

**HOW ARE CALIFORNIA'S LATINA/X/O STUDENTS FARING?: CHARTER
ELEMENTARY SCHOOLS' SPANISH/ENGLISH DUAL LANGUAGE PROGRAMS**

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ABSTRACT

Despite the widespread popularity of both Dual Language Programs (DLP) and charter schools in California, little is known about the intersection of these two school models. In a quantitative study utilizing several statewide databases, researchers explored four questions related to DLP and charter schools: 1) How many Latina/x/o students attend charter DLP? 2) What are the student body characteristics (ethnicity, socioeconomic status, EL status) found in charter DLP vs. neighborhood-based attendance (NBA) DLP? 3) Do Latina/x/o students in charter DLP outperform those in NBA DLP? 4) What are the teacher characteristics (credential status, misassignments) found in charter DLP vs. NBA DLP? Analysis revealed previously unknown basic demographic information about student and staffing characteristics in DLP, as well as significant differences between charter and non-charter DLP in schoolwide mean language arts CAASPP scores and proportional enrollments of Latina/x/o, white, and Asian students.

Keywords: Dual language, charter schools, school segregation, California, Latinx, Hispanic students

Introduction

In California, where the public school population is now 55% Latina/x/o¹ (California Department of Education, 2020), Dual Language Programs (DLP)² are increasing in popularity. In the 2018 report *Global California 2030*, the California Department of Education (CDE) outlines a plan to quadruple the number of DLP in the state by 2030 as “part of a larger effort to better prepare students for twenty-first century careers and college, recognizing that multilingualism is an essential skill” (p. 5). DLP, whose goals are for students to achieve bilingualism, biliteracy, grade-level competence, and sociocultural competency (Center for Applied Linguistics, 2015), are lauded for their ability to bring together students from different language backgrounds to learn together in the same classroom. Supporters claim that participation in DLP raises student test scores and better prepares students to compete in the global economy (e.g. Lindholm-Leary, 2005).

However, for all their promise, there is much that remains unknown about DLP in California and the United States more broadly. In *Dual Language Education Programs: Current State Policies and Practices* (2015), the U.S. Department of Education recognized the need for further research, citing the need for states to accurately count the number of programs in existence and to collect information about student demographics. The report called for further studies exploring what features of DLP lead to increased student acquisition of content. But, in order for this type of research and evaluation to be possible in California, we must first focus our efforts on creating a comprehensive account of the state's DLP that includes information on various attributes including student, teacher, and program data.

As DLP gain attention, a different movement for school reform has gained traction and become a popular topic of national conversation; the charter school movement has sparked debates about school choice, fairness, and accountability with commentators claiming variously that charter schools embody the promise of experimentation, the establishment of a mechanism by which poorly performing or unmotivated students could be easily expelled, or the long-term strategy of breaking the teacher unions. Like DLP, results of studies connecting student performance in charter versus neighborhood-based attendance (NBA) schools have been uneven and difficult to interpret (Buddin & Zimmer, 2005; Gill, 2016). Some researchers have called into question whether charter schools are using fair enrollment practices (Renzulli, 2006), while others have focused on charter schools' extreme variance in resources and teacher qualifications depending on local context (Bodine et al., 2008). Charter schools are often described in the literature and the wider media as "schools of choice," a term we argue is both inaccurate and unfairly biases readers against "traditional" public schools. We therefore refer to non-charter schools as neighborhood-based attendance, or NBA, schools, highlighting the historical and common approach to assigning students schools. NBA schools have, of course, failed a great many students in the past hundred years of widespread public education, but because school districts have, especially in recent years, permitted students to transfer from one NBA school to another, it is not accurate to say that NBA schools are not a "choice." In fact, under NCLB (No Child Left Behind), districts were required to offer parents whose children attend "low performing" schools the choice to move schools. Whether parents had the resources (e.g., transportation options) to move their child to a different school is another matter entirely.

Of California's 570 elementary charter schools, it is unknown how many are also DLP. With 10.5% of California's students enrolled in charter schools and 55% of California's students identifying as Latina/x/o (California Department of Education, 2019), research exploring the intersection of these two major educational reforms and their impact on the Latina/x/o community is urgently needed. Despite our current "Age of Accountability" making available more data about schools and students than ever before, basic information about California's DLP is still lacking. Although individual student data would allow for a more comprehensive analysis of differences between charter and NBA DLP, we decided it was worth carrying out this initial analysis using the data that is publicly available due to the importance of this topic.

Our study used 2018 data from several statewide databases, merged to create a more complete set of variables, to investigate the following research questions:

1. How many Latina/x/o students attend charter DLP?
2. What are the student body characteristics (ethnicity, socioeconomic status, EL status) found in charter DLP vs. NBA DLP?

3. Do students in charter DLP outperform those in NBA DLP?
4. What are the teacher characteristics (credential status, misassignments) found in charter DLP vs. NBA DLP?

The results of our study will be of interest to school districts and leaders in California who are concerned about the growth of new charter schools and their planned “charter,” or instructional focus. Our study aims to provide school districts with previously unavailable information that can be of use as they make decisions about how to allocate resources and plan for programs and school models that have the best chance for student success. We hope that the results of this initial analysis will also provide a pathway for future study into this topic with a focus of creating a more comprehensive data set as time goes on.

Literature Review

Bilingual Education

While education in languages other than English (LOTE) has existed in this country in one form or another since its founding, it was not until the passage of the Civil Rights Act in 1964 that federal law introduced protections for LOTE speakers’ right to equal access to education. Title VI of the Civil Rights Act (1964) stipulates that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance” (p. 252). A 1970 memorandum by the Office of Housing, Education, and Welfare (HEW) further clarified that Spanish-speaking students’ inability to access the English-only curriculum constituted discrimination on the basis of national origin and required districts to take “affirmative steps to rectify the language deficiency” (35 Fed. Reg., 11595). While the HEW memorandum did not specify any specific action or the possibility of native-language instruction for non-English speakers, these documents were used in two court cases, *Serna v. Portales Municipal Schools* (1972) and *Lau v. Nichols* (1974), which respectively ruled that Mexican-American students were constitutionally entitled to instruction in Spanish and that non-English speaking students were entitled to special instruction to aid them in accessing the curriculum (Malakoff & Hakuta, 1990, p. 37).

As a result of these rulings, bilingual education gained traction in the United States as a means for districts to fulfill their responsibilities to non-English speaking students, primarily in the form of Transitional Bilingual Education (TBE), also known as early-exit bilingual education. In the TBE model, students entering school are taught content knowledge in their native language while simultaneously receiving instruction in English, with the goal of transitioning students into mainstream English-only classrooms as soon as possible (Malakoff & Hakuta, 1990). While TBE was an improvement from the “sink-or-swim” model students were previously subjected to, the programs faced criticism and implementation issues. TBE classrooms were often perceived to be remedial programs by district actors, community members, teachers, and the students themselves (Collier et al., 2006). Furthermore, research has revealed uneven implementation of TBE in many classrooms where Spanish instruction has been neglected for a variety of reasons, including pressure from administration to exit students as quickly as possible, the perception that students should learn only in English to prepare for English-only standardized tests, and teachers who are certified bilingual but are not truly comfortable teaching in a LOTE (Hinton, 2015). In California, opposition to TBE as the default placement for minority language speakers was the basis for Proposition 227, which required parents to opt-in to bilingual education classrooms. Although the

ballot measure did not, as some have claimed, outlaw bilingual education, its passing created an opportunity for many districts whose commitment to bilingual education was already weak to shed what they perceived as costly and ineffective programs that served mostly poor, minoritized students (Gándera et al., 2000).

Dual Language Programs

As an educational reform, DLP owe their origin to the work of Canadian educators, who in the 1960s engaged in what was called the St. Lambert experiment. (Bruck et al., 1974). Native English speaking and native French speaking kindergarten students were placed in the same classroom and received content instruction in both languages. The goal was full bilingualism and the capacity to learn challenging academic content in both languages. Their model, more or less, has been implemented many thousands of times worldwide and especially in the US. (Kim et al., 2015). In contrast to TBE, the goals of DLP are “full bilingualism and biliteracy, grade-level academic achievement, and multicultural competency” for both native English speakers and speakers of other languages (Lindholm-Leary, 2005, p. 56). DLP can be classified as either one-way or two-way, with one-way programs serving a linguistically homogeneous group of students (more than two thirds of students are dominant in one language) and two-way programs where about half of the students are dominant in each language (Center for Applied Linguistics, 2018, p. 3). While TBE served only language-minority students, DLP gave native English speakers the opportunity to learn a second language and were able to attract upwardly mobile, predominantly white families (Valdez et al., 2016).

DLP have steadily gained popularity in the United States since the 1990s (Wilson, 2011). Their proponents point out the economic advantages of bilingualism in the global job market (Lindholm-Leary, 2005), and claim that DLP students consistently outperform monolingually-educated students on English assessments of academic skills across all domains (Rolstad et al. 2005; Thomas & Collier, 1997; Willig, 1985). With such lofty claims, it is not surprising that many school districts are eager to approve DLP where students are sure to become “the high achievers of this planet” (Collier et al., 2006, p. 30). While these studies paint a clear picture, others point out the difficulty in determining whether DLP participation truly results in higher levels of student performance given the self-selecting nature of these programs. Several studies have shown that EL students educated bilingually (either through a TBE or DLP model) have better long-term outcomes for language proficiency and academic achievement than EL students educated in an English-only program (National Academies of Sciences, Engineering, and Medicine, 2017), and a 2015 study by Valentino and Reardon found that students in DLP models had the best outcomes over time despite initially scoring lower on tests of English language and academic proficiency when compared to students in TBE programs.

If the academic rewards of DLP are great, so, too, are the risks if the programs are poorly designed. The Center for Applied Linguistics’ *Guiding Principles of Dual Language Education* (2018) stresses that programs with a high level of planning have the highest level of student success, and cautions that “there should be a clear rationale for modifications, and programs should avoid frequent changes based on an uncritical attempt to keep up with the latest curricular or instructional approaches” (Howard et. al, 2018, p. 13). DLP, like TWB, can suffer from uneven implementation, and many have begun to raise questions about whether the needs of LOTE speakers are being neglected as schools and districts cater to the best interests of their more affluent English-speaking students (Valdes, 1997; Valdez et al., 2016). Valdes (1997) warned that in DLP with high levels of social and economic inequality between students in different language groups,

minority-language speaking students would become domesticated language teachers for middle and upper class white students, whose bilingual abilities would allow them to secure jobs that were once the domain of the Latina/x/o community. Many believe that the primary benefit of DLP are their social goals; while TBE segregated students from one another based on native language, DLP are intended to promote what has been variously referred to as biculturalism, multiculturalism, or sociocultural competence. Bringing together students from different language backgrounds as equals who help each other become bilingual is certainly a noble goal, but DLP must be vigilant to avoid the recreation of inequities in the classroom.

Testing in Dual Language Programs

Willig (1985), in a meta-analysis of 23 efficacy studies of bilingual education programs, found that bilingually-educated students consistently outperformed their monolingually-educated peers on English-language assessments of mathematics, language arts, reading, and “total achievement”(p. 269). In a similar meta-analysis of Arizona bilingual education models, Rolstad et al. (2005) found similar results, concluding that students participating in bilingual education programs scored higher on English-language measures of reading and mathematics proficiency than their conventionally-educated peers. While these results are promising, Baker and Lewis (2015) point out that there are many intervening factors that prevent clear conclusions regarding whether bilingual education causes higher levels of student performance. They note that DLP students are a self-selected group, and describe the state of our field of knowledge about bi- and multilingual education as “complex, kaleidoscopic, and sometimes conflictive” (p. 112). Flores and Beardsmore (2015) highlight the high level of within-group diversity among DLP models, and call for researchers to work towards a more nuanced understanding of bilingual education as a multifaceted enterprise rather than a single program model.

Many researchers have questioned whether state and federal assessment policies, which stipulate English-only assessments are fair and valid measures of emerging bilingual students’ ability. The requirement of No Child Left Behind and its reincarnation, the Every Student Succeeds Act, that all students participate in English-language proficiency testing has created what Shohamy and Menken (2015) refer to as a “de facto English-only policy in all states” (p. 265). Although the previously mentioned meta-analyses found bilingual education students to score higher on English-language assessments, a study by Saalbach et al. (2013) showed that dual language high school students’ performance on a math test was negatively impacted when the language of the test was different from the language of instruction. A 2006 study by Marian and Fausey found similar results when testing bilingual adults in one language when they had learned the information in a different language.

This picture becomes even more concerning when we consider that DLP may have a higher proportion of students classified as EL than traditional schools. Wolf and Leon (2009), in a comparative study analyzing mathematics and science items from 11 statewide assessments, found unsurprisingly that the linguistic complexity of test items was associated with differential item functioning between EL and non-EL students. The researchers found that it was the general academic vocabulary that appeared across multiple disciplines, and not the context-specific or technical vocabulary, that caused the greatest degree of difficulty for the EL students, speculating that general academic language may not be explicitly taught and thus disadvantaged the EL students. In a reaction to the differential success of EL students on standardized assessments, some researchers have explored modifying test items in an effort to make them equitable for ELs and provide a more reliable picture of these students’ conceptual understanding and ability level in

mathematics. Sato et al. (2010) were able to linguistically modify test items in a way that maintained the validity of the item while increasing the reliability of scores for not only ELs, but monolingual English-speaking peers who had low proficiency in Language Arts (p. 53). While test item modification is a promising arena for future research and improvement of statewide assessment validity and reliability across student groups, the issues that arise from high-stakes, summative assessments are present, and perhaps magnified, in dual language classrooms due to the interaction of EL students and a multilingual curriculum.

The charter school movement

In the past two decades, partly as a result of the No Child Left Behind legislation, which notably avoided mandating prescriptive instructional practices and instead required that schools reach arbitrary scores on standardized achievement tests, educators and policymakers, especially, have largely avoided discussing *how* students are taught and instead engaged in fervent arguments over *where* they are taught and which types of schools produce the highest test scores. To the long-standing debate over the efficacy of public vs. private schools, policymakers in nearly every U.S. state amended laws and codes to permit charter schools, publicly funded schools given wide latitude in both the types of students they enroll and the qualifications of the teachers they hire. Indeed, the performance and growth of charter schools has become *the* primary educational reform debate (Jason, 2017).

Charter schools were first approved by the California state legislature in 1992, just one year after Minnesota approved the country's first charter school legislation. From their inception, charter schools saw rapid and consistent growth, with nationwide charter enrollment tripling to over 3 million students between 2007 and 2018 (Lake et al., 2018). Charter school expansion has slowed; however, since 2016, the expansion of charter schools has dropped off nationally and in California, with charter school proponents citing decreasing availability of facilities, a saturated market, and increasing political opposition to charter schools (Lake et al., 2018). While those in favor of the charter school movement claim that charter schools allow for educational innovation unencumbered by the regulatory restrictions faced by NBA schools, detractors warn that charter schools are a neoliberal scheme to privatize public education, break up teachers unions, and siphon resources away from existing public schools (Jason, 2017). Research on the effects of charter schools on neighboring NBA schools have shown effects ranging from negative to neutral to positive, leaving the picture unclear (Gill, 2016).

Staffing in charter schools

Some of the largest arguments against charter schools have dealt with the differences in teacher characteristics between charter and NBA programs. Several studies have found significant differences in teacher turnover, with charter school teachers leaving at dramatically higher rates than their NBA school counterparts. Stuit and Smith (2012), in a study of teacher attrition in charter vs. NBA schools in multiple states, found that teacher attrition in charter schools tended to hover between 20-25% compared to the 11-14% range found in traditional public schools. The authors found the factors most associated with teacher attrition to be years of experience and credential status, with new and un- or under-credentialed teachers leaving at rates as high as 40%. The explanation for these high turnover rates may be connected to personnel policy differences found in charter versus NBA schools--charter schools in many states are able to hire large numbers of un- or under-credentialed teachers, and teachers at charter schools are less likely to be members of unions and more likely to be at-will employees (Miron & Applegate, 2007; Newton et al., 2018;

Podgursky & Ballou, 2001). Matsudaira and Patterson (2017) found that California charter school students' achievement in mathematics was positively associated with teachers being unionized, but their study found only 28.2% of charter school teachers were unionized compared to the 93.6% of unionized California teachers identified in the 2008 schools and staffing survey.

Students in charter schools

The range of research on charter schools has been far-reaching. Many have addressed questions regarding the ethnicity of students served by charter schools (Renzulli, 2006), while others have explored the difference in academic performance, if any, between students who attend charters schools vs. those who attend neighborhood-based attendance (NBA) schools (Clarke & Burt, 2019; Toma & Zimmer, 2011). The results of dozens of studies are uneven at best. Several researchers have raised questions about charter schools' admittance practices towards students with disabilities, and a 2012 report by the Government Accountability office found that charter schools enrolled only 8% students with IEPs compared to the 11% found in traditional public schools. Some studies show that charter schools often enroll a disproportionate number of Students of Color who outperform NBA students, but the picture is inconsistent (Buddin & Zimmer, 2005). Epple, Romano, and Zimmer (2015) found that student enrollment in charter schools has been changing: between 2001 and 2010 charter schools substantially increased their proportions of Latina/x/o students (19% to 27%) and students receiving free/reduced lunch (30% to 50%), while proportions of African American and white students decreased over that time period by 4% and 5%, respectively (p. 8). Whitehurst et al. (2016) found that charter schools were on average more segregated than traditional public schools, tending to serve more homogeneous student populations than their neighboring NBA schools. These results were corroborated by Monarrez et al. (2019), who found that district charter school enrollment was positively related to district levels of segregation for Black, white, and Latina/x/o students with the most dramatic effects of segregation appearing in suburban districts with low enrollment of Black and Latina/x/o students and urban districts with high enrollment of Black and Latina/x/o students. In an extensive report on charter school segregation, Frankenberg et al. (2011) found that Black charter school students were the most likely to be enrolled in highly segregated schools, although Latina/x/o charter students were also more likely to be enrolled in highly segregated schools than their NBA counterparts, a pattern that was seen nationwide and in California specifically.

Much of the attention on charter schools has focused on African American students' academic performance in charter vs. NBA schools (Bodine et al., 2008; Whitehurst et al., 2015). For instance, after hurricane Katrina, New Orleans schools, which served primarily African American students, "reformed" the entire school system to a charter model. Whether the reformed charter schools have served students any better is an open question, but the political controversies have been shrill. However, one significant group of students attending charter schools has remained largely unstudied: elementary-aged students who attend DLP in California. At present, we do not know how many Latina/x/o students attend such schools and almost nothing about their academic performance. Of the few studies exploring DLP in charter schools, most have addressed teacher quality or teacher experiences (Gebhard, 2002). And yet the pedagogical and administrative demands of delivering a high quality DLP are well known (Alanis & Rodriguez, 2008). We wondered if charter schools are offering a coherent program to the Latina/x/o students who attend charter DLP and students' levels of academic achievement. Our initial questions, such as the number of charter DLP, were more mundane, but still largely unexamined in the literature.

We have both methodological and theoretical purposes in studying a relatively small number of students. True, Latina/x/o students at charter DLP make up a small proportion of the Latina/x/o students in California, but it is an important group. First, in choosing to study only DLP, we have identified schools with somewhat common purposes and goals, thereby making the comparison more valid. Of course, we admit that a school can claim to offer a comprehensive DLP even if the actual educational experiences do not match. If DLP deliver on their promise of both promoting bilingualism and encouraging the mixing of ethnic and language groups (Téllez, 2010), then we should be concerned about the effectiveness of this unique pedagogical experiment. And when the school is also a charter school, the importance of the results are compounded, because now we are exploring the consequences of two significant educational experiments, one pedagogical and one structural.

Methods

To create a statewide database of elementary DLP, researchers started with a publicly-available list of California DLP from the California Department of Education, containing 334 DLP. As this database was created in 2012, we anticipated that more DLP may exist. We then searched the county office of education websites for the largest counties, which captured an additional 16 DLP. This yielded a list of 350 DLP. Ten were found to be high schools or middle schools and deleted from the list, and researchers added seven more programs that they learned were initiated after the first publicly available list was created³. The resulting list of 347 elementary DLP is likely the most comprehensive to date considering that the CDE does not maintain a current list of Dual Language Programs, although without a reliable state-maintained database, it is likely our database still undercounts the true total⁴. Grade-level mean 2018 California Assessment of Student Performance and Progress (CAASPP) scores for third, fourth, and fifth grade language arts and mathematics tests were collected from the CDE website for each school and added to the data set, and schoolwide mean CAASPP score variables for mathematics and language arts were created by taking the mean of grade-level mean scores for third, fourth, and fifth grades.

Next, data from the 2017/2018 School Accountability Report Card (SARC) was used to add each school's enrollment data and staffing data, as well as each school's California Directory Search code so that future research would not depend on using schools' names, which appear differently in different state databases. Student data included each school's total enrollment, percent of students in each ethnic group, percent of students with Individualized Educational Plans (IEPs), percent of students who were designated English Learners (ELs), and percent of students receiving free or reduced lunch. Staffing data included information from 2016, 2017, and 2018 on each school's number of teachers who were fully credentialed, working without a full credential, or working outside their area of competency, as well as each school's count for misassigned teachers of ELs, total teacher misassignments, and total unfilled teacher vacancies.

Finally, a statewide database of charter schools, created by selecting for "public," "elementary," and "charter" in the California Public School Database (available online from the CDE) was compared to our database of elementary DLP, which identified 26 charter DLP schools. We removed 33 schools that had partner languages other than Spanish, resulting in 314 Spanish elementary DLP with 25 of those being charter schools. We chose to use only DLP with Spanish as the partner language, as our research interests are specifically tied to Latina/x/o students attending Spanish/English DLP. Our final Excel spreadsheet was then read into SPSS version 27. Initial analysis consisted of simple counts and measures of central tendency, which were then

followed by independent samples t-test to determine whether differences in means between the charter and NBA groups were statistically significant or simply due to normal variation in the data.

Results

Student body characteristics

According to the schools' reported enrollment data for 2018, 13,381 Latina/x/o students attended charter DLP in California, accounting for 8.6% of the 155,668 Latina/x/o students attending DLP. Across all elementary DLP, Latina/x/o students accounted for 72.1% of the 215,894 students enrolled. However, the percentage of Latina/x/o students was not the same for charter and NBA DLP, and independent samples t-test revealed significant differences in the ethnic makeup of charter versus NBA DLP.

Table 1

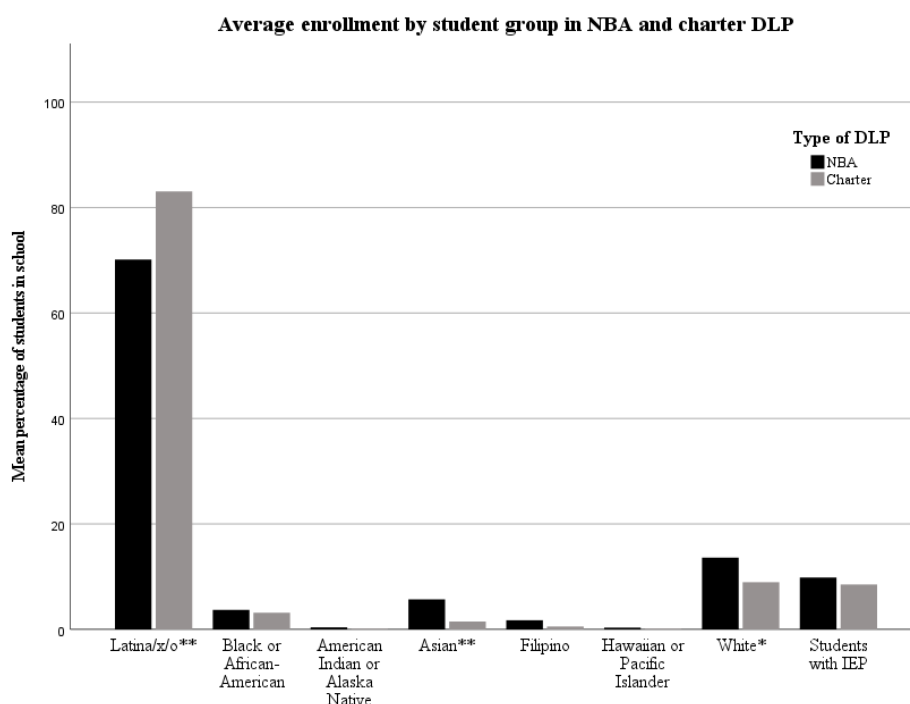
Latina/x/o enrollment in California Spanish/English elementary DLP in 2018

Student group	Number enrolled
Total students enrolled in DLP	190,904
Total Latina/x/o enrolled in DLP	136,578
Total students enrolled in NBA DLP	174,769
Latina/x/o students enrolled in NBA DLP	124,240
Total students enrolled in Charter DLP	7,089
Latina/x/o students enrolled in Charter DLP	6,050

The charter schools had a significantly higher percentage of Latina/x/o students than NBA schools--charter DLP had a mean of 83.06% Latina/x/o students, while the NBA DLP mean was just 70.04% ($t(43.17)=-2.05, p<.01$). Conversely, charter DLP had less Asian and white students than NBA DLP. The charter schools had a mean of 1.51% enrollment of Asian students compared to a mean 5.66% in NBA DLP ($t(189.98)=-5.0, p<.01$), and 8.94% enrollment of white students versus a mean of 13.71% found at the NBA DLP ($t(35.16)=-2.07, p<.05$). Furthermore, the charter schools had a lower percentage of students with IEPs than the NBA DLP--8.53% versus 9.83% ($t(33.25)=2.04, p=.052$). While this is a small difference that approaches significance, the underenrollment of students with disabilities in charter schools is a trend that has been seen in previous studies (Government Accountability Office, 2012), and therefore should not be ignored.

Figure 1

Differences in student body makeup in charter vs. NBA DLP



* $p < .05$ ** $p < .01$

Note. Mean enrollment by student group for DLP in 2018--statistically significant mean differences can be seen for the Latina/x/o, Asian, white, and Students with IEP groups.

Despite these differences in student body makeup, other enrollment features were not found to be significantly different when comparing charter DLP to NBA DLP. Both types of schools had similar mean numbers of students and percentages of students designated EL or receiving free/reduced lunch. Mean total enrollment in elementary DLP was 610 students, while mean total enrollment in California elementary schools for 2018 was 506 students. While we do not know if this difference is significant, we thought it was interesting to note for future research as DLP may be enrolling more students than traditional elementary schools. As charter schools seem to be recruiting students with the same socioeconomic and linguistic backgrounds as NBA, it raises questions about why their ethnic makeup differs significantly, and if this enrollment pattern is intentional or incidental. One of the primary goals of DLP is to encourage the mixing of cultures, bringing together students of various backgrounds to learn in the same classroom. With this in mind, the disproportionate number of Latina/x/o students in charter DLP and the significantly lower percentage of white and Asian students may mean that charter DLP are failing to integrate students from various ethnic backgrounds. There is certainly a great deal of linguistic and cultural diversity within the large group of students designated Latina/x/o, but without individual student data, and given inconsistencies in the accuracy of EL designations (Haas et al., 2015), the relationship between Latina/x/o identification and EL status remains unclear. Furthermore, with previous research revealing troubling inconsistencies in charter schools' teacher quality based on the ethnic and socioeconomic makeup of the student body (Bodine et al., 2008), it would be remiss to ignore this finding in future research.

Table 2

2018 Student body characteristics in California elementary Spanish/English DLP

Characteristic	Mean percentage
DLP students receiving free/reduced lunch	70.04%
CA students receiving free/reduced lunch	60.88%
DLP students designated EL	41.62%
CA elementary students designated EL	19.39%

Note. Statewide means have been included for reference.

Student achievement

The mean schoolwide 2018 CAASPP scores for California's elementary DLP were 2453.5 (SD=36.2) for Language Arts and 2456.9 (SD 31.9). For reference, the statewide mean for schoolwide elementary Mathematics and Language Arts CAASPP scores were 2461.3 (SD=85) and 2463 (SD=94), respectively (California Department of Education, CAASPP Reporting, 2018).⁵

When schoolwide mean scores on the CAASPP were compared between the two types of DLP, analysis revealed a statistically significant mean difference in the schoolwide mean language arts CAASPP with charter DLP showing scores a mean of 10 points lower than NBA ($t(38.16)=-2.05, p<.05$).

Table 3

2018 Schoolwide mean CAASPP scores for CA elementary Spanish/English DLP

Type of school, content	Mean score and standard deviation(in parentheses)
All DLP Language Arts	2447.30(36.98)
NBA DLP Language Arts	2448.62(37.65)*
Charter DLP Language Arts	2438.60(21.90)*
All DLP Mathematics	2451.4(34.45)

* $p<.05$

Note. Because the difference in mean score between charter and NBA DLP was not significant for mathematics, only the mean score across all DLP was included for the Mathematics CAASPP.

Staffing characteristics

We were able to compare teacher characteristics on five measures for school years 2016, 2017, and 2018 using the school staffing data found in the "Conditions of Learning" section of the SARC: number of teachers working without a full credential, number of teachers teaching outside their credential's competency area, number of misassigned teachers of English learners (those teaching ELs without an EL authorization), total number of misassigned teachers, and total teacher

vacancies. Although previous research has shown that charter schools often have higher teacher turnover and less experienced, credentialed teachers than traditional schools (Stuit & Smith, 2012), means were similar between charter and NBA DLP across all categories in our analysis.

Table 4
2016-2018 Staffing characteristics at California elementary Spanish/English DLP

Staffing characteristic	Mean number of teachers by year, standard deviation(in parentheses)		
	2016	2017	2018
Teachers without full credential	1.13(3.83)	1.13(2.85)	1.17(2.31)
Teachers outside area of competency	.17(.73)	.25(.88)	.34(1.21)
Misassigned teachers of ELs	.05(.26)	.11(.43)	.09(.47)
Total misassigned teachers	.15(.54)	.32(1.03)	.35(1.25)
Total teacher vacancies	.16(.51)	.07(.36)	.08(.36)

Note. This table shows the mean number of teachers in each category for the years 2016-2018.

Conclusions and Implications

The first guiding principle outlined in the Center for Applied Linguistics' 2018 *Guiding Principles for Dual Language Education* is that "all aspects of the program work together to achieve the three core goals of dual language education: grade-level academic achievement, bilingualism and biliteracy, and sociocultural competence" (Howard et al., 2018, p. 24). The similarities in students' mathematics performance between the charters and the NBA DLP suggest that students' grade-level achievement in mathematics is not affected by placement in a charter school, but the disparities in language arts CAASPP scores between the two school models is troubling. It is difficult to know why we see this difference in mean scores, but we speculate that the decreased ethnic diversity seen in the charter schools, both in the literature and our own study, may be connected; DLP rely on students having both English and Spanish models to learn from in the classroom, and it is possible that charter DLP, with their more homogeneous populations, might be falling behind in their ability to provide students with strong English-language models. Although the groups of students designated as Latina/x/o and EL certainly contain a substantial amount of within-group linguistic and cultural diversity, current measures do not adequately

capture this reality. For example, the current Home Language Survey (the first step in designating California students as EL) identified only 6% of students as potential multilingual learners, while a proposed updated survey identified almost 40% of students as multilingual learners (Haas et al., 2015). This lack of clarity around student demographic designations makes the true cultural and linguistic balance in DLP classrooms unknown.

We believe that our study fills an important gap in the research, and is a valuable first step to understanding more about DLP and charter schools in California. However, our study was not without faults. A major limitation in our comparison of student achievement in charter versus NBA DLP is the lack of a statewide Spanish-language test of academic achievement, making it impossible to know if students at charter and NBA DLP are gaining bilingualism and biliteracy at the same rates. While a Spanish language assessment⁶ is currently in the process of being rolled out, state policy only requires English-language testing, and we are unable to compare student achievement and progress in LOTE. With only English-language assessment data, any analysis of student achievement in DLP is missing a vital component. Nevertheless, it will be interesting to see the progress of the California Spanish Assessment in future years and how this new achievement data will clarify our picture of charter and NBA DLP. A second limitation of this study was our lack of access to individual student data. We hope that in future investigations into this topic we will be able to access individual, longitudinal student data, nested within classrooms within schools, allowing us to perform more advanced statistical analyses.

Apart from measures of student achievement, the disproportionate enrollment of Latina/x/o students versus white and Asian students that we see in charter schools calls their performance on the final goal of sociocultural competence into question. In our view, learning the language is just the vehicle to the broader cultural benefits that come from two-way programs. Unfortunately, schools and even school districts are becoming increasingly segregated (Orfield et al., 2003), and thus the opportunities to create well-designed, linguistically and ethnically diverse two-way programs may be decreasing. When DLP were originally conceived in the St. Lambert Experiment (Bruck et al., 1974), the mixing of cultures was heavily emphasized. In early formulations of two-way programs, biculturalism was seen as necessary for the model, requiring a classroom with an equal mix of English and LOTE speakers. With shifting demographics in the United States and California, especially, this model may be increasingly difficult to implement. Recent changes to the stated goals of Dual Language Education have shifted from “biculturalism” to “sociocultural competence,” seemingly de-emphasizing the integration of students from different backgrounds in favor of a more general pedagogical focus on appreciation of diversity. But results from at least one DLP suggest that the cultural knowledge and interactions that students gain can be of equal importance to language development (Téllez, 2010).

As charter schools require parents to opt-in to a specific program, it is of utmost importance that parents truly understand what type of education their children will receive and the implications of one program model or another. A DLP and its associated promises of bilingualism, biliteracy, and linguistic/cultural integration, may sound quite attractive to parents. However, if these charter school programs lack the integration of linguistic and cultural groups and the balanced approach to language of instruction crucial to the initial conception of DLP, parents may unknowingly enroll their children into programs that have substantial differences from what they expect. A cursory review of how charter DLP websites are marketing their DLP appears to be inconsistent with what many educators think of as a DLP model. Along with many other educators, we believe that a key component offered by DLP is the opportunity for all students to learn literacy in their native

language, a program feature that seems impossible to fulfill in charter schools that advertise DLP with a 90-100% LOTE program for early elementary grades. Parents, who have put their trust in these schools to teach their children in two languages, have the right to full information about the type of program their children will truly experience.

John Dewey (1902) made famous a quote commonly attributed to Horace Mann: “one former is worth a thousand reformers.” Dewey’s use of Mann’s quote, in our reading, was to emphasize that creative ideas and new methods outweigh mere critique of current models. While there is nothing wrong with reform, it must be done with caution, with consistent evaluation of outcomes, and vigilance to ensure that the reform is not being tested on children whose families may lack the knowledge or confidence to understand the potential effects of the reforms on their children’s life chances. Although we believe in the value of DLP, the paucity of information around important issues such as basic demographics, student achievement, and the gap between research-based practice, policy, and implementation requires attention if we are to be sure that California’s Latina/x/o students are not being short-changed. We hope that this study leads to further research that uses individual student data, nested within classrooms and schools, in order to better understand the relationship between school model, student and staffing characteristics, and student achievement in DLP.

NOTES

1. We prefer the somewhat unwieldy acronym Latina/x/o, in place of the now-common term Latinx, to represent students whose ethnic or national heritage is rooted in the geography of Latin America. Although now popular as a generic reference, Latinx emerged as a suffixation to represent “Latinos” who identify as nonbinary. Therefore, to use Latinx for all who represent this heritage is inaccurate. Our term includes those who identify as female, male, or nonbinary.
2. The terms used to describe language education programs are varied and often confusing. The programs we are studying have been described as two-way immersion, two-way bilingual education, dual immersion schools, and dual language programs, to name a few. We prefer dual language programs, or DLP.
3. These additional DLP were discovered by sharing our list with colleagues working with Dual Language education in California and asking if they noticed any programs we had missed.
4. Existing resources vary widely in their counts of California’s DLP; The California Association of Bilingual Education’s website directs visitors to DualLanguageSchools.org, an organization that lists 515 DLP in California, but does not separate schools by type (elementary versus secondary, public versus private). In contrast, The Center for Applied Linguistics’ Dual Language Program Directory lists only 160 elementary DLP in California. The origin of the information in these two databases is unclear. Our database, though it may not be completely comprehensive, is based on the most current data available from the California Department of Education. Our database is available upon request.
5. The difference in standard deviation between the statewide and DLP datasets can be attributed to the state’s dataset being based on individual student data, while the DLP dataset’s use of schoolwide mean scores decreased the variation.
6. The CDE is currently in the process of rolling out a new test that aligns with Common Core State Standards for Language Arts, but the California Spanish Assessment (CSA) remains optional (California Department of Education, CAASPP Reporting, 2019). In 2019, the only year in which this test has been administered, 24,313 students in grades 3, 4, and 5 took the test, accounting for

only 12.7% of California's 190,904 third through fifth grade students attending DLP. It is unclear how many of the students who took the CSA in 2019 attended DLP, and the CSA does not presently have a mathematics component.

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