

Charter Schools and English Learners in the Lone Star State

by Deven Carlson
with David Griffith



Foreword by Michael J. Petrilli and David Griffith

About

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Foreword

By Michael J. Petrilli and David Griffith

As most readers are at least dimly aware, the number of English Learners in U.S. schools has increased in recent decades. Yet, unlike racial categories (which are more or less permanent) the “EL” designation is meant to be temporary. Consequently, even seasoned education policymakers tend to underestimate the number of “ever EL” students.

Because states aren’t required to report this number, clarity on this point is surprisingly hard to come by; however, based on the data we do have, it seems likely that the “true” figure is closer to 15 percent¹ than 10 percent (which is the figure that’s usually cited). And it may be higher. For example, 19 percent of students in California are current English Learners, but another 16 percent are former English Learners.²

Like other student groups, students in both of those categories are increasingly served by charter schools. Yet, in part because of the aforementioned data issues, our knowledge of how well they are served in these schools hasn’t kept pace with this growth. For example, we have little sense of how the rapid expansion of charters’ enrollment share within the English Learner population has affected their performance vis-à-vis this population. Nor, with the notable exception of English Learners in Boston,³ do we know much about the long-term outcomes of English Learners who enroll in charters, or about how the sector is approaching the unique challenges (and opportunities) that are associated with educating this population.

Importantly, while some studies suggest a positive relationship between charter school attendance and English Learners’ academic progress,⁴ questions about the validity of these estimates have persisted,⁵ along with questions about whether charters are pulling their weight when it comes to the number and types of English Learners they serve.⁶ Because most parents of English Learners aren’t fluent in English, concerns have also been raised about how non-English-speaking families learn about, evaluate, and access schools of choice in a country where most official business is conducted in English.⁷

Finally, it’s worth noting that English Learners as a group were particularly affected by pandemic-related school closures – and have yet to recover.⁸

For all of these reasons, we decided it was time for a closer look at the educational experiences and outcomes of English Learners in charter schools. And upon further investigation, it became increasingly clear where we needed to be looking.

Currently, about one in five English Learners in the United States lives in Texas, which is also home to one of the country’s largest and fastest-growing charter sectors. In the past decade, the number of English Learners in the Lone Star State’s charters has *quintupled* to about 125,000 students. And the state has also served as a launching pad for some of the country’s biggest charter school networks, including KIPP, IDEA, and Harmony (to name just a few).

To conduct the analysis we envisioned, we recruited University of Oklahoma Associate Professor Deven Carlson, who is well-known for his work on charters⁹ and the experiences of English Learners.¹⁰ And to ensure that Dr. Carlson received the best possible advice, we also reached out to Elizabeth Setren (whose study of English Learners in Boston charters remains the gold standard) and Will Fullerton (who was chief of staff at the Texas Education Agency when the sector experienced some of its fastest growth).

Finally, to provide some context for the results, we decided to talk to practitioners. Specifically, we conducted fifteen semi-structured interviews with principals and other leaders of high-performing charter and traditional public schools with unusually high concentrations of English Learners.¹¹ On the charter side, we talked to superintendents, bilingual education coordinators, and principals from the IDEA, Harmony, Uplift, Yes Prep, Vanguard, and Step networks. On the traditional public school side, we spoke with principals and other leaders of high-performing schools in Houston, Dallas-Fort Worth, Austin, and the Lower Rio Grande Valley.

To our knowledge, the result of all this activity is the first truly large-scale study to control for factors such as students' baseline English proficiency when estimating "ever EL" students' academic progress in charters. (After all, the state of Texas has more English Learners in charter schools than the city of Boston has K-12 students of any description.)

Similarly, we believe this is the first truly large-scale study to examine the relationship between "ever EL" students' charter school enrollment and longer-term outcomes such as postsecondary enrollment and earnings.

In short, this study broadens, deepens, and updates our understanding of an important and somewhat underappreciated national phenomenon.

So, what did we find?

Finding 1: Charter schools now enroll a disproportionate share of Texas's English learners.

Finding 2: Compared to their traditional public school peers, English Learners in Texas's charter schools make somewhat more progress in reading but slightly less progress in math.

Finding 3: Compared to their traditional public school peers, English Learners in Texas's charters are more likely to graduate high school and enroll in college, and they earn more money in the post-college years.

Finding 4: As Texas's charter sector has expanded, English Learners' reading gains have remained relatively consistent, but their math gains have fluctuated.

On the strength of these findings, we draw the following conclusions.

1. Overall, English Learners in Texas are benefitting from attending charter schools.

As noted, English Learners in charters are significantly more likely to graduate high school and enroll in a four-year institution. Moreover, they earn considerably more in the years after college, suggesting that those students who enroll in college tend to benefit from it.

2. In Texas, as elsewhere, the charter school movement will not meet its goals unless rapid expansion is paired with appropriate accountability and funding.

Per Finding 4, the progress that English Learners in Texas charter schools made in math declined rapidly in the first half of the study period but improved significantly in the second half, consistent with prior research by the Center for Research on Education Outcomes that suggests that accountability and funding reforms enacted in 2013 led to broader improvement in the Lone Star State's charter sector.¹² Accordingly, we urge the Texas Board of Education (and other charter school authorizers in other states) to continue to set a high standard for the approval of new charter schools and to close schools that are consistently low-performing. Similarly, we urge lawmakers in Texas (and other states) to remain committed to equitable charter funding. Over time, adhering to these basic principles should lead to further increases in charter school quality, even as the sector continues to expand.

3. In some cases, efforts to boost English Learners' reading achievement may be coming at the expense of their math achievement.

Perhaps the most difficult question raised by the report is why English Learners in Texas's charter schools are seeing more progress in reading, while those in the state's traditional public schools are making (slightly) more progress in math; however, based on our conversations with educators in both sectors, we believe that two hypotheses deserve consideration.

First, the fact that charters are schools of choice means they may be more responsive to the demands of some English Learners' parents for more English instruction and/or English-focused supports (see *How do parents of English Learners in Texas want their children educated?*). And despite the positive tenor of the findings, there may be trade-offs associated with this preference. Notably, a significant body of research finds that dual immersion programs, which are among the *least* English-intensive approaches, tend to get the strongest results, though much of this research is associational.¹³

Second, the general shortage of bilingual educators in Texas, the regulatory hurdles associated with bilingual and/or ESL programming, and the fact that charters tend to recruit their teachers from a different pool of potential applicants than traditional public schools may make it particularly difficult or unappealing for the state's charter networks to staff an "official" bilingual program (see *What do Texas educators say is the biggest barrier to serving English Learners effectively?*). In other words, some combination of limited supply and unmet demand may be conspiring to produce a somewhat different set of learning environments in the charter school context.

In addition to these factors, it seems likely that there are philosophical differences between educators in charter and traditional public schools – such as a preference or distaste for data-driven instruction – that have implications for English Learners’ education. However, after speaking with leaders in both sectors, our sense is that their personal experiences – including but not limited to growing up in an English- or Spanish-speaking community or household – matter far more than the distinction between traditional public schools and charters.

As Steinbeck famously wrote after traversing the state with his poodle, “Texas is a nation in every sense of the word.” In other words, it might just be big enough, diverse enough, and indisputably American enough to tell us something important about where the rest of the country’s K-12 education system is heading. If so, we have reason to be optimistic about the growing number of English Learners served by charter schools.

Introduction

Thanks to rapid increases in the state's Hispanic and Asian populations, the number of Texas students classified as English Learners has surged in the past decade, from approximately 830,000 in 2010 to more than 1.1 million today.

In the charter sector, change has been even more rapid. In 2010, 16 percent of charter students in Texas were classified as English Learners. Yet by 2021, that figure had nearly doubled to just under 30 percent, even as the share of all Texas students who enrolled in charters *also* doubled (and then some). Consequently, the total number of English Learners in Texas charters has quintupled in the past decade, from less than 25,000 in 2010 to nearly 120,000 in 2021.

The rapid growth in Texas's English-Learner population puts a premium on analyzing the educational experiences of this student group, and the disproportionate share of this growth that has occurred in the state's charter sector makes it particularly important to understand how English Learners in that sector are faring. Accordingly, this report addresses three research questions:

- 1. How do the English Learners who enroll in Texas charter schools compare to their peers in traditional public schools?**
- 2. How do the academic and economic outcomes of English Learners in Texas charter schools compare to those of their peers in traditional public schools?**
- 3. How have the academic outcomes of English Learners in Texas charter schools evolved as the number of English Learners in charters has increased?**

To address these questions, this report uses student-level data spanning much of the first two decades of this century and a wide range of analytic techniques. In so doing, it brings important new evidence to bear on the educational experiences of one of the fastest-growing student populations in one of the fastest-growing sectors in one of the fastest-growing states in the country.

Background

While both English Learners and charter schools have been the subjects of numerous studies, only a handful of analyses have examined the academic performance of English Learners in charters. Of these, perhaps the most well-known have been published by the Center for Research on Education Outcomes (CREDO), which has conducted a series of studies comparing the math and reading achievement growth of all students, including English Learners, in charter and traditional public schools. Yet when it comes to English Learners, the results of these studies are all over the map, both literally and figuratively.

Some CREDO studies, including those conducted in Washington State, California, and New Jersey, as well as CREDO's National Charter School Study, find that English Learners in charters make significantly more progress than their traditional public school peers; however, a second set of studies, including those conducted in South Carolina, New Mexico, Pennsylvania, Idaho, Indiana, and Florida, find no significant difference between the two sectors. And a third group of studies, including analyses conducted in Ohio, Massachusetts, and Michigan, find that English Learners make significantly less progress than their traditional public school peers.

CREDO has also published three reports with information on English Learners' performance in Texas charters—in 2009, 2015, and 2017. The 2009 report, which analyzed data from the 2002–03 to 2006–07 school years, concluded that English Learners in Texas charters outperformed their traditional public school peers in reading, while exhibiting no significant difference in math achievement gains. The 2015 report, which analyzed data from the 2007–08 through 2012–13 school years, found that English Learners in charters made more progress than their traditional public school peers in both reading and math (though the differences in math were small). Finally, the most recent report, which gauged charter performance from 2011–12 through 2014–15—thus overlapping with the 2015 report—found that English Learners in charters made slightly less academic progress than their traditional public school peers, though these differences were small and statistically insignificant.

In addition to CREDO's work, a rigorous study that leveraged thirty admissions lotteries held by Boston charter schools between the 2003–04 and 2014–15 school years found that charter enrollees were more than thirty percentage points less likely to be classified as English Learners.¹⁴ This reduction in English-Learner classification was accompanied by immense gains on both standardized tests and the likelihood of postsecondary enrollment. Indeed, charter school enrollment boosted the probability that English Learners attended college by more than twenty-five percentage points.

Needless to say, Boston isn't Texas. And it's tough to say whether or how findings from a single northeastern city with a relatively small English-Learner population and one of the highest-performing charter sectors in the country generalize to a state with more English Learners than Boston has students. In contrast, while the CREDO reports contain valuable information on the relative performance of English Learners in the charter and traditional public school sectors, that was not their focus. Consequently, they don't consider the full range of available data on English Learners, such as their home language or test-based measures of English proficiency. Nor do they consider how charter school enrollment is associated with long-term outcomes such as high school graduation, postsecondary enrollment, and earnings.

In short, the literature on English Learners in charters is broad. But with the exception of the aforementioned Boston study, it is not deep.

The Texas context

Federal law requires districts, including those that consist of one or more charter schools, to identify students who may benefit from English-language services. In Texas, districts in both sectors identify these students by administering a home-language survey to every student that includes two questions: (1) “What language is spoken in the child’s home most of the time?” and (2) “What language does the child speak most of the time?” If the answer to either of these questions is anything other than English, the district administers the Texas English Language Proficiency Assessment System (TELPAS), which informs the English-Learner classification.¹⁵

In principle, parents can always opt out of English-language services (see “How does Texas educate its English Learners?”). But in practice, both identification and deidentification are typically determined by students’ performance on the TELPAS. To exit English-Learner status, students in Texas must receive a score of “advanced high” on the TELPAS. And because of the stringency of this requirement, a nontrivial share of the state’s English Learners are never formally deidentified.

It’s no exaggeration to say that Texas is ground zero for English-Learner education in the U.S. As noted previously, more than one million K–12 students in the state—about 20 percent of all Texas public school students—are classified as “emergent bilinguals” (though to avoid confusion, this report uses the term “English Learners”). Collectively, Texas’s public schools serve nearly one in five English Learners in the United States. About 95 percent of Texas school districts enroll at least one English Learner. And a meaningful number of English Learners can be found in almost every corner of the state, from the Rio Grande Valley to major cities such as Dallas-Fort Worth, Houston, San Antonio, and Austin, as well as more rural areas.

While about 83 percent of Texas’s English Learners speak Spanish at home, more than a hundred different languages are spoken by at least one English Learner’s family. Similarly, there is wide diversity when it comes to English Learners’ levels of English proficiency, racial and ethnic backgrounds, and any number of other characteristics.

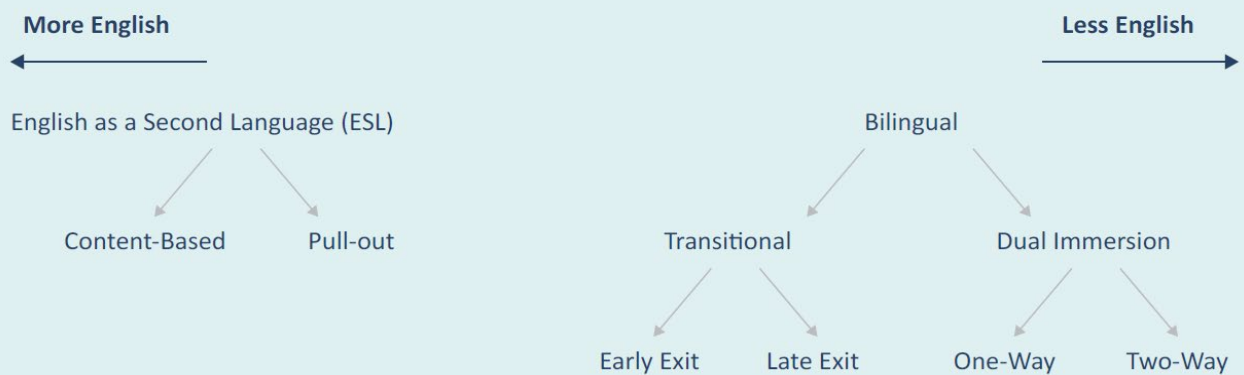
For these and other economic, cultural, and institutional reasons, programming for Texas’s English Learners also varies widely (see below).

How does Texas educate its English Learners?

In Texas, as elsewhere in the country, most approaches to educating English Learners can be thought of as falling on a broad language-delivery continuum (see Figure 1). At one end of this continuum are traditional English-as-a-second-language (ESL) programs, which tend to be more English-centric. These include “content-based ESL” (in which all instruction is theoretically conducted in English) and “pull-out ESL” programs (in which non-English pull-outs supplement predominantly English instruction).

Bilingual programs, which rely less on English, can be divided into “transitional” and “dual immersion” programs. In the former, English instruction is phased in gradually and ultimately replaces instruction in a student’s home language, with “early exit” transitional programs phasing in English more quickly and “late exit” transitional programs phasing it in more slowly. In dual immersion programs, approximately half of instruction is in English and the other half in some other language (typically Spanish), and the goal is full proficiency in both languages. Per the figure, dual immersion includes “one-way” options, wherein the typical class consists primarily of Spanish-speaking students, and “two-way” options, wherein the typical class consists of a mix of English and Spanish speakers.

Figure 1. The English Learner Language Delivery Continuum



As bilingual programs, dual immersion and transitional programs are subject to different rules and regulations than ESL programs. For example, regardless of sector, most teachers in bilingual education programs must be bilingual certified (as opposed to ESL certified), meaning they must be sufficiently fluent in both English and Spanish (or another language) to pass the state’s bilingual certification exam.

In theory, Texas law requires any traditional school district or charter school network with more than twenty English Learners in a single grade level to establish a bilingual education program. Similarly, any district with at least one but fewer than twenty English Learners is required to establish an ESL program. However, in practice, the Texas Education Agency can grant exemptions to districts or charter networks that are unable to staff such a program. And because of the increasingly acute shortage of ESL and bilingual certified teachers,¹⁶ a growing number of teachers in ESL and bilingual programs are the beneficiaries of ESL or bilingual education waivers.¹⁷

For these and other reasons, over half of Texas’s English Learners are still enrolled in ESL programs, despite a growing body of research that finds dual immersion programming is associated with strong outcomes for students.¹⁸ To address this challenge, Texas’s recently released “Emergent Bilingual Strategic Plan” calls for an increase in the number of bilingual programs and dual immersion programs in particular.¹⁹

Data and methods

This report takes advantage of two sets of annual records from the Texas Education Agency (TEA): (1) records with information on student characteristics and outcomes and (2) records describing school characteristics. The former contain a wide range of information, including the standard set of demographic characteristics. Demographics of particular interest for this report include students' English Learner status, the language they speak at home, and an indicator for students' immigrant status. In addition to these demographics, the records contain information on students' test scores and high school graduation. And for students with an English-Learner classification, they also contain information on students' English-language proficiency, as measured by the TELPAS. At the school level, the TEA records contain information on whether the school is a charter, its grade span, and the district and county in which it is located.

In addition to the TEA records, this study draws on information from the Texas Higher Education Coordinating Board (THECB), the National Student Clearinghouse (NSC), and the Texas Workforce Commission (TWC). Records from the THECB contain information on postsecondary enrollment, persistence, and completion for individuals enrolling in Texas postsecondary institutions. The NSC records provide comparable information for students attending college outside the Lone Star State. Finally, records from the TWC detail individuals' quarterly earnings from employers who are required to pay into Texas's Unemployment Insurance (UI) system—a group that includes almost all employers in the state, except for self-employed individuals.

In most cases, these records begin in the early- to mid-2000s, allowing this report to characterize English Learners' educational experiences and outcomes over a period of nearly two decades; however, while more recent data exist, the end point for most analyses is the 2018–19 school year, as there is simply too much uncertainty about data quality and comparability during the years affected by Covid-19.

In general, these analyses rely on regression techniques, which account for factors related to both English-Learner status and the outcome of interest, thus producing a better “apples-to-apples” comparison. In most cases, these models account for both standard demographic characteristics (e.g., student race/ethnicity, sex, and economic disadvantage) and factors more directly relevant to English-Learner education, such as immigrant status, home language, and English proficiency (as measured by the TELPAS). Importantly, the models also account for county of residence, meaning that they compare the outcomes of English Learners in the charter and traditional public schooling sectors who reside in the same county.

Finally, in addition to analyzing administrative data, we conducted fifteen semi-structured interviews with principals and other leaders of high-performing charter and traditional public schools with unusually high concentrations of English Learners. On the charter side, we talked to superintendents, bilingual education coordinators, and principals from the IDEA, Harmony, Uplift, Yes Prep, Vanguard, and Step networks. On the traditional public school side, we spoke with principals and other leaders of high-performing schools in Houston, Dallas-Fort Worth, Austin, and the Lower Rio Grande Valley. Themes from these interviews appear as sidebars throughout the report.

For a full description of the methods, see *Appendix A*.

Results

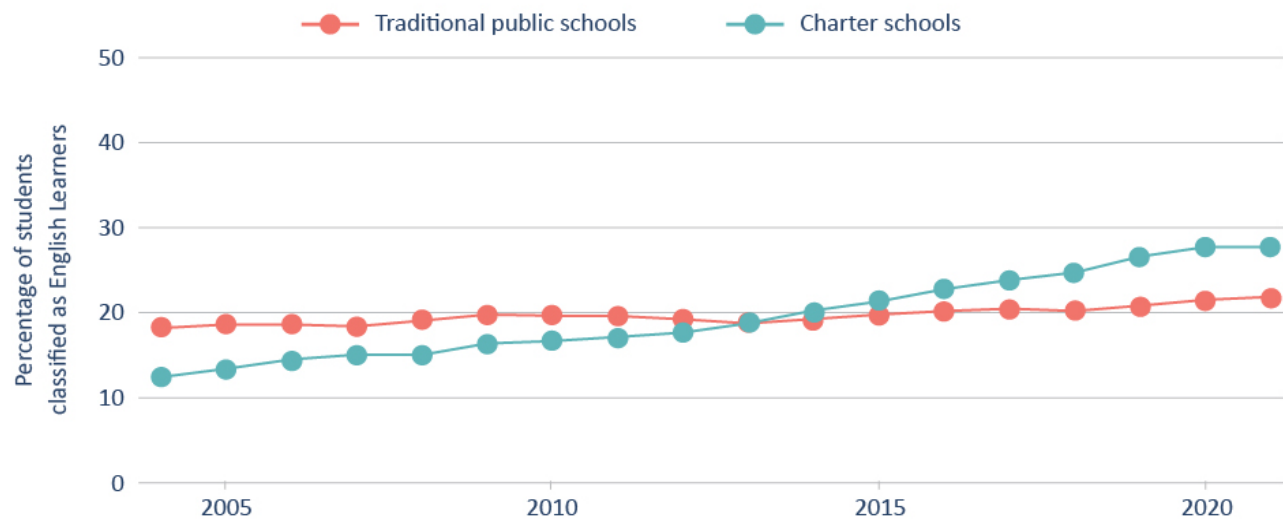
Our analysis of the aforementioned data sources yielded four findings: First, charter schools now enroll a disproportionately share of Texas's English Learners. Second, compared to their peers in traditional public schools, English Learners in Texas's charter schools make somewhat more progress in reading and slightly less progress in math. Third, English Learners in charter schools are more likely to graduate high school and enroll in college, and they make more money in the post-college years. And finally, as Texas's charter sector has expanded, English Learners' reading progress has remained relatively consistent, but their progress in math has fluctuated.

See below for a more detailed discussion of each of these findings.

Finding 1: Charter schools now enroll a disproportionate share of Texas’s English Learners.

As noted previously, charter schools now enroll a disproportionate share of Texas’s English Learners. Per Figure 2, the average student in the charter sector now attends a school where 28 percent of students are classified as English Learners, compared to 22 percent for the average student in a traditional public school.

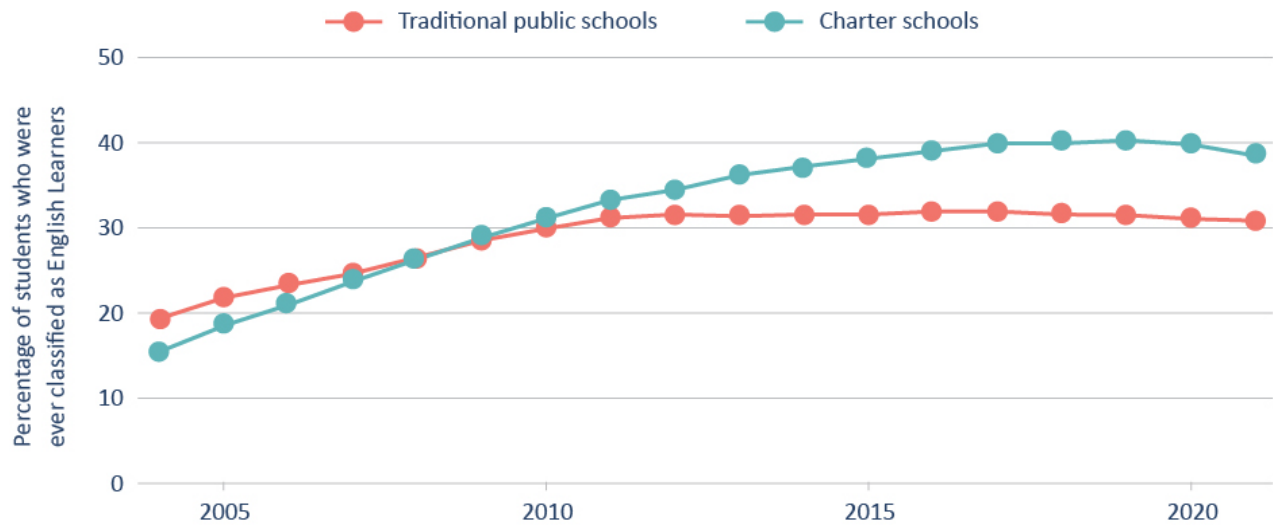
Figure 2. Charter schools now enroll a disproportionate share of Texas students who are classified as English Learners.



Notes: This figure shows the percentages of charter and traditional public school students who were classified as English Learners between 2003–04 and 2020–21. For example, in the 2020–21 school year, approximately 28 percent of charter school students and 22 percent of traditional public school students were English Learners. For each individual school year, the analytic sample is restricted to schools in counties that contain at least one traditional public school and at least one charter school.

Focusing on students who were *ever* classified as English Learners paints an even more dramatic picture. Per Figure 3, the average student in Texas’s charter sector now attends a school where nearly 40 percent of students held an English-Learner classification at some point.

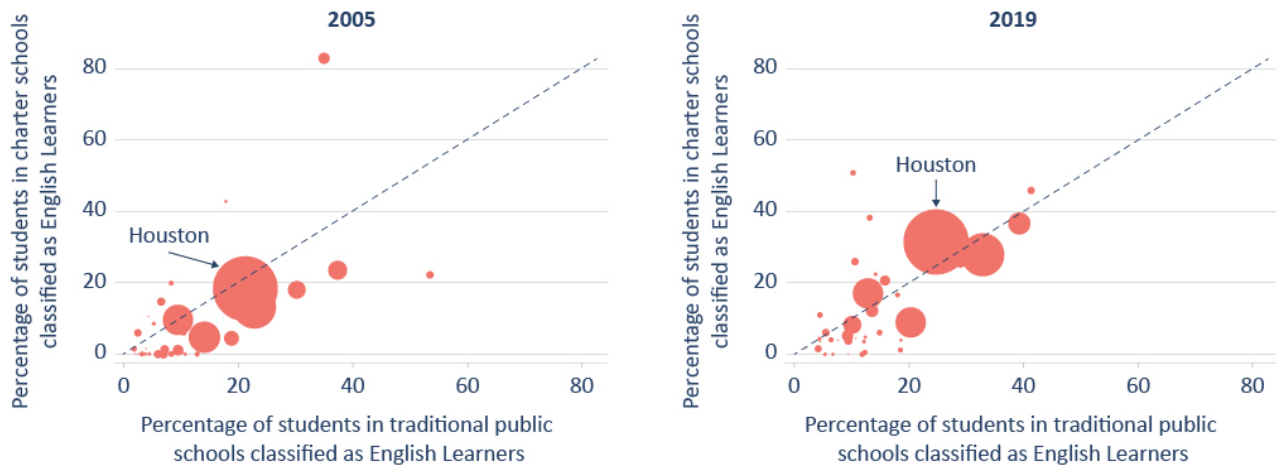
Figure 3. Charter schools now enroll a disproportionate share of Texas students who have ever been identified as English Learners.



Notes: This figure shows the percentages of charter and traditional public school students who were ever classified as English Learners between 2003–04 and 2020–21. For example, in the 2020–21 school year, approximately 39 percent of charter school students and 31 percent of traditional public school students were or ever had been classified as English Learners. For each individual school year, the analytic sample is restricted to schools in counties that contain at least one traditional public school and at least one charter school.

Per Figure 4, which shows how the percentages of students in charter and traditional public schools who were classified as English Learners changed within individual counties between 2005 and 2019, the shift toward charters was relatively broad based.

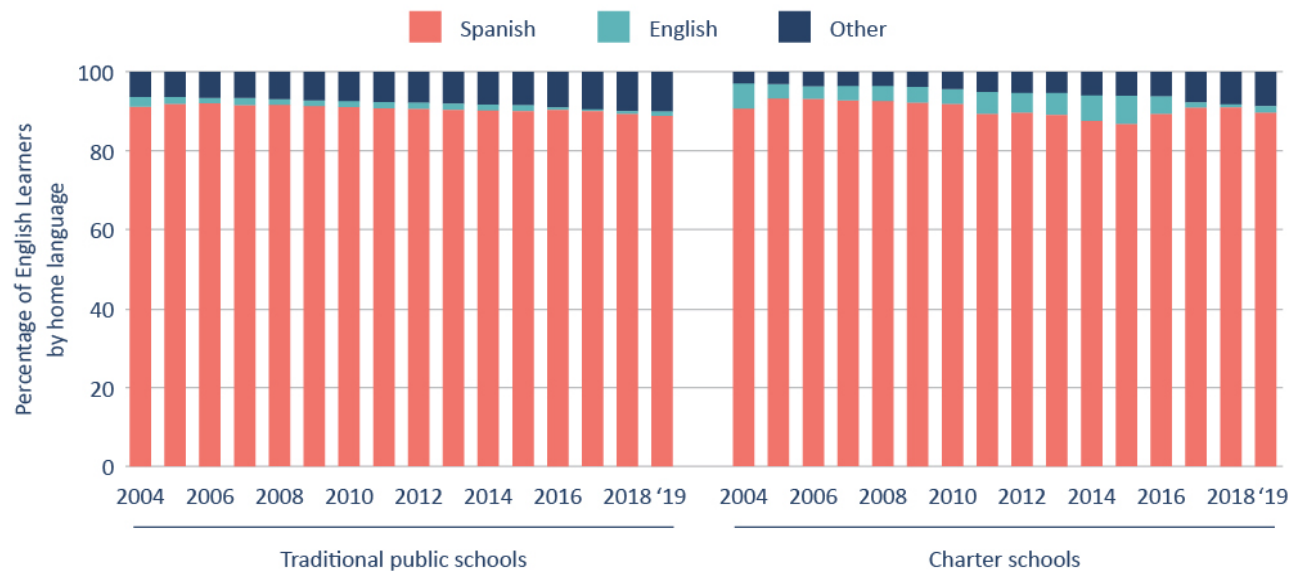
Figure 4. In most Texas counties, the share of English Learners enrolled in charter schools increased between 2005 and 2019.



Notes: This figure shows how the percentages of students who were English Learners in charter and traditional public schools changed in each individual county between 2005 and 2019. Larger dots represent counties with more students (for example, the largest dot is Houston). The two dotted lines indicate perfectly proportional distributions of English Learners across sectors. Counties where charters enrolled a disproportionately low percentage of English Learners fall below the dotted lines, while those where charters enrolled a disproportionately high percentage of English Learners fall above them. For example, charter schools in Houston enrolled a disproportionately low percentage of English Learners in 2005 but a disproportionately high percentage by 2019.

Per Figure 5, most English Learners in both sectors—about 88 percent in recent years—speak Spanish at home, though that number has been steadily declining in traditional public schools. In charters, English has historically been the second most frequently spoken home language; however, in recent years, only about 1–2 percent of the sector’s English Learners have come from homes where English is spoken most of the time, bringing them closer to traditional public schools. Finally, the percentage of English Learners whose home language is something other than English or Spanish has increased over time, though even today fewer than one in ten English Learners fall into this group. The most frequently spoken home languages after Spanish and English are, in order, Vietnamese, Arabic, and Urdu. In short, as charters have become a more popular option for English Learners, the home language profile of their English Learner population has come to more closely resemble that of traditional public schools.

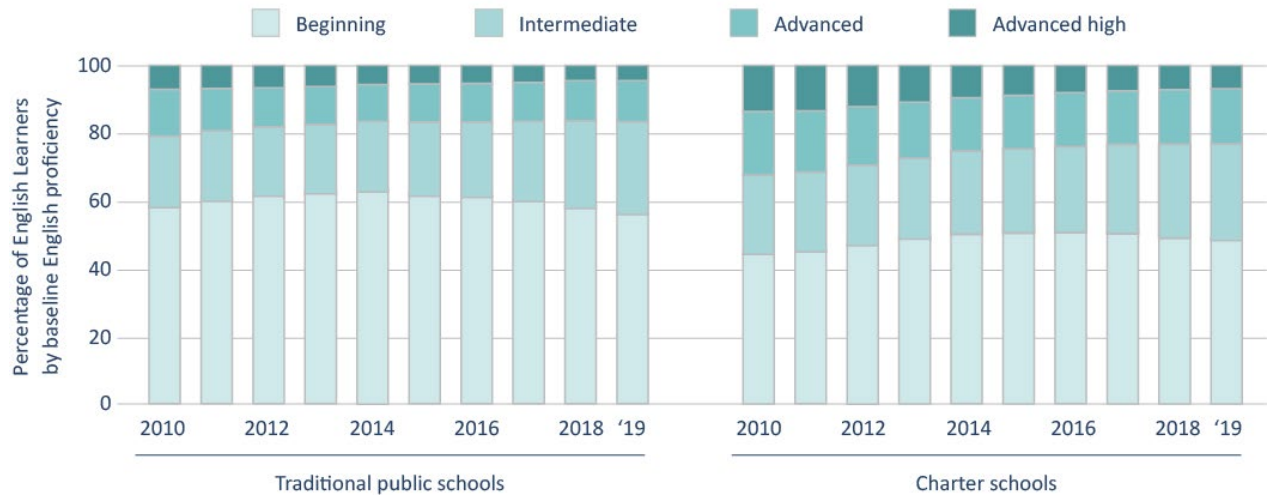
Figure 5. When it comes to their home language, the English Learners in Texas’s charter and traditional public schools look increasingly similar.



Notes: This figure presents the distributions of English Learners’ home language in Texas’s charter and traditional public schools for the 2003–04 to 2018–19 school years. For example, in the 2018–19 school year, roughly nine out of ten English Learners in both sectors lived in homes where the primary language was Spanish. Information on a student’s home language is collected from all Texas parents when they enroll their child in a public school and does not necessarily reflect a student’s knowledge of English and/or other languages.

Broadly speaking, the trends in charter and traditional public school students’ English proficiency mirror the trends in their home language. For example, about 45 percent of English Learners in charters had a baseline English proficiency level of “beginning” in 2009, compared to 58 percent in traditional public schools (Figure 6). Yet by 2018–19, this gap was only half as large. Similarly, about 13 percent of English Learners in charters had “advanced high” baseline English proficiency in 2009. Yet by 2018–19, that number had declined to about 7 percent, versus 5 percent in traditional public schools.

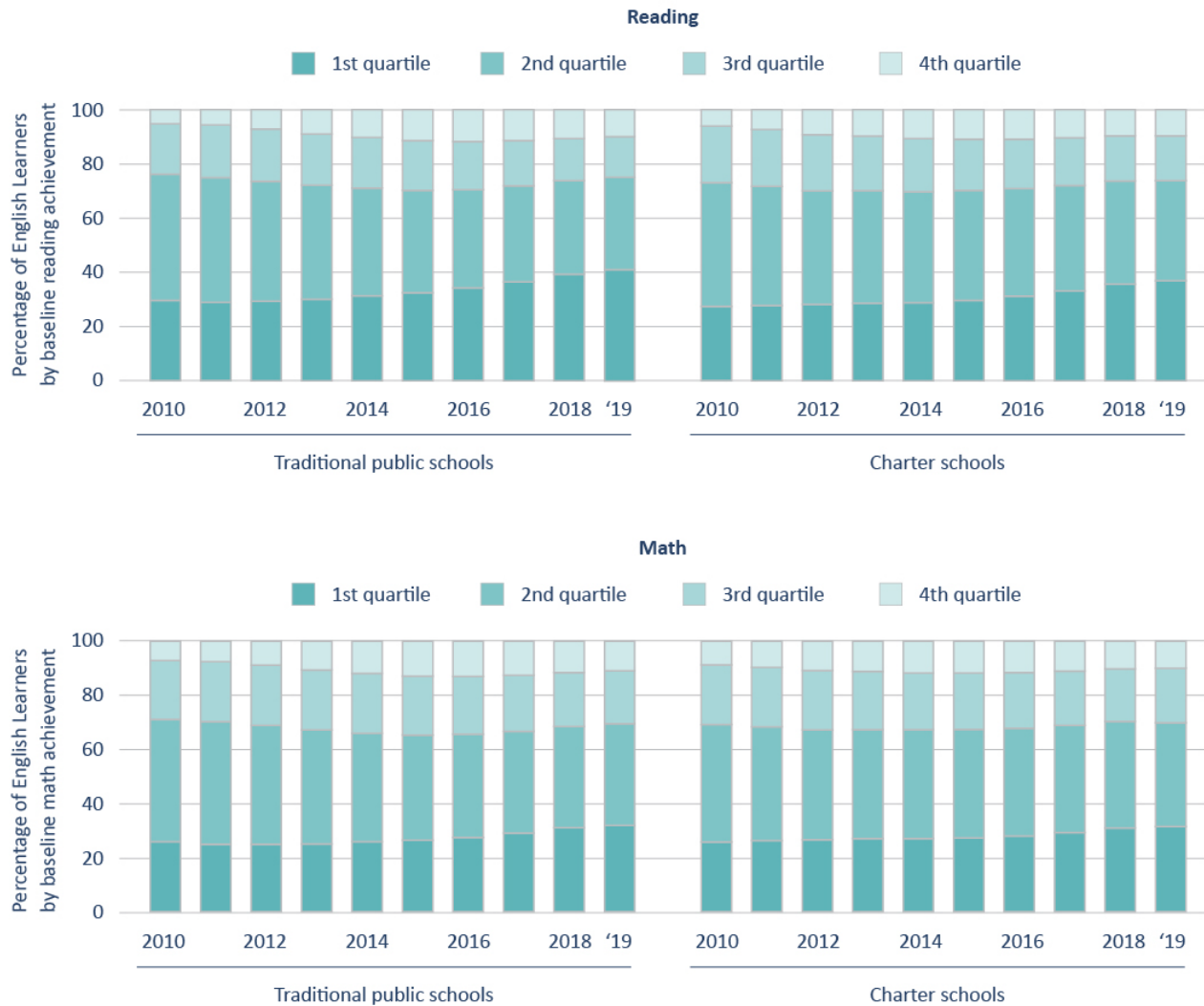
Figure 6. When it comes to baseline English proficiency, the English Learners in Texas’s charter and traditional public schools look increasingly similar.



Notes: This figure presents the distribution of students’ baseline English proficiency level as measured by the TELPAS in charter and traditional public schools for the 2009–10 to 2018–19 school years. The TELPAS collapses students’ composite scale score into four proficiency levels—beginning, intermediate, advanced, and advanced high. The figure begins with the 2009–10 school year to ensure that each student is observed for at least five years and to maximize the probability of capturing a “true” baseline English proficiency score. Per the figure, the share of English Learners in charters with “advanced” or “advanced high” baseline English proficiency declined between 2009–10 and 2018–19.

Finally, while English Learners’ baseline reading and math achievement is below average (compared to all Texas students), there is little difference between the two sectors’ achievement profiles, especially in more recent years (Figure 7). In short, as the percentage of English Learners in charters has grown, the English-Learner populations in the two sectors serve have become increasingly similar.

Figure 7. When it comes to baseline reading and math achievement, English Learners in Texas’s charter and traditional public schools look very similar.



Notes: This figure presents the distributions of charter and traditional public school students’ baseline reading and math quartiles as measured by their TAKS/STAAR performance in the 2009–10 to 2018–19 school years. The figure begins with the 2009–10 school year to ensure that each student is observed in the data for at least five years and maximize the probability of capturing a “true” baseline achievement score. Although assessment data are provided in the form of student scale scores, for the purposes of analysis, they were standardized (using the statewide mean and standard deviation from the relevant test administration) and then binned into quartiles for each individual year based on the statewide distribution. Per the figure, roughly 75 percent of English Learners in charter and traditional public schools fall in the first or second quartiles of reading performance, and roughly 70 percent fall into the first or second quartiles of math performance.

How do parents of English Learners in Texas want their children educated?

Because charters are schools of choice, one might expect the parents of English Learners in charters to have different preferences than the parents of English Learners in traditional public schools. Yet overall, educators in charter and traditional public schools provided similar accounts of the preferences of English Learners' parents. Perhaps most notably, educators in both sectors say *some* parents (though by no means all) want their children taught in English—or at least, mostly in English—rather than a mix of English and Spanish.

“Most of our kids in the bilingual program, the parents are very for it. But some of the parents, for whatever reason, don’t want their student in the bilingual program. So then they’re not.”

- Traditional public school principal

“Ultimately the parents want their kids to be successful. They know that they need the English to do that.”

- Traditional public school principal

“They really want English for their kids. They really want English because they know that’s how the system works. The system works in English.”

- Traditional public school principal

“One of the biggest issues with our kids not making progress is at home... One of the things I tell the parents is, have your son or daughter teach you the English they’re learning... help make them a teacher in your home.”

- Traditional public school principal

“Honestly, I haven’t had a parent complain or really ask me about their kid learning English in a long time.”

- Traditional public school principal

“Typically, the parents want the kids learning English in class, even the ones who don’t know English at all, because they know there is a financial barrier... if they don’t speak a high level of English.”

- Charter school principal

“We are an early college high school, so the parents want that associate’s degree for their student... In order to get an associate’s degree, they need to be very fluent in English and pass that reading test, right? So I think they bring them in here because we do hone in a lot on helping them build those skills.”

- Charter school principal

“A lot of our families only want our students getting instruction in English. Like, they see it as a hindrance. And officially it is, right? If you look at students in a bilingual program... their results are stalled until about fifth grade. In fifth grade, they tend to catch up to their peers. But explaining to a parent that their student failed the state test again, you know, for the second year, for the third year, but we expect them to catch up in a couple years. It just, it doesn’t go over well.”

- Charter school leader

“What I love about charter schools is they give parents a choice. If you want it bilingual, you can have that. And if you don’t... you can go another route.”

- Charter school principal

Finding 2: Compared to their peers in traditional public schools, English Learners in Texas’s charter schools make slightly more progress in reading and slightly less progress in math.

Per Figure 8, charter school students who were *ever* classified as an English Learners made slightly more progress in reading than their traditional public school peers but slightly less progress in math (estimates that restrict the sample to students who were actively classified as English Learners are available upon request). In both cases, the magnitude of the estimates is modest—0.026 standard deviations in reading and -0.017 standard deviations in math. For context, the reading gains are roughly equivalent to moving a student from the fortieth percentile to the forty-first percentile of reading achievement over the course of a school year.

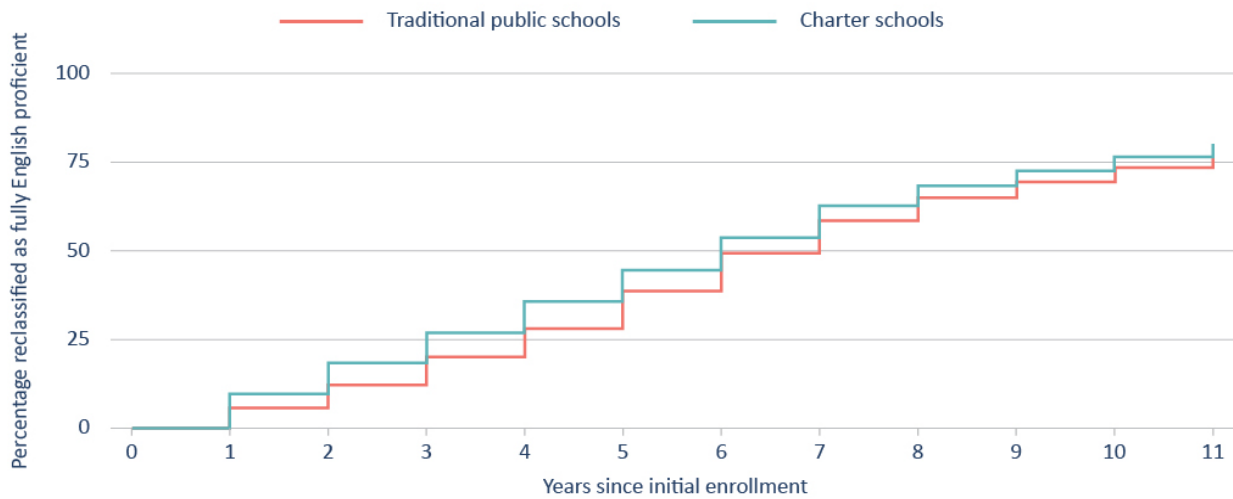
Figure 8. Compared to their peers in traditional public schools, English Learners in Texas charter schools make slightly more progress in reading but slightly less progress in math.



Notes: This figure shows the difference between the annual reading and math achievement gains of Texas’s charter and traditional public schools’ English Learners’ in grades 3–8 after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, English proficiency (as measured by the TELPAS), and county of residence. Test scores were standardized at the grade-year level using the mean and standard deviation from the statewide population of test takers. The estimates reflect the experiences of students who were *ever* classified as English Learners. For context, a difference of 0.25 standard deviations is roughly equivalent to moving a student from the fortieth to the forty-first percentile of reading achievement over the course of a school year.

As the reading estimates suggest, charter schools in Texas reclassify English Learners as fully English proficient somewhat more quickly than traditional public schools do (Figure 9). For example, three years after English-Learner identification, about 20 percent of English Learners in traditional public schools were reclassified, versus 27 percent of English Learners in charters.

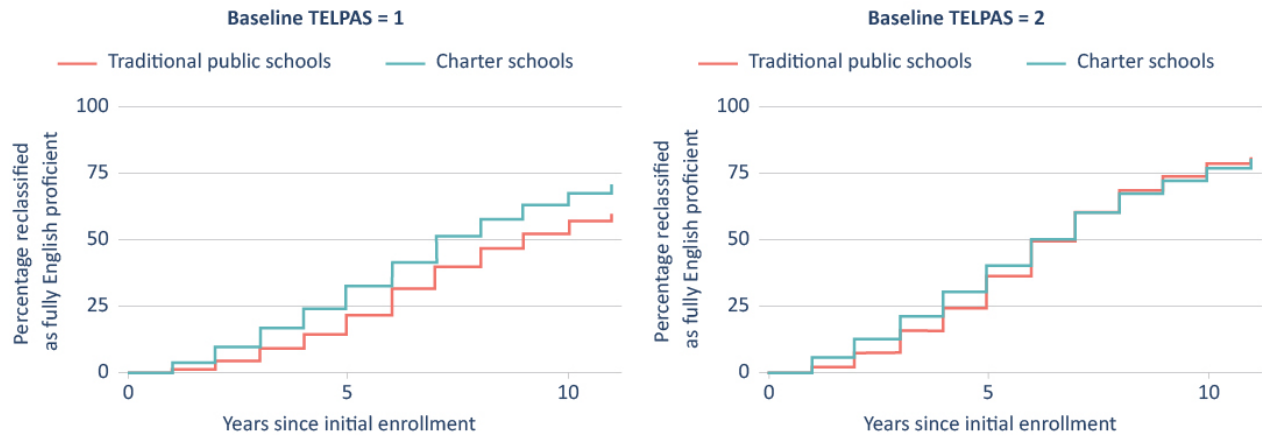
Figure 9. On average, Texas’s charter schools reclassify English Learners as fully English proficient more quickly than the state’s traditional public schools.



Notes: This figure shows the percentages of English Learners in charter and traditional public schools who retained their identification status up to eleven years after entering the dataset. For example, after three years in the dataset, 27 percent of English Learners in charter schools were reclassified versus 20 percent of English Learners in traditional public schools. For the purposes of this figure, each student’s initial observation is considered time zero.

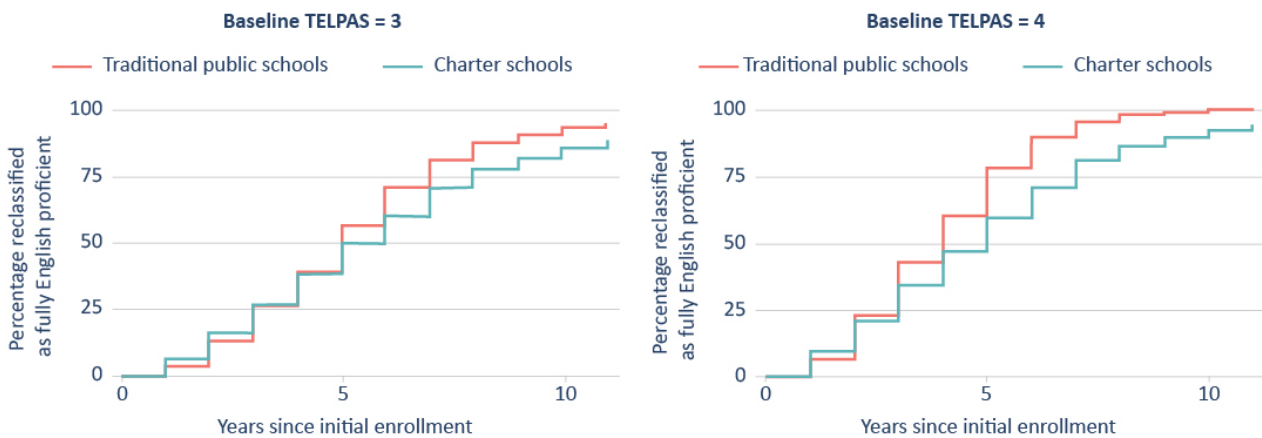
Interestingly, this difference is driven by charters moving English Learners with baseline TELPAS scores of one—the lowest level of English proficiency—toward full proficiency more quickly than traditional public schools (Figure 10). In contrast, traditional public schools reclassify English Learners with baseline scores of three or four more quickly (Figure 11). However, because most English Learners enter school with a baseline proficiency level of one or two, charters’ overall reclassification rate is higher.

Figure 10. On average, Texas’s charter schools reclassify English Learners with low baseline English proficiency more quickly than the state’s traditional public schools.



Notes: This figure shows the percentages of English Learners in charter and traditional public schools with baseline TELPAS scores of one or two (the two lowest levels of English proficiency) who retained their identification status up to eleven years after their initial enrollment (or after entering the dataset). For the purposes of this figure, each student’s initial observation is considered time zero.

Figure 11. On average, Texas’s traditional public schools reclassify English Learners with high baseline English proficiency more quickly than the state’s charter schools.



Notes: This figure shows the percentages of English Learners in charter and traditional public schools with baseline TELPAS scores of 3 or 4 (the highest levels of English proficiency) who retained their identification status up to eleven years after entering the dataset (or after entering the dataset). For the purposes of this figure, each student’s initial observation is considered time zero.

Which approaches to English Learner education do leaders in Texas's charter and traditional public schools support?

Overall, our conversations with school leaders suggest that many (though by no means all) see value in a more bilingual approach. Yet in practice, the many constraints with which educators must contend, from the abrupt and disorienting nature of some students' arrivals to the bewildering number of languages in some classrooms and the sometimes-bureaucratic hurdles associated with bilingual programming, seem to have at least as big an impact on instructional practice as any pedagogical or philosophical commitments.

"I think it's good to celebrate bilingualism and both cultures... Supporting the Spanish language with the Spanish processes so they can support the English language... And then having the English language to support their Spanish."

- Traditional public school principal

"Knowing how important the content is over the language piece, we communicate that to the parents... My main message is the kids need to learn the content. They're gonna learn the English because they live in the United States. The most important thing is that they know how to read... They know how to do that math."

- Traditional public school principal

"The most important thing is that they learn the content... So if that's in Spanish and it's supposed to be English, then we're gonna give them... the supports to move that way. But no one is ever in trouble for speaking one language over another."

- Traditional public school principal

"The hoops and that these kids have to go through that native language speakers do not to be able to exit the bilingual program... My personal opinion is it discriminates against bilingual students."

- Traditional public school principal

"It is my dream to start a bilingual program."

- Charter school leader

"It's supposed to be a hundred percent in English. There shouldn't be any other language being spoken in the classroom... but in reality, you've got a 10th grader who just came to America from Mexico... you're not gonna get anything through unless you use some Spanish."

- Charter school leader

"We'll get fifth graders that come and they don't know a word in English yet. So, we really have to try to individualize instruction."

- Charter school leader

"We are currently using an ESL model, not a dual language model. And the primary reason for that is that we are such a linguistically diverse school district. We have 45-50 different native languages."

- Charter school leader

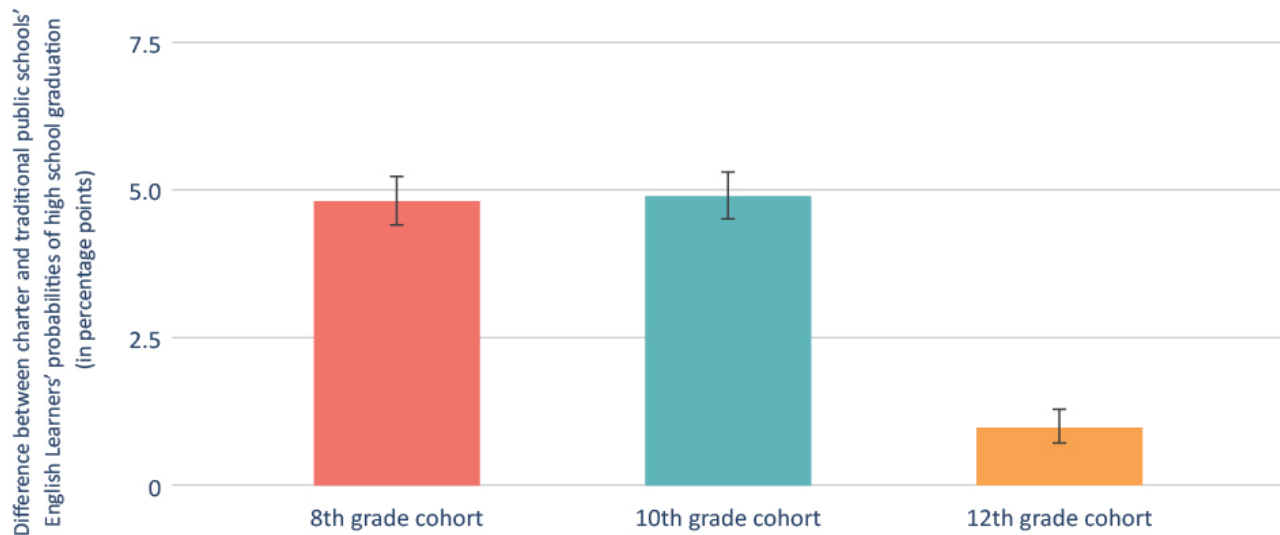
"It does start with compliance, making sure we have all of those compliance pieces in place because that will drive how that student is served academically or instructionally."

- Charter school leader

Finding 3: Compared to their traditional public school peers, English Learners in Texas charter schools are more likely to graduate high school and enroll in college, and they earn more money in the post-college years.

Because English Learners are an unusually mobile student population, characterizing the long-term outcomes of those in charters requires comparisons between multiple cohorts of students. For example, per Figure 12, English Learners who were enrolled in a charter school in eighth or tenth grade were four to five percentage points more likely to graduate high school than their traditional public school peers, while English Learners who were enrolled in a charter in twelfth grade were only about one percentage point more likely to graduate (presumably because twelfth graders are less likely to drop out).

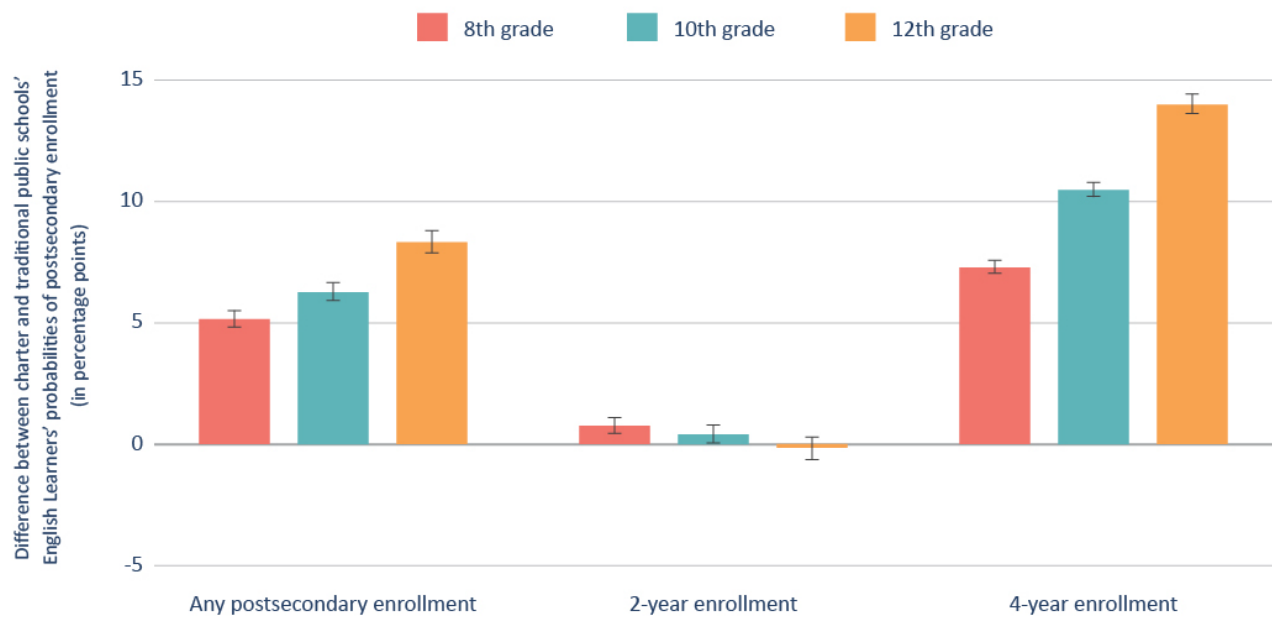
Figure 12. English Learners in Texas charter schools are more likely to graduate high school than their traditional public school peers.



Notes: This figure shows the difference between Texas’s charter and traditional public schools’ English Learners’ probabilities of on-time high school graduation after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, eighth-grade math and reading achievement, eighth-grade English proficiency (as measured by the TELPAS), county of residence, and alternative school status. The estimates reflect the experiences of students who were ever classified as English Learners who were enrolled in a charter or traditional public school in eighth, tenth, or twelfth grade. Per the figure, English Learners who were enrolled in charters in eighth or tenth grade were approximately five percentage points more likely to graduate high school than their peers in traditional public schools.

Per Figure 13, English Learners who were enrolled in a charter school in eighth grade were also about five percentage points more likely to enroll in a postsecondary institution than their traditional public school peers, with this difference driven almost entirely by a seven to eight percentage-point difference in enrollment in four-year institutions. Similarly, English Learners who were enrolled in charters in tenth grade were about six percentage points more likely to ever enter postsecondary education and ten percentage points more likely to enroll in a four-year institution, while twelfth-grade charter enrollees were about eight percentage points more likely to enroll in any postsecondary institution and fourteen percentage points more likely to enroll in a four-year institution.

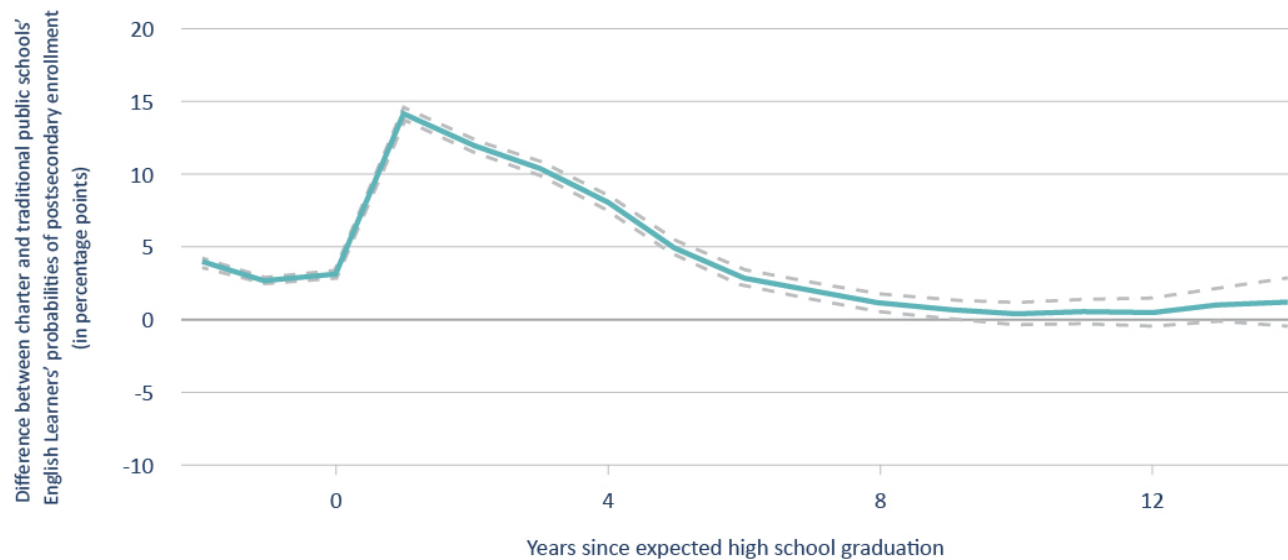
Figure 13. English Learners in Texas’s charter schools are more likely to enroll in a 4-year institution than their peers in traditional public schools.



Notes: This figure shows the differences between Texas’s charter and traditional public schools’ English Learners’ probabilities of enrolling in a two-year or four-year institution after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, eighth-grade math and reading achievement, eighth-grade English proficiency (as measured by the TELPAS), county of residence, and alternative school status. The estimates reflect the experiences of students who were ever classified as English Learners who were enrolled in a charter or traditional public school in eighth, tenth, or twelfth grade. Per the figure, English Learners who were still enrolled in charter schools in twelfth grade were approximately eight percentage points more likely to enroll in any postsecondary institution and approximately fourteen percentage points more likely to enroll in a four-year institution.

Per Figure 14, the increased likelihood of postsecondary enrollment among English Learners is driven by the years immediately following high school completion. For example, English Learners who are enrolled in charters in tenth grade are about fifteen percentage points more likely to be enrolled in a postsecondary institution in the year following their expected high school graduation—though the difference in subsequent years is smaller. Increases for the eighth- and twelfth-grade cohorts are strikingly similar (see *Appendix B*).

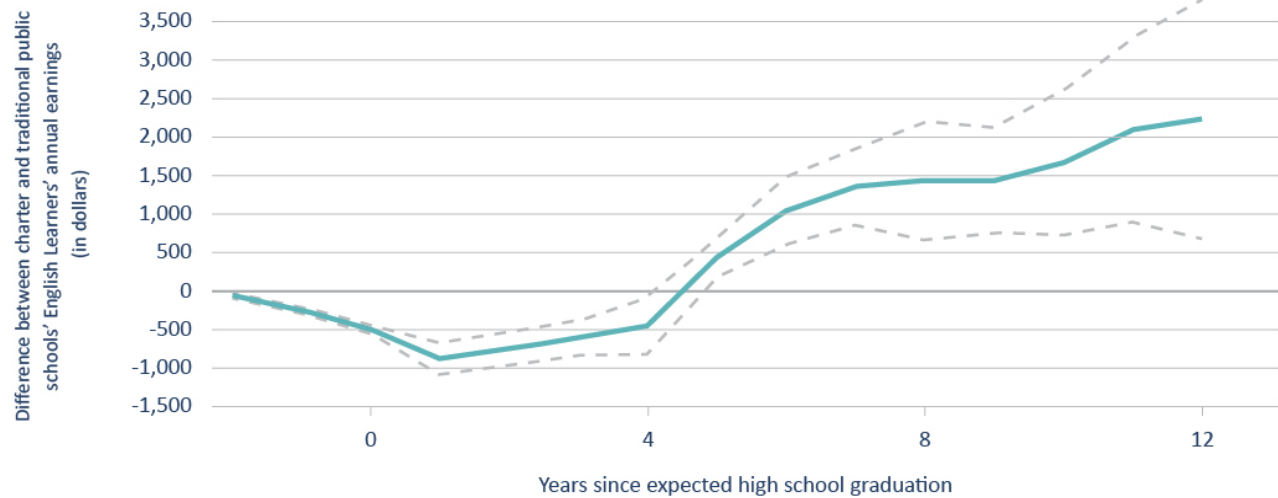
Figure 14. English Learners who enroll in Texas charter schools in tenth grade are more likely to be enrolled in a postsecondary institution in the post-high school years.



Notes: This figure shows the difference between Texas’s charter and traditional public schools’ English Learners’ probabilities of postsecondary enrollment up to fourteen years after expected high school graduation after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, 8th grade math and reading achievement, 8th grade English proficiency (as measured by the TELPAS), county of residence, and alternative school status. The solid line is above zero in years where English Learners in charter schools have higher postsecondary enrollment rates. The two dotted lines denote the 95 percent confidence intervals. The estimates reflect the experiences of students who were ever classified as English Learners who were enrolled in a charter or traditional public school in 10th grade. Per the figure, charter school students in these groups were nearly 15 percentage points more likely to be enrolled in a postsecondary institution one year after their expected high school graduation.

Finally, English Learners attending charter schools in the 10th grade earn less than their traditional public school peers during the years that correspond to increased postsecondary enrollment (per Figure 14) but significantly more in the long run (per Figure 15). And once again, this pattern holds for students attending charter schools in eighth and tenth grade too (see *Appendix*).

Figure 15. On average, English Learners who enroll in charter schools in tenth grade earn less in the years typically associated with postsecondary enrollment but more in later years.



Notes: This figure shows the difference between Texas’s charter and traditional public schools’ English Learners’ earnings up to fourteen years after their on-time high school graduation after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, 8th grade math and reading achievement, 8th grade English proficiency (as measured by the TELPAS), county of residence, and alternative school status. The solid lines are above zero in years where English Learners in charter schools have higher earnings and below zero in years where English Learners in traditional public schools have higher enrollment rates. The two dotted lines denote the 95 percent confidence intervals. The estimates reflect the experiences of students who were ever classified as English Learners who were enrolled in a charter or traditional public schools in 10th grade. Per the figure, charter school students in these groups earned significantly less than traditional public school students in the years corresponding to postsecondary enrollment, but significantly more in the long run.

Texas’s charter high schools often serve at-risk student populations.

A disproportionate number of Texas charter high schools serve at-risk student populations—in particular, students who have dropped out or struggled in traditional school settings. In the 2020–21 school year, about 10 percent of traditional public high schools operated under Texas’s alternative accountability system, a designation given to schools designed to serve at-risk student populations. In contrast, 34 percent of charter high schools operated under alternative accountability systems.

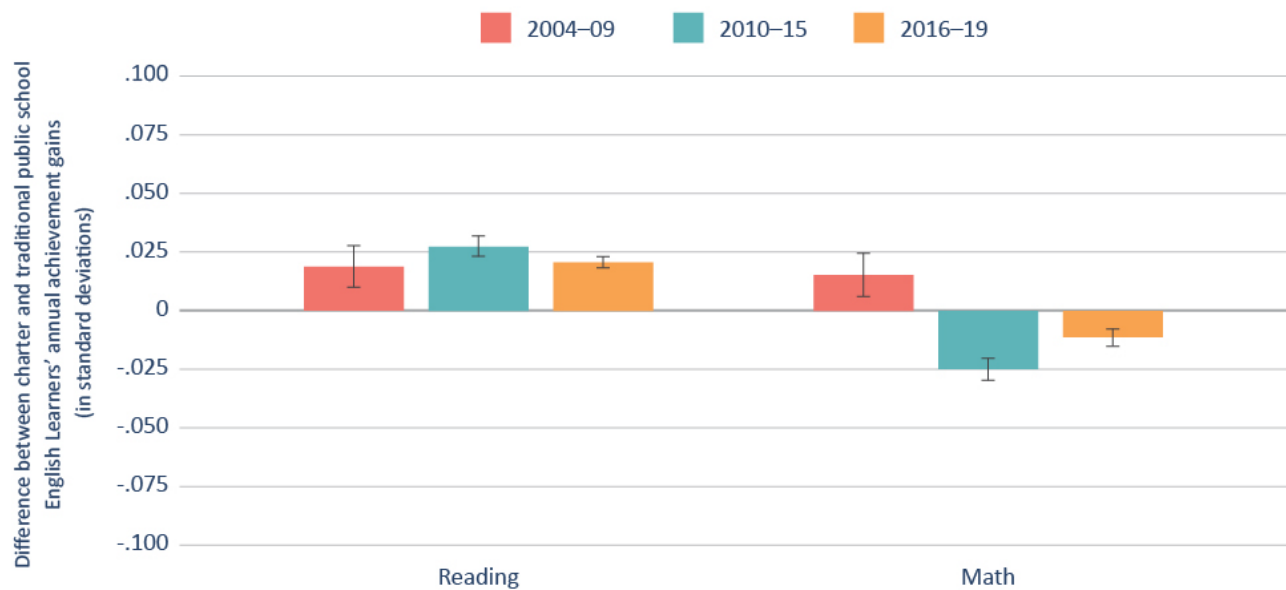
To account for this difference, the analyses of high school graduation, postsecondary enrollment, and earnings only compare students who enroll in schools that are subject to the same accountability regime. Notably, most of the differences between charter and traditional public school English Learners’ high school graduation, postsecondary enrollment, and earnings are driven by schools operating under regular accountability. The differences between charter and traditional public high schools operating under alternative accountability systems were relatively modest.

Finding 4: As Texas’s charter sector has expanded, English Learners’ reading progress has held steady, but their math progress has fluctuated.

The fivefold increase in English-Learner enrollment in Texas charter schools over the past decade begs the question of whether student and school performance have changed over time. Accordingly, Figure 16 shows that as Texas’s charter sector has expanded, English Learners’ reading gains have remained relatively consistent, but their math gains have declined—at least between the first time period and later time periods, though there is evidence of improvement in more recent years.

In all periods, these differences are modest. For example, in the 2016–19 period, English Learners in charters made about 0.01 standard deviations less progress in math per year and about 0.02 standard deviations more progress in reading. As noted previously, that is roughly equivalent to moving the average student from the fortieth to the forty-first percentile.

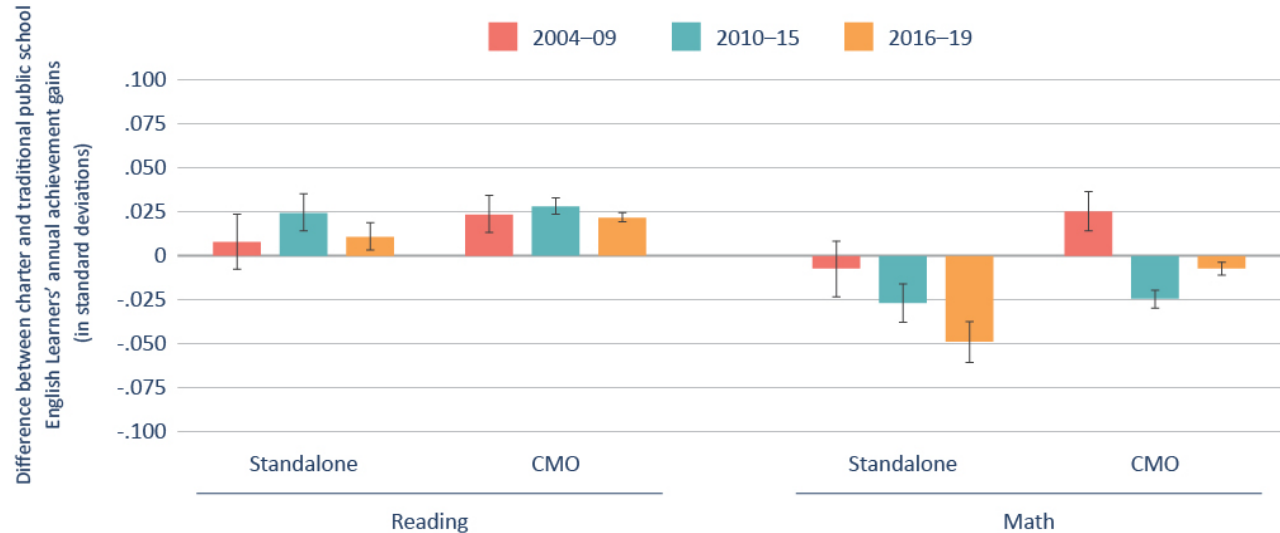
Figure 16. As Texas’s charter sector has expanded, English Learners’ reading gains have remained relatively consistent, but their math gains have fluctuated.



Notes: This figure shows the historical differences between Texas’s charter and traditional public schools’ English Learners’ annual reading and math achievement gains after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, English proficiency (as measured by the TELPAS), and county of residence. Test scores were standardized at the grade-year level using the mean and standard deviation from the statewide population of test takers. The estimates reflect the experiences of students who were ever classified as English Learners. For context, a difference of 0.25 standard deviations is roughly equivalent to moving a student from the fortieth to the forty-first percentile of reading achievement over the course of a school year.

Upon closer inspection, some version of this pattern seems to hold for both multi-school charter management organizations (CMOs) and stand-alone charters (Figure 17). In each type of charter, English Learners’ reading progress has held steady, but their math progress now lags that of their traditional public school peers. This is especially true in stand-alone charters, which account for less than a quarter of Texas’s charter sector.

Figure 17. As Texas’s charter sector has expanded, English Learners’ reading gains have held steady, but their math gains in standalone charters have declined.



Notes: This figure shows the historical differences between the annual reading and math achievement gains of English Learners in Texas’s stand-alone and CMO-affiliated charter schools and the annual reading and math achievement gains of their peers in the state’s traditional public schools after controlling for race/ethnicity, sex, economic disadvantage, immigrant status, home language, English proficiency (as measured by the TELPAS), and county of residence. Test scores were standardized at the grade-year level using the mean and standard deviation from the statewide population of test takers. The estimates reflect the experiences of students who were ever classified as English Learners. For context, a difference of 0.25 standard deviations is roughly equivalent to moving a student from the fortieth to the forty-first percentile of reading achievement over the course of a school year.

What do Texas educators say is the biggest barrier to serving English Learners effectively?

Regardless of sector, leaders of schools with high proportions of English Learners tend to view a bilingual teaching staff as an asset. Yet finding teachers who speak English and Spanish well enough to provide instruction in either language can be difficult, and the certification process for bilingual education presents additional challenges for districts and networks that are trying to create or staff a bilingual program.

Because charter schools often recruit their teachers from a somewhat different pool of potential applicants, it's possible that Texas's chronic shortage of bilingual educators is particularly acute in the state's growing charter sector—though that doesn't necessarily mean that bilingual students are ill-served.

"We have a great dual-language program in Texas, but the teachers that we have teaching the kids don't necessarily do a great job teaching in Spanish."

- Traditional public school principal

"It's always the people that say bilingual on the resumes that go to the top of the list."

- Charter school leader

"I'm trying to hire people obviously that match my demographics... not all my Spanish-speaking staff are bilingual certified, but there are lots that do speak Spanish."

- Traditional public school principal

"The certification is very hard to get. In Texas, not only do you have to speak Spanish fluently, but you also have to be able to read and write fluently and properly."

- Charter school principal

"I have two teachers on my campus that are not bilingually certified, but not cause they're not able to provide instruction in Spanish, they're just not able to pass the test."

- Traditional public school principal

"One of the hardest things is to find bilingual certified teachers for every grade level for the students."

- Charter school leader

"If the teacher is stronger in Spanish, they're going to veer a little bit more toward providing that instruction in Spanish, because that's what they're comfortable with. And if they're stronger in English ... their instruction is going to lend itself more to the English content."

- Traditional public school principal

"It doesn't matter. Right now, I have a huge Spanish population, but I have two bilingual teachers who don't speak any Spanish. And they're very successful."

- Charter school leader

Takeaways

- 1. Overall, Texas charter schools stack up well against traditional public schools when it comes to serving the state’s English Learners.** Perhaps most important, English Learners who enroll in a Texas charter school are significantly more likely to graduate high school and enroll in a four-year institution—and, on average, they earn significantly more in the post-college years.
- 2. Examining longer-term outcomes is essential to understanding English Learners’ educational experiences.** After all, analysis of achievement gains shows only modest differences between English Learners in charter and traditional public schools. Only when the focus turns to longer-run outcomes, such as postsecondary enrollment and earnings, do the differences between sectors become meaningful.
- 3. In some cases, efforts to boost English Learners’ reading achievement may be coming at the expense of their math achievement.** To be clear, this is neither certain nor inevitable. Still, in addition to other factors, it’s *possible* that the disconnect between charters’ reading and math outcomes partly reflects the opportunity costs associated with more intensive English interventions. Regardless, the attention that charters are paying to English Learners’ math skills is a topic that deserves further investigation.

Limitations

As noted in the methods, the analysis controls for numerous observable characteristics including but not limited to race/ethnicity, sex, socioeconomic status, prior achievement, and baseline English proficiency. Yet, despite these measures, the fact that English Learners in Texas aren't randomly assigned to the state’s charter schools means we cannot rule out the possibility that the estimates are biased by “unobservable” characteristics of English Learners that are correlated with their achievement, educational attainment, and subsequent earnings. For this reason, we avoid using causal language in the report.

Appendix A: Technical Methods

The differences between English Learners' achievement gains in charter and traditional public school peers are estimated using the following model:

$$Y_{it} = Y_{it-1}\gamma + \lambda C_{it} + \beta X_{it} + \psi_t + \varepsilon_{it} \quad (1)$$

where Y_{it} is the reading or math achievement²⁰ of individual i in year t , Y_{it-1} is that same individual's achievement in the prior school year, C_{it} is a binary variable that indicates whether a given student was enrolled in a charter or traditional public school in a given school year, X_{it} is a bundle of demographic and English Learner specific characteristics, ψ_t is a set of year-specific effects,²¹ and ε_{it} is the error term.

Similarly, the presented differences in graduation, postsecondary enrollment, and earnings are estimated using the following model:

$$G_{ic} = \lambda C_i + \beta X_i + \psi_c + \varepsilon_{ic} \quad (2)$$

where G_{ic} is the outcome of interest for student i who entered the grade cohort of interest (i.e., 8th, 10th, or 12th grade) in calendar year c , X_i is a bundle of demographic and English Learner specific characteristics, ψ_c is a set of year-specific effects,²² and ε_{ic} is the error term.

From the standpoint of the report, the most important term in both of these equations is λ , which represents the average difference in English Learners' achievement growth in charter versus traditional public schools after conditioning on the other variables.

To generate figures 16 and 17, the model in Equation 1 was estimated separately for each of the three time periods in the figures. To generate figures 14 and 15, the model in Equation 2 was estimated separately for each of the fifteen years in the study period. To distinguish between the achievement growth of English Learners in CMO-affiliated and stand-alone charter schools in Figure 17, the indicator for charter school enrollment was interacted with an indicator for enrollment in a CMO-affiliated school.

The estimator for the Kaplan-Meier survival function that is the basis for Figure 9 can be written as:

$$\hat{S}(t) = \prod_{j|t_j \leq t} \left(\frac{n_j - d_j}{n_j} \right) \quad (3)$$

where the probability that an English Learner retains the classification longer than t years is given by the difference between the number of English Learners who could lose the classification (n_j) and the number who do (d_j), scaled by the number who could lose the classification.

The plots in figures 10 and 11, which adjust for English Learners' baseline English proficiency, were generated by first fitting a Cox proportional hazards model where the sole covariate is an indicator for the baseline TELPAS level of interest (e.g., baseline TELPAS of 1) and then retrieving and plotting the estimated baseline survivor function.

Appendix B: Additional Figures

Figure A1. English Learners in charter schools are more likely to enroll in a postsecondary institution.

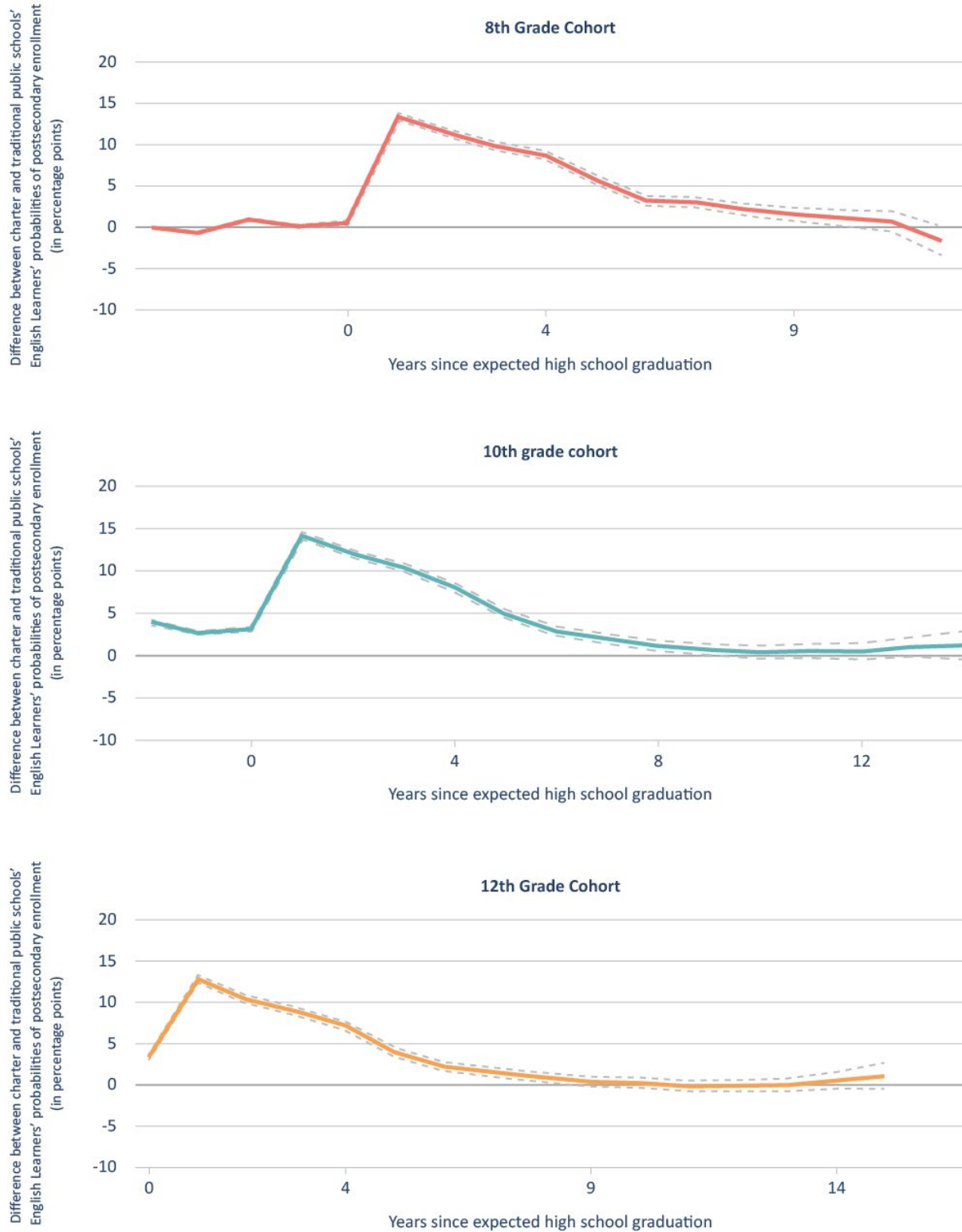
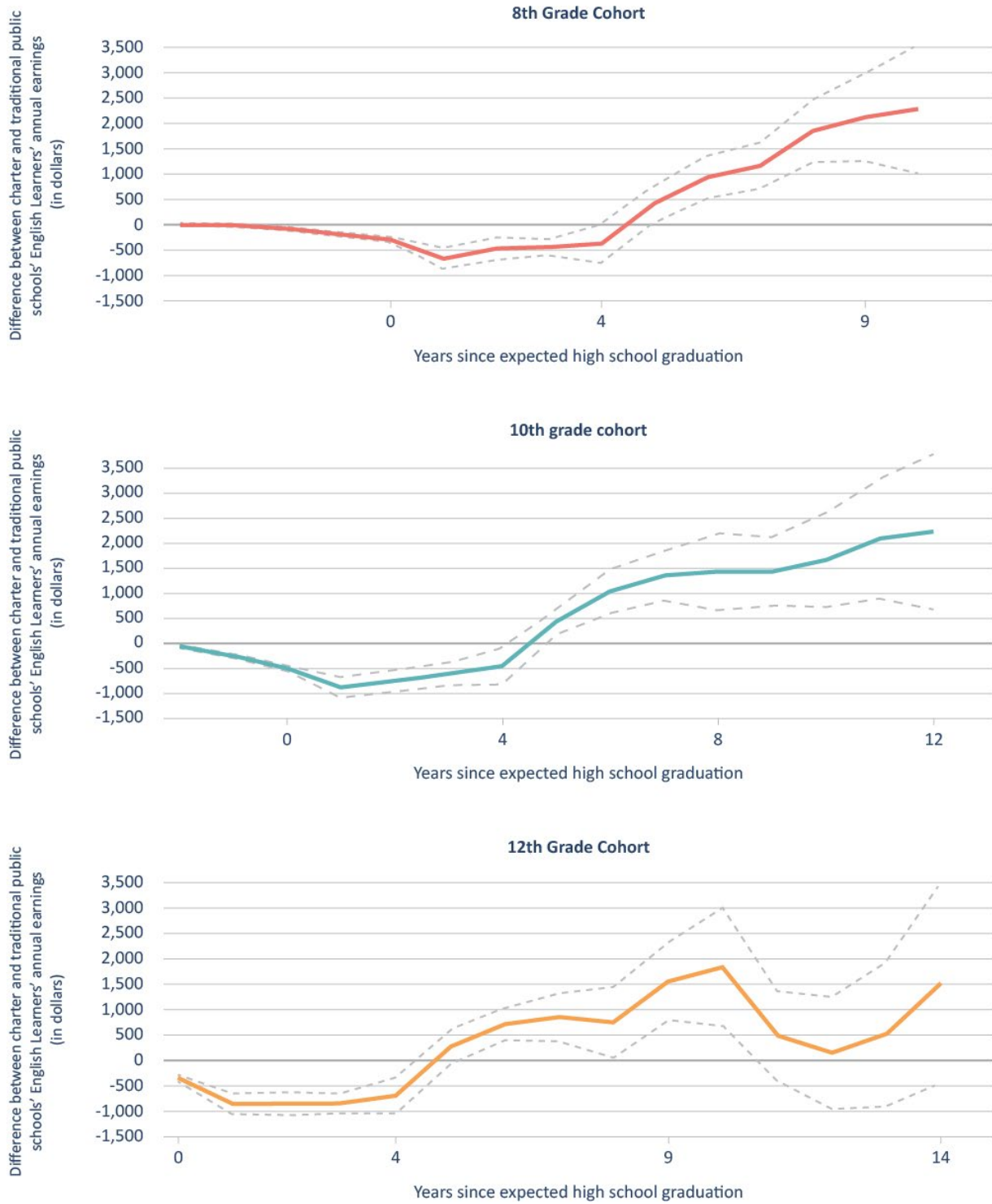


Figure A2. On average, English Learners in charter schools earn less in the years typically associated with postsecondary enrollment but more in later years.



Endnotes

- ¹ For example, national data show that about 15 percent of Kindergarteners are identified as English Learners: <https://nces.ed.gov/programs/coe/indicator/cgf/english-learners#:~:text=The%20percentage%20of%20public%20school,%2C%20or%204.5%20million%20students.>
- ² California Department of Education, March 13, 2023: <https://www.cde.ca.gov/ds/sg/englishlearner.asp>
- ³ Setren, Elizabeth. "Special education and English language learner students in Boston charter schools: Impact and classification." *Cambridge, MA: Massachusetts Institute of Technology* (2015); Setren, Elizabeth. "Targeted vs. General Education Investments Evidence from Special Education and English Language Learners in Boston Charter Schools." *Journal of Human Resources* 56.4 (2021): 1073-1112.
- ⁴ Cremata, Edward, et al. "National charter school study." *Center for Research on Education Outcomes, Stanford University* 54.6 (2013): 1079-1116; Center for Research on Education Outcomes. "Urban charter school study report on 41 regions." *Technical Report* (2015).
- ⁵ Peggie Garcia and P. Zitlali Morales, "Exploring quality programs for English language learners in charter schools: A framework to guide future research," *Education Policy Analysis Archives* 24, no. 53 (2016): 1–25, doi:10.14507/epaa.24.1739.
- ⁶ Winters, Marcus A. "Why the Gap? English Language Learners and New York City Charter Schools. Civic Report No. 93." *Manhattan Institute for Policy Research* (2014).
- ⁷ Mavrogordato, Madeline, and Marc Stein. "Accessing choice: A mixed-methods examination of how Latino parents engage in the educational marketplace." *Urban Education* 51.9 (2016): 1031-1064. Mavrogordato, Madeline, and Julie Harris. "Eligiendo Escuelas: English learners and access to school choice." *Educational Policy* 31.6 (2017): 801-829.
- ⁸ Ileana Najarro, "U.S. English Learners' Language Proficiency Scores Still Below Pre-Pandemic Years," *Education Week*, April 18, 2023, <https://www.edweek.org/teaching-learning/u-s-english-learners-language-proficiency-scores-still-below-pre-pandemic-years/2023/04>
- ⁹ Carlson, Deven, and Stéphane Lavertu. "Charter school closure and student achievement: Evidence from Ohio." *Journal of Urban Economics* 95 (2016): 31-48.
- ¹⁰ Carlson, Deven, and Jared E. Knowles. "The effect of English language learner reclassification on student ACT scores, high school graduation, and postsecondary enrollment: Regression discontinuity evidence from Wisconsin." *Journal of Policy Analysis and Management* 35.3 (2016): 559-586.
- ¹¹ For the purposes of this exercise, we define "high-performing" schools as those that received an "A" for academic growth.
- ¹² Arianna Prothero, "Texas Charter School Performance is on the Rise," August 7, 2017, <https://www.edweek.org/leadership/texas-charter-school-performance-is-on-the-rise-credo-study-finds/2017/08>
- ¹³ Serafini, Ellen J., Nadine Rozell, and Adam Winsler. "Academic and English language outcomes for DLLs as a function of school bilingual education model: the role of two-way immersion and home language support." *International Journal of Bilingual Education and Bilingualism* 25.2 (2022): 552-570.
- ¹⁴ Setren, Elizabeth. "Targeted vs. General Education Investments Evidence from Special Education and English Language Learners in Boston Charter Schools." *Journal of Human Resources* 56.4 (2021): 1073-1112.
- ¹⁵ Among other things, this process makes clear how English Learners can actually have English as a home language, per Figure 5.
- ¹⁶ Catherine Horn et al., Texas Teacher Workforce Report (Houston, TX: University of Houston College of Education, 2021), <https://www.uh.edu/education/research/institutes-centers/erc/reports-publications/ryht-report-20211.pdf>.
- ¹⁷ Chloe Latham Sikes and Chandra Kring Villanueva, *Creating a More Bilingual Texas* (San Antonio, TX: IDRA, 2021), <https://www.idra.org/wp-content/uploads/2021/03/Creating-a-More-Bilingual-Texas-2021.pdf>.
- ¹⁸ Mendez, Julia D. Trevino, John R. Slate, and Cynthia Martinez-Garcia. "Reading and Mathematics Differences for English Language Learners Enrolled in Dual Language or Exit Programs." *Athens Journal of Education* 4.2 (2017): 105-121.
- ¹⁹ Senate Bill 560, "Emergent Bilingual Strategic Plan," January 2023, <https://tea.texas.gov/sites/default/files/sb-560-emergent%20bilingual-strategic-plan.pdf>.

²⁰ Throughout the report, students' reading and math scores in grades 3-8 were standardized at the grade-year level using the mean and standard deviation from the statewide population of test takers. Standard errors were clustered at the student level.

²¹ The measure of lagged achievement contains both their standardized reading score and their standardized math score from the prior school year. The full set of covariates in X include an indicator for female, classification as an immigrant, economic disadvantage, race/ethnicity, language spoken at home, and fixed effects for county of residence.

²² The full set of covariates included in X include an indicator for female, classification as an immigrant, economic disadvantage, race/ethnicity, language spoken at home, 8th grade achievement in reading and math, baseline English proficiency, fixed effects for county of residence, and a binary indicator of alternative school status.