JUNE 2022

FIRST 5 CALIFORNIA
Dual Language Learner

PILOT STUDY

**INSTRUCTIONAL SERIES | BRIEF 1**

# Relationships Between Teacher Language Use in the Classroom and Outcomes for Preschool-Aged Dual Language Learners

**AUTHORS: Deborah J. Holtzman, Lisa White, Iliana Brodziak de los Reyes, Maryan Carbuccia-Abbott, Karen Manship, Heather Quick, and Rebecca Bergey**

More than half of children aged 5 and younger in California live in households where a language other than English is spoken (UCLA Center for Health Policy Research, 2020). Yet relatively little is known about how these young dual language learners (DLLs) are served—and how they can *best* be served—by the state's early learning and care programs. The First 5 California (F5CA) DLL Pilot Study, a large-scale study funded by F5CA and conducted by the American Institutes for Research (AIR) and partners, was designed to examine how teachers support DLLs from diverse backgrounds in early learning settings, and how various types of supports, including those related to classroom instruction, relate to child outcomes. This brief is part of a series that addresses these questions. The series includes briefs on the following topics:

BRIEF 1 | **THIS BRIEF—How specific classroom language use practices relate to language and learning outcomes for preschool-aged DLLs from four different language backgrounds**

BRIEF 2 | How preschool-aged DLLs' language and learning outcomes differ in classrooms with different English and Spanish language use profiles

## Key Findings

- Teaching teams spent more time speaking in English than in the home language, on average across classrooms. How much more varied by home language.
- Most classrooms did activities in English every day or nearly every day. Activities in Spanish were somewhat less frequent, and activities in Cantonese, Mandarin, and Vietnamese were *much* less frequent.
- More use of Spanish in the classroom was associated with better performance of Spanish-language DLLs on several outcomes, including oral comprehension in *English*.
- On average, Cantonese-language DLLs in classrooms where teachers used more Cantonese knew more Cantonese vocabulary words and had higher bilingual scores.
- On average, Mandarin-language DLLs in classrooms where teachers used more Mandarin knew more Mandarin vocabulary words.
- For Vietnamese-language DLLs, greater use of Vietnamese by teachers did not appear to have positive effects on any outcome; greater use of English had some positive effects.

BRIEF 3 | How classroom practices that teachers can use regardless of their language backgrounds relate to language and learning outcomes for preschool-aged DLLs

BRIEF 4 | How classroom practices relate to language and learning outcomes for infant and toddler DLLs

Specifically, this research brief describes the language use practices implemented in 271 classrooms in 16 California counties that participated in the F5CA DLL Pilot Study (see "About the First 5 California DLL Pilot Study" at the end of this brief for a list of the participating counties); it also examines the extent to which these practices were associated with the performance of 1,600 preschool-aged DLLs from diverse language backgrounds on a wide range of outcomes. **Overall, consistent with prior research, our analyses show that greater use of the home language in instruction is associated with better child performance on several different outcomes in both English and the home language—particularly for DLLs from a Spanish language background.**

## Background

Young children exhibit a natural capacity for learning multiple languages (Brisk & Harrington, 2007; Koenig & Woodward, 2012; McCabe et al., 2013), and research shows that a strong base in the home language can help promote English learning for young DLLs (Dickinson et al., 2004; López & Greenfield, 2004). In addition, when DLLs develop high levels of proficiency in both languages at an early age, they can reap numerous cognitive, social, cultural, and economic benefits of bilingualism (August & Shanahan, 2006; NASEM, 2017). Compared to their monolingual peers, for example, bilingual children often demonstrate advantages in social-emotional skills (Goetz, 2003; Halle et al., 2014), executive functioning (Carlson & Meltzoff, 2008; Bialystok, 2015; White & Greenfield, 2017), and spatial reasoning (Bialystok & Majumder, 1998), to name a few. In the longer term, they may even have higher earnings (Gándara, 2018; Agirdag, 2014).

The National Academies of Sciences, Engineering, and Medicine report on supporting children and youth learning English (NASEM, 2017) concluded that the timing, quantity, and quality of exposure to the home language and English are key determinants of DLLs' language development and proficiency in both languages. In preschool, previous research has demonstrated positive effects of home language instruction on young DLLs' learning in both the home language and English (Barnett et al., 2007; Durán et al., 2015; Méndez et al., 2015; Méndez et al., 2018). Other studies looking specifically at the quantity of home language use in the early childhood classroom demonstrate that DLLs in classrooms where teachers use more of the home language have better learning outcomes in various domains, including language and math (Burchinal et al., 2012; Raikes et al., 2019; White et al., 2020).

This brief adds to the existing research by discussing both the quantity of English and home language use in the early learning classroom, and the frequency of various types of activities in several languages. It also explores how these language use inputs are related to outcomes for DLLs of diverse language backgrounds.

# Extent of English and Home Language Use in Classrooms

For this brief, data on classroom language practices come from a web-based survey of teachers conducted from May 2020 through July 2020.[1] The analyses and findings are based on the responses of 572 teachers[2] in 271 classrooms that served DLL preschoolers.[3] These teachers and classrooms were in 153 early learning and care programs, 27 of which were family child care homes (FCCHs) and 124 of which received public funding. Although large and diverse, the sample was not designed to be representative of all DLL-serving early learning programs across California, so results reported in this brief are not necessarily generalizable to the state as a whole. More information about the participating classrooms and programs is available in the report describing the sample ("Description of the Sample of Preschool-Aged DLLs Included in Analyses of Instruction"—hereafter called the Sample Report, available here).

This brief focuses on the specific language use practices teachers reported using in the classroom, rather than their program's officially stated language model or policy (which teachers may not have been implementing with fidelity).[4] Furthermore, because children are presumably influenced by *all* of the teachers in their classroom (and because we had no way to isolate the influences of particular teachers on particular children), we averaged the survey responses of teachers within each classroom to create classroom-level measures.[5] This averaging of responses across teachers in classrooms helps provide a more complete, accurate, and useful picture of classroom practice than would be possible from an individual teacher's responses.[6]

The F5CA study focused on DLLs from four home language backgrounds, based largely on their prevalence in California: Spanish, Cantonese, Mandarin, and Vietnamese. Accordingly, the study also focused on the use of these four languages, as well as English, in the early learning classroom. Because of factors such as the languages teachers are able to speak and the language backgrounds of the DLLs in any given classroom, classroom language practices likely differ across the four languages. Therefore, we asked teachers about their practice with DLLs of *each* of the four language groups, if they reported that there were DLLs of that language in the classroom, and all of our findings are disaggregated by language group.[7]

This section describes the language use practices teachers reported with respect to (1) the percentage of *time* teaching teams used English and each home language, and (2) the frequency of specific *activities* in each language. The goal of this section is to describe the language use practices being used in

---

[1] Although this was after disruptions related to the COVID-19 pandemic had begun, most of the questions on the survey instructed teachers to answer based on their classrooms and instructional practice *prior* to the pandemic.

[2] Sixty-one of the teachers taught in two classrooms; at the request of the study team, these teachers completed a separate survey about each classroom, given that their practices may have differed in the two classrooms. Thus, we had 633 survey responses from the 572 teachers. "Teachers" included assistants and aides as well as lead teachers, associate teachers, co-teachers, and so forth.

[3] The study defined *preschoolers* as children aged 3 and older. The study also included children younger than 3 (defined as *infants and toddlers*), but because the child outcome measures for those children were different from the outcomes for the preschoolers, study findings for that younger age group are presented in a separate brief.

[4] In fact, we asked teachers what their classroom's language approach was. We found that the language approach/model was not always consistently identified or described by all of the teachers in any given classroom.

[5] In calculating these classroom-level averages, we gave more weight to teachers who indicated having a classroom role with greater responsibility (such as lead teacher), teachers who had been teaching in the classroom for more than a few months, and teachers who spent more time in the classroom, on the assumption that these teachers would exert the greatest influence on the children they were working with. On average, classrooms had 2.3 teachers who responded to the survey; the range was 1 to 6.

[6] Our research design called for observing classrooms in addition to surveying teachers, but the COVID-19 pandemic hit just as these observations were beginning, so this study component had to be eliminated.

[7] Some classrooms had DLLs from more than one of the four language backgrounds; these classrooms were included in analyses for each language.

classrooms serving DLLs from each of the four study languages (and, toward the end of the section, how language use practices vary across early learning program settings), as context for the subsequent discussion of how practices are related to child outcomes. We do not speculate on the reasons *why* teachers used the language practices they reported (e.g., their program's language model or their own fluency in a given language).

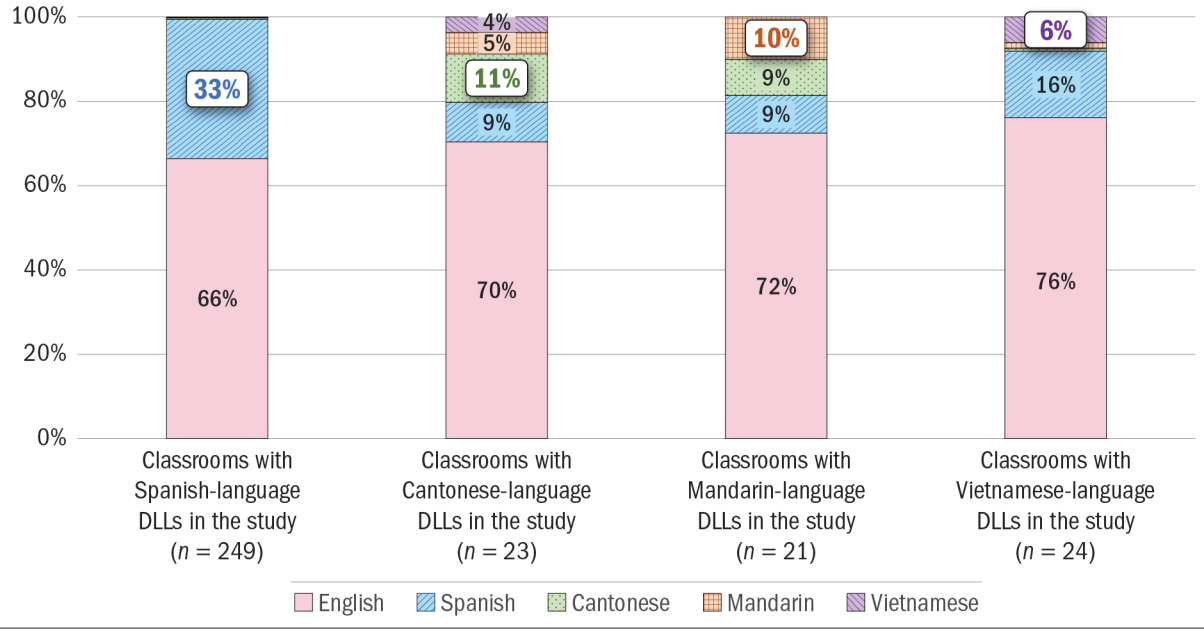
## Percentage of Time Teachers Speak DLLs' Home Languages and English

We asked teachers what languages they used in their classroom, and then, for each language that they indicated, we asked them what percentage of their *total* speaking time in the classroom they spent speaking that language. The survey required all of the percentages to sum to 100.

**Key Finding: Teaching teams spent more time speaking in English than in the home language, on average across classrooms. How much more varied by home language.**

In classrooms with Spanish-language DLLs, teachers reported using English two thirds of the time, on average, and Spanish nearly all of the remaining third (Exhibit 1). In the other three home language classroom groups, the percentage of teacher speaking time in English was slightly higher—up to 76% of the time in the classrooms with Vietnamese-language DLLs—and the remainder of the time was split among *multiple* languages, reflecting the fact that many of the classrooms serving these Asian-language speakers tended to serve children from a variety of language backgrounds. Notably, the 24 classrooms with Vietnamese-language DLLs averaged more time in Spanish (16%) than in Vietnamese (6%); this is likely because on average, these classrooms had more Spanish-language DLLs (6.7) than Vietnamese-language DLLs (4.7).[8]

**Exhibit 1. Average Percentage of Time Classroom Teaching Teams Used English and Each Study Language**




*Note.* The numbers of classrooms sum to more than 271 because some classrooms had DLLs of more than one language and thus are included in more than one bar. Percentages of 3% or less not marked.

[8] Seventeen of the 24 classrooms with Vietnamese-language study participants also had Spanish-language study participants.

Many of the DLLs of the three Asian language backgrounds did hear at least *some* of their own home language. The average percentage of teacher speaking time in the home language for these three language groups ranged from 6% for Vietnamese (in classrooms with Vietnamese-language DLLs) up to 11% for Cantonese (in classrooms with Cantonese-language DLLs). However, it is important to note that these are averages across classrooms. There were some classrooms—just over a third of the classrooms with Cantonese- and Mandarin-speakers and fully half of the classrooms with Vietnamese-speakers—where the home language was not used at all (not shown in exhibit).

## Frequency of Activities in DLLs' Home Languages and English

**Key Finding: Most classrooms did activities in English every day or nearly every day. Activities in Spanish were somewhat less frequent, and activities in Cantonese, Mandarin, and Vietnamese were *much* less frequent.**

The study had three measures of the ways that teaching teams used English and home languages in the classroom:

1. **Frequency of activities in English.** This measure gauged how often teaching teams used English for two overarching purposes—instruction and routines/behavior management—and in 12 specific instructional activities such as reading books in English, working on English vocabulary development (in general and specifically for math, science, and social-emotional concepts), and speaking English one on one with DLLs. We constructed a summary measure by averaging each teacher's responses—from *never* to *every day*[9]—across the 14 survey items (and then, as mentioned earlier, by averaging the resulting teacher-level values across the teachers in each classroom to create classroom-level values).

2. **Frequency of activities in the home language.** Paralleling the measure for English, this measure gauged how often teaching teams used the home language for instruction, routines/behavior management, and specific activities. Teachers answered a separate set of questions for each home language (of the four study languages) for which they reported that there were DLLs of that language in their classroom, resulting in a separate measure for each language.

3. **Frequency of strategies in the home language to build English.** This measure captured how often teaching teams used the home language for the specific purpose of helping speakers of that home language with their *English* language development. This "bridging" measure was an average of three specific strategies:

    - Introducing key vocabulary words in the home language specifically to prepare children for learning the word or concept in English
    - Drawing connections between English and the home language—for example, by highlighting words that are similar in English and the home language

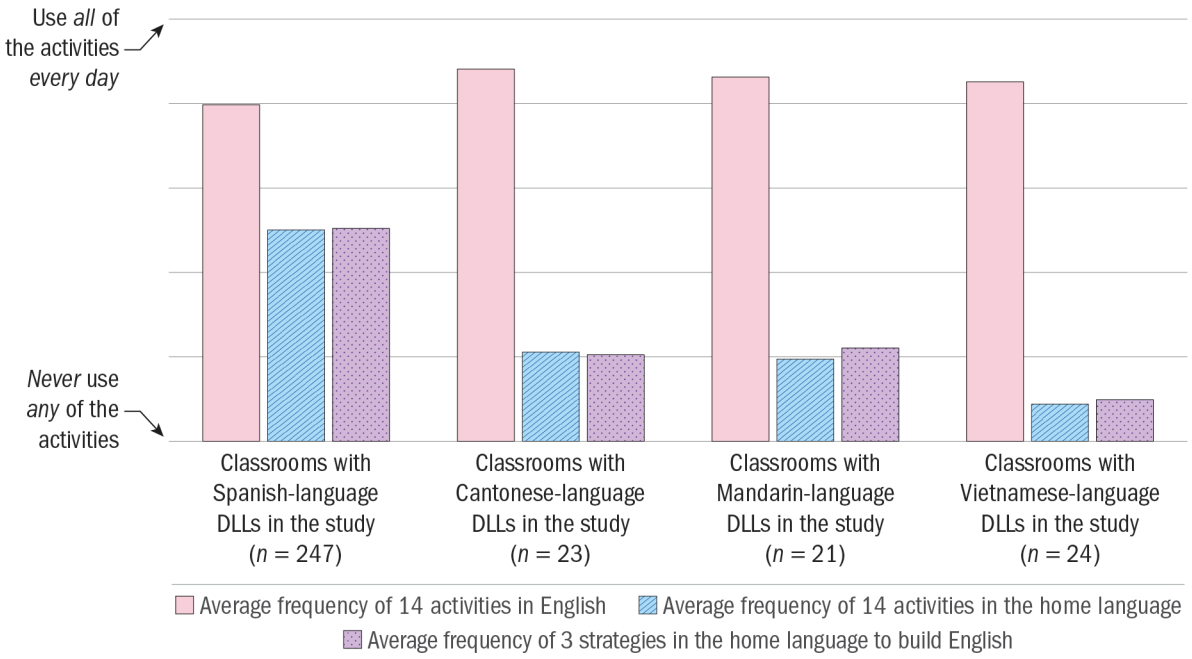
[9] The response scale for the two overarching purposes was *never* to *all the time,* but we numerically equated it to the other response scale.

- Speaking the home language *one on one* with speakers of that home language to build their *English* language skills

Again, teachers answered these questions separately for each home language for which they reported that there were DLLs of that language in their classroom.

As Exhibit 2 shows, the measure of activities in English had a high frequency—close to *use all the activities every day*—on average across the classrooms in all four language groups. In classrooms with Spanish-language DLLs, activities in Spanish and strategies in Spanish to build English both averaged halfway along the frequency scale. The corresponding measures for Cantonese and Mandarin both averaged considerably less often, and Vietnamese was less often still—relatively close to *never use any of the activities.*

**Exhibit 2. Average Frequency of Activities in English and Home Language**




*Note.* For Cantonese and Mandarin, the "activities in the home language" measure consisted of 13 activities rather than 14 because one of the activities for the other three languages, "working on [language] letter identification/sounds," was intentionally not listed for Cantonese and Mandarin.

## Language Use Practices in Different Early Learning Settings

Although we found the use of children's home language to be a common practice in many settings, family child care homes (FCCHs) tended to use significantly more home language and less English than center-based classrooms. This was true for FCCHs serving DLLs of Spanish, Cantonese, and Vietnamese language backgrounds (though only two FCCHs in our sample served DLLs of Cantonese language background, and only three served DLLs of Vietnamese language background). The differences between FCCHs and center-based classrooms were particularly pronounced for those serving Spanish-language DLLs, where we saw differences in *all five* language use measures. For instance, center-based classrooms ($n$ = 225) used English 69% of the time and Spanish 30% of the time, on average, while FCCHs ($n$ = 24) used English 42%

of the time and Spanish 58% of the time. FCCHs serving Mandarin-language DLLs did not differ from center-based classrooms on any of the language use measures.

We also examined whether the language use practices differed based on funding source (e.g., Head Start or California State Preschool Program). For classrooms serving DLLs of Spanish language background, we found no significant funding-related differences in any of the five language use practices. For the other three languages, we detected a small number of funding-related differences. For example, for classrooms serving Vietnamese-language DLLs, those in Head Start (or Early Head Start) programs more frequently did activities in Vietnamese than classrooms in other programs.

## Relationships Between the Language Use Measures and Child Outcomes

Separately for DLLs of each of the four study languages, we examined the relationship between each of the five classroom instruction measures described in the previous section and each of 10 different child outcomes.[10] Eight of the child outcomes were based on direct assessment of study children by trained assessors. Three of the directly assessed skills—vocabulary, oral comprehension, and basic mathematics—were assessed *both* in English and in the home language, so that we could assess children's language skills in both languages and because assessments were available and validated in Spanish as well as English. The other two directly assessed outcomes—basic literacy skills and executive function—were administered *either* in English or in the home language, whichever the child performed better in on the vocabulary and oral comprehension assessments. From the pair of vocabulary measures, we calculated a measure of bilingualism. The 10th outcome was a parent-reported measure of the child's social-emotional well-being.

Findings are based on data for 1,604 children in the 271 classrooms.[11] The assessments were administered in late 2019 and early 2020, prior to disruptions caused by the COVID-19 pandemic.[12] Further detail about the child outcomes, including the assessments used and descriptive information about how children performed on each one, is provided in the Sample Report.

Analyses of the relationships between classroom language use and child outcomes controlled for child and family background characteristics, and, when sample sizes were sufficiently large, classroom background characteristics.[13] The large number of Spanish-language DLLs in the sample allowed for inclusion of a particularly broad and rich array of background characteristics as control variables in the analyses of these children's outcomes: the extent to which parents selected their early learning program for its language

---

[10] Small sample sizes prohibited analysis of some of the outcomes for Mandarin and Vietnamese.

[11] Not every child had scores for all 10 assessments. However, most of the children who were directly assessed had scores for at least six of the eight direct assessments, plus the bilingualism measure. About 30% did not have a score on the two mathematics assessments because these assessments were administered only to children aged 4 and older.

[12] Because of the pandemic, the study was only able to assess children once, so we are unable to make inferences about what helps them improve. We could only examine how children exposed to different types of practices performed relative to one another.

[13] In addition, analyses for the Spanish-language DLLs used multilevel modeling to account for the fact that many classrooms in the study had more than one child participating and that many early learning and care programs in the study had more than one classroom participating. For Cantonese, Mandarin, and Vietnamese, which had much smaller sample sizes, some analyses permitted accounting for multiple children in each classroom but not for multiple classrooms within program; others did not permit multilevel modeling at all.

approach, multiple measures of the children's language environment at home (level of exposure to Spanish at home, age of first exposure to English, parent proficiency in both the home language and Spanish), parent education level, household income, child age and gender, *teacher* proficiency in both English and Spanish, and several others. Fewer control variables could be included in the analyses for the other three home language groups, for which sample sizes were much smaller. The Sample Report provides detailed information about the background characteristics included in our statistical analyses and how they themselves were related to the child outcomes.

## Results for Spanish-Language DLLs

**Key Finding: More use of Spanish in the classroom, particularly the percentage of classroom *time* teachers used Spanish, was associated with better performance of Spanish-language DLLs on several outcomes, including their oral comprehension in *English.***

Exhibit 3 summarizes the results of the analyses of relationships between the classroom language use measures and the child outcomes for Spanish-language DLLs. Perhaps most notably, as shown by the prevalence of pink shading in the first column, the percentage of classroom time in English was significantly *negatively* associated with performance on eight of the 10 outcomes—all except English vocabulary and basic math as assessed in English—while the percentage of classroom time in Spanish was significantly *positively* associated with performance on the same eight outcomes (prevalence of green in the third column).[14] In other words, the more time teaching teams reported using Spanish in the classroom and the less time they reported using English, the better children from Spanish language backgrounds performed on these outcomes (other factors, including the children's exposure to Spanish at home, held constant).

The other three classroom language use measures—those having to do with the frequency of specific *activities*—had fewer significant associations with children's outcomes, but the findings generally paint a similar picture, in that the two measures of frequency of activities in Spanish were positively associated with children's skills (green cells in the fourth and fifth columns of Exhibit 3).

Notably, on the outcomes assessed in English, children in classrooms where Spanish was used more often did not perform any *worse,* on average, than children in other classrooms (last three columns in the top section of the table). This is consistent with existing literature showing that greater use of Spanish does not impede English development (Raikes et al., 2019). In fact, more use of Spanish in study classrooms was *positively* associated with oral comprehension in English, which may be evidence of cross-language transfer, the idea that a strong base in the home language can promote learning English for young DLLs (e.g., Dickinson et al., 2004; López & Greenfield, 2004).

The only language use practice that had a statistically significant association with children's English vocabulary (top row) was frequency of activities in English, and the association was positive. None of the language use practices were significantly associated, one way or the other, with children's basic mathematics as assessed in English (third row).

---

[14] Given that in many of the classrooms with Spanish-language DLLs, the percentage of time in English and the percentage of time in Spanish summed to very close to 100 (see Exhibit 1), and thus were essentially complementary (in the mathematical sense), it is not surprising that the results for these two measures mirrored one other.

**Exhibit 3. Summary of Relationships Between Classroom (Teaching Team) Language Use Measures and Child Outcomes: Spanish-Language DLLs**

| | Measures of English Use | | Measures of Spanish Use | | Bridging |
|---|---|---|---|---|---|
| | Percentage of Time in English | Frequency of Activities in English | Percentage of Time in Spanish | Frequency of Activities in Spanish | Strategies in Spanish to Build English |
| **Outcomes Assessed in English** | | | | | |
| English Vocabulary | Ø | ↑* | Ø | Ø | Ø |
| English Oral Comprehension | ↓* | Ø | ↑* | ↑† | ↑* |
| Basic Mathematics | Ø | Ø | Ø | Ø | Ø |
| **Outcomes Assessed in Spanish** | | | | | |
| Spanish Vocabulary | ↓*** | ↓*** | ↑*** | ↑*** | ↑† |
| Spanish Oral Comprehension | ↓** | Ø | ↑** | Ø | Ø |
| Basic Mathematics | ↓*** | Ø | ↑*** | ↑** | Ø |
| **Hybrid or Other Outcomes** | | | | | |
| Bilingualism | ↓*** | Ø | ↑*** | ↑* | Ø |
| Literacy Skills | ↓** | Ø | ↑** | Ø | Ø |
| Executive Functioning | ↓* | Ø | ↑** | Ø | Ø |
| Social-Emotional Well-Being | ↓* | Ø | ↑† | Ø | Ø |

*Note.* ↑ indicates a statistically significant positive relationship; ↓ indicates a statistically significant negative relationship; Ø indicates no (statistically significant) relationship. The number of children included in analyses ranges from 858 to 862 on the social-emotional outcome (which was based on parent report), from 956 to 965 across the two mathematics outcomes (which were administered only to children aged 4 and older), and from 1,280 to 1,308 across the other eight outcomes.

***$p < .001$; **$p < .01$; *$p < .05$; †$p < .10$.

## Results for Cantonese-Language DLLs

### Key Finding: On average, Cantonese-language DLLs in classrooms where teachers used more Cantonese knew more Cantonese vocabulary words and had higher bilingual scores.

For children from a Cantonese language background, the only classroom language use measures that were significantly related to any outcomes were the three Cantonese language use measures: percentage of time teaching teams used Cantonese, frequency of activities in Cantonese, and strategies in Cantonese to build English (Exhibit 4). Each of these three classroom language use measures was significantly positively associated with each of two child outcomes: Cantonese vocabulary and, more weakly, bilingualism. That is, in classrooms where more Cantonese was used by teaching teams, either as a percentage of time compared to other languages or as a frequency of activities, Cantonese-language DLLs did better, on average, on the Cantonese vocabulary assessment and had higher average bilingual scores. Given that the bilingual score was calculated based partly on the Cantonese vocabulary outcome (in combination with the English vocabulary outcome), the findings for the two outcomes are related to some extent.

Neither measure of English use (first two columns) was significantly related to any of the 10 outcomes for Cantonese-language DLLs. In addition, none of the five classroom language measures were significantly

associated with any of the English outcomes (top three rows) or the non-language-focused outcomes (bottom two rows). However, the sample size of Cantonese-language DLLs was quite small, and generally speaking, the smaller the sample size, the larger a relationship needs to be to register as statistically significant.

**Exhibit 4. Summary of Relationships Between Classroom (Teaching Team) Language Use Measures and Child Outcomes: Cantonese-Language DLLs**

| | Measures of English Use | | Measures of Cantonese Use | | Bridging |
|---|---|---|---|---|---|
| | Percentage of Time in English | Frequency of Activities in English | Percentage of Time in Cantonese | Frequency of Activities in Cantonese | Strategies in Cantonese to Build English |
| **Outcomes Assessed in English** | | | | | |
| English Vocabulary | Ø | Ø | Ø | Ø | Ø |
| English Oral Comprehension | Ø | Ø | Ø | Ø | Ø |
| Basic Mathematics | Ø | Ø | Ø | Ø | Ø |
| **Outcomes Assessed in Cantonese** | | | | | |
| Cantonese Vocabulary | Ø | Ø | ↑* | ↑* | ↑* |
| Cantonese Oral Comprehension | Ø | Ø | Ø | Ø | Ø |
| Basic Mathematics | Ø | Ø | Ø | Ø | Ø |
| **Hybrid or Other Outcomes** | | | | | |
| Bilingualism | Ø | Ø | ↑† | ↑† | ↑† |
| Literacy Skills | Ø | Ø | Ø | Ø | Ø |
| Executive Functioning | Ø | Ø | Ø | Ø | Ø |
| Social-Emotional Well-Being | Ø | Ø | Ø | Ø | Ø |

*Note.* ↑ indicates a statistically significant positive relationship; ↓ indicates a statistically significant negative relationship; Ø indicates no (statistically significant) relationship. The number of children included in analyses ranges from 66 to 70 on the social-emotional outcome (which was based on parent report), from 48 to 52 across the two mathematics outcomes (which were administered only to children 4 and older), from 75 to 80 on executive functioning, and from 82 to 98 across the other seven outcomes.

*$p < .05$; †$p < .10$.

## Results for Mandarin-Language DLLs

### Key Finding: On average, Mandarin-language DLLs in classrooms where teachers used more Mandarin knew more Mandarin vocabulary words.

As with Spanish and Cantonese, the three measures of Mandarin use—percentage of time teaching teams used Mandarin, frequency of activities in Mandarin, and strategies in Mandarin to build English—were each positively associated with home language vocabulary for DLLs whose home language was Mandarin (Exhibit 5). In addition, the percentage of time the teaching team used Mandarin was positively associated with bilingualism; this was one of the two most strongly significant relationships found in the Mandarin analysis. The other strongly significant relationship was a negative relationship between frequency of activities in English and English vocabulary. In other words, the more frequently teaching teams used activities in English, the *less* well Mandarin-language DLLs performed on the English vocabulary assessment. (This is the opposite

of the relationship found in the parallel analysis of the Spanish-language DLL sample.) Frequency of activities in English was also negatively associated with Mandarin-language DLLs' oral comprehension in English, though this association was weaker.

The size of the Mandarin-language DLL sample was even smaller than that of the Cantonese-language DLL sample, so similar caveats about statistical significance apply. Moreover, the sample sizes for three of the outcomes—basic mathematics in English, basic mathematics in Mandarin, and social-emotional well-being—were so small that we did not conduct analyses of those outcomes.

**Exhibit 5. Summary of Relationships Between Classroom (Teaching Team) Language Use Measures and Child Outcomes: Mandarin-Language DLLs**

| | Measures of English Use | | Measures of Mandarin Use | | Bridging |
|---|---|---|---|---|---|
| | Percentage of Time in English | Frequency of Activities in English | Percentage of Time in Mandarin | Frequency of Activities in Mandarin | Strategies in Mandarin to Build English |
| **Outcomes Assessed in English** | | | | | |
| English Vocabulary | Ø | ↓** | Ø | Ø | Ø |
| English Oral Comprehension | Ø | ↓† | Ø | Ø | Ø |
| **Outcomes Assessed in Mandarin** | | | | | |
| Mandarin Vocabulary | Ø | Ø | ↑* | ↑† | ↑* |
| Mandarin Oral Comprehension | Ø | Ø | Ø | Ø | Ø |
| **Hybrid or Other Outcomes** | | | | | |
| Bilingualism | Ø | Ø | ↑** | Ø | Ø |
| Literacy Skills | Ø | Ø | Ø | Ø | Ø |
| Executive Functioning | Ø | Ø | Ø | Ø | Ø |

*Note.* ↑ indicates a statistically significant positive relationship; ↓ indicates a statistically significant negative relationship; Ø indicates no (statistically significant) relationship. The number of children included in analyses ranges from 38 to 46. Because of small sample sizes, we did not analyze basic mathematics (in either English or Mandarin) or social-emotional well-being for Mandarin-language DLLs.

$^{**}p < .01$; $^{*}p < .05$; $^{\dagger}p < .10$.

## Results for Vietnamese-Language DLLs

### Key Finding: For Vietnamese-language DLLs, greater use of Vietnamese by teachers did not appear to have positive effects on any outcome; greater use of English had some positive effects.

The results for Vietnamese-language DLLs differed from the results for Spanish, Cantonese, and Mandarin. Unlike in the other three language groups, the percentage of time teaching teams used *English* had significant positive relationships with three of the outcomes: basic mathematics as assessed in English, literacy skills, and executive functioning (Exhibit 6). Also unlike in the other three language groups, the percentage of time teaching teams used Vietnamese had significant negative relationships with two outcomes: basic mathematics as assessed in English and executive functioning. No other relationships for the three Vietnamese language use measures were significant, one way or the other. Frequency of

activities in English had a positive relationship with basic mathematics as assessed in English, and a negative relationship with Vietnamese vocabulary.[15]

**Exhibit 6. Summary of Relationships Between Classroom (Teaching Team) Language Use Measures and Child Outcomes: Vietnamese-Language DLLs**

| | Measures of English Use | | Measures of Vietnamese Use | | Bridging |
|---|---|---|---|---|---|
| | Percentage of Time in English | Frequency of Activities in English | Percentage of Time in Vietnamese | Frequency of Activities in Vietnamese | Strategies in Vietnamese to Build English |
| **Outcomes Assessed in English** | | | | | |
| English Vocabulary | Ø | Ø | Ø | Ø | Ø |
| English Oral Comprehension | Ø | Ø | Ø | Ø | Ø |
| Basic Mathematics | ↑** | ↑* | ↓** | Ø | Ø |
| **Outcomes Assessed in Vietnamese** | | | | | |
| Vietnamese Vocabulary | Ø | ↓† | Ø | Ø | Ø |
| Vietnamese Oral Comp. | Ø | Ø | Ø | Ø | Ø |
| Basic Mathematics | Ø | Ø | Ø | Ø | Ø |
| **Hybrid or Other Outcomes** | | | | | |
| Bilingualism | Ø | Ø | Ø | Ø | Ø |
| Literacy Skills | ↑* | Ø | Ø | Ø | Ø |
| Executive Functioning | ↑* | Ø | ↓* | Ø | Ø |

*Note.* ↑ indicates a statistically significant positive relationship; ↓ indicates a statistically significant negative relationship; Ø indicates no (statistically significant) relationship. The number of children included in analyses was 42 for both mathematics outcomes, 51 for executive functioning, and 56 for all other outcomes. Because of small sample size, we did not analyze social-emotional well-being for Vietnamese-language DLLs.

$^{**}p < .01$; $^{*}p < .05$; $^{\dagger}p < .10$.

# Summary and Implications

This brief has focused on language use in the preschool classroom—in particular, teachers' use of English and the home language(s) of the DLLs they teach and interact with.[16] Many classrooms reported using a substantial amount of DLLs' home languages in the classroom, and FCCHs tended to report more home language use than center-based classrooms. We generally found **positive relationships between classroom use of the home language and child outcomes.** This finding, which aligns with much prior research, was especially strong and robust for teachers' use of Spanish in classrooms with DLLs from Spanish language backgrounds, applying to multiple outcomes across various early learning domains, and controlling for numerous background variables, including children's level of exposure to Spanish at home. Results suggested a similar relationship for Cantonese and Mandarin, although fewer significant effects were found for these languages. Results appeared to differ for Vietnamese, however; in classrooms with

[15] As with Cantonese and Mandarin, the size of the Vietnamese-language DLL sample was quite small.

[16] The third brief in the series examines classroom practices that are not related to teachers' language use, although some of the practices examined, such as books available in the home language, are still language specific.

Vietnamese-language DLLs, greater teacher use of Vietnamese did not appear to have positive effects for these children. (See the "Limitations and Future Research" box.)

Overall, with the possible exception of Vietnamese, **these findings suggest that DLL children may benefit when they have substantial exposure to their home language in the early learning classroom.** Such early exposure can benefit DLLs' learning beyond the early childhood years. For instance, one recent study found that DLLs with stronger home language skills at kindergarten entry have a higher likelihood of achieving English language proficiency later in elementary school than students with lower initial home language proficiency (Arellano et al., 2018).

Our findings have several potentially important implications for policy and practice. For example:

- At the county or state level, policies might focus on **broadening the language diversity of the early learning and care workforce, supporting recruitment of teachers who (fluently) speak children's home languages**—perhaps even incentivizing such individuals to join the workforce—and ensuring that they do not face undue obstacles to entry. Public investments might also focus on professional development for the early learning workforce in the use of home language strategies.
- At the program level, program directors and administrators should try to **ensure that classrooms have at least one teacher who can fluently speak the language(s) of the DLLs** who tend to enroll in their programs. Program directors can also **establish environments and set policies that encourage intentional use of the home language in the classroom.** Teachers are likely to be more comfortable using children's home languages when this use is endorsed and encouraged by leaders at their programs.

## LIMITATIONS AND FUTURE RESEARCH

Despite targeted recruitment efforts, this study's sample sizes for Cantonese, Mandarin, and Vietnamese-language DLLs, and the number of programs and classrooms in which they were found, were very small. Future research should focus more explicitly on these groups (and DLLs from other non-Spanish languages as well) by carefully identifying and recruiting large numbers of their early learning programs.

Regarding the finding that greater use of Vietnamese was not positively associated with outcomes for Vietnamese-language DLLs, we do not know of any empirical or theoretical reason why the relationship between classroom language use and child outcomes should or would differ for Vietnamese-language DLLs compared to DLLs from other language backgrounds, although it could have something to do with the fact that many of the study's Vietnamese-language DLLs were in classrooms that had high numbers of DLLs from other language backgrounds, especially Spanish. Further research would be useful to see if the results for Vietnamese-language DLLs can be replicated.

Another limitation is that this study's measures of classroom language use were based on teachers' survey responses. Although the averaging of responses across teachers in classrooms helps mitigate the limitations of self-report, it cannot entirely overcome them. Moreover, because it is very difficult for survey-based measures to get at *quality,* our measures focused on quantity. Classroom observations, such as those originally planned by this study before the pandemic intervened, would be useful to provide independent verification of teacher report and measures of quality that are not possible with surveys, particularly given research that suggests that classroom quality, from both general and DLL-specific perspectives, is important for DLLs' learning in early childhood classrooms (Downer et al., 2012; Hindman & Wasik, 2015; White et al., 2020).

- Finally, at the classroom level, **teachers who know and can speak the language of DLLs in their classroom should not hesitate to interact and engage with children using that language.**[17] They should of course consider the circumstances and purposes for which they are using the home language, so that it is used intentionally and in positive ways. True dual language instruction involves providing strategically coordinated and aligned instruction in both languages with language-specific scope and sequence (Olsen et al., 2020). Additionally, beyond just supporting academic and language development, home language use can help children and families feel comfortable and accepted, and can create a welcoming environment that will help young children thrive (Espinosa & Crandell, 2020).

The findings presented in this brief contribute to existing research in early learning settings that demonstrates the benefits of using the home language for the instruction of young DLLs. All teachers, regardless of their own language backgrounds, can find ways to encourage and cultivate the home languages of DLLs through intentional strategies and practices (see here for practical examples for early educators that are derived from the research; this will also be discussed further in the third brief in this series). By helping young DLLs feel that their home language is valued, included, and fostered in the early childhood classroom, early educators can help these young learners feel comfortable and ensure that they have access to the multitude of learning opportunities that early education affords. California can help lead the way in promoting home language use in early education settings, thereby helping young DLLs reach their full linguistic and academic potential.

[17] Our findings do not imply that *all* teachers who work in classrooms with DLLs need to be bilingual or multilingual. This would likely be unrealistic to expect, especially for languages other than Spanish and for highly diverse classrooms.

# References


Agirdag, O. (2014). The long-term effects of bilingualism on children of immigration: Student bilingualism and future earnings. *International Journal of Bilingual Education and Bilingualism, 17*(4), 449–464.

Arellano, B., Liu, F., Stoker, G., & Slama, R. (2018). *Initial Spanish proficiency and English language development among Spanish-speaking English Learner students in New Mexico.* REL 2018-286. Regional Educational Laboratory Southwest.

August, D., & Shanahan, T. (2006). *Executive summary: Developing literacy in second-language learners: A report of the National Literacy Panel on Language-Minority Children and Youth.* Lawrence Erlbaum Associates.

Barnett, W. S., Yarosz, D. J., Thomas, J. Jung, K. H., & Blanco, D. (2007). Two-way and monolingual English immersion in preschool education: An experimental comparison. *Early Childhood Research Quarterly, 22,* 277–293.

Bialystok, E. (2015). Bilingualism and the development of executive function: The role of attention. *Child Development Perspectives, 9*(2), 117–121.

Bialystok, E., & Majumder, S. (1998). The relationship between bilingualism and the development of cognitive processes in problem solving. *Applied Psycholinguistics, 19*(1), 69–85.

Brisk, M., & Harrington, M. (2007). Working effectively with bilingual students. In Brisk, M., Harrington, M. (Eds.), *Literacy and bilingualism: A handbook for ALL teachers,* 15–47. Lawrence Erlbaum Associates, Inc.

Burchinal, M., Field, S., López, M. L., Howes, C., & Pianta, R. (2012). Instruction in Spanish in pre-kindergarten classrooms and child outcomes for English language learners. *Early Childhood Research Quarterly, 27*(2), 188–197.

Carlson, S. M., & Meltzoff, A. N. (2008). Bilingual experience and executive functioning in young children. *Developmental Science, 11*(2), 282–298.

Dickinson, D. K., McCabe, A., Clark-Chiarelli, N., & Wolf, A. (2004). Cross-language transfer of phonological awareness in low-income Spanish and English bilingual preschool children. *Applied Psycholinguistics, 25,* 323–347.

Downer, J. T., López, M. L., Grimm, K. J., Hamagami, A., Pianta, R. C., & Howes, C. (2012). Observations of teacher–child interactions in classrooms serving Latinos and dual language learners: Applicability of the Classroom Assessment Scoring System in diverse settings. *Early Childhood Research Quarterly, 27*(1), 21–32.

Durán, L., Roseth, C. J., & Hoffman, P. (2015). Effects of transitional bilingual education on Spanish-speaking preschoolers' literacy and language development: Year 2 results. *Applied Psycholinguistics, 36*(4), 921–951.

Espinosa, L., & Crandell, J. (2020). Early learning and care for multilingual and dual language learners ages zero to five. In California Department of Education (Ed.), *Improving education for multilingual and English learner students: Research to practice* (Ch. 4). California Department of Education. www.cde.ca.gov/sp/el/er/improvingmleleducation.asp

Gándara, P. (2018). The economic value of bilingualism in the United States. *Bilingual Research Journal, 41*(4), 334–343.

Goetz, P. J. (2003). The effects of bilingualism on theory of mind development. *Bilingualism: Language and Cognition, 6*(1), 1–15.

Halle, T. G., Whittaker, J. V., Zepeda, M., Rothenberg, L., Anderson, R., Daneri, P., Wessel, J., & Buysse, V. (2014). The social–emotional development of dual language learners: Looking back at existing research and moving forward with purpose. *Early Childhood Research Quarterly, 29*(4), 734–749.

Hindman, A. H., & Wasik, B. A. (2015). Building vocabulary in two languages: An examination of Spanish-speaking Dual Language Learners in Head Start. *Early Childhood Research Quarterly, 31,* 19–33.

Koenig, M., & Woodward, A. L. (2012). Toddlers learn words in a foreign language: The role of native vocabulary knowledge. *Journal of Child Language, 39*(2), 322–337.

López, L. M., & Greenfield, D. B. (2004). The cross-language transfer of phonological skills of Hispanic Head Start children. *Bilingual Research Journal, 28*(1), 1–18.

McCabe, A., Tamis-LeMonda, C. S., Bornstein, M. H., Cates, C. B., Golinkoff, R. M., Hirsh-Pasek, K., Hoff, E., Kuchkiro, Y., Melzi, G., Mendelsohn, A., Páez, M., & Song, L. (2013). Multilingual children: Beyond myths towards best practices. *SRCD Policy Report, 27*(4).

Méndez, L. I., Crais, E. R., Castro, D. C., & Kainz, K. (2015). A culturally and linguistically responsive vocabulary approach for young Latino dual language learners. *Journal of Speech, Language, and Hearing Research, 58*(1), 93–106.

Méndez, L. I., Crais, E. R., & Kainz, K. (2018). The impact of individual differences on a bilingual vocabulary approach for Latino preschoolers. *Journal of Speech, Language, and Hearing Research, 61*(4), 897–909.

National Academies of Sciences, Engineering, and Medicine [NASEM]. (2017). *Promoting the educational success of children and youth learning English: Promising futures.* National Academies Press. https://www.nap.edu/catalog/24677/promoting-the-educational-success-of-children-and-youth-learning-english

Olsen, L., Martinez, M., Herrera, C. B., & Skibbins, H. (2020). Multilingual programs and pedagogy: What teachers and administrators need to know and do. In California Department of Education (Ed.), *Improving education for multilingual and English learner students: Research to practice* (Ch. 3). California Department of Education. www.cde.ca.gov/sp/el/er/improvingmleleducation.asp

Raikes, H. H., White, L. J., Green, S., Burchinal, M. R, Kainz, K., Horm, D. M., Bingham, G., Cobo-Lewis, A. B., St. Clair, L., & Greenfield, D. B. (2019). Use of the home language in preschool classrooms and first- and second-language development among dual-language learners. *Early Childhood Research Quarterly, 47,* 145–158.

UCLA Center for Health Policy Research. (2020). *Ask CHIS (California Health Interview Survey)* (pooling 2018, 2019, & 2020) [Data tool]. University of California, Los Angeles. https://healthpolicy.ucla.edu/chis/Pages/default.aspx

White, L. J. & Greenfield, D. B. (2017). Executive functioning in Spanish- and English-speaking Head Start preschoolers. [Special issue article]. *Developmental Science,* 1–14.

White, L. J., Fernandez, V. F., & Greenfield, D. B. (2020). Using two observation tools to understand classroom quality for Latino dual language learners in Head Start. *Early Education and Development, 31*(4).

## About the First 5 California DLL Pilot Study

In 2015, First 5 California committed $20 million for a "DLL Pilot" to identify and promote effective, scalable strategies that early learning and care programs can use to support DLLs and their families. A key component of this initiative is a study focused on three high-leverage areas: instructional practices, professional development for early educators, and family engagement. The study is examining the practices used across different early learning settings, diverse language groups, and DLLs of varying ages and backgrounds, and the extent to which various practices are associated with child and family outcomes. Sixteen counties, selected to be broadly representative of California's DLL population, are participating in the DLL Pilot: Butte, Calaveras, Contra Costa, Fresno, Los Angeles, Monterey, Orange, Riverside, Sacramento, San Diego, San Francisco, Santa Barbara, Santa Clara, Sonoma, Stanislaus, and Yolo. The study is being conducted by the American Institutes for Research in partnership with Juárez & Associates; CRI; School Readiness Consulting; Allen, Shea & Associates; and Stanfield Systems, Inc. Guidance is provided by a DLL Input Group composed of stakeholders, advocates, and state and national experts on DLLs.

**For more information about the study and to read other study briefs and reports:**

https://californiadllstudy.org/

www.ccfc.ca.gov/

Copyright © 2022 American Institutes for Research® . All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, website display, or other electronic or mechanical methods, without the prior written permission of the American Institutes for Research. For permission requests, please use the Contact Us form on AIR.ORG.

AIR®
Advancing Evidence.
Improving Lives.

1333 Broadway, Suite 300
Oakland, CA 94612
+1.202.403.5000 | **AIR.ORG**

FIRST 5 CALIFORNIA™

2389 Gateway Oaks Drive, Suite 260
Sacramento, CA 95833
916.263.1050 | **www.first5california.com**

18157 v9_6/22