	*En qué, Pablo? [In what, Pablo?]*	Ms. Luz calls on Pablo.
9	Pablo	*En carro. [In a car.]*	Pablo provides a response.
10	Ms. Luz	*En carro. [In a car.]*	Ms. Luz mirrors back his response, signaling that this was an acceptable answer to the question.

Excerpt 1b. Ms. Luz's DLLs SG lesson.

Transcript			Annotation
1	Ms. Luz	Look, Brandon, are your lines small? Are they skinny or thick?	In the context of a DLLs SG lesson on same and different, the students are painting tire tracks with toy cars of different sizes and shapes. Brandon uses a small car that makes thin tire tracks. Melinda and Yesenia have medium-sized cars that make thicker tracks. And Natalie uses a car with very big wheels that makes the thickest tracks. Ms. Luz asks Brandon about his car's tracks in English.
2	Brandon	Thick.	Brandon responds "thick," which is not the answer Ms. Luz was looking for.
3	Ms. Luz	*Mira, son gruesas o delgaditas? [Look, are they thick or thin?]*	Ms. Luz then switches to Spanish to restate the question.
4	Brandon	*Delgaditas. [Thin.]*	This time Brandon answers correctly.
5	Ms. Luz	*Delgaditas! [Thin!]*	Ms. Luz repeats his response, signaling that he was correct.
6	Ms. Luz	*Mira el de Melinda. [Look at Melinda's.]*	Ms. Luz then points out Melinda's thicker tracks.
7	Ms. Luz	*Melinda, tus llantas son gruesas o delgaditas? [Melinda, your tires are thick or thin?]*	Ms. Luz poses the same question to Melinda as she asked Brandon.
8	Melinda	*Delgaditas. [Thin.]*	Melinda provides the same response as Brandon gave, which is incorrect in her case.
9	Ms. Luz	*Mira el de Brian, éste es delgadito. [Look at Brian's, this is thin.]* It's very thin, yours are wide. So keep painting with your car, then tell me.	Ms. Luz responds by drawing Melinda's attention to Brian's tracks to compare them with her own. She switches to English to point out the difference between the lines. She tells Melinda to keep thinking about it.
10	Brandon	Look!	Brandon holds out the small car he is painting with toward Ms. Luz, but she doesn't respond.
11	Ms. Luz	Yesenia, how is your car doing?	Ms. Luz checks in on Yesenia and asks her about her car in English.
12	Yesenia	Umm different.	Yesenia answers in English, using one of the key words from the lesson ("different").
13	Ms. Luz	Look at your … *Mira las llantas de tu carrito. Está haciendo muchas marquitas. [Look at the tires of your car. It is making lots of little tracks.]* Is Nicole's car making the same ones?	Ms. Luz begins to ask Yesenia to look at the tires on her car in English but shifts gears to Spanish, perhaps to make sure that Yesenia understands. She then poses a new question in English, asking her to compare her tracks to Nicole's.
14	Yesenia	No.	Yesenia answers the question in English with a one-word response.
15	Ms. Luz	No, right! How about Brandon? Brandon, does your little car making the same lines as umm Yesenia?	The teacher affirms Yesenia's response and then asks her to compare her tracks with Brandon's. She then poses the same question to Brandon.
16	Brandon	No.	Brandon also provides a one-word response in English.

(Continued)

Excerpt 1b. (Continued).

17	Ms. Luz	Why not? why not? *Brandon, ¿por qué no está haciendo las mismas marcas? [Brandon, why is it not making the same tracks?]*	The teacher then asks Brandon an "analyzing question." She first poses the question in English. When she does not get a response, she shifts to Spanish to pose the question.
18	Brandon	Because they are big ones.	Brandon then answers the question in English.
19	Ms. Luz	Those are big wheels!	Ms. Luz affirms Brandon's response (i.e., that Nicole's tracks are different because her car has big wheels).

Excerpt 2a. Ms. Jeanette's WG lesson.

Transcript			Annotation
1	Ms. Jeanette	Diego, what do you see in the picture?	The children sit in a circle on the carpet. The teacher shows a picture to Diego, who is sitting next to her, apart from the other children.
2	Diego	xxx [unintelligible]	Diego points at something in the photo and speaks quietly.
3	Ms. Jeanette	Who is that? Is that a little boy or a little girl?	Teacher seems to have not understood Diego's response. She asks a more specific question, and then asks a question that models two possible responses.
4	Ellie & Precious	A little girl!	Two other children (both non-DLL students) call out an answer to the question at once.
5	Ms. Jeanette	I'm asking Diego.	Teacher holds the floor for Diego.
6	Ms. Jeanette	Is that a little boy or a little girl right here in the blue jacket?	Teacher turns back to Diego and asks the question again, describing the child in the picture in more detail.
7	Precious	Little girl.	Precious interjects her response again.
8	Ms. Jeanette	Now, he can see it better than you. He's very close.	Teacher discourages Precious again, this time providing the rationale that Diego has a better view of the photo.
9	Ms. Jeanette	A *niña* or *niño*? [A *girl* or *boy*?]	Teacher replaces key words with one-word code-switches to Spanish to make the question more comprehensible to Diego, who is a Spanish-English DLL.
10	Ms. Jeanette	*Dónde está niño? [where is boy?]*	Teacher poses a new question in Spanish that could be responded to nonverbally.
11	Ms. Jeanette	Look, *mira* [Look, *look*]	Teacher uses both English and Spanish to direct Diego's attention to the photo.
12	Ms. Jeanette	*Aquí, aquí* [*here, here*]	Teacher uses Spanish to say here and guides Diego's hand to the boy in the photo.

Excerpt 2b. Ms. Jeanette's DLLs SG lesson.

Transcript			Annotation
1	Ms. Jeanette	*Cómo dice* sounds like fife? [*how say*, sounds like fife]?	The children each have a placemat and ball of playdoh in front of them. The teacher holds a handful of plastic knives and prompts the children in the small group to say the word knife.
2	Diego	Teacher. *Yo quiero ese cuchillo. [I want that knife.]*	Diego does not say the English word knife but does assert that he would like one of the knives. He uses Spanish to request a knife.
3	Ms. Jeanette	N-n-knife.	Teacher hands a knife to Christian and models the word knife.
4	Christián	Knife.	Christian repeats the word knife.
5	Ms. Jeanette	*Cuchillo* say knife.	Teacher hands a knife to Daniel.
6	Christián	Knife!	Christian repeats the word knife again.
7	Ms. Jeanette	Knife .	Teacher hands a knife to Diego.
8	Diego	*Cuchillo que . . . [Knife that . . .]*	Diego starts to say something about the knife in Spanish.
9	Ms. Jeanette	Don't cut your fingers. *Cuidado, no, cuidado. [Careful, no careful.]*	The teacher speaks over the rest of Diego's statement to remind the group to be careful using both English and Spanish words.
10	Diego	*Yo tengo este cuchillo. Este corta. [I have this knife. This cuts.]*	In the pause after the teacher's safety reminder, Diego initiates a contribution, sharing something he knows about knives.
11	Ms. Jeanette	*Corta [it cuts]*	The teacher picks up on one of the words that Diego used and echoes it back, signaling that she heard his contribution.
12	Christián	*Corta [it cuts]*	Christián joins in as well, further validating Diego's contribution.
13	Diego	*Sí corta bien éste. [Yes, this cuts well]*	Diego elaborates on his contribution.

Appendix C

Table C1. Quantity of child talk, Spanish use, and code-switching in WG and DLLs SG.

Teacher Pseudonym	Student Pseudonym	Tokens/minute		Mean Length of Turn[a]		Percent Spanish tokens[b]		Cross-speaker code-switches[a]	
		WG	DLLs SG	WG	DLLs SG	WG	DLLs SG	WG	DLLs SG
Jeanette	Adamaris	1.35	5.05	2.67	3.11	0.00%	23.73%	0	4
Jeanette	Daniel	0.42	2.74	1.67	2.46	0.00%	41.94%	0	5
Jeanette	Diego	0.51	4.54	2.00	4.08	0.00%	49.06%	0	2
Jeanette	Jaime	0.59	3.68	0.88	2.26	0.00%	30.23%	0	5
Jeanette	Christián	1.10	2.06	1.86	2.00	0.00%	12.50%	0	2
Classroom Mean		0.79	3.61	1.81	2.78	0.00%	31.49%	0	3.6
Yasmín	Christopher	0.00	0.71	.	2.33	.	33.33%	.	2
Yasmín	Celia	2.93	3.39	2.85	4.47	0.00%	8.70%	0	2
Yasmín	Donna	0.56	0.91	1.75	3.00	0.00%	25.00%	0	2
Yasmín	Elízabeth	0.71	1.57	1.13	4.43	0.00%	13.79%	0	1
Yasmín	Joaquín	1.27	0.51	1.78	2.50	12.50%	25.00%	0	1
Yasmín	Jason	4.04	3.33	1.76	2.64	18.37%	43.86%	3	6
Yasmín	Samantha	1.43	1.52	1.50	2.50	0.00%	30.00%	0	1
Classroom Mean		1.56	1.70	1.79	3.12	5.14%	25.67%	0.50	2.14
Erika	Angel	0.10	0.42		1.33	0.00%	0.00%	.	0
Erika	César	0.00	2.65	.	1.39	.	31.58%	.	4
Erika	Dylan	2.68	2.33	1.59	1.69	0.00%	22.73%	0	2
Erika	Fernanda	0.00	1.91	.	1.20	50.00%	5.56%	.	1
Classroom Mean		0.69	1.83	1.59	1.40	16.67%	14.97%	0	1.75
Ximena	Edwin	2.86	4.60	1.55	2.46	91.18%	95.52%	2	1
Ximena	Emily	0.00	3.26	.	2.45	.	87.76%	.	2
Ximena	Jorge	0.00	0.47	.	1.00	.	85.71%	.	1
Ximena	Rafael	0.25	5.39	1.50	2.38	100%	100%	0	1
Ximena	Tanya	0.67	2.00	.	2.00	0.00%	80.00%	1	1
Classroom Mean		0.76	3.14	1.52	2.06	63.73%	89.80%	1	1.2
Luz	Brandon	6.16	6.62	2.96	2.44	48.05%	31.52%	2	2
Luz	Melinda	0.00	2.58	.	2.06	.	45.95%	0	2
Luz	Nicole	0.24	5.57	1.50	2.29	100%	21.05%	0	3
Luz	Yesenia	7.36	2.16	6.13	2.39	91.01%	45.16%	2	3
Classroom Mean		3.44	4.23	3.53	2.29	79.69%	35.92%	1	2.5
Overall child mean		1.41	2.80	2.06	2.43	25.56%	39.59%	0.53	2.24
(SD)		1.95	1.73	1.19	0.88	38.96%	28.71%	0.96	1.51

[a]Mean length of turn is not reported for children with fewer than 2 turns in a lesson
[b]Spanish tokens and code-switches are not reported for children who did not speak at all in WG