RESEARCH REPORT

Dos Métodos: Two Classroom Language Models in Head Start

Strengthening the Diversity and Quality of the Early Care and Education Workforce Paper Series

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Executive Summary

Over the past decade, student diversity in preschool classrooms has increased. Children who are learning two or more languages at the same time or learning a second language while continuing to develop their first language make up about 23 percent of the nation's preschool-age children and almost one-third of children enrolled in Head Start (HHS and DOE 2017, 2). These young *dual language learners* (DLLs) belong to the country's fastest-growing population, represented in almost 87 percent of 3- and 4-year-old children in Head Start classrooms (ECLKC 2017a).[1]

DLLs have unique language experiences and brain development associated with the powerful benefits of bilingualism and biliteracy. But a significant school achievement gap persists between DLLs and monolingual students. Spanish-speaking DLLs rank lower on assessments administered at kindergarten entry and throughout their academic careers. DLLs achieve lower fourth-grade reading and math test scores and are less likely than monolingual students to graduate from high school (NASEM 2017). They are also overrepresented in special education and are more likely than monolingual students to repeat a grade.

A promising part of the solution to the achievement gap is preschool attendance. High-quality preschool education is important for child development and later success. DLLs can experience positive long-term educational, social, and economic gains when they participate in well-designed, high-quality early learning programs. Like several states, including California, Illinois, and New Jersey, the Office of Head Start recognizes the importance of language use in the preschool classroom to fully realize potential gains for DLLs. The Office of Head Start has directed programs on how to use languages for academic instruction (ECLKC 2017b). In particular, guidance introduced in 2016 includes approaches for instructional language use, called *classroom language models*, designed to help teachers deliver optimal instruction for children of all linguistic backgrounds. Researchers need to evaluate the effectiveness of such preschool classroom models and determine the best ways to do so.

This study compares classroom quality and improvements in children's language skills for programs implementing two Head Start classroom language models: (1) dual language model and (2) English with home language support (EHLS). The dual language model allocates time for teaching only in Spanish and for teaching only in English. In the EHLS model, teaching is mainly in English, but various approaches are used to support home languages (e.g., translation, labeling). Specifically, I conducted analyses to examine the following research questions:

1. Are there significant differences in quality ratings between classrooms using the Head Start dual language model and classrooms using the Head Start EHLS model?

2. Are there significant gains in children's language development in English and Spanish from the beginning of the school year to the end? Do those gains differ for classrooms using the dual language model compared with classrooms using the EHLS model?

3. How does classroom quality relate to gains in children's language development and classroom language model?

Recruitment for the sample occurred in 153 Head Start and Migrant Head Start classrooms in southern and central California and in southern Florida.[2] More than half the classrooms (55.6 percent) used the dual language model, and 44.4 percent used the EHLS model. Research team observations confirmed the implementation of each model. Because Spanish is the most common non-English language spoken in US households, 10 Spanish-speaking DLLs from each classroom were randomly selected for the study.[3] In total, 841 preschool-age children (3- and 4-year-olds) participated. Trained bilingual assessors conducted receptive and expressive language assessments with each child (the fifth edition of the Preschool IDEA Proficiency Tests in English and in Spanish and the Expressive One-Word Picture Vocabulary Test–4: Spanish-Bilingual Edition) at the beginning and at the end of the respective Migrant Head Start and Head Start program period. The Classroom Assessment Scoring System (CLASS) Pre-K and the Classroom Assessment of Supports for Emergent Bilingual Acquisition (CASEBA) measured aspects of preschool quality.

The results of this study indicate how the two recommended Head Start classroom language models are related to language outcomes and shed light on the influence of quality in preschool classrooms with young DLLs. Key findings include the following:

- EHLS classrooms scored higher than dual language classrooms on the CASEBA domains for support for English and support for home language.

- The opposite pattern was evident for the CLASS domains for emotional support and instructional support—dual language classrooms scored significantly higher than EHLS classrooms on these two domains.

- Students in dual language classrooms showed significantly greater average gains from pretest to posttest in English oral proficiency and Spanish oral proficiency than did students in EHLS classrooms.

- In classrooms with low support for home language, there was little difference in gains in English oral proficiency for students in both dual language and EHLS classrooms. But in classrooms with high support for home language, students in EHLS classrooms made fewer gains in English oral proficiency than did students in dual language classrooms.

- In classrooms with low classroom organization as measured by CLASS, students in EHLS classrooms tended to exhibit a smaller gain in Spanish oral proficiency than did students in dual language classrooms. In classrooms with high classroom organization, there was little difference in gains in Spanish oral proficiency for students in dual language and EHLS classrooms.

Findings from the analyses have four primary implications for policy and practice:

- the need for in-depth professional development on the two classroom language models to ensure consistency and quality in implementing the practices that support children's home language

- the value of implementing the dual language model

- the importance of classroom organization in classrooms implementing the EHLS model

- the need for more investigation into the assessment of support for DLLs in preschool classrooms

Introduction

Many Head Start preschool classrooms include children and teachers who speak different languages. Children who are *dual language learners* (DLLs) are learning and developing language skills in more than one language and have varying background characteristics.[4] They differ in race, ethnicity, their or their parents' country of origin, time and level of exposure to languages, parents' level of education, and other characteristics. As for all children, what DLLs see, hear, and experience in early childhood affects their social-emotional, cognitive, and language development; as such, language and culture are increasingly recognized as significant for success in DLLs' preschool education and beyond.

As the country's fastest-growing population (Goldenberg et al. 2013), DLLs make up about 23 percent of the nation's preschool-age children and at least one-third of children enrolled in Head Start (NIEER 2017).[5] The proportion of DLLs is highest in California, where 47 percent of children enrolled in state preschools are DLLs and 60 percent of children younger than 5 are DLLs (NIEER 2017; Park, O'Toole, and Katsiaficas 2017). About 44 percent of children in California schools do not speak only English at home, and 59 languages are spoken in classrooms (California Department of Education 2017).

Work is necessary to ensure DLLs receive the education they need and deserve. A significant achievement gap persists between DLLs and monolingual students (Park, O'Toole, and Katsiaficas 2017), and Spanish-speaking DLLs receive low rankings on English assessments in kindergarten (Rumberger and Tran 2010). DLLs achieve lower fourth-grade reading and math test scores and are less likely to graduate from high school than are monolingual students.[6] They are also overrepresented in special education and are more likely to repeat a grade than are monolingual students (Muschkin, Ladd, and Dodge 2015; Takanishi and Le Menestrel 2017).

Socioeconomic challenges may be barriers to children's readiness for and success in school (Ferguson, Bovaird, and Mueller 2007) and can arise from many aspects of diversity seen among DLLs: DLLs speak different languages; they come from various social, economic, and cultural backgrounds; their parents vary in their immigrant generational status, years in the United States, income or poverty status, and perceived status of their home language in their community (Takanishi and Le Menestrel 2017); and their families are twice as likely as families of monolingual children to have trouble getting sufficient food and income to survive (ACF 2013).

In addition, and often stemming from socioeconomic challenges, a lack of proficiency in English when English is the primary language of instruction (Takanishi and Le Menestrel 2017) poses a

significant barrier to learning. The early development of English language skills is important for later academic success for DLLs (Burchinal et al. 2012; Castro, García, and Markos 2013; Farver et al. 2006; NASEM 2017). Children's ability to participate in and benefit from instructional activities and interactions with others in the classroom is shaped by their ability to comprehend and communicate in the same language as their teachers and peers. Preschool DLLs who become proficient in English have been shown to achieve better results in math, science, and reading that last through eighth grade (Halle et al. 2012).

Increasing English proficiency helps prevent an achievement gap, but research shows that DLLs need proficiency in both their home language and English at kindergarten entry for overall academic success in a second language (Thompson 2015). Ensuring development of the home language helps the development of English language skills (Genesee et al. 2005), and overcoming challenges to achieve bilingualism and biliteracy brings even more rewards. Research reveals that, as a result of exposure to multiple languages during the early childhood years, the brain development of DLLs looks different from monolinguals. When DLLs achieve bilingualism and biliteracy, benefits result, including enhanced executive function, mental agility, self-control, and improved academic achievement (Bialystok et al. 2005; Zelasko and Antunez 2000).[7]

Learning two languages, however, presents challenges for teachers and students. The quantity of exposure to and the quality of input in the home language and English are particularly important in preschool years (NASEM 2017). Becoming fluent in both a first and second language is a complex interaction between exposure to both languages with adults, siblings, and peers who are proficient in those languages; the child's age and personality; the timing of learning each language; and the number of hours the child spends hearing and speaking each language (Ackerman and Tazi 2015). Classroom practices need to account for these factors.

Increasingly, policymakers, administrators, and teachers are recognizing the need for tailored instructional practices for DLLs at a sensitive developmental period. The term *dual language learner* is now mainly used for children younger than 6. *English learner* now applies largely to K–12 students. This distinction reflects (1) a move away from an emphasis only on English acquisition and (2) an increased understanding of the major academic advantage to DLLs of becoming proficient in both English and their home language by the time they enter kindergarten.

The Role of Preschool Classroom Quality for DLLs

A promising part of the solution to the achievement gap is preschool attendance. High-quality preschool education is important for child development and later success (Espinosa 2002; NIEER 2017; Yeager Pelatti et al. 2016). DLLs make positive long-term educational, social, and economic gains when they participate in well-designed, high-quality early learning settings that attend to their language needs (Muschkin, Ladd, and Dodge 2015; Temple and Reynolds 2007). Latino or Spanish-speaking DLLs improve their language and literacy skills when they attend public prekindergarten and programs such as Head Start (Bauer and Whitmore Schanzenbach 2016; Buysse et al. 2014).

The quality of Head Start as a common early learning setting attended by DLLs has been questionable. Head Start is a large-scale federal preschool program for economically disadvantaged 3- and 4-year-olds (ECLKC 2018). In 2007, the Office of Head Start came under congressional pressure to justify its continued funding because the program was not consistently effective across the United States.[8] In 2013, the US Department of Health and Human Services reported that instructional quality in Head Start classrooms was low and that, although Head Start children demonstrated gains in several aspects of development, neither DLL nor monolingual children reached the same level as their peers from more economically advantaged backgrounds across the broader population when they started kindergarten (ACF 2013).

Efforts to measure and improve preschool classroom quality for DLLs need clearer direction from research (ACF 2013; Mead and Libetti Mitchel 2016). Some early learning programs provide additional ongoing supports for preschool DLLs to ensure full access and effective participation in the daily learning experiences (Magruder et al. 2013; Oliva-Olson et al. 2019a, 2019b). These comprehensive supports allow DLL children to continue developing concepts, knowledge, and abilities (e.g., math and science) while learning English and their home language. In this way, DLLs can reap the benefits of participation from a quality preschool experience.

Preschool Classroom Language Models and DLLs

The quality of teacher-child interactions in preschool classrooms influences children's academic growth (Downer et al. 2012). The language of interactions and instruction affects academic growth because children cannot learn if they do not understand the language of instruction. Research shows there is a need for instruction that develops English language proficiency to prevent poor outcomes and to

facilitate educational success, and shows the importance of instructional support for the home language (Ackerman and Tazi 2015; Espinosa 2010; Goldenberg et al. 2013; NASEM 2017).

A 2007 experimental study found no significant difference in English language measures in English immersion classrooms and two-way immersion classrooms with about 130 preschool children in a northeastern US city with a 50 percent Latino population (Barnett et al. 2007). But Spanish-speaking children in the two-way immersion classroom achieved large gains in Spanish vocabulary compared with the English-only program. Both the English learners and native English speakers improved their Spanish language development without losses in English language learning (Barnett et al. 2007).

In 2018, the same publication included a study of 1,961 children in three types of Educare[9] classrooms: classrooms instructing mainly (1) in English with little or no Spanish; (2) in English and some Spanish; and (3) in English and Spanish (Raikes et al. 2019). DLLs in all groups improved their language skills in English and Spanish, but DLLs achieved higher Spanish auditory comprehension scores in classrooms where instruction was in both English and Spanish (Raikes et al. 2019). Such research pointing to the desirability of instruction of DLLs in both the home language and English is supported by findings that dual language instruction helps Spanish-speaking DLLs acquire English language abilities and early reading and math skills (Barnett et al. 2007; Burchinal et al. 2012) and that more instruction in Spanish leads to greater academic skills, phonological awareness, and vocabulary knowledge in English and Spanish for Spanish-speaking children (Burchinal et al. 2012; Durán, Roseth, and Hoffman 2010; Goodrich, Lonigan, and Farver 2013; Páez, Tabors, and López 2007). Findings also show, however, that English-only instruction depresses home language development without boosting English development levels, and above certain levels, instruction in Spanish could hurt English proficiency over time (Goldenberg et al. 2013).

Given also the improved academic achievement of DLLs who achieve bilingualism (Bialystok et al. 2005; Zelasko and Antunez 2000), dual language instruction must expose children to high-quality practices in both the home language and in English. In classrooms with DLLs, programs ideally need to provide high-quality curriculum materials and teach essential content in both languages (California Department of Education 2015; ECLKC 2017a; Oliva-Olson 2019b). Careful planning for dual language instruction ensures equal exposure to each language while providing a clear structure for language instruction. Equal exposure prevents English from becoming dominant and prevents loss of the home language and interruption of increasing proficiency in both languages.

Head Start Requirements and Classroom Language Models for DLLs

The Head Start Act of 2007 mandates "culturally and linguistically appropriate instructional services" and that programs "must focus on both the continued development of the home language and English language acquisition" (ECLKC 2016, 27). The Office of Head Start recommends that program leaders implement classroom language models that ensure high-quality practices and optimal language and literacy experiences for all children, including DLLs.

According to the Office of Head Start Program Performance Standards (ECLKC 2016, 54), all Head Start programs with more than 50 percent of students speaking a language other than English must have at least one teacher who speaks that language. Every program must intentionally and systematically ensure the full and effective participation of DLLs through materials, curriculum, instruction, staffing, supervision, and partnerships. They must also deliver developmentally, culturally, and linguistically appropriate learning experiences in all learning domains.

The Office of Head Start recommends four research-based classroom language models, the choice of which is based on "the languages and backgrounds of the children *and* the languages and backgrounds of the staff" (ECLKC 2017b, 3). The **home language as a foundation for English development** model can be used for infants and toddlers when all the children speak the same home language and the teachers are fluent in both English and the home language. When all the children in a classroom speak English and the staff speak English well, the **English classroom language** model can be selected. This study focused on the two preschool classroom language models used with different teacher-child language mixes and abilities.

1. In the **dual language model**, "Each language is spoken during designated, equal, and predictable periods; the teachers are both fluent and [have] strong language models in both languages [; or one] teacher is fluent in English and one is fluent in the other language of instruction…. All members of the team are strong language models in each language they speak with the children" (OHS, n.d., 11). The dual language model applies when the program aims to help students achieve bilingualism and biliteracy. The aim is to lead DLLs to develop high enough language proficiency to thrive in any elementary school (English-only or dual immersion programs).

2. In the **English with home language support (EHLS) model**, "English is the language of instruction and communication, but teaching staff, with help from others as needed, also

intentionally use the children's home languages" (OHS, n.d., 8). In many preschool settings, no teacher speaks the home language of the majority of the children. In these cases, the leadership team must select the EHLS model and recruit additional teaching staff and volunteers who do speak the children's languages. In the EHLS model, teachers implement strategies that allow DLLs to continue developing skills and competencies in all domains in their home language. English is the main language of instruction and interactions but is accompanied by continuous family engagement and home language supports that are integral to classroom activities. The teaching team learns about and incorporates each child's home language by collaborating with families, using community resources, networks of professionals, and assistance from volunteers with activities and environmental supports.

Methods

With no known previous research on the topic, this study compares classroom quality and any improvements in children's language skills in programs implementing the two Head Start preschool classroom language models recommended for use in classrooms with DLLs. Analyses examined the following research questions:

1. Are there significant differences in quality ratings between classrooms using the Head Start dual language model and classrooms using the Head Start EHLS model?

2. Are there significant gains in children's language development in English and Spanish from the beginning of the school year to the end? Do those gains differ for classrooms using the dual language model compared with classrooms using the EHLS model?

3. How does classroom quality relate to gains in children's language development and classroom language model?

Participants

Sample recruitment occurred in 153 Head Start and Migrant Head Start classrooms that were part of six federally funded agencies in southern and central California and southern Florida (regions with large Spanish-speaking populations from diverse cultural backgrounds). More than half the classrooms (55.6 percent) used the dual language model, and the other classrooms (44.4 percent) used the EHLS model. All the classrooms had teachers proficient in both Spanish and English. The classrooms were wholly composed of students from families with low socioeconomic backgrounds, and the classrooms had a large proportion of children who were learning English at school while speaking primarily Spanish at home. All classrooms met high standards for teacher qualifications, teacher-child ratio, and class size.

Each participating grantee followed its own procedure to determine the classroom language model for its classrooms (e.g., language policy, school readiness goals for DLLs, planned language approach, DLL program self-assessment). Each grantee identified the classroom language model for each classroom as either dual language or EHLS before the data were collected.

In classrooms implementing the dual language model, the research team confirmed that instruction was about half in English and half in Spanish. Instruction alternated between both languages daily, with lesson plans capturing language times and staff leads for each. To achieve equal language exposure,

large- and small-group times were organized by language and teacher model. In addition, daily routines were organized to include small-group targeted instruction in each language and were led by a teacher who modeled the language assigned to him or her. In EHLS classrooms, teachers spoke English and Spanish, but the language of instruction was English. Spanish support was provided through ad hoc translation, one-on-one response, and conversation.

Each agency identified the Spanish-speaking DLLs in participating classrooms. Of the DLLs, 10 students from each classroom were randomly selected to receive invitations to participate in the study. In total, 841 preschool-age children who attended preschool in these Migrant and Regional Head Start programs participated. About half (50.7 percent) were male, and 49.3 percent were female. Head Start programs serve 3- and 4-year-olds. The children who participated in this study were 49.1 months old, on average, ranging from 32 to 59 months old (see the appendix for details).

Measuring Children's Language Development

Once at the beginning of the program year and once at the end, trained bilingual assessors assessed each child during normal program hours in a quiet area during two separate visits. The assessors used three measures of English and Spanish language proficiency: the fifth edition of the Preschool IDEA Proficiency Test (Pre-IPT-5) in English, the Pre-IPT-5 in Spanish, and the Expressive One-Word Picture Vocabulary Test–4: Spanish-Bilingual Edition (EOWPVT-B). Each assessment lasted 5 to 15 minutes, depending on the child's proficiency in the language assessed. The assessor administered the Pre-IPT-5 in Spanish during the first visit and the Pre-IPT-5 in English and the EOWPVT-B assessments during the second visit, one week after the first visit. Of the 841 children in the sample, 785 children completed both a pretest and a posttest for the Pre-IPT-5 in English, 791 completed both tests for the Pre-IPT-5 in Spanish, and 787 completed the EOWPVT-B.

TABLE 1

Summary of Data Collection Schedule

Beginning of the School Year		End of the School Year	
Assessment day 1	**Assessment day 2**	**Assessment day 1**	**Assessment day 2**
Pre-IPT-5 Spanish	Pre-IPT-5 English EOWPVT-B	Pre-IPT-5 Spanish	Pre-IPT-5 English EOWPVT-B

Note: EOWPVT-B = Expressive One-Word Picture Vocabulary Test: Spanish-Bilingual Edition; Pre-IPT-5 = the fifth edition of the Preschool IDEA Proficiency Test.

The Pre-IPT-5 in Spanish was conducted on a day separate from the other visits to prevent children from using the knowledge from the Spanish assessment to shape their answers to the English assessment. Breaking assessments across two visits also decreased the time children spent being assessed in a single sitting, maintaining appropriate expectations of the children's attention span at their young age. Trained undergraduate students (with senior research staff supervising) scored the assessments (see the appendix for details).

Measuring Classroom Quality

Midway through the program year, assessors completed classroom observational measures of the quality of interactions between teachers and children using the Classroom Assessment Scoring System (CLASS) and the Classroom Assessment of Supports for Emergent Bilingual Acquisition (CASEBA). CLASS is a common measure of classroom quality used to help program leaders and teachers improve child outcomes (Pianta, La Paro, and Hamre 2008). This evidence-based tool defines quality based on preschool classroom observations that focus on teacher and child interactions. CLASS is required in all Head Start classrooms and is widely used in non–Head Start preschool programs across the US. California adopted CLASS as the official measure for its quality rating and improvement system for early childhood education programs (First 5 California 2018).

CLASS assesses quality in three domains:

- **Emotional support.** Dimensions of positive or negative climate, teacher sensitivity, and regard for student perspectives

- **Classroom organization.** Behavior management, productivity, and instructional learning formats

- **Instructional support.** Concept development, quality of feedback, and language modeling

On its own, CLASS may be insufficient for measuring the effectiveness of classrooms with DLLs (Peisner-Feinberg et al. 2014; Vitiello 2013b). CLASS has been shown to be valuable for measuring universal quality in culturally and linguistically diverse settings at the classroom-wide level (Peisner-Feinberg et al. 2014; Downer et al. 2012; Karoly and Gonzalez 2011), but it does not, and is not intended to, measure aspects of quality that are child-specific and important for dual language classrooms and DLLs (Vitiello 2013a). Its behavior markers—general descriptions of observable behaviors included in the instrument to guide classroom observers (Fernandez and Oliva-Olson 2018)—and the concepts underlying its quality measures neither include cultural competence, cultural

sensitivity, and culturally relevant interactions (Vitiello 2013a) nor identify home language supports that are critical for children's learning and development (Vitello 2013b). High-quality status based on CLASS scores for preschool classrooms with DLLs may give the impression that all children are benefiting sufficiently from such high quality. But even in high-quality programs, DLLs may not receive the support they need to overcome language and cultural barriers to learning in an English-based education system. More robust studies are needed that examine general as well as DLL-specific experiences to determine optimal quality measures for classrooms with DLLs (Peisner-Feinberg et al. 2014).

This study used CASEBA as a second assessment tool to measure language support as a factor in each classroom language model (Freedson, Figueras-Daniel, and Frede 2009). CASEBA determines quality based on five elements: supports for English acquisition, supports for English print literacy, supports for home language, culturally responsive environment, and knowledge of child background. A small-scale, limited study had been used to validate CASEBA as an assessment tool. The present study uses a larger sample to find out what the assessment tool would reveal about support for language—but with the constraint that high overall CASEBA scores are achieved only when the home language is used for 90 percent or more of classroom time. In neither the dual language model nor the EHLS model would the home language be used for more than 50 percent of the time. Therefore, to some extent, this measure does not align perfectly with the design of this study.

CASEBA was administered in 59 classrooms and CLASS in 109 classrooms during normal program hours by trained early childhood specialists employed by Head Start grantees. Conducting both sets of observations halfway through the program year allowed time for teachers and children to connect and develop relationships and for teachers to implement the classroom language model (see the appendix for details).

Results

Differences in Classroom Quality by Language Model

Multiple regression analysis examined differences in classroom quality by classroom language model, controlling for relevant covariates.[10] Results show significant differences. Support for English and support for home language, as measured by the CASEBA, were lower in dual language classrooms than in EHLS classrooms (figure 1).[11]

Support for English and Home Language by Classroom Language Model
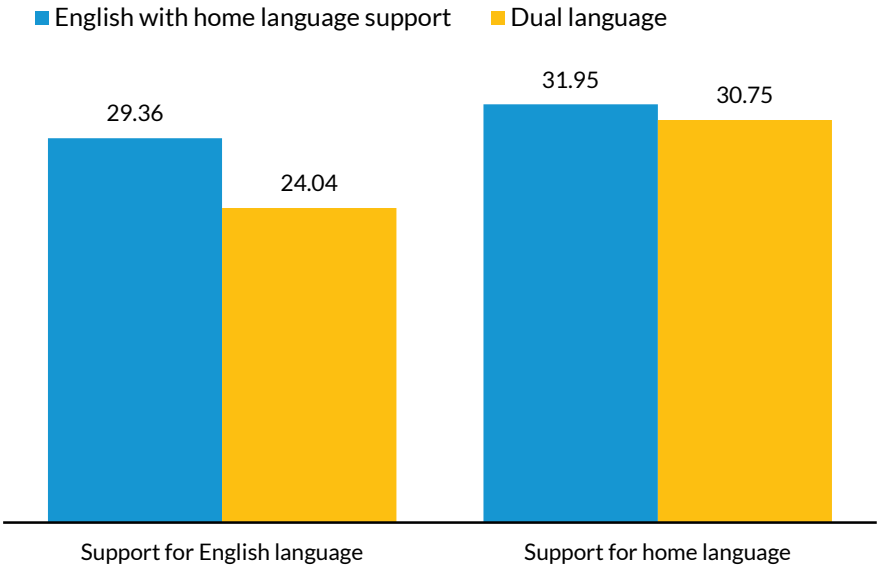
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Source: Author's calculations based on Classroom Assessment of Supports for Emergent Bilingual Acquisition scores.
**Note:** $p < 0.001$ for support for English language; $p < 0.05$ for support for home language.

Higher scores for support for English in EHLS classrooms makes sense, given that English takes priority in these classrooms. Splitting the instruction time in dual language classrooms between two languages appears to deemphasize English language instruction. It is surprising, however, that support for home language was also lower in dual language classrooms. Although instruction occurs in both English and Spanish, support for Spanish was weaker than in classrooms with primarily English instruction. It was hypothesized that dual language programs would at least provide greater support for

home language by design. Although instructing in both languages might benefit students, it might place more pressure on teachers who are not fully prepared to teach in both languages.

The opposite pattern was evident in CLASS scores (figure 2). Dual language classrooms scored significantly higher for emotional support (average score of 6.29) and for instructional support (average score of 3.75) compared with EHLS classrooms (average scores of 6.11 and 3.19, respectively).[12] The scores for both types of classrooms are above the national Head Start average for emotional support (6.07) and for instructional support (3.00) (ECLKC 2018). As a result, both the higher-scoring dual language classrooms and the EHLS classrooms are considered high quality.

FIGURE 2
Emotional and Instructional Support by Classroom Language Model
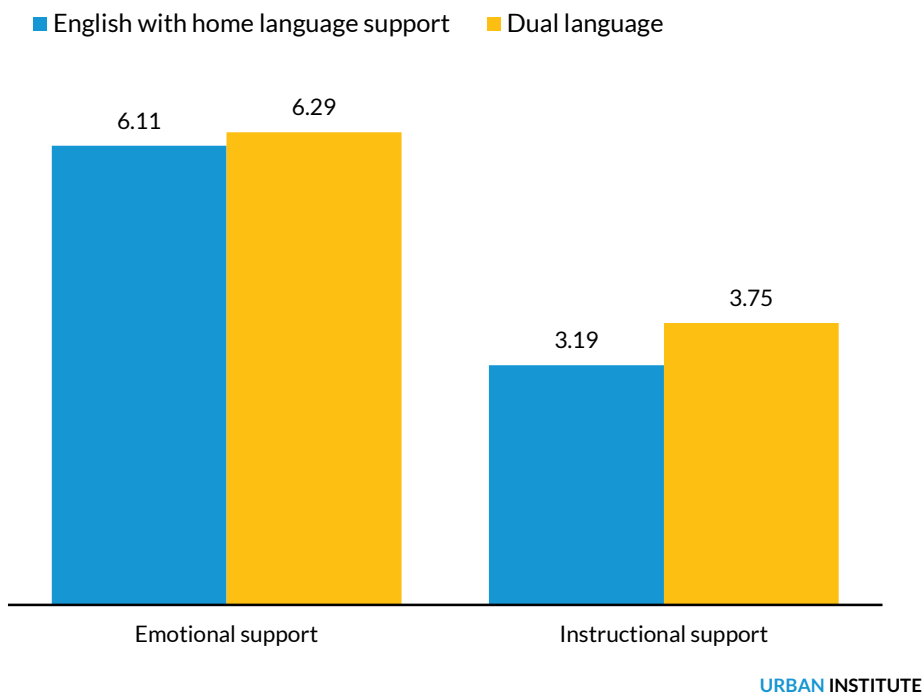
Source: Author's calculations based on Classroom Assessment Scoring System scores.
Note: $p < 0.05$ for emotional support; $p < 0.001$ for instructional support.

These results suggest that the quality of teacher-child interactions was higher in the Head Start classrooms exposing children equally to content and experiences in English and in Spanish (the dual language model). The teacher-child interactions in dual language classrooms are more likely to encourage positive relationships among teachers and peers, frequent and engaging learning activities, teaching that helps students think, ongoing feedback and support, and facilitation of language and vocabulary. These conditions may stem from the need for teachers to intentionally teach and interact in

English and Spanish. Acknowledging and accepting both monolingual English speakers and DLLs may make teachers more likely to interact in warm, responsive ways, or it could reflect greater ease with instructing in a shared home language.

The lower instructional support in classrooms implementing the EHLS model suggests that teachers may require more professional development to address the challenges of teaching to both monolingual students and DLLs. Such support could improve instruction and boost scores measuring quality in terms of language support.

Differences in Language Development

Paired sample *t*-tests and repeated measures analyses of covariance tested for differences in children's English and Spanish language development from the beginning to the end of the school year based on their classroom language model. Students significantly improved from pretest to posttest in all three areas of language development (i.e., expressive language, English oral proficiency, and Spanish oral proficiency). On average, scores in English oral proficiency (Pre-IPT-5 in English) increased 6.76 points.[13] Scores in Spanish oral proficiency (Pre-IPT-5 in Spanish) increased 2.43 points.[14] Scores in expressive language (EOWPVT-B) increased 7.34 points (figure 3).[15]

FIGURE 3

Changes from Pretest to Posttest in Language Skills across All Classrooms
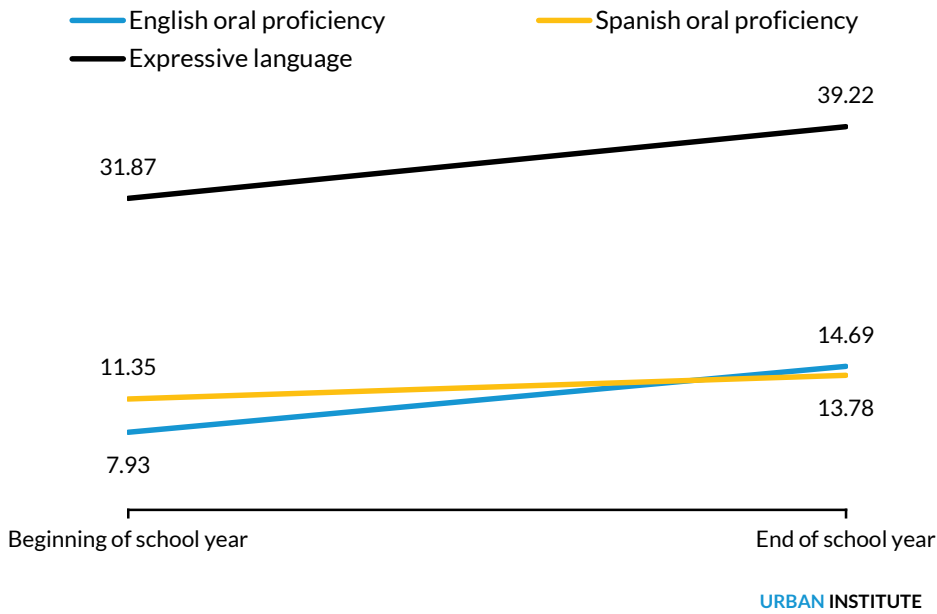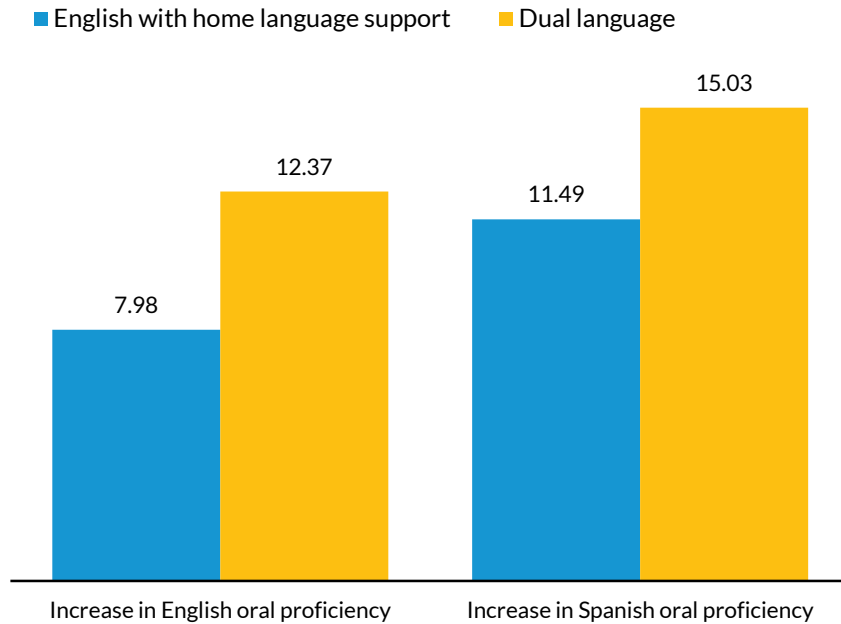

Source: Author's calculations based on results from the Preschool IDEA Proficiency Tests in English and Spanish and the Expressive One-Word Picture Vocabulary Test–4: Spanish-Bilingual Edition.
Note: $p < 0.001$ for change from pretest to posttest for all language skills.

Gains significantly varied by classroom language model (figure 4). Students in dual language classrooms showed greater average gains from the beginning of the year to the end in English oral proficiency (average increase of 12.37 points)[16] and Spanish oral proficiency (average increase of 15.03 points)[17] compared with students in EHLS classrooms (average increases of 7.98 points and 11.49 points, respectively). Gains for expressive language, however, were not significantly different by language model.[18] These findings suggest that the dual language model may be more effective for improving DLLs' language proficiency than the EHLS model may be.

**Average Gains from Pretest to Posttest in English and Spanish
Oral Proficiency by Classroom Language Model**

■ English with home language support　■ Dual language

12.37

7.98

15.03

11.49

Increase in English oral proficiency　　　Increase in Spanish oral proficiency

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Source: Author's calculations based on results from the Preschool IDEA Proficiency Tests in English and Spanish.
**Note:** $p = 0.001$ for English proficiency; $p < 0.05$ for Spanish proficiency.

Differences in Language Development
by Quality and Classroom Language Model

Repeated measures analysis of covariance tested whether children's language gains vary by level of classroom quality. In classrooms with low support for home language, there was little difference in gains in English oral proficiency for students in dual language classrooms (average increase of 13.35 points) and EHLS classrooms (average increase of 12.52 points). But in classrooms with high support for home language, students in EHLS classrooms showed smaller growth in English oral proficiency (average increase of 4.59 points) than students in dual language classrooms showed (average increase of 11.04 points) (figure 5).[19] The way teachers are supporting children's home language when the instruction is primarily in English might impede students' English language development.

FIGURE 5
**Average Gains from Pretest to Posttest in English Oral Proficiency
by Classroom Language Model and Support for Home Language**
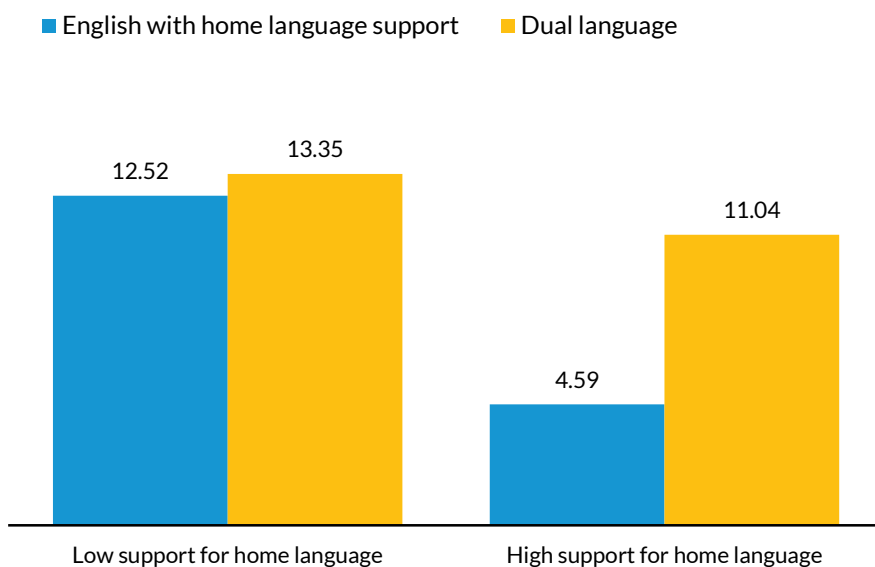
■ English with home language support   ■ Dual language

Source: Author's calculations based on results from the Preschool IDEA Proficiency Test in English.
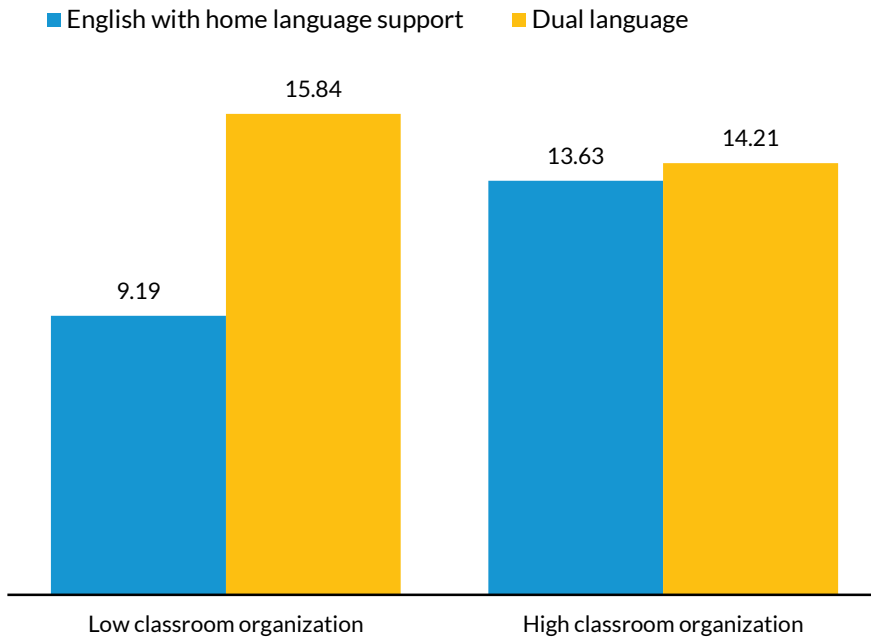**Note:** Difference is significant for classrooms with high support for home language ($p < 0.05$).

There were no other differences in children's language skills when comparing dual language and EHLS programs across different levels of program quality, as measured by the CASEBA. Improvements in children's language scores did not vary for dual language and EHLS classrooms by level of support for English.[20] Similarly, gains in children's Spanish oral proficiency and expressive language were similar for dual language and EHLS classrooms by level of support for home language.[21]

When looking at quality as measured by CLASS, classroom organization emerged as an important factor comparing children's Spanish language development for both classroom language models (figure 6).[22] In classrooms with low classroom organization, students in EHLS classrooms tended to exhibit a smaller gain in Spanish oral proficiency (average increase of 9.19 points) than students in dual language classrooms exhibited (average increase of 15.84 points) (figure 6). To the contrary, in classrooms with high classroom organization, there was little difference in gains in Spanish oral proficiency for students in dual language classrooms (average increase of 14.21 points) compared with students in EHLS classrooms (average increase of 13.63 points). Classroom organization does not appear to be influential in dual language programs, but Spanish language development appears to be slowed down in EHLS classrooms with low classroom organization.

FIGURE 6
**Average Gains from Pretest to Posttest in Spanish Oral Proficiency
by Classroom Language Model and Classroom Organization**

■ English with home language support   ■ Dual language

Source: Author's calculations based on results from the Preschool IDEA Proficiency Tests in Spanish.
Note: Difference is trending toward significance for classrooms with low classroom organization (p = 0.066).

There were no other differences in children's language skills when comparing dual language and EHLS programs across different levels of program quality, as measured by CLASS. Gains in children's English oral proficiency and expressive language were similar for dual language and EHLS classrooms by level of classroom organization.[23] Improvements in children's language scores did not vary for dual language and EHLS classrooms by level of emotional support[24] or instructional support.[25]

Implications and Future Directions

This study aims to help preschool programs, teachers, and policymakers better understand how instructional approaches and specific features of preschool classroom quality contribute to language development among DLLs. The findings show the potential effectiveness of the dual language classroom language model and the significance of instructional and emotional support for both English and Spanish language development in dual language classrooms. To validate and build upon these results, researchers could replicate this study with different samples of preschool classrooms and children, and with control group samples from English-only classroom language models. This study uses convenience samples in parts of California and Florida, with preschool programs identifying the children's DLL status and home language. Future samples could broaden the investigation of the two models by assessing children in other locations, by including monolingual students for a direct comparison with DLLs, by including information from reports by parents on their home language and children's DLL status, and by comparing non-Spanish-speaking DLLs in addition to Spanish-speaking DLLs.

Although the dual language model appeared to be more effective than the EHLS model in improving both English language and Spanish language development, the low level of Spanish language support found in dual language classrooms is intriguing. The CASEBA tool might not fully or accurately measure aspects that support children's language development. The allocation of higher scores in CASEBA when 90 percent of instruction occurs in the home language cannot be achieved in the dual language model, which, by design, entails 50 percent instruction in English and the home language. More research is needed to validate the CASEBA tool compared with the widely adopted and validated CLASS measure of preschool quality, which the study shows is predictive of language gains. Teachers may need training in how to facilitate *lecto-escritura* (i.e., language and literacy development in Spanish) with Spanish-speaking DLLs. Spanish instruction may be occurring based mistakenly on translations from resources in English or on monolingual Spanish *lecto-escritura* from Spanish-speaking countries that are not a match for the origin(s) of the children. Further investigation of the role of the language of instruction could extend to the role of the languages each child uses in the EOWPVT-B. The language in which children respond during assessment might reveal meaningful patterns in interactions and in DLLs' experiences of preschool instruction.

Programs self-reported their classroom models. Self-perception of implementation of a classroom language model might over- or underestimate the degree of intentional planning and instruction in English and Spanish. Programs may also aspire to or identify as providing a dual language model when capacity to provide the model may not be consistently available. Thus, identifying programs as dual

language and EHLS may have been more mixed than intended. Third-party identification is recommended for future research.

Additionally, programs may be implementing the classroom language models in different ways, leading to variations in quality. The Head Start models' descriptions provide general guidance around use of home language and English in the classroom and do not include specific instructional practices for use by teachers. Programs are likely to use a wide range of strategies and practices, yielding variation in effectiveness for student learning. Research is needed to identify the potential influence of fidelity to each classroom language model and the specific instructional practices used within each.

The results of the study support conclusions from previous research that teachers—especially in classrooms where English is the language of instruction and the home language is used only as a supplement—may need more professional development on how to support children's home language through their classroom practices and interactions with students (Petig, Austin, and Dean 2018). Studies of preschool often focus on instruction in English and social-emotional aspects of quality in preschool classrooms. Classroom practices included in or referred to for EHLS include family engagement, specific environmental supports, personalized oral language-learning strategies, conversation and interactions, and use of appropriate materials in the children's home language (Oliva-Olson et al. 2019a, 2019b). But few teachers are trained in these strategies and supports to be effective in classrooms with DLLs (Petig, Austin, and Dean 2018).

Based on the results, assessments could include additional elements, such as the effects on instructional and emotional support of teachers teaching in their home language, the level of intentional teaching, the amount of concentrated instructional and interactional "dose," the standard of language modeling, and how well communication is tailored to individual children. Some teachers conscious of language use in the classroom may deliver a stronger "dose" of instruction and engage in interactions that are tuned more directly to each child's level of emotional, social, and language development, while others might use both languages without the same level of intentionality. With more awareness of and intentional use of a single language, teachers may automatically improve their language modeling and better support development of that language. Other classroom language model effects that could be assessed relate to the children in the classroom, such as how much children in the dual language model experience a respite from language learning, whether children's confidence increases, and the level of shared purpose and peer-to-peer engagement.

The results showing that the most improvement in both English and Spanish oral proficiency for DLLs occurs with the dual language model echoes research with similar findings supporting the use of

both languages for instruction in preschool classrooms (Barnett et al. 2007; Raikes et al. 2019). Further research is needed on the models, research that includes third-party verification of implementation and assessment of more variables. In addition, the need remains for a widely validated tool to assess classroom quality that includes the use of language strategies and supports for DLLs. Such an assessment could tease out the specific effectiveness of approaches targeting DLLs, helping them achieve the gains they need in both English and their home language to close the achievement gap.

Technical Appendix

Participants

Head Start agencies were invited to participate based on their geographic location, and they self-selected whether to participate. All invited agencies agreed to participate. The agencies received either bilingual children's books or professional development as incentive for participation.

As required by the federal funding mechanism, each agency abided by Head Start–mandated regulations and used a research-based curriculum (e.g., the Creative Curriculum and the HighScope Curriculum). All the classrooms supported home language and English language skills (as required by the Head Start Act of 2007). The principal investigator recruited teachers, all of whom received information about the study, assurance of confidentiality, and means to access informational materials and videos in English and Spanish that explained the research and its procedures.

Each agency identified the DLLs in participating classrooms. Ten DLLs from each classroom were randomly selected to receive invitations to participate. Parents received informational documents and videos in English and Spanish. Teachers also met with families to explain the study and give the option for their child to participate or decline. The parents identified all the students as Spanish-speaking DLLs when they enrolled in their preschool program. To control for some individual differences, children with an Individualized Education Program or with referrals for language delays were excluded.

Measuring Children's Language Development

I used three measures of English and Spanish language proficiency: the fifth edition of the Preschool IDEA Proficiency Tests (Pre-IPT-5) in English, the Pre-IPT-5 in Spanish, and the Expressive One-Word Picture Vocabulary Test–4: Spanish-Bilingual Edition (EOWPVT-B).

The Pre-IPT-5 in English (Stevens et al. 2017) evaluated the students' English language proficiency. The Pre-IPT-5 in English assesses progress in English oral language development in comprehension, syntax, vocabulary, and verbal expression in 3-to-5-year-olds. Assessors met with students, explaining that they would like to know the students' English language skills and asking them to respond to questions and prompts related to a storyboard. There were five sections of increasing difficulty.

Assessors stopped asking questions after a child gave three incorrect responses within a given section. The overall score was determined by how far the child progressed in the test items.

The Pre-IPT-5 in Spanish (Chen-Ryan et al. 2017) assessed children's Spanish language proficiency. The Spanish version is similar to the English version but with a different storyline and different story pieces. The instrument's format, procedures, and scoring protocol are the same.

The EOWPVT-B (Martin and Brownell 2012) assesses children's expressive language skills in English and Spanish. The EOWPVT-B is suitable for use with preschool-age children and measures total acquired vocabulary across two languages. In the EOWPVT-B, the child is presented a colored image and asked to name that object in either English or Spanish (the child chooses the language in which to respond). Because this assessment is bilingual, it was not administered separately for English and Spanish. Each of the 190 full-color pictures reflects a concept that follows a developmental sequence and is common in home and school experiences or in the media. The assessor concludes the assessment when the child reaches the ceiling for the child's age.

Measuring Classroom Quality

The CLASS tool assessed the quality of teacher-child interactions in the preschool classroom. The three domains—emotional support, classroom organization, and instructional support—are each composed of 3 or 4 dimensions (10 total), such as regard for student perspectives and language modeling. Each dimension is rated on a 7-point scale, with 1 or 2 indicating low quality, 3 to 5 indicating midlevel quality, and 6 or 7 indicating high quality. Observations were completed during at least four 20-minute cycles followed by a 10-minute period for scoring. After each entire observation, average ratings across all observation cycles were calculated for each dimension and for each broader domain.

The CASEBA measured the quality of cultural and instructional supports for dual language development. CASEBA directly assesses the cultural and linguistic responsiveness of the classroom and language instruction practices, both in English and in students' home language (Freedson et al. 2011). CASEBA has 27 observation items rated on a 7-point scale, ranging from 1 (total absence of the specified practices) to 7 (the specified practices are in ideal form). Items address cultural inclusion, curriculum content, classroom management, social-emotional supports, home language and English acquisition support, and child assessment by teachers.

Notes

1 The 2017 US Department of Health and Human Services and US Department of Education policy statement on supporting the development of young dual language learners (HHS and DOE 2017) also notes that the term *dual language learner* "may encompass or overlap substantially with other terms frequently used, such as limited English proficient (LEP), bilingual, English language learner (ELL), English learner (EL), and children who speak a language other than English (LOTE). The broader DLL population also includes children from many different backgrounds, including children who speak heritage languages, such as children from American Indian Alaska Native (AIAN) or Native Hawaiian communities." The term is also used more narrowly to refer to younger children. The California Preschool Learning Foundations uses this definition: "children whose first language is not English and encompasses children learning English for the first time in the preschool setting as well as children who have developed various levels of English proficiency" (California Department of Education 2008, 103).

2 "B16001: Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over," US Census Bureau, American FactFinder, accessed May 30, 2019, https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B16001&prodType=table.

3 "B16001: Language Spoken at Home."

4 See note 1.

5 See also "Head Start Policy and Regulations," US Department of Health and Human Services, Administration for Children and Families, Head Start Early Childhood Learning and Knowledge Center, accessed April 26, 2019, https://eclkc.ohs.acf.hhs.gov/policy/showcase/dll.

6 "Student Readiness and Progress through School," US Department of Education, Institute of Education Sciences, National Center for Education Statistics, accessed April 26, 2019, https://nces.ed.gov/programs/statereform/srp.asp.

7 See also Claudia Dreifus, "The Bilingual Advantage," *New York Times*, May 30, 2011, https://www.nytimes.com/2011/05/31/science/31conversation.html?_r=1.

8 "Head Start Policy and Regulations: Head Start Act," US Department of Health and Human Services, Administration for Children and Families, Head Start Early Childhood Learning and Knowledge Center, accessed April 26, 2019, https://eclkc.ohs.acf.hhs.gov/policy/head-start-act.

9 Educare is a US network of early childhood education schools for low-income children from birth to age 5 that also supports families, provides effective teaching practices, and shares research. See "About," Educare, accessed May 3, 2019, https://www.educareschools.org/about/.

10 Differences identified between groups were controlled for throughout the analyses. Students in dual language classrooms (average age of 50.06 months) were significantly older than students in EHLS classrooms (average age of 48.03 months), $t(776.50) = -4.759$, $p < 0.001$. There were no differences between the dual language and EHLS groups for gender, $\chi^2(1) = 2.347$, $p = 0.126$, or language levels at the beginning of the year (pretest scores for expressive language, $t(819) = -0.132$, $p = 0.895$, English oral proficiency, $t(817) = -1.725$, $p = 0.085$, and Spanish oral proficiency, $t(816) = -1.236$, $p = 0.217$). Students in dual language classrooms scored significantly lower for expressive language (EOWPVT-B) at pretest (average score of 31.15) than did students in EHLS classrooms (average score of 33.20), after controlling for the differences in age, $F(1,797) = 5.008$, $p = 0.026$. There remained no differences for gender or levels of other aspects of language at the beginning of the year (gender, $\chi^2(2) = 1.583$, $p = 0.453$, B = 0.167, Wald(1) = 1.360, $p = 0.244$, and pretest scores for English oral proficiency, $F(1,795) = 0.006$, $p = 0.938$, and the Spanish oral proficiency, $F(1,794) = 0.127$, $p = 0.722$). Thus, age and EOWPVT-B pretest scores are controlled for in all analyses testing the research questions.

[11] CASEBA support for English, B = -6.078, SE = 1.014, β = -0.298, t = -5.995, p <0 .001, and CASEBA support for home language, B = -2.096, SE = 1.015, β = -0.110, t = -2.065, p = 0.040, after controlling for age and EOWPVT-B pretest.

[12] Emotional support, B = 0.176, SE = 0.078, β = 0.148, t = 2.244, p = 0.026, and instructional support, B = 0.553, SE = 0.147, β = .243, t = 3.759, p < 0.001. The CLASS domain for classroom organization did not vary by classroom language model.

[13] t(780) = -17.445, p < 0.001, after controlling for covariates (age, expressive language pretest, and classroom quality—excluding classroom organization).

[14] t(789) = -6.242, p < 0.001, after controlling for covariates.

[15] t(786) = -18.584, p < 0.001, after controlling for covariates.

[16] F(1,228) = 10.516, p = 0.001, after controlling for covariates.

[17] F(1,229) = 5.153, p = 0.024, after controlling for covariates.

[18] F(1,230) = 0.386, p = 0.535 (EOWPVT-B was excluded as a covariate for this analysis).

[19] F(1,227) = 4.654, p = 0.0342.

[20] English oral proficiency, F(1,227) = 1.768, p = 0.185, Spanish oral proficiency, F(1,228) = 0.053, p = 0.818, and expressive language, F(1,229) = 1.642, p = 0.201.

[21] Spanish oral proficiency, F(1,228) = 1.507, p = 0.221, and expressive language, F(1,229) = 2.098, p = 0.149.

[22] F(1,227) = 3.418, p = 0.066.

[23] English oral proficiency, F(1,226) = 2.607, p = 0.108, and expressive language, F(1,228) = 0.814, p = 0.368.

[24] English oral proficiency, F(1,227) = 0.326, p = 0.568, Spanish oral proficiency, F(1,228) = 0.030, p = 0.863, and expressive language, F(1,229) = 1.223, p = 0.270.

[25] English oral proficiency, F(1,227) = 0.083, p = 0.773, Spanish oral proficiency, F(1,228) = 1.135, p = 0.268, and expressive language, F(1,229) = 1.135, p = 0.268.

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