



# Research Brief: Professional Development for Teachers of Young Dual Language Learners and Its Connection to Teacher Beliefs and Practices

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California is home to a large population of young children, ages 0 to 5, who are learning another language in addition to English. These young dual language learners (DLLs) have the potential to reap the academic, social, and cultural benefits of bilingualism when they are in early learning environments that effectively support the development of both the home language and English (National Academies of Science, Engineering, and Medicine [NASEM], 2017). With this awareness, First 5 California (F5CA) has invested in research to understand the landscape of dual language instruction and teacher preparation in early learning and care settings. The DLL Pilot Study, a large-scale study conducted by the American Institutes for Research (AIR) and funded by F5CA, was designed, in part, to examine how teachers support DLLs and their families in early learning settings, how this relates to child and family outcomes, and the types and amount of professional development (PD) teachers have received to prepare them for work with these children.

This research brief describes the PD experiences of teachers in the F5CA DLL Pilot Study sample and examines the ways their participation in DLL-related PD was linked to how they think about and work with DLLs and their families. **Our analyses show that DLL-related PD is associated with teachers' use of supportive, evidence-based practices with DLLs and their families.**

## Key Findings

Overall, this study found that participation in DLL-related PD is associated with teachers' beliefs about DLLs and their self-reported use of evidence-based practices. Specific findings were as follows:

- Although most teachers reported receiving at least a *little* DLL-related PD, fewer than one in four reported receiving a *lot* of PD on any given topic, and most teachers still wanted more.
- Teachers who had received more DLL-related PD had more favorable attitudes about bilingualism and greater confidence in their ability to support DLLs.
- Teachers who had received more DLL-related PD were more likely to report using evidence-based instructional practices for teaching DLLs, including use of the home language for instruction and having books in the home language.
- Teachers who had received more DLL-related PD reported using a larger number of linguistically and culturally responsive family engagement strategies.

Taken together, these findings reinforce the need for ongoing DLL-focused PD for the early learning workforce.

## Policy, Research, and Theoretical Foundations

As a whole, the early learning workforce in California (and beyond) may not yet be adequately prepared to effectively support and address the learning needs of DLLs (Gándara et al., 2005; Oliva-Olson et al., 2017). Many teachers themselves report being underprepared (Choi et al., 2021). Research shows that early childhood teachers often do not provide high-quality language and literacy practices that are effective for DLLs (Sawyer et al., 2016, Jacoby & Lesaux, 2017). In California specifically, most early learning and care program directors recently indicated that their staff included too few educators trained to work specifically with DLLs (Brodziak de los Reyes et al., 2020). Taken together, these findings point to a need to better prepare teachers for implementing high-quality instruction for DLLs.

Historically, there have been no statewide requirements for early childhood certification or training for working with young DLLs. In recent years, however, policies and practices in California have been evolving to recognize the value of bilingualism and respond to the need to develop an early childhood workforce that can effectively support DLLs prior to kindergarten entry. Some recent efforts to advance this work include:

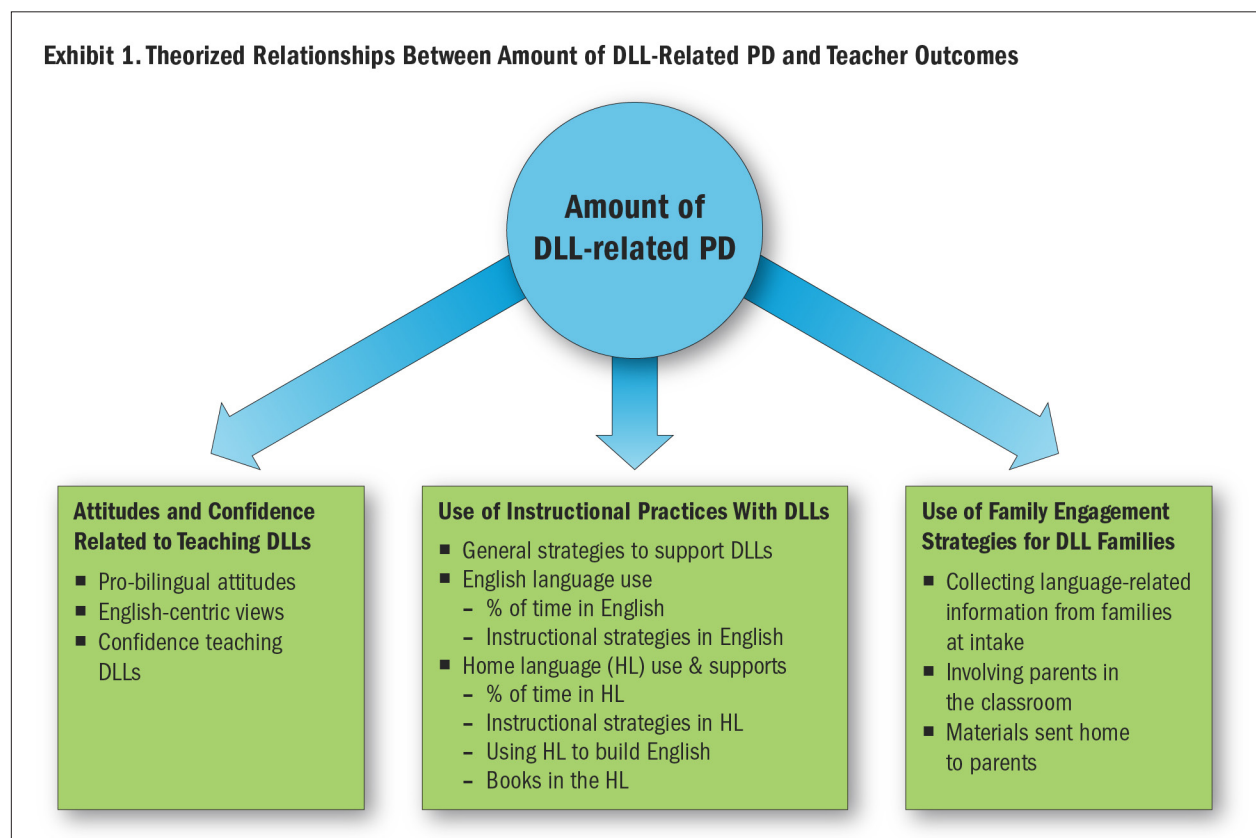
- The [\*Master Plan for Early Learning and Care\*](#), released by the California Health & Human Services Agency in 2020 (Alcalá et al., 2020), highlights the importance of providing culturally relevant learning experiences and high-quality language interaction in both English and the home language for DLLs in early learning settings. The Master Plan also prioritizes advancements in professional development to better prepare the early childhood workforce to provide equitable and high-quality learning experiences for all young children.
- The [\*DLL Policy Platform\*](#), published in 2020 by Advancement Project California and Early Edge California, summarizes the key issues related to early education for young DLLs and provides recommendations for promoting high-quality learning experiences for them, including a recommendation specifically about improving workforce capacity to support DLLs (Zepeda et al., 2020).
- The [\*DLL-PD Program\*](#), a \$5 million program funded by the California legislature in 2018, supported the provision of DLL PD to early learning and care providers. This program, which was administered by the California Department of Education (CDE), offered one-time grants to six organizations and collaboratives to provide DLL-focused PD for early learning providers during the 2019–20 school year. The goal of the program was to support educators and caregivers in better understanding and serving young DLLs with high-quality early educational experiences. (See the box on pp. 14–15 for a summary of results from a study of three PD providers that participated in this program.)

These and other policy efforts to provide more DLL-related professional development are informed by research and expert recommendations for intentional PD that focuses on evidence-based practices for DLLs (e.g., NASEM, 2017; CDE, 2020; Castro et al., 2013). Generally speaking, teachers who have participated in professional development (PD) that focuses on the use of such evidence-based practices use more instructional practices that support DLLs' language and literacy skills (Buysse et al., 2010; Castro et al., 2017). In addition, research shows that PD that focuses on culturally responsive pedagogy and encourages

positive beliefs about bilingualism promotes more favorable teacher attitudes about DLL students (Mellom et al., 2018; Spies et al., 2017; Gardner-Neblett et al., 2020). Experts also suggest that teachers of young DLLs need PD to help them engage with the families of DLLs in linguistically and culturally appropriate ways to maximize home-school partnerships and learning (Espinosa, 2020).

Perhaps most importantly, prior research suggests that DLLs have better learning outcomes when they are in the classrooms of teachers who have more training, experience, and linguistic and cultural competence (Ramírez, 2019). For example, Castro et al. (2017) found that DLLs in classrooms whose teachers participated in DLL-focused PD had better outcomes in both English and their home language.

Overall, then, recent research suggests that an intentional focus on DLL instruction in PD for early educators can help them implement research-based practices that benefit DLL children. Informed by this evidence, we set out to examine how the amount of DLL-related PD that California early childhood teachers received was related to outcomes in three domains: (1) teachers’ attitudes and confidence about teaching DLLs, (2) teachers’ use of DLL-specific instructional practices, and (3) teachers’ use of strategies to engage DLL families. Exhibit 1 illustrates the specific relationships we investigated.



Ideally, we would like to make inferences about whether PD *causes* improvements in teachers’ beliefs and practices. Because the study could not be structured to allow for such causal inferences, we instead present information about *relationships*—namely, whether teachers who had more DLL-related PD also had

better outcomes. Such a finding *might* mean that the PD improved the teacher outcomes, but we cannot be certain. (For example, teachers who were already using better practices with their DLL students might also have been more likely to seek out PD.)

## Organization of This Brief

After presenting an overview of the study sample, this brief describes the amount of DLL-related PD teachers reported receiving, on specific topics and overall. The brief then presents and discusses findings on the extent to which teachers' DLL-related PD experiences were related to their beliefs and practices in working with DLLs and their families, organized by the three outcome domains in Exhibit 1.

## Study Sample

This brief draws on the responses of 626 early learning and care teachers to a survey administered in 16 California counties as part of the F5CA DLL Pilot Study.<sup>1</sup> These teachers taught in 306 classrooms in 171 early learning and care programs. The survey, which was administered online, was conducted from May 2020 through July 2020. 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, practice, and experiences *prior* to the pandemic.

On average, the teachers reported that their classes had 12.5 DLLs (of any non-English language background) and that 1.9 non-English languages were represented by the DLLs. The F5CA study focused primarily on supports for DLLs from four language backgrounds: Spanish, Cantonese, Mandarin, and Vietnamese. As Exhibit 2 shows, nearly all of the 626 teachers reported that there were DLLs of Spanish language background in their classrooms; fewer reported that their classrooms had DLLs of the other three language backgrounds examined by the study.

Among teachers who reported teaching Spanish-language DLLs, over 80% reported speaking Spanish themselves in the classroom. The corresponding percentages for the other three languages were much lower, especially for Mandarin and Vietnamese (Exhibit 2). However, among teachers who *did* report using the language themselves, average fluency levels (based on self-report) were high—over 3 on a scale from 1 (hardly at all) to 4 (very well) in all three languages. Nearly all teachers (96%) reported using English in their classroom; these teachers' average fluency in English was 3.7.

The box on p. 5 provides additional background information about the teachers and their classrooms. The sample may not have been representative of DLL-serving early learning teachers across California, so results reported in this brief are not necessarily generalizable to the state as a whole.

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<sup>1</sup> A total of 755 teacher survey responses, from 693 teachers in 329 classrooms, were received for the F5CA study (94% response rate). Sixty-two teachers completed two surveys, each for a different classroom; for the purposes of this brief, we selected one of the two surveys to include in analysis, given that practices may have differed in the two classrooms. In addition, 67 of the 693 teachers did not answer one or more survey questions needed for the analyses conducted for this brief, so the maximum sample size for any analysis is 626.

**Exhibit 2. The Study Sample in Relation to the Four Study Languages**

	Spanish	Cantonese	Mandarin	Vietnamese
Number of teachers who reported DLLs of this language in their classroom	605 (97%) in 294 classrooms	47 (8%) in 29 classrooms	97 (15%) in 56 classrooms	76 (12%) in 42 classrooms
<i>Among those teachers...</i>				
Average number of DLLs of the language in their classroom	10.4	8.5	2.6	4.1
Number of teachers who reported using the language themselves	490 (81%)	23 (49%)	20 (21%)	12 (16%)
<i>Among those teachers...</i>				
Their average fluency in the language, from 1 to 4	3.4	3.4	3.2	3.3

## ABOUT THE 626 TEACHERS



40% had a bachelor's degree or higher



2% had a DLL-related certification (CLAD, BCLAD, or TEFL/TESOL)



69% identified as Hispanic/Latino; 15% identified as White; 14% identified as Asian



91% worked in center-based care; the remainder worked in family child care homes



41% were the lead teacher in their classroom



67% had only preschoolers in their class; 16% had only infants or toddlers; 17% had both



Average years of experience teaching young children: 12.5

## Amount of DLL-Related PD Teachers Received

**Key Finding: Although most teachers reported receiving at least a *little* DLL-related PD, fewer than one in four reported receiving a *lot* of PD on any given topic, and most teachers still wanted more.**

Earlier findings from the F5CA DLL Pilot Study suggested that the early learning workforce in California may be underprepared to support DLLs—in a statewide survey, more than 75% of center directors indicated that they do not have enough staff trained to work with DLLs; a similar percentage reported that their teachers lacked training on engaging with parents of DLLs (Brodziak de los Reyes et al., 2020). When surveyed themselves about their PD experiences, most teachers reported having had some exposure to DLL-related PD, but they also indicated that they would like more.<sup>2</sup>

On each of 12 different topics related to teaching DLLs—such as best practices for teaching DLLs, bilingual language development, and teaching a multilingual classroom—a majority of teachers reported having received at least a little PD on the topic. For most of the topics, 40% to 60% of the teachers reported having received at least a moderate amount of PD on the topic, but fewer than 20% reported having had a *lot* of PD on the topic (Exhibit 3).<sup>3</sup>

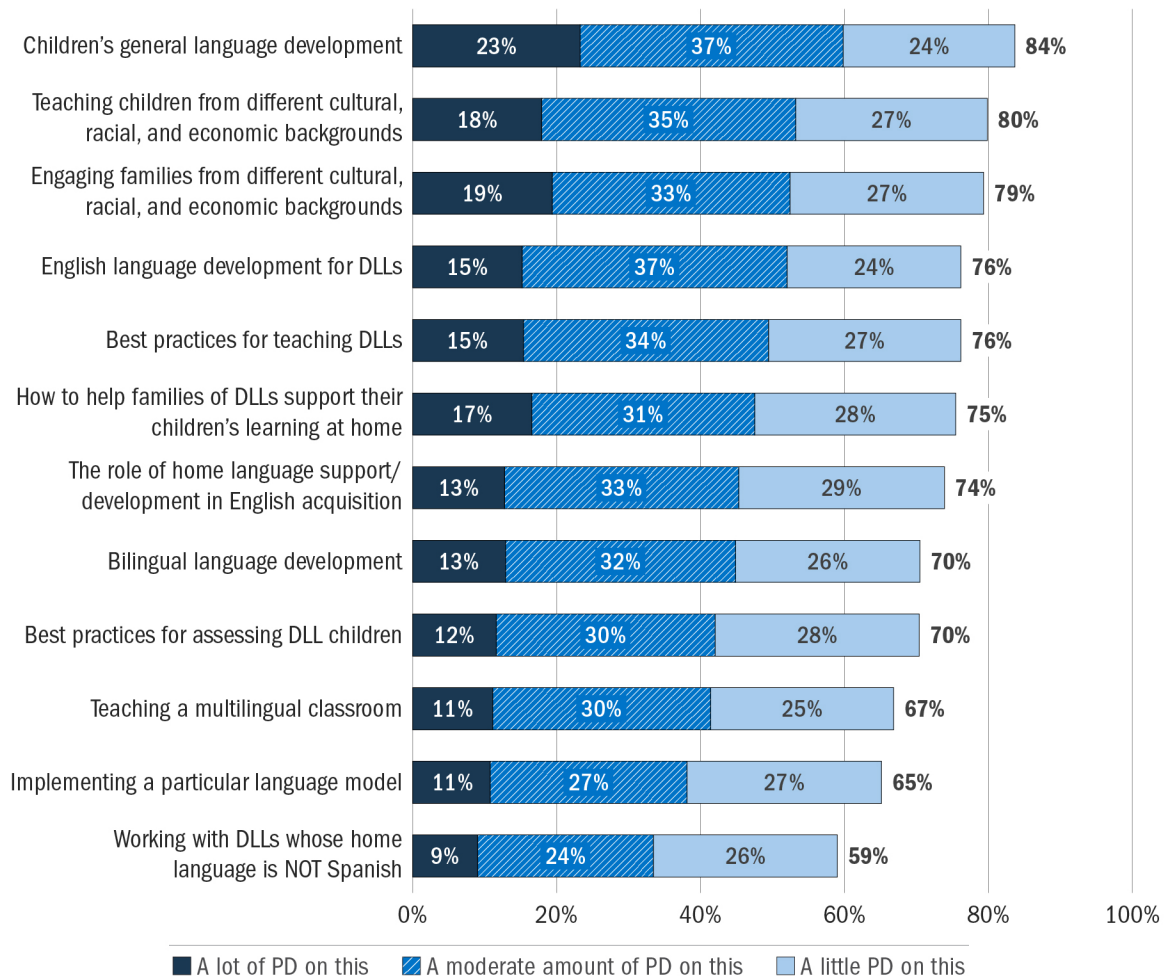
The most commonly reported topic of DLL-related PD was children’s general language development: 84% reported receiving at least a little PD on this topic, and it was the only topic on which more than 20% of teachers reported having had a lot of PD. Other topics on which most teachers reported receiving at least a little PD were teaching children from diverse backgrounds (80%) and engaging the families of these children (79%). The least commonly reported PD topic was working with DLLs whose home language was not Spanish (59%); PD on implementing a particular language model and PD on teaching a multilingual classroom were also reported by relatively fewer teachers (65% and 67%, respectively). On each of these latter three topics, only about 10% of teachers reported having received a lot of PD.

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<sup>2</sup> As already noted, the teacher survey sample was not representative of the state. One example of nonrepresentativeness was that we deliberately included in the sample some teachers who we knew had participated in specific DLL-related PD. (See the box titled “Related Research: Findings from the DLL PD Bridge Study” on pp. 14–15.) The analyses reported in this brief include 55 such teachers (9% of our total sample of 626 teachers). Although not a large group, it may still be large enough to influence the results on how much PD teachers received.

<sup>3</sup> The survey did not define a *little*, a *moderate amount*, or a *lot*; it is possible that different teachers interpreted these terms differently. The survey also did not specify a particular timeframe for having participated in the PD.

**Exhibit 3. Percentage of Teachers Who Reported Receiving PD on Various DLL-Related Topics**

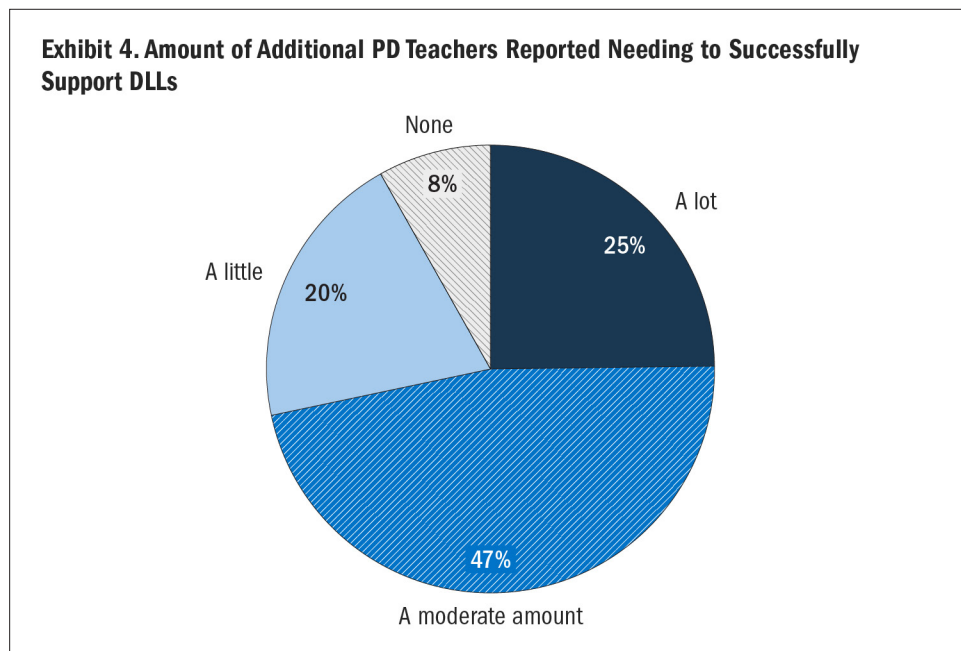


Note: Ns range from 620 to 625. Ordering of topics is by overall percentage, not the order of appearance on the survey.

To facilitate our investigation of relationships between teachers' PD experiences and the outcomes shown in Exhibit 1, we created a summary measure of how much DLL-related PD each teacher had received by averaging the teacher's responses (none, a little, a moderate amount, or a lot) across all 12 of the PD topics shown in Exhibit 3. **The average value on this measure, among the 626 teachers in our sample, was one third of the way between "a little PD" and "a moderate amount of PD."**<sup>4</sup> About 10% of the teachers reported having had *no* PD on any of the topics, while 4% reported a *lot* of PD on all of the topics. All others were somewhere in between. Teachers at Head Start or Early Head Start programs had significantly more DLL-related PD than teachers at other types of programs ( $p < .001$ ), as did teachers at California State Preschool Programs ( $p < 0.05$ ). Teachers at family child care homes did not significantly differ from teachers at centers in amount of DLL-related PD.

<sup>4</sup> As shown in some later exhibits, the average amount of DLL-related PD was slightly lower for the subset of 76 teachers with Vietnamese-speaking DLLs in their classroom. The averages for the subsets of teachers with Spanish-, Cantonese-, and Mandarin-speaking DLLs in their classroom were all similar to the average for the full group of 626 teachers.

The survey also asked teachers how much *additional* PD they felt they needed to successfully support DLLs in their classroom. **Nearly all teachers (92%) indicated a need for at least a little additional PD** (Exhibit 4). One quarter of teachers said they wanted a lot more PD, and another 47% said they wanted a moderate amount of additional PD. Not surprisingly, the teachers who said they only wanted a little additional PD had already received significantly more DLL-related PD, according to our composite measure, than the teachers who said they wanted a lot more PD. On the other hand, the small group of teachers who said they wanted *no* additional PD reported the *lowest* amount of DLL-related PD already received. This suggests that, along with increasing the availability of DLL-focused PD, it is also important to reach out to teachers about the potential benefits and applicability of the PD opportunities. In addition, teachers could be encouraged, or even incentivized, to take advantage of the opportunities, which should be relevant and useful for early educators across a wide range of settings and with differing classroom contexts, such as the number and mix of DLLs in the classroom.



Note: n = 625.

## Relationships Between the Amount of DLL-Related PD Teachers Received and Their Beliefs and Practices

The composite measure of amount of DLL-related PD, described earlier, was the key measure in the analyses of the relationship between PD and the teacher outcomes shown in green in Exhibit 1; results are provided in the subsequent sections of this brief. Details on the analysis approach are presented in the box on pp. 25–26, “How We Analyzed the Relationships Between DLL-Related PD and Outcomes.”



## Attitudes and Confidence

**Key Finding: Teachers who had received more DLL-related PD had more favorable attitudes about bilingualism and greater confidence in their ability to support DLLs.**

One section of the survey used in our study asked teachers to rate their level of agreement with several statements related to bilingualism and teaching DLLs. From their responses, we derived two aggregate measures: one capturing the extent to which teachers held a pro-bilingual attitude and the other capturing the extent to which they held an English-centric view. Exhibit 5 shows the survey statements constituting each of the two measures. We constructed each measure by averaging the responses—from *strongly disagree* to *strongly agree*—across the included statements, similar to how we constructed the measure of the amount of PD teachers received.

**Exhibit 5. Survey Statements Constituting the Measures of Pro-Bilingual and English-Centric Attitudes**

Pro-Bilingual Statements	English-Centric Statements
<ul style="list-style-type: none"><li>■ Continuing to use their home language promotes a child's future school success.</li><li>■ DLLs learn English better when they are also developing their home language.</li><li>■ It would be great if everyone spoke at least two languages.</li><li>■ Children who speak more than one language tend to be more skilled at understanding other people's viewpoints.</li><li>■ Children who speak more than one language tend to be more creative in solving problems.</li></ul>	<ul style="list-style-type: none"><li>■ Teaching DLLs solely in English is the best way to get them ready for kindergarten.</li><li>■ Learning two languages can be confusing for children.</li><li>■ Generally speaking, DLLs learn English faster when their parents speak to them in English.</li><li>■ We live in the United States, so English should be the main language taught to children.</li></ul>

Exhibit 6 shows that on average, teachers were more likely to agree with the pro-bilingual statements than with the English-centric statements; the average level of agreement with the pro-bilingual statements was about halfway between *somewhat agree* and *strongly agree* (blue dot in Exhibit 6) while the average level of agreement with the English-centric statements was close to *somewhat disagree* (red dot in Exhibit 6).

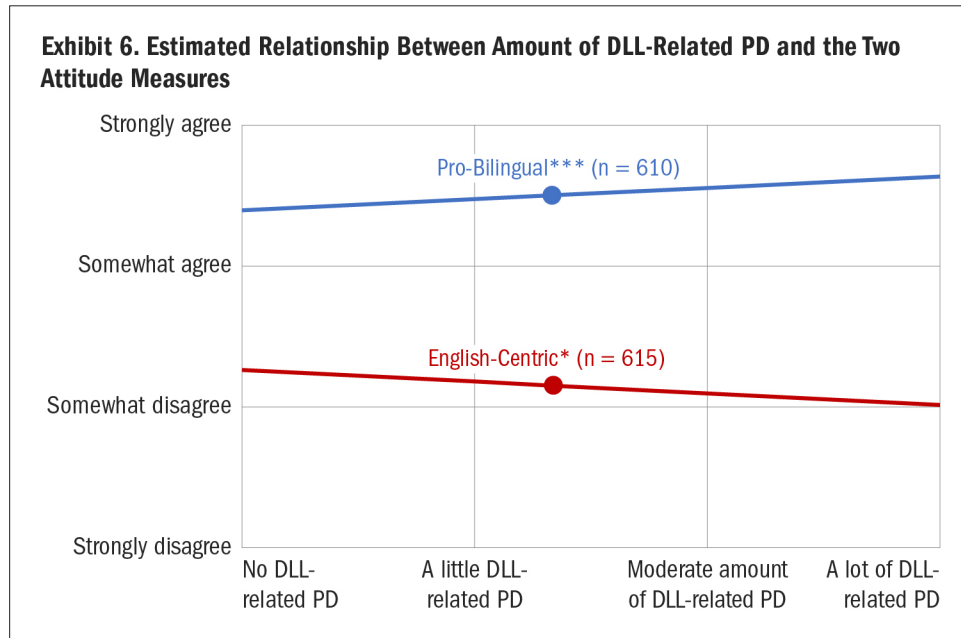
Notably, the difference widens in relation to the amount of DLL-related PD teachers received: all else being equal, **the more DLL-related PD teachers had received, the more likely they were to indicate a pro-bilingual attitude** ( $p < .001$ ; upward slope of blue line in Exhibit 6) **and the less likely they were to indicate an English-centric view** ( $p < .05$ ; downward slope of red line in Exhibit 6).

## HOW TO INTERPRET THE DISPLAYS OF THE RELATIONSHIP RESULTS

In the line-graph exhibits throughout this section of the brief, the **lines** show the estimated relationship between teachers' *amount of DLL-related PD\** and the various *outcomes*, all else (such as teacher and classroom characteristics) being equal. A line sloping *upward* (from left to right) signifies a positive relationship, while a *downward*-sloping line signifies a negative relationship, and a flat line signifies no relationship. Asterisks indicate the statistical significance of the relationship. Some of the graphs show multiple outcomes (each with its own line), while others show only one. See the box “How We Analyzed the Relationships Between DLL-Related PD and Outcomes” for information on how we estimated the lines.

The **dot** on each line shows the *average level of the outcome* for the *average amount of DLL-related PD* among all the teachers included in the analysis of that outcome, adjusted to account for the fact that different programs have different numbers of classrooms and different classrooms have different numbers of teachers.

\* The amount of DLL-related PD was a continuous measure, given the averaging of responses across multiple DLL-related PD topics, but the horizontal axis includes the labels of the original response metric as reference points to aid in interpretability of amount of PD.



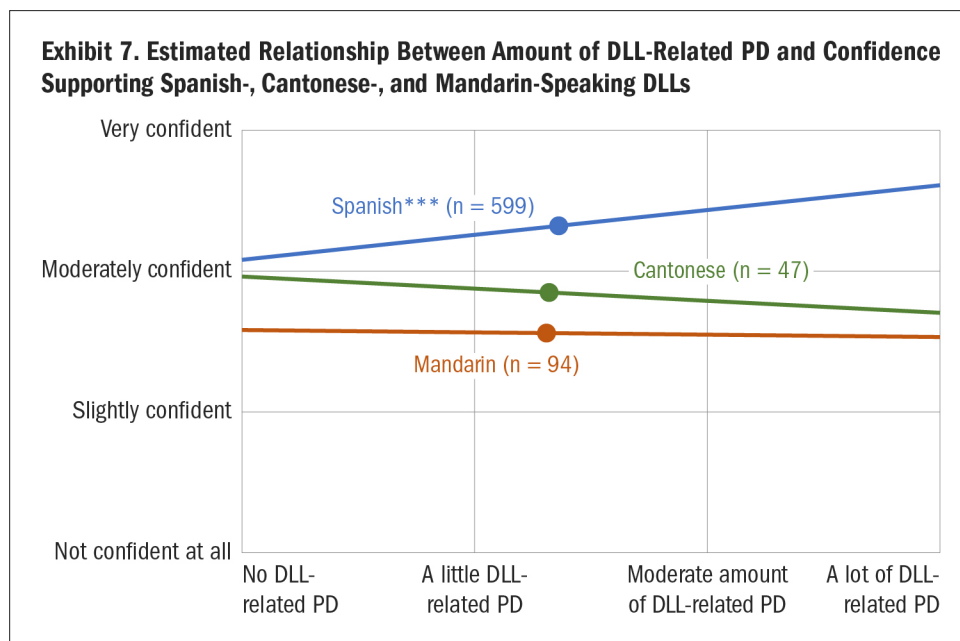
\*\*\*p<0.001; \*p<0.05. (See “How to Interpret the Displays of the Relationship Results.”)

The survey also asked teachers how confident they felt in their ability to support DLLs in seven specific developmental areas: English language development, home language development, pre-literacy skill development, social-emotional development, math learning, assessing DLLs, and engaging with families. Given that teachers' confidence levels might differ depending on the particular language background of the DLLs in their class—for instance, some teachers might feel more confident supporting DLLs with a Spanish language background than DLLs with a Cantonese language background—the survey asked

about confidence separately for Spanish, Cantonese, and Mandarin.<sup>5</sup> (Teachers were only asked about a language if they had reported that their class had at least one DLL of that language background.) For each language, we created a summary confidence measure by averaging responses—from *not at all confident* to *very confident*—across all seven developmental areas.

On average, confidence levels were in fact higher for supporting Spanish-speaking DLLs (average between *moderately confident* and *very confident*; blue dot in Exhibit 7) than for supporting Cantonese-speaking DLLs or Mandarin-speaking DLLs.<sup>6</sup> The average confidence level for supporting Cantonese DLLs was just under *moderately confident* (green dot in Exhibit 7), while the average confidence level for supporting Mandarin DLLs was about halfway between *slightly confident* and *moderately confident* (orange dot in Exhibit 7).

When we looked at the relationship of the overall PD scale to confidence, we found that, all else equal, **teachers who had more DLL-related PD were more confident in their ability to support Spanish-speaking DLLs** ( $p < .001$ ; upward slope of blue line in Exhibit 7). There was not, however, a significant relationship between amount of PD and confidence in supporting either Cantonese- or Mandarin-speaking DLLs (flatter green<sup>7</sup> and orange lines in Exhibit 7).



\*\*\* $p < 0.001$ . (See “How to Interpret the Displays of the Relationship Results.”)

<sup>5</sup> Due to a survey routing error, some teachers who had Vietnamese-speaking DLLs in their class were not asked about their confidence in supporting these DLLs. Thus we do not report results on this outcome for Vietnamese.

<sup>6</sup> Direct comparisons between the three languages should be made with caution, given that they were based on different samples of teachers.

<sup>7</sup> Although the green line (for Cantonese) slopes downward in Exhibit 7, suggesting a negative relationship, the slope of the line was not significantly different from zero (flat). The lack of significance likely has to do with the small sample size for Cantonese—only 47 teachers. (Generally speaking, the smaller the sample size, the larger a difference needs to be to register as statistically significant—see the box “How We Analyzed the Relationships Between DLL-Related PD and Outcomes.”) It could well be that learning about the needs of DLLs caused some teachers to become *less* confident about their ability to support DLLs of language backgrounds other than Spanish, particularly if the PD was mainly focused on Spanish-language DLLs, as much PD appears to be (see Exhibit 3).

In summary, our findings show that participation in DLL-related PD is associated with more positive beliefs about DLL development and teaching (though it could be that teachers with more positive beliefs are more likely to *seek out* DLL-related PD). Either way, positive attitudes about home language use are important, because teachers with these attitudes tend to use practices that are supportive of DLLs' language development (Garrity & Guerra, 2015; Carley Rizzuto, 2017), which may also contribute to better academic outcomes for children (Oh & Mancilla-Martinez, 2021). Conversely, English-centric views, perhaps lingering from the Proposition 227 era (Garrity et al., 2018), can limit opportunities for DLLs to become fully bilingual and reap the academic, cognitive, and social benefits associated with bilingualism (Arellano et al., 2018; Collins, 2014; Lindholm-Leary, 2014).

We also found that DLL-related PD was associated with greater teacher confidence in working with Spanish-language DLLs, but not in working with DLLs of other language backgrounds. The latter finding may reflect the scarcity of PD for working with DLLs with a home language other than Spanish, as mentioned earlier (Exhibit 3), and is consistent with other research showing that teachers need more support for their work with non-Spanish-speaking DLLs (Choi et al., 2021).

## Instructional Practices

**Key Finding: Teachers who had received more DLL-related PD were more likely to report using evidence-based instructional practices for teaching DLLs, including use of the home language for instruction and having books in the home language.**

Our study also examined whether the amount of DLL-related PD that teachers reported receiving was related to their use of specific instructional practices with the DLLs in their classroom, including activities in the home language (for each of the four study languages). We examined the following instructional practices: a) general strategies for working with DLLs of any language background; b) teachers' English language use (both in terms of the percentage of time and use of specific instructional activities in English); and c) teachers' home language use (also in terms of both the percentage of time and use of specific instructional activities in the home language). We also considered the number of books classrooms had in Spanish, Cantonese, Mandarin, and Vietnamese, although this may not always be directly in teachers' control.

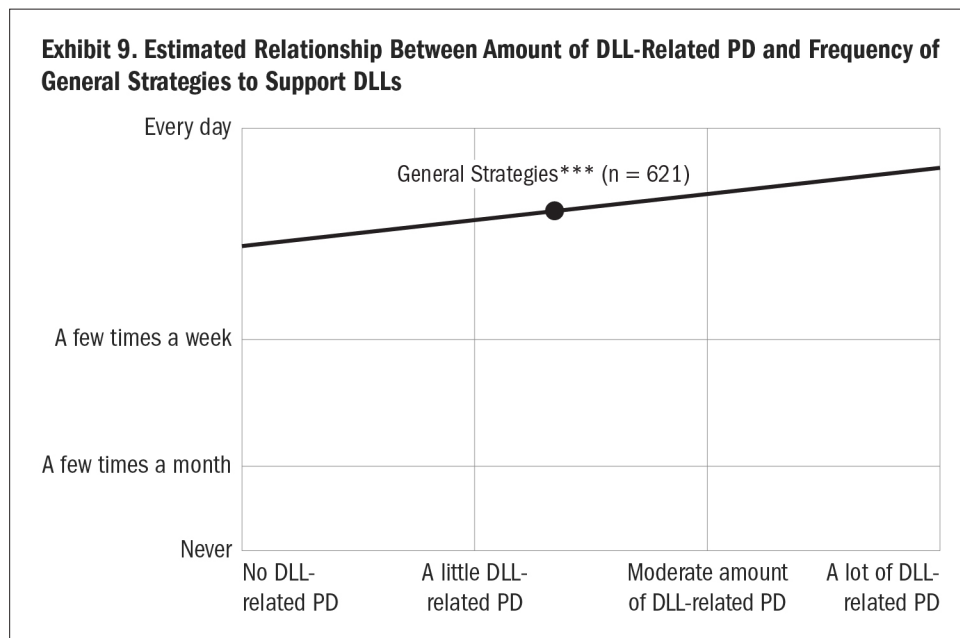
### General Strategies for Working With DLLs

To gather information on teachers' use of general strategies to support DLLs of any language background, we asked them about their use of evidence-based practices such as using gestures, hands-on materials, and activities exploring children's family backgrounds and cultures. Teachers indicated how often they used eight such strategies (Exhibit 8); response options ranged from never to every day, and we made a single composite measure using the same averaging method as described previously for the PD and attitudes measures.

### Exhibit 8. Survey Items Included in the Measure of General Strategies for Working With DLLs

How frequently do you...
<ul style="list-style-type: none"> <li>■ Use body language and gestures to convey meaning when working with DLLs</li> <li>■ Use pictures, photographs, and objects when working with DLLs</li> <li>■ Use an interactive schedule (e.g., with pictures and moveable cards/magnets) to help DLLs understand routines</li> <li>■ Do specific activities that explore children’s family backgrounds and cultures</li> <li>■ Make sure that DLLs have opportunities to interact with English-speaking children (whether in your classroom or not)</li> <li>■ Intentionally engage DLLs during group time by asking them questions or responding to their comments</li> <li>■ Group children so that less-experienced English speakers are paired with more-experienced English speakers for activities</li> <li>■ Plan and implement hands-on learning experiences for DLL children that allow them to connect language to content (e.g., providing sand and tools if exploring words like <i>digging</i>, <i>sifting</i>, etc.)</li> </ul>

Most teachers reported using these general strategies quite frequently, with the average (across strategies and then across teachers) being relatively close to *every day* (the dot in Exhibit 9). **However, it was still the case that the more DLL-related PD teachers had received, the more often they used these general research-based strategies**, according to their self-report ( $p < .001$ ; upward slope of the line in Exhibit 9).



\*\*\* $p < 0.001$ . (See “How to Interpret the Displays of the Relationship Results.”)

## RELATED RESEARCH: FINDINGS FROM THE DLL PD BRIDGE STUDY

In 2018, the state of California allocated \$5 million to provide DLL PD to early learning and care providers (CDE, n.d.). The Heising-Simons Foundation partnered with AIR to conduct the *DLL PD Bridge Study*, which examined the effects of those state-funded programs on teacher practice, leveraging survey data from the F5CA Study’s large and broad sample of teachers serving DLLs. The study analyzed whether participation in three of the grant-funded PD programs was associated with teachers’ beliefs about and practices for working with DLLs and their families, using the same outcomes—and a largely overlapping sample of teachers—described in this brief. The three programs were the following:

- **Preschool Guided Language Acquisition Design (GLAD)** is a professional development organization that provides training (grades PreK–12) in language acquisition and literacy. Trainings provide teachers with practical tools and strategies for how to implement the GLAD® model to promote academic language and literacy.
- **The Language Learning Project (LLP)** provides a free online toolkit that explains how to implement Personalized Oral Language Learning (POLL) strategies (based on current dual language research) into the classroom, with video and picture examples of the strategies. It also provides brief foundational professional development training sessions.
- **Sobrato Early Academic Language (SEAL): A PreK-3 Model** is a research-based program that provides professional development, curriculum support, and technical assistance to give educators and school systems the knowledge they need to provide high-quality education to all multilingual learners.

The study included teachers who had either participated in the program prior to the grant period (“pre-grant group”;  $n = 30$ ) or as part of the DLL-PD grant program (“grant-period group”;  $n = 49$ ). An additional “self-identified” group consisted of F5CA Study teachers who self-reported participating in one or more of these programs, but whom our official records did not show as participants ( $n = 116$ ). Our main comparison group was a fourth group: teachers who had not participated in PD through the grant-funded programs (also from the F5CA Study;  $n = 310$ ).<sup>a</sup> We also compared pre-grant and grant-period participants.<sup>b</sup>

The key findings of the PD Bridge Study were as follows:

- *Teachers who participated in GLAD, LLP, or SEAL (either as part of the DLL-PD grant program or earlier) not only received more DLL-related PD than other teachers but also reported needing less additional PD.*
- *Teachers who participated in GLAD, LLP, or SEAL prior to the DLL-PD grant program were less likely to express English-centric views and had higher levels of confidence in teaching DLLs.*

<sup>a</sup> Of the 505 teachers included in the DLL PD Bridge Study, all but 36 were also included in the analyses for this brief. Twenty-one (all of whom were in the grant-period group) were omitted because they were not in the 16 counties included in the F5CA Study; another 15 were omitted because they were missing data on the amount of PD they had received, which was needed for this brief’s analyses. The F5CA PD analyses, meanwhile, included 157 teachers not in the DLL PD Bridge Study: these teachers taught in infant-only classrooms (99), family child care homes (57), or both (1). None of the PD Bridge Study’s pre-grant or grant-period teachers were infant-only teachers or were based in family child care homes, so we dropped such teachers from the other two groups in the interests of keeping the four groups comparable in these respects.

<sup>b</sup> Teachers in any of the four groups may have received PD, including DLL-focused PD, from sources *other* than the grant-funded programs.

- Teachers who participated in GLAD, LLP, or SEAL **more frequently used evidence-based instructional practices**, especially teachers who received the PD prior to the DLL-PD grant program.

- Teachers who participated in GLAD, LLP, or SEAL demonstrated **more family engagement practices that were linguistically and culturally responsive** than those who did not receive this PD.

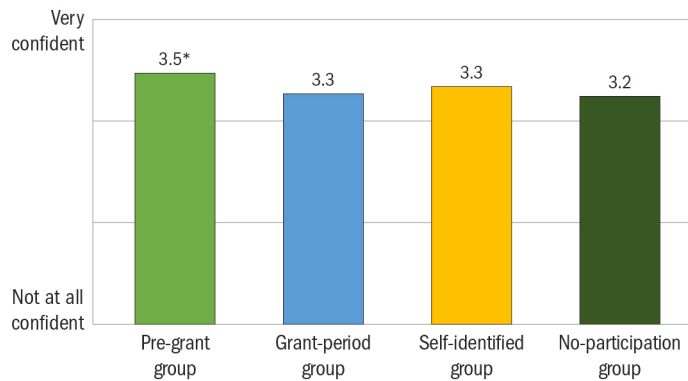
- The **amount of DLL-related PD teachers receive may be a key driver of their use of evidence-based practices with DLLs and their families.**

This study provided an important opportunity to understand the potential benefits of California’s large investment in providing DLL-focused PD to educators in the state. **As this summary shows, across several different outcomes we examined, we found positive results for teachers who received the DLL-focused PD.**

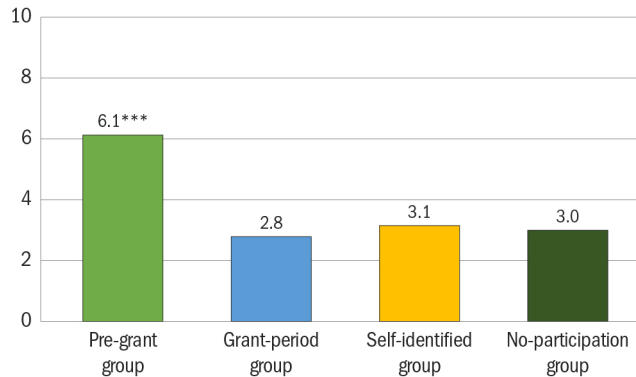
Teachers who participated in GLAD, LLP, or SEAL *prior* to the DLL-PD grant program tended to report greater use of evidence-based practices, particularly as compared to the no-participation group. These findings complement the findings of the larger F5CA DLL Pilot Study, reinforcing the finding that the more DLL-related PD teachers receive, the more likely they are to engage in supportive practices for DLLs and their families.

[Access the full report here.](#)

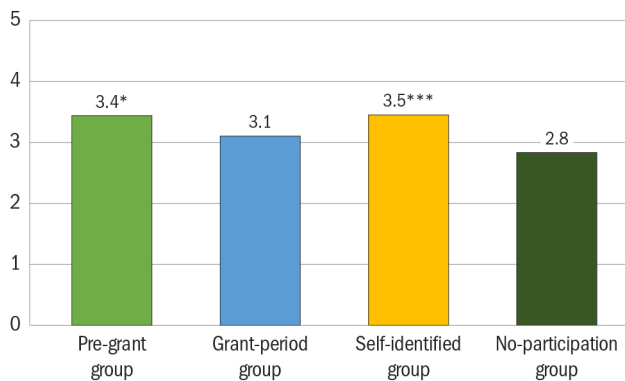
**Exhibit A1. Teachers’ Confidence in Supporting Spanish-Speaking DLLs, by PD Group**



**Exhibit A2. Average Number of Books in Spanish per DLL of Spanish Language Background, by PD Group**



**Exhibit A3. Average Number of Strategies (of Five) for Involving Parents in the Classroom, by PD Participation**



Note: Asterisks indicate a significant difference between the marked group and the no-participation group. \*\*\*p<.001; \*p<0.05.

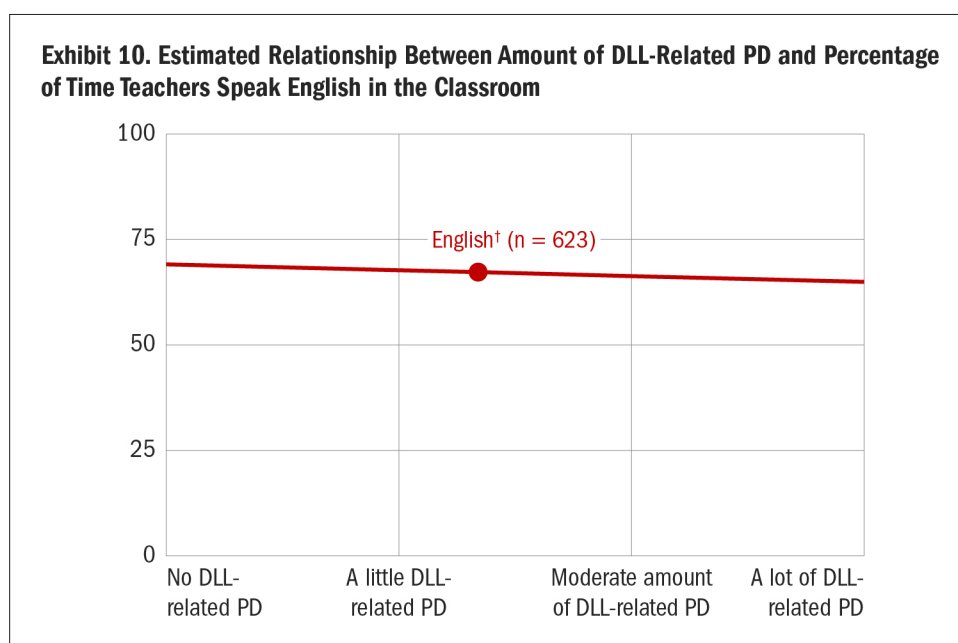
## English Language Use

We also examined whether teachers' amount of DLL-related PD was associated with each of two measures of English language use in the classroom:

1. the percentage of time the teachers spent speaking English in the classroom, and
2. how often they used English both for overarching purposes—instruction and routines/behavior management—and in 12 specific 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.

Across teachers in our sample, the average percentage of time spent using English in the classroom was 66% (the dot in Exhibit 10). The frequency of instructional activities in English (averaged across purposes and activities for each teacher to create a composite measure) averaged between a few times a week and every day (the dot in Exhibit 11).

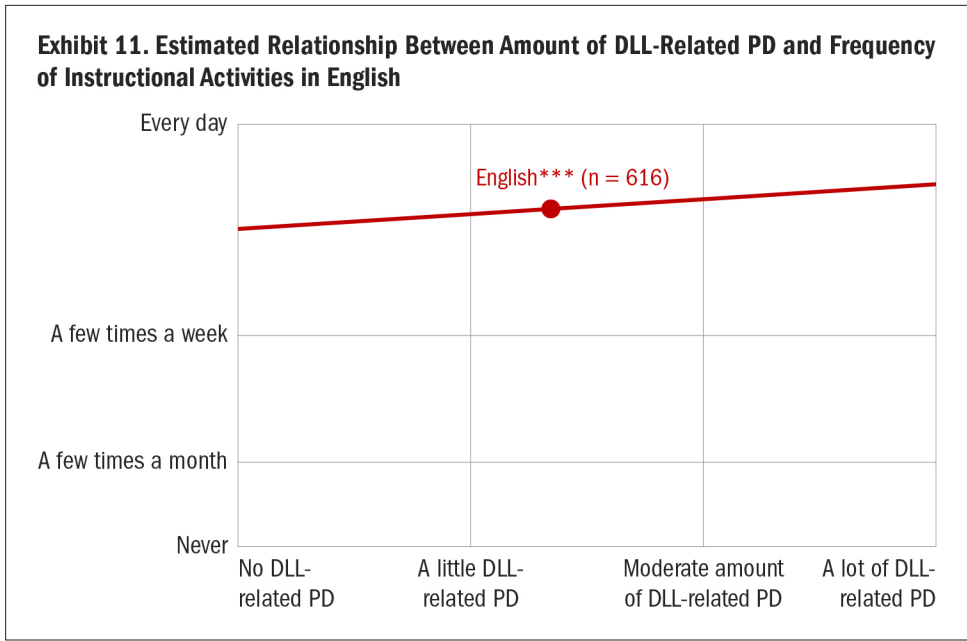
Amount of DLL-related PD had a marginally significant association with the percentage of time teachers reported speaking English ( $p < 0.10$ ). This relationship was *negative*, meaning that receiving more DLL-related PD was associated with slightly *less* use of English in the classroom (downward slope of the line in Exhibit 10), relative to the use of other languages.



† $p < 0.10$ . (See “How to Interpret the Displays of the Relationship Results.”)

**Frequency of instructional activities in English, on the other hand, was significantly positively related to amount of DLL-related PD** ( $p < .001$ ). That is, teachers who reported receiving more DLL-related PD reported more frequent use of instructional activities in English (upward slope of the line in Exhibit 11).





\*\*\*p<0.001. (See “How to Interpret the Displays of the Relationship Results.”)

## Home Language Use and Supports

To gauge teachers’ use of the four home languages examined by the study (Spanish, Mandarin, Cantonese, and Vietnamese) and how PD was related to home language use, we looked at four measures for each of the four home languages:

1. percentage of time the teacher used the home language in the classroom;
2. frequency of instructional activities in the home language, paralleling the ones for English, above—namely, using the home language for different overarching purposes (instruction and routines/behavior management) and in 12 activities such as reading books in the home language;<sup>8</sup>
3. frequency of instructional strategies in the home language for the specific purpose of supporting children’s *English* language development; and
4. how many books the classroom had, according to the teacher, in the home language, calculated *per DLL of that language background*.

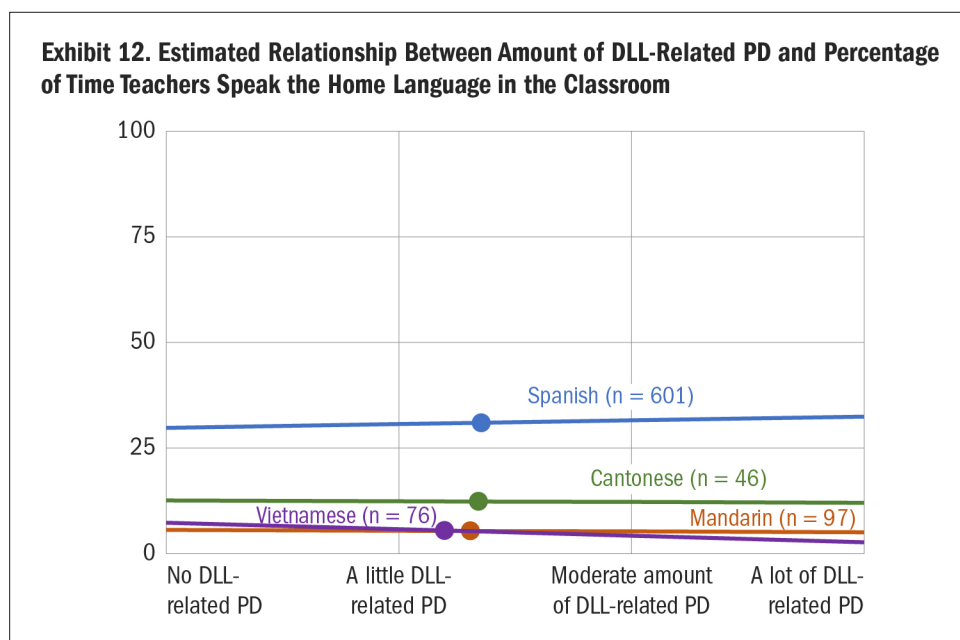
For each language, teachers only answered the survey questions constituting these measures if they reported that there was at least one DLL of that language in their classroom.

Exhibits 12–15 show that for most of these measures, averages for Spanish were substantially higher than for the other three languages (height of blue dots as compared to height of the other dots). This is

<sup>8</sup> For Cantonese and Mandarin, there were 11 rather than 12 activities because one of the activities listed for English, Spanish, and Vietnamese—“working on [language] letter identification/sounds”—was intentionally not listed for Cantonese and Mandarin.

not surprising, given that most teachers in our sample spoke at least some Spanish, but relatively few spoke the other three languages, especially Mandarin and Vietnamese (Exhibit 2). However, the measure pertaining to the number of books in the home language was something of an exception: on this measure, the average number for Mandarin (orange dot in Exhibit 15, for the 82 teachers who reported teaching at least one Mandarin-speaking DLL and reported the number of books in Mandarin) was almost as high as the average for Spanish (blue dot in Exhibit 15, for the 518 teachers who reported teaching at least one Spanish-speaking DLL and reported the number of books in Spanish). There were more than three books per DLL for both Spanish and Mandarin, compared to about two for Cantonese and one for Vietnamese.

There were no significant relationships, for any of the four languages, between the amount of DLL-related PD teachers had received and the percentage of time that they spoke the language in the classroom (flatness of all four lines in Exhibit 12). In other words, having received DLL-related PD does not seem to be related to *how much* teachers use any of these home languages in their classroom.<sup>9</sup>

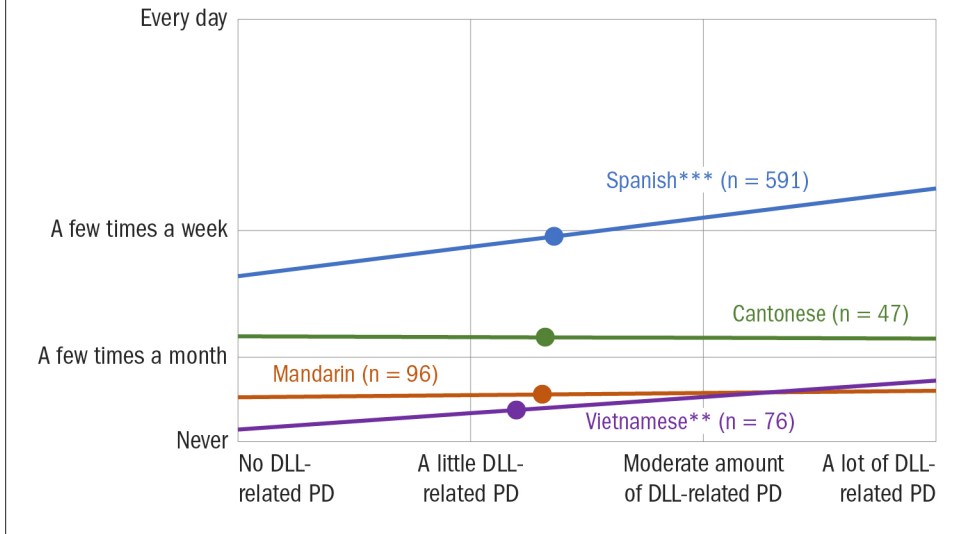


(See “How to Interpret the Displays of the Relationship Results.”)

**However, there were significant associations between the amount of DLL-related PD teachers had received and how often they reported using instructional activities in Spanish and Vietnamese** ( $p < .001$  and  $p < .01$ , respectively; see upward sloping blue and purple lines in Exhibit 13). No relationship with PD was found for instructional activities in Cantonese and Mandarin (flat orange and green lines in Exhibit 13). The picture was nearly identical **for teachers’ use of instructional strategies in the home language to build English; amount of PD was positively related to the frequency of such strategies for Spanish ( $p < .001$ ) and Vietnamese ( $p < .05$ )**. There was no significant relationship for Cantonese, and only a borderline ( $p < 0.10$ ) significant relationship for Mandarin (Exhibit 14).

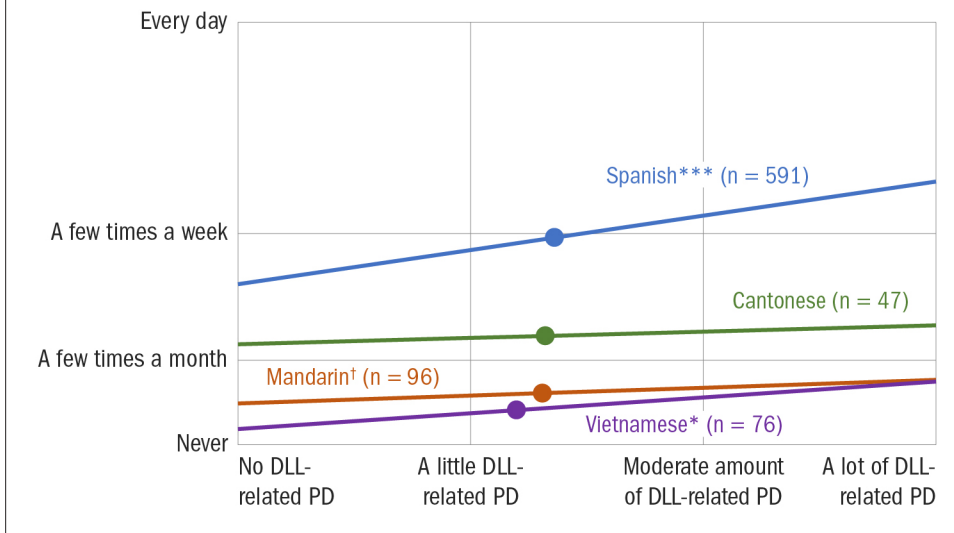
<sup>9</sup> This and all other analyses reported in this brief controlled for teachers’ fluency in the home language (see the box entitled “How We Analyzed Relationships Between DLL-Related PD and Outcomes”), as well as in English, so this result is not simply a function of whether teachers are able to speak the home language.

**Exhibit 13. Estimated Relationship Between Amount of DLL-Related PD and Frequency of Instructional Activities in the Home Language**



\*\*\*p<0.001; \*\*p<0.01. (See “How to Interpret the Displays of the Relationship Results.”)

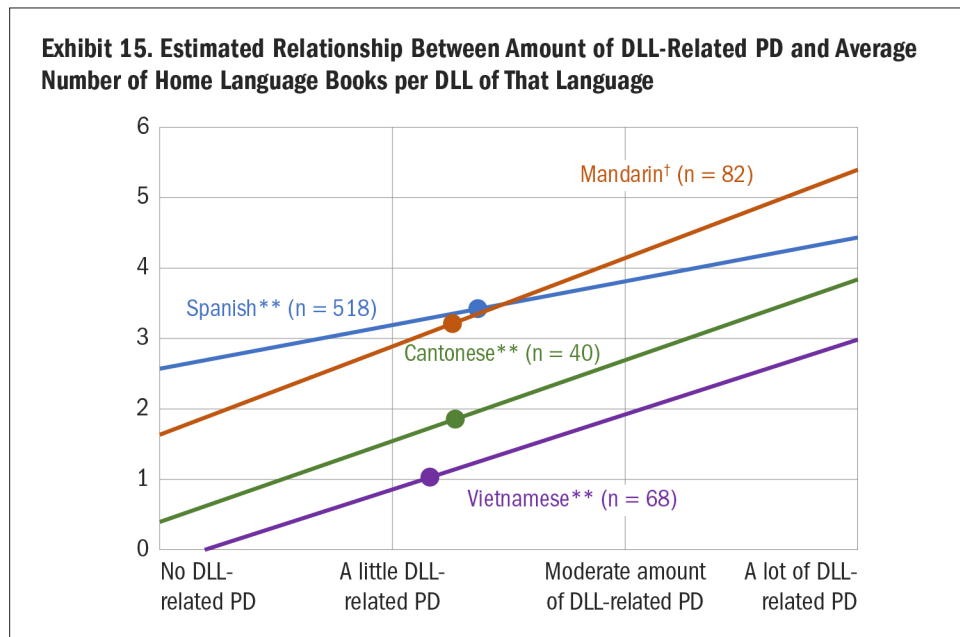
**Exhibit 14. Estimated Relationship Between Amount of DLL-Related PD and Frequency of Instructional Strategies in the Home Language to Support English**



\*\*\*p<0.001; \*p<0.05; †p<0.10. (See “How to Interpret the Displays of the Relationship Results.”)

Finally, as shown in Exhibit 15, the amount of DLL-related PD teachers had received was significantly related to their classroom’s number of books in Spanish, Vietnamese, and Cantonese per DLL of each language background, respectively ( $p<0.01$  for each of the three languages). We found a borderline significant ( $p<0.10$ ) relationship for Mandarin. For Spanish, a one-unit increase in amount of PD (e.g., from a little PD to a moderate amount of PD, or from a moderate amount to a lot) was associated with an increase of 0.6 books per Spanish-speaking DLL (upward sloping blue line in Exhibit 15). For each of the three Asian

languages, a one-unit increase in the amount of PD was associated with an increase of just over one book in the language per DLL of that language (upward sloping orange, green, and purple lines in Exhibit 15). However, because the number of books in the classroom may be a function of resources and priorities at the program level, and not individual teachers' discretion, the finding of the relationship between teacher PD and number of books should be treated with particular caution. Programs with the resources and inclination to ensure the availability of home-language books in the classroom may be the types of programs that also encourage or require teachers to receive DLL-related PD.



\*\*p<0.01; †p<0.10. (See “How to Interpret the Displays of the Relationship Results.”)

In summary, the more DLL-related PD teachers had received, the more likely they were to report the use of several practices that are considered to be linguistically and culturally responsive and supportive for DLLs. This is important, given research indicating that home language instruction for DLLs alongside English can have a positive effect on their outcomes in both English and the home language (Barnett et al., 2007; Farver et al., 2009; Simon-Cereijido et al., 2014).

Interestingly, there were no significant relationships between the amount of DLL-related PD and the percentage of time teachers reported speaking Spanish, Cantonese, Mandarin, or Vietnamese, even controlling for teacher proficiency in the various languages. It could be that PD matters more in terms of *how* teachers use language for specific instructional activities. Perhaps the DLL-related PD received by teachers in our study sample focused more on the *quality* of language-focused instructional activities and interactions with DLLs than on the *quantity* of language spoken. In addition, some teachers may have been in classrooms or programs using particular language models (e.g., 50-50 or 80-20), which could dictate—or at least influence—the amount of time teachers spend speaking a given language. Regardless of the context, however, our findings do indicate that DLL-related PD is linked with *how* teachers report using the

home language, thereby suggesting that PD experiences may help teachers increase their intentionality when incorporating the home language into instruction and other interactions with children in the classroom.

## Family Engagement Practices

**Key Finding: Teachers who had received more DLL-related PD reported using a larger number of linguistically and culturally responsive family engagement strategies.**

Finally, our study examined how the amount of DLL-related PD teachers received was related to linguistically and culturally responsive family engagement practices. For families of DLLs, effective family engagement involves regular, two-way communication between program staff and families that is linguistically responsive and demonstrates a value of and interest in learning about the home language and culture of families (Espinosa & Crandall, 2020; Gonzalez et al., 2006). In our study, we specifically examined the following aspects of family engagement for DLLs:

- Collecting language-related information from families at intake into the program or class
- Involving parents in the classroom
- Providing parents with materials and activities related to language development and bilingualism

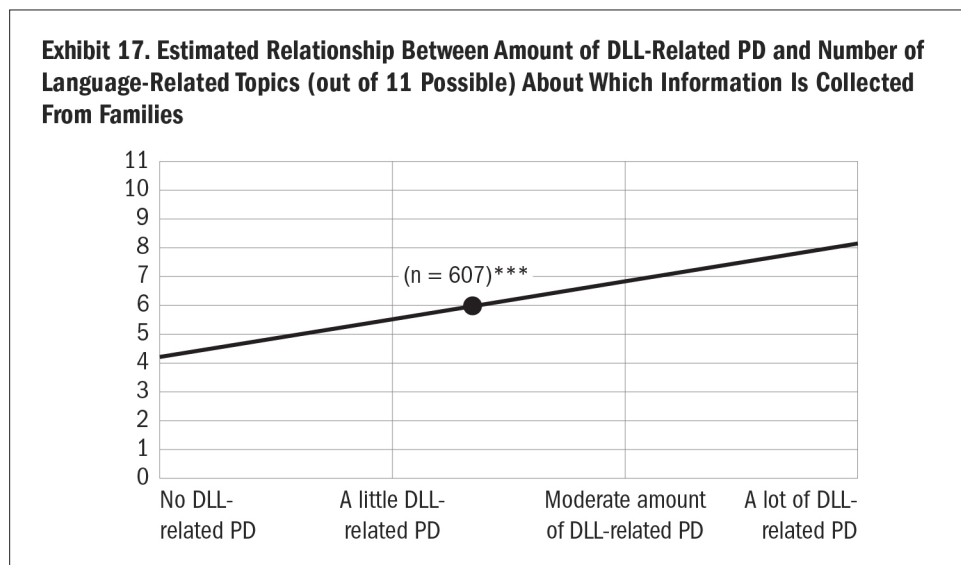
The specific survey items constituting each of these are listed in Exhibit 16. Teachers indicated which practices were used (but not how often each one was used). Therefore, unlike the other outcome measures described in previous sections of this brief, each of the three family engagement measures was a *count* of how many specific elements teachers marked.

**Exhibit 16. Survey Items Included in the Family Engagement Outcome Measures**

Collecting Language-Related Information From Families at Intake	Involving DLLs' Parents in the Classroom	Providing Parents With Language-Related Materials
<ul style="list-style-type: none"> <li>■ Languages spoken at home</li> <li>■ Amount of English spoken at home</li> <li>■ Amount of home language spoken at home</li> <li>■ Child's dominant language</li> <li>■ Age child was first exposed to English</li> <li>■ Parent country of origin</li> <li>■ Household composition</li> <li>■ Family cultural background</li> <li>■ Parent language goals for child</li> <li>■ Key words in the home language</li> <li>■ Parent reading practices with their children</li> </ul>	<ul style="list-style-type: none"> <li>■ Invite parents to visit the classroom and speak in the home language</li> <li>■ Invite parents to share family pictures for display</li> <li>■ Invite parents to share cultural objects/activities</li> <li>■ Make effort to help parents feel welcome in the classroom</li> <li>■ Invite parents to suggest ideas for classroom activities</li> </ul>	<ul style="list-style-type: none"> <li>■ Activities/suggestions for how parents can support their child's English language development</li> <li>■ Activities/suggestions for how parents can support their child's home language development</li> <li>■ Information on the benefits of bilingualism</li> </ul>

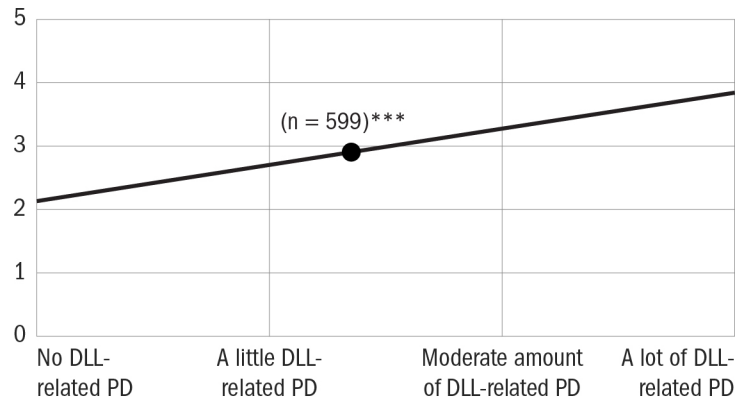
**For each of the three domains of family engagement, we found a positive, highly significant relationship ( $p < .001$ ) with the amount of DLL-related PD teachers reported receiving.** Specifically, more DLL-related PD was associated with:

- *Collecting more language-related information from families at intake.* A one-unit increase in the amount of DLL-related PD teachers received (e.g., from a *little* to a *moderate amount*, or from a *moderate amount* to a *lot*) was associated with the collection of information from families about an additional 1.3 topics, out of a total of 11 possible topics (upward sloping line in Exhibit 17). Similar to the finding of the relationship between teacher PD and number of books discussed earlier, this finding should be treated with additional caution because the amount and types of information collected from parents at intake may be more of a programmatic decision than a teacher decision.
- *Using more strategies to involve parents in the classroom.* A one-unit increase in the amount of PD teachers received was associated with the use of an additional 0.6 strategies, out of a total of five possible strategies (upward sloping line in Exhibit 18).
- *Providing more types of materials to parents.* A one-unit increase in the amount of PD teachers received was associated with sending an additional 0.5 types of materials home, out of a total of three possible types of materials (upward sloping line in Exhibit 19).



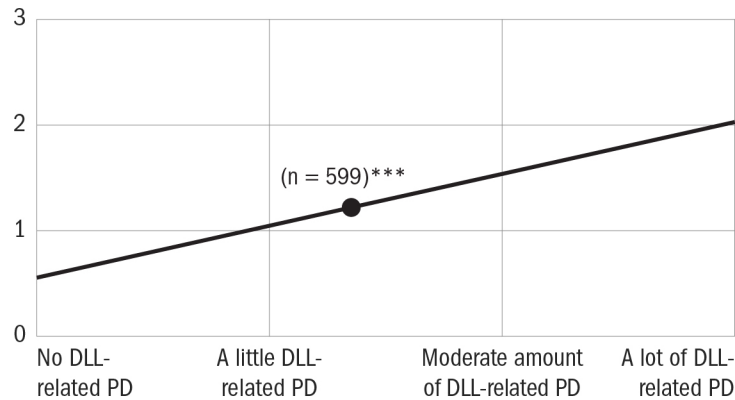
\*\*\* $p < 0.001$ . (See "How to Interpret the Displays of the Relationship Results.")

**Exhibit 18. Estimated Relationship Between Amount of DLL-Related PD and Number of Strategies (out of Five Possible) for Parent Involvement in the Classroom**



\*\*\*p<0.001. (See “How to Interpret the Displays of the Relationship Results.”)

**Exhibit 19. Estimated Relationship Between Amount of DLL-Related PD and Number of Material Types (out of Three Possible) Provided to Parents**



\*\*\*p<0.001. (See “How to Interpret the Displays of the Relationship Results.”)

Overall, like the results pertaining to attitudes and instructional practices, the results presented in this section indicate that teachers who receive more DLL-related PD are more likely to use linguistically and culturally responsive family engagement practices. For additional findings from the DLL Pilot Study related to family engagement, see the [brief here](#) (Hsin et al., 2022).

## Implications and Conclusions

High-quality early learning experiences have always been critical for the development of California’s children—especially for the large number of them who are dual language learners. Although the COVID-19 pandemic has disrupted many early learning systems, several recent policy and funding initiatives seek to expand the availability of high-quality early learning experiences for young DLLs as well as other children, with a focus on making sure the workforce is prepared to meet the needs of the diverse children they

serve. Perhaps most notably, the expansion of transitional kindergarten to all 4-year-old children will increase access to early learning throughout California. In planning and executing this expansion, policymakers and administrators at multiple levels will need to consider the qualifications and preparation of the teachers who work with California's linguistically diverse young children. Already the *Master Plan for Early Learning and Care* and the *DLL Policy Platform* call for an increased focus on and continued investment in DLL-focused PD.

**The findings from this study, based on a large sample of teachers in California serving DLLs from diverse language backgrounds, underscore the importance of PD and the potential benefits of PD participation for teacher practice and approaches to working with DLLs and their families.** The findings also suggest that the amount of DLL-related PD teachers receive may matter when it comes to beliefs related to bilingualism. Two key takeaways from the study are as follows:

1. **Amount of PD matters.** We consistently found that the more DLL-related PD teachers reported having, the more likely they were to exhibit positive frames of mind about dual language learning and to engage in supportive practices with the DLL children in their classrooms and these children's families. This was true for attitudes and confidence, instructional practices, and family engagement efforts, providing a robust picture of how DLL-related PD may be beneficial. These findings align with existing literature that highlights the utility of participating in DLL-related PD for supportive teacher practice with DLLs (Buysse et al., 2010; Castro et al., 2017) and expand the evidence base about the potential benefits of PD to the additional outcome domain of family engagement.
2. **Teachers want more PD about working with DLLs.** Teachers in the study sample resoundingly shared a need for additional PD to help them support DLLs in their classrooms. A particular area of need

## LIMITATIONS AND FUTURE RESEARCH

The findings from this study offer promising insights about the potential of DLL-focused PD for supporting teachers. However, a few limitations should be noted. One is that all of the measures we examined, including the amount of DLL-related PD teachers received and the practices we considered as outcomes, are based on self-report from a survey and were not independently verified. A second limitation is that our sample of teachers was not a representative sample, and thus caution is warranted in generalizing the findings to all teachers of DLL children in California. Finally, as noted previously, we cannot definitively conclude anything about the directionality of the relationships we identified. That is, PD *may* increase teachers' use of evidence-based practices, but it could also be that teachers who are already using evidence-based practices *seek out* more DLL-related PD. Further research is needed to rigorously evaluate the impacts of participation in DLL-specific PD programs on teacher practice, such as with studies using a randomized controlled design, and classroom observations of practice.

Future research could also examine whether child outcomes benefit as a result of improvements in teacher practice caused by teacher PD (if causal relationships are found). In addition, it would be useful for researchers and program administrators to more deeply explore questions about how much PD teachers need, how often they need it, and what forms it should take to maximize benefits for teachers and children. Finally, further research should examine PD programs and opportunities that target languages other than Spanish, to help ensure that teachers are prepared to support DLLs from multiple language backgrounds.



appears to be PD designed for teachers of linguistically diverse classrooms and DLLs from language backgrounds other than Spanish, focused on helping those teachers learn to support DLLs from a variety of different language backgrounds.

As California builds and expands opportunities for high-quality early learning experiences, and as the early learning population continues to grow and diversify, it is imperative that all teachers be well prepared to serve DLLs, and investments in DLL-focused PD can support that mission.

## HOW WE ANALYZED THE RELATIONSHIPS BETWEEN DLL-RELATED PD AND OUTCOMES

To investigate whether there were relationships between the amount of DLL-related PD teachers had received and the outcomes we examine in this brief (beliefs and confidence, instructional practice, and family engagement), we used a statistical technique called *multiple regression*, which allows us to take into account that the teachers in our sample may have differed on factors besides the PD, such as their experience levels, and that those other factors may have been related to the outcomes too. Specifically, the technique allows us to estimate how much *each individual factor* is related to any given outcome, *if all of the other included factors are held constant, or set as equal, across teachers*. For the purposes of this brief, the factor we were most interested in was the amount of DLL-related PD teachers had received, and all the other factors were included as *controls*.

The analyses included several teacher-level controls: whether they had a bachelor's (or higher) degree, whether they had DLL-related certification (CLAD, BCLAD, or TEFL-TESOL), their race/ethnicity (Hispanic/Latino, Asian, or other), whether they were the lead teacher in their classroom, their average years of experience teaching children aged 0 to 5, and their fluency in English and (if applicable, depending on the DLLs in their class) in Spanish, Cantonese, Mandarin, and Vietnamese.<sup>a</sup> We also controlled for the following classroom-level characteristics: the total number of DLLs in the classroom, how many DLLs of each of the four study languages the classroom had, the number of different home languages (not limited to the four study languages) represented by the DLLs, and the age composition of the children in the classroom (preschool, infant/toddler, or a combination<sup>b</sup>). All of these teacher and classroom characteristics were based on the teacher's self-report on the teacher survey. In addition, we also controlled for whether the early learning program was a center or a family child care home; this was based on administrative data about the programs (not teacher self-report).<sup>c</sup>

In the analysis of each outcome, the main results we looked at were for the PD variable. First, we looked at the *coefficient*, which is the *slope of the line* showing the estimated relationship between amount of PD and the outcome, all else being equal; it is the predicted change in the outcome for each *one-unit increase* in the amount of PD teachers received

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<sup>a</sup> Teachers received a fluency score for any given language only if they reported that their classroom had DLLs of that language. Fluency scores ranged from 0 to 4. Teachers who said they did not speak a particular language at all were coded as having 0 fluency in that language. Self-ratings of "hardly at all" were coded as 1, "not well" as 2, "fairly well" as 3, and "very well" as 4.

<sup>b</sup> In the F5CA DLL Pilot Study, *preschool* is defined as age 3 and older; *infant/toddler* is younger than 3.

<sup>c</sup> Analyses of outcomes related to individual home languages included only general background characteristics and characteristics pertaining to that language, including the self-reported fluency in the language; analyses for English and language-agnostic outcomes included measures for all four home languages.

(for instance, going from *no PD* to a *little PD*, or from a *moderate amount of PD* to a *lot of PD*), if all the control variables are held constant. If the line is flat (i.e., the coefficient is zero), there is no relationship.

The coefficient (or slope of the line), however, is only an *estimate* that averages information from the teachers in the sample. It is possible that few or even none of the teachers have actual PD and outcome values that fall on the line itself; they might be above the line or below the line, and some will be further away from the line than others. Therefore, in addition to looking at how strong the relationship is (i.e., the steepness of the slope), we also consider how confident we are in the slope estimate. This is where *statistical significance* and *p-values* come in. The p-value is a measure of confidence: the lower the p-value, the more confidence we have. The common threshold for “confident enough” is 0.05; if a p-value is less than 0.05, we are at least 95% confident that there is a relationship (i.e., that the line really is sloped rather than flat), and we call such a finding “statistically significant.” Statistical significance is a function of several things, including the following:

1. How sloped the estimated line is: the steeper it is, the more confidence we have that a relationship exists.
2. How many teachers and how many control variables are in the analysis: the more teachers there are, the more information we have—especially if we have a lot of control variables (as we do in this brief’s analyses)—and the more confident we can be.
3. The extent to which the estimated line reflects teachers’ actual coordinate values: the closer to the line (and to one another) the individual points are, the more confident we can be.
4. How reliable the survey measures are (such as the extent to which any given teacher gave similar responses to questions asking about similar things): the more reliable the measure is, the more confident we can be in estimates of the strength of relationships involving that measure. (Most of the measures we examined for this brief displayed high reliability.)<sup>d</sup>

Finally, we used a specific type of regression called multilevel modeling, which takes into account that many classrooms in the study had more than one teacher participating, and that many early learning and care programs in the study had more than one classroom participating. This is important because the practices being used by teachers in the same classroom (or by classrooms in the same program) are likely related to one another.

*Technical notes about missing data:* We universally dropped cases that were missing the PD measure. For the analysis of any given outcome, we also dropped cases that were missing that outcome. We used dummy variable imputation (i.e., including an indicator of missingness as a variable) to handle missing data for the following covariates: years of experience (6% missing), DLL-related certification (5% missing), fluency in English (5% missing), and fluency in Spanish (6% missing). For all other covariates, which were missing no or few cases, we employed complete case analysis. Because teachers missing any of these other covariates were excluded from all analyses, they are not part of the analysis sample of 626 teachers.

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<sup>d</sup> Reliability is typically measured using a statistic called Cronbach’s alpha, which ranges from 0 to 1; a value of 1 indicates perfect reliability. The measure of DLL-related PD analyzed for this brief had a Cronbach’s alpha of 0.97 among the 626 teachers in the analysis sample. For the measures analyzed as outcomes (15 of which were scales for which reliability is applicable), Cronbach’s alpha ranged from 0.61 (for English-centric view) to 0.99 (for one of the Cantonese instructional measures and two of the Mandarin instructional measures). Of the 15 measures, 12 had a Cronbach’s alpha greater than 0.90.

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## 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.cafc.ca.gov/](http://www.cafc.ca.gov/)

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