



# Sharpening the Divide

## How California's Teacher Shortages Expand Inequality

Desiree Carver-Thomas, Tara Kini, and Dion Burns

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## Executive Summary

When California students returned to school in fall 2019, hundreds of thousands returned to classrooms staffed by substitutes and teachers who were not fully prepared to teach. In recent years, California has experienced widespread shortages of elementary and secondary teachers as districts and schools seek to restore class sizes and course offerings cut during the Great Recession. Schools experiencing shortages of fully certified teachers often respond by cutting courses, increasing class sizes, and hiring substitutes and teachers on substandard credentials. Although statewide data reveal a deepening shortage across the state, teacher supply and demand factors vary across districts, and as a result, there can be stark disparities in shortages both among and within districts.

This report examines the most recent publicly available data from the California Commission on Teacher Credentialing (CTC) and public- and restricted-use student and staffing data from the California Department of Education (CDE) to highlight the status of teacher supply, demand, and shortages, as well as teacher diversity, in California. The report details the significance of these supply and demand factors and demonstrates how these conditions vary throughout the state. In addition, the report summarizes recent state investments in addressing teacher shortages and examines potential policy solutions to mitigate ongoing shortages. While this report is based largely on data that predates the COVID-19 pandemic, it discusses the key factors now emerging as the pandemic affects California's teacher workforce.

### Is There Still a Teacher Shortage in California?

One of the best indicators of teacher shortages is the prevalence of substandard credentials or permits, which by law should be issued only when fully credentialed teachers are not available. In 2017–18, California issued more than 13,000 intern credentials, permits, and waivers, nearly triple the number issued in 2012–13. The growing number of substandard credentials issued by the state is an indicator that teacher supply continues to be insufficient to meet the demand for those positions.

Teachers on substandard credentials and permits are not equally distributed across the state. Statewide, about one in three teachers who were new to their districts in 2017–18 were teachers on substandard credentials. However, at one end of the spectrum, roughly 15% of California districts did not hire any teachers on substandard credentials in 2017–18. In a roughly equal number of districts, representing many more students from low-income families (72% vs. 52%), more than half of new hires had substandard credentials.

Analysis of statewide teacher supply and demand factors indicates that there are three main factors driving shortages in California: the decline in teacher preparation enrollments, increased demand for teachers, and teacher attrition and turnover. However, the relative weight of supply and demand factors can vary from district to district.

## Teacher Supply and Demand Factors

Teacher supply is composed of the total teacher workforce, including new entrants to teaching and re-entrants, or those who have left teaching but choose to return. New entrants include those who are fully prepared and those who have substandard credentials and permits. Also important are the characteristics of teachers entering and staying in the profession, including teacher diversity.

- Although new hires and beginning teachers can be assets to a growing district—and an expected component of any district’s teacher supply—research shows that students benefit from a stable and substantially experienced teacher workforce. In 2017–18, new hires (beginning and veteran teachers who are in their first year of service to their district) made up 10% of California’s teacher workforce. About 5% of districts, though, had no new hires in 2017–18, while, in contrast, roughly the same number of districts had 40% or more new hires. These districts with the highest proportions of new hires typically have turnover rates twice as high as districts with average or below-average proportions of new hires.
- Beginning teachers—those in their first or second year of teaching—comprise 12% of California’s teacher workforce overall. Roughly 10% of districts employ fewer than 3% beginning teachers, and the majority of those districts had no beginning teachers in 2017–18. Meanwhile, about one in four districts employs 20% or more of these teachers, who are typically less effective than experienced teachers. When schools have large numbers of novices, they often lack a sufficient number of expert veterans to support these new teachers.
- Re-entrants, or California teachers who return to teaching after having left for a period of time, are an important component of teacher supply, making up about a quarter of new hires in recent years. Nearly 20% of teachers who left after 2015–16 returned to teaching in the state in 2017–18, with about 12% of leavers returning to the same district that they left within a year.
- A growing body of research shows that being taught by teachers of color is associated with benefits to all students, with students of color, especially Black students, experiencing boosts in academic achievement, graduation rates, and aspirations to attend college, among other benefits. With 34% teachers of color statewide, the proportion of teachers of color in California exceeds the national average of 20%. Nonetheless, 9% of California districts had no teachers identifying as people of color in 2017–18, and 58% had fewer than 20%.

Demand factors indicate the need districts and counties have to hire additional teachers. These factors include teacher attrition and turnover, student–teacher ratios, recent and projected changes in student enrollment, and the percentage of teachers who are age 50 and older or 60 and older, which can signal the extent to which imminent retirements might create demand for new teacher hires.

- Teacher attrition (measuring teachers who leave teaching) and turnover (measuring teachers who leave teaching or move between districts) are primary drivers of statewide shortages. Between 2016–17 and 2017–18, 12% of California teachers either left public

school teaching in the state (9%) or moved to another California district (3%). On one end of the spectrum, nearly 1 in 10 districts have turnover rates under 5%. At the other end of the spectrum, roughly 1 in 10 districts have turnover rates of 25% or more. Districts with higher turnover rates also have greater proportions of students from low-income families compared to those with the lowest turnover rates.

- Each year districts estimate the number of teachers they will need to hire to replace teachers who have left or to fill new positions. Between 2013–14 and 2017–18, the number of teachers districts estimated needing to hire each year increased by 43%. Increases in teacher demand were due, in part, to districts hiring new teachers to reduce student–teacher ratios, which increased after the Great Recession to the highest level in the United States (24:1, as compared to the national average of 15:1). Although California is gradually nearing its pre-recession student–teacher ratio of 21:1, the state would need more than 4,100 additional teachers per year in order to reach that benchmark. In 2017–18, roughly 60% of districts still had student–teacher ratios that were larger than their pre-recession levels.
- Although statewide student enrollment is projected to decline by about 4% between 2017–18 and 2027–28, trends differ across the state. Total student enrollment in the state was essentially unchanged between 2016–17 and 2017–18, but nearly a quarter of districts experienced enrollment increases or decreases of 5% or more.
- In part because of teacher layoffs during the Great Recession, California’s teacher age distribution has shifted to include more mid- and late-career teachers and fewer early-career teachers. About 40% of the teacher workforce is age 50 or older, and the 14% of California teachers age 60 and older are likely to retire within the next 5 to 10 years.

## The Potential Impact of the COVID-19 Pandemic

The COVID-19 crisis is likely to impact teacher demand and supply in complex ways: The pandemic could increase demand as additional staff are needed to ensure schools can safely reopen with appropriate physical distancing in place; it could also trigger shortages by exacerbating turnover, as many teachers have indicated they may not return to school under current circumstances. At the same time, teacher layoffs could occur if revenues drop as the state and districts grapple with the economic effects of the crisis. In any of these scenarios, long-standing shortages in high-need fields and schools are likely to continue.

## Addressing California’s Teacher Shortage

In recent years, California has begun to take a proactive approach to addressing teacher shortages. Over the past 4 years, the state Legislature has enacted several initiatives and invested nearly \$300 million to build the teacher pipeline and recruit and retain well-prepared teachers. While the largest investments are for programs that have not yet been fully launched, and many of the other investments are for programs that will take a number of years to produce graduates, efforts to rebuild the teaching force are beginning to yield modest results. However, nearly all of these initiatives were funded only on a one-time basis in the state budget. Given the severity of ongoing shortages and the disproportionate impact of shortages on particular districts, subject areas, and

student populations, California may need to consider further action to address chronic shortages. Based on research on attracting and retaining teachers, we have identified eight strategies that state and local agencies in California can implement in order to address ongoing teacher shortages, particularly in high-need fields and schools. These include:

1. **Maintaining and expanding high-retention pathways into teaching**, such as teacher residencies and Grow-Your-Own pathways.
2. **Providing service scholarships** to all teacher candidates who complete preparation and commit to teach in high-need fields and locations.
3. Ensuring equitable access to **mentoring and induction programs** for novice teachers.
4. **Streamlining requirements for entry into the profession** by considering multiple pathways for demonstrating competence for both in-state and out-of-state entrants to the profession.
5. Strengthening systems to recruit and prepare aspiring teachers earlier in the educational process, including through **community college and high school pathways**.
6. **Improving teacher compensation and working conditions** to retain strong teachers in the profession.
7. **Developing strong school leaders** who can recruit, develop, support, and retain their staff.
8. **Strengthening state educator workforce data systems** to allow the state to examine and manage educator supply and demand more effectively.

## Introduction

When California students returned to school in fall 2019, hundreds of thousands returned to classrooms staffed by substitutes and teachers who were not fully certified. According to one news story, “More than three weeks into the school year, several hundred Sacramento City Unified School District students are being taught by substitutes as school officials continue to look for teachers to staff classrooms.”<sup>1</sup> In the wake of the Great Recession, stories like this are not uncommon. Between 2008 and 2012, California schools lost \$7.4 billion in funding and the teacher workforce shrank by 32,000 positions, about a tenth of the workforce.<sup>2</sup> Since then, California has experienced widespread shortages of elementary and secondary teachers as districts and schools seek to restore class sizes and course offerings cut during those lean years.

As this report goes to publication in summer 2020 and the health and economic impacts of the COVID-19 pandemic continue to affect California schools, the impact on the teacher workforce appears complex. This report provides an analysis of the California teacher workforce based on the most recent statewide data, which precedes the pandemic, and documents the state’s long-standing shortages in high-need subjects and schools. The prospect of significant educator resignations and retirements this year, as foreshadowed by national and local polls, coupled with disruptions to the college entry pipeline, suggests that these shortages of qualified personnel in fields such as mathematics, science, and special education will continue to be problematic in California, and may even deepen.

Given widespread teacher shortages across the nation, California districts have been competing not only with other districts to recruit new teacher hires, but with other states. Nearby Nevada boasts lower costs of living that can entice teachers, drawing both newly prepared California teachers as well as veterans. One news article, for example, notes that California is “a prime target” of Clark County, Nevada, teacher recruitment.<sup>3</sup> Schools experiencing shortages of fully certified teachers often respond by cutting courses, increasing class sizes, and hiring substitutes and teachers on substandard credentials.<sup>4</sup> Shortages tend to be most severe in mathematics, science, and special education; and with the passage of Proposition 58 in 2016, which lifted limitations on bilingual education, there is increasing demand for bilingual teachers as well.<sup>5</sup> Furthermore, shortages are more likely to occur in schools serving more students of color and students from low-income families.<sup>6</sup>

A recent study of California districts found that the more teachers on substandard credentials that districts employ, the worse their students perform academically.<sup>7</sup> The effect is even worse for African American and Latino/a students.

Although statewide data reveal a deepening shortage across the state, teacher supply and demand factors may vary across districts for a range of reasons, including school and district teaching conditions, teacher compensation, economic conditions, demographics, and the availability of nearby teacher preparation programs. As a result, there can be stark disparities in teacher supply and demand both among and within districts and counties.

A recent study of California districts found that the more teachers on substandard credentials that districts employ, the worse their students perform academically. The effect is even worse for African American and Latino/a students.

This report draws on the most recent publicly available data from the California Commission on Teacher Credentialing (CTC) and public- and restricted-use student and staffing data from the California Department of Education (CDE) to highlight the status of teacher supply, demand, and shortages, as well as teacher diversity in California.<sup>8</sup> This report is the fifth in a series of Learning Policy Institute reports documenting the status of the TK–12 teacher workforce in California and was developed as a companion to an online interactive map, *Understanding Teacher Shortages in California: A District- and County-Level Analysis of the Factors Influencing Teacher Supply and Demand*. This report provides an analysis of the teacher supply and demand factors highlighted in the map.<sup>9</sup> The supply factors featured in the map include district, county, and state data on total number of teachers, percentage of teachers who are new hires, percentage of new hires on substandard credentials, percentage of beginning teachers, percentage of teachers of color, and percentage of re-entrants (leavers who re-enter teaching).

Demand factors in the interactive map include teacher attrition and turnover, student enrollment, the change in enrollment from 2016–17 to 2017–18, projected enrollment growth from 2017–18 to 2027–28 at the county and state levels, projected teacher hires, the number of teachers needed to return to pre-recession student–teacher ratios, and the percentage of teachers age 50 and older and 60 and older.

This report details the significance of these supply and demand factors and demonstrates how these conditions vary throughout the state. It discusses the potential implications of the COVID-19 pandemic on California’s teacher workforce. Finally, the report summarizes recent state investments in addressing teacher shortages and offers potential policy strategies to mitigate ongoing shortages.

## Is There Still a Teacher Shortage in California?

One of the best indicators of teacher shortages is the prevalence of substandard credentials and permits. California has continued to issue more and more of these year after year since 2012–13. By law, districts are supposed to be authorized to hire a teacher on a substandard credential or permit only when a suitable fully credentialed teacher is not available. (See “California Teacher Credential and Permit Types.”) Substandard credentials and permits are issued to candidates who have not completed the testing, coursework, and clinical practice requirements that the CTC requires for full credentials—i.e., “preliminary” credentials for new, fully prepared teachers and “clear” credentials for fully prepared teachers who have also completed an induction program.

### California Teacher Credential and Permit Types

#### Full credentials

- **Preliminary credentials** are awarded to individuals who successfully complete a CTC-approved teacher preparation program and the state assessments required for a license, including demonstration of subject-matter competence and teaching skills. These credentials are valid for 5 years.
- **Clear credentials** are awarded to preliminary credential holders upon successful completion of an induction program. These credentials are renewable every 5 years.

#### Substandard credentials and permits

- **Provisional Intern Permits (PIPs), Short-Term Staff Permits (STSPs), and waivers** are used to fill “immediate and acute” staffing needs. These emergency-style, 1-year permits allow individuals who have not completed teacher preparation programs or demonstrated subject-matter competence to teach a particular grade, course, or student population.
- **Limited Assignment Teaching Permits** allow fully credentialed teachers to teach outside of their subject area to fill a “staffing vacancy or need.”
- **Intern credentials** are awarded to teachers in training who have demonstrated subject-matter competence but have not completed a teacher preparation program or met the performance assessment requirements for a license. While serving as teachers of record in a district, interns take courses toward earning their preliminary credential and receive mentoring while teaching.

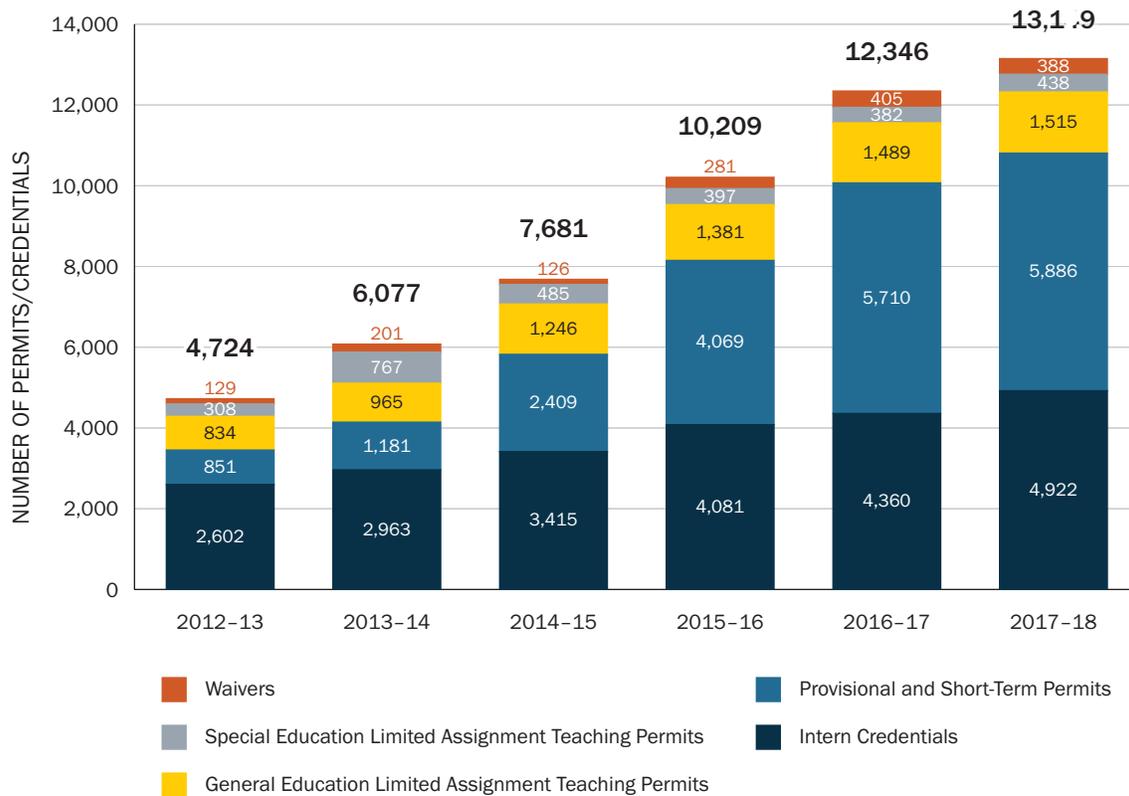
Source: California Commission on Teacher Credentialing. (n.d.). Data terms glossary. <https://www.ctc.ca.gov/commission/reports/data/data-terms-glossary>. See also the CTC’s publications on Provisional Internship Permit, <http://www.ctc.ca.gov/credentials/leaflets/cl856.pdf>; Short-Term Staff Permit, <http://www.ctc.ca.gov/credentials/leaflets/cl858.pdf>; and University Intern Teaching Credentials, <http://www.ctc.ca.gov/credentials/leaflets/cl402a.pdf>.

In 2017–18, California issued more than 13,000 intern credentials, permits, and waivers, nearly triple the number issued in 2012–13. (See Figure 1.) In 2017–18, substandard credentials accounted for nearly half of all new credentials issued to California teachers. Although intern credentials alone have nearly doubled since 2012–13, the fastest-growing type of substandard authorizations

are provisional and short-term permits. These emergency-style permits—issued to individuals who have not demonstrated subject-matter competence for the courses they teach and who oftentimes have not entered a teacher training program—have increased sevenfold since 2012–13. The growing number of substandard credentials issued by the state is a reliable indicator that teacher supply continues to be insufficient to meet the demand for those positions.

Emergency-style permits—issued to individuals who have not demonstrated subject-matter competence for the courses they teach and who oftentimes have not entered a teacher training program—have increased sevenfold since 2012–13.

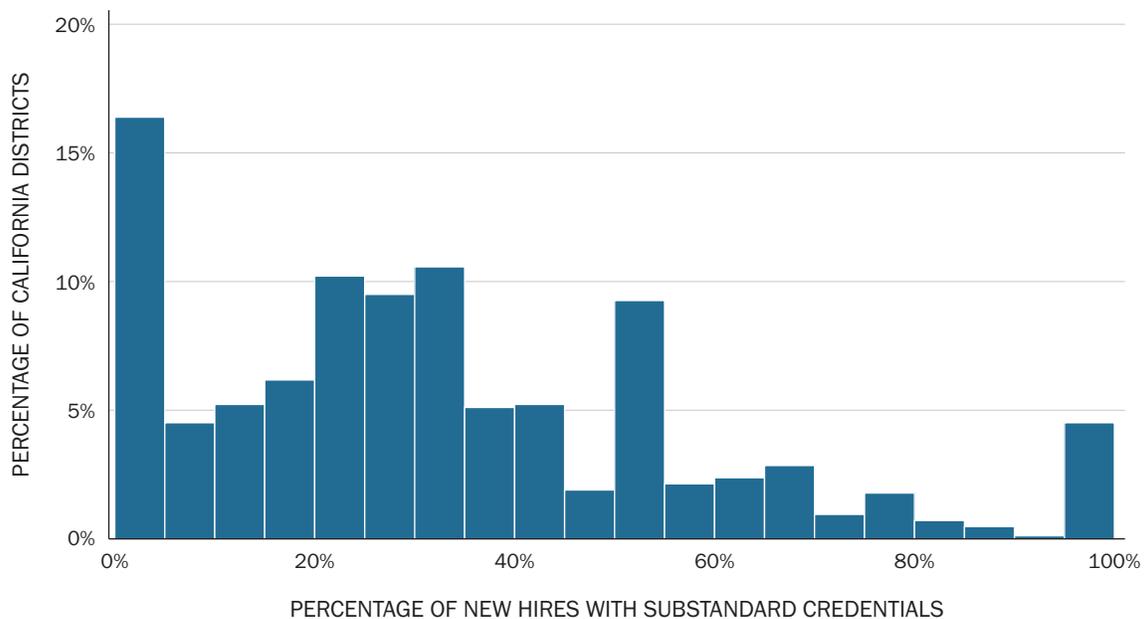
**Figure 1**  
**Substandard Permits and Credentials, 2012–13 to 2017–18**



Data source: California Commission on Teacher Credentialing. (2019). *Teacher supply: Interns, permits and waivers* [Data dashboard]. <https://www.ctc.ca.gov/commission/reports/data/edu-supl-ipw> (accessed 10/17/19).

While the number of teachers with substandard credentials and permits has been growing over the past several years, these teachers are not equally distributed across the state. (See Figure 2.) Statewide, about one in three teachers who were new to their districts in 2017–18 were teachers on substandard credentials. However, at one end of the spectrum, roughly 15% of California districts did not hire any teachers on substandard credentials in 2017–18. In a roughly equal number of districts, representing many more students from low-income families (72% vs. 52%),<sup>10</sup> more than half of new hires had substandard credentials.<sup>11</sup>

**Figure 2**  
**Percentage of New Hires on Substandard Credentials in California Districts, 2017–18**



Note: Districts with fewer than five teachers were omitted from the analysis.

Data source: LPI analysis of California Department of Education. (2019). *Staff demographics record* [Data file and code book]. <https://www.cde.ca.gov/ds/sd/df/filesstaffdemo.asp> (accessed 07/14/19); California Department of Education. (2019). *Staff credential record* [Data file and code book]. <https://www.cde.ca.gov/ds/sd/df/fsstaffcred12.asp> (accessed 07/14/19).

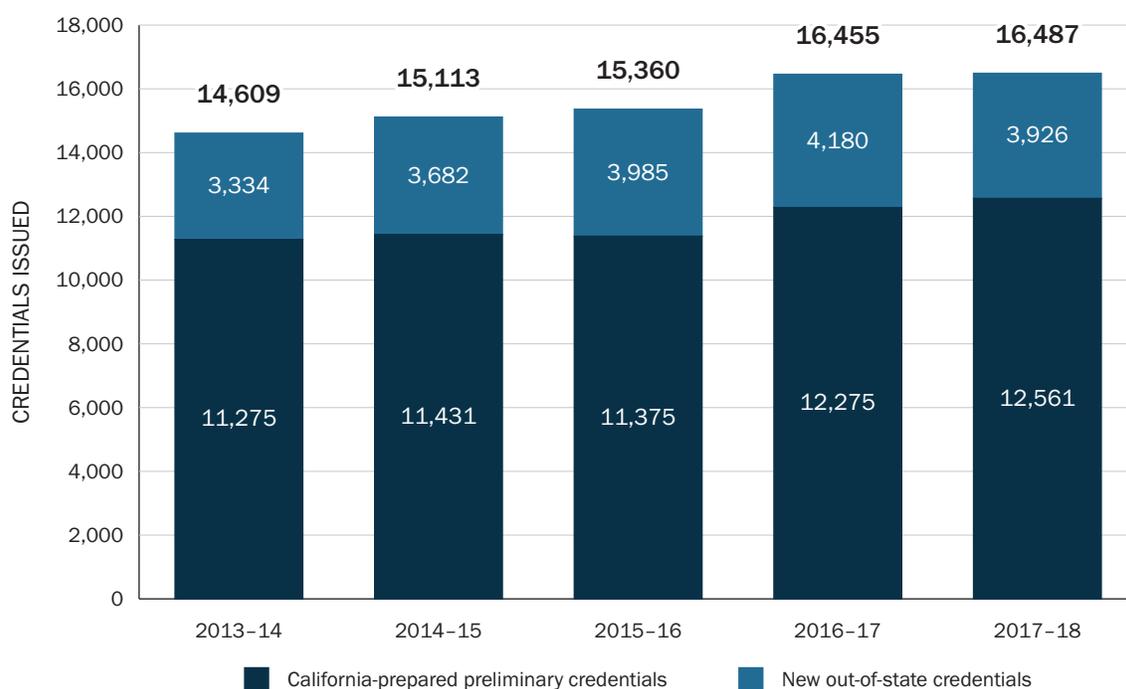
These teachers on substandard credentials and permits have generally not completed a teacher preparation program or are teaching in a field for which they were not prepared. Research finds teachers who have received little preservice preparation are less effective than fully prepared teachers, and they leave at two to three times the rate of teachers who have been well prepared.<sup>12</sup>

A study of California districts in which students outperformed their peers statewide found that, overall, these districts employed fewer teachers on substandard credentials and permits than the state average.<sup>13</sup> After controlling for several school and community characteristics, these lower rates of hiring teachers on substandard credentials were associated with significant increases in student academic performance, especially for African American and Latino/a students.<sup>14</sup> Rather than wait for well-qualified teachers to come to them, these outperforming districts leveraged local resources,

such as partnerships with teacher preparation programs, to build robust educator pipelines.<sup>15</sup> They also retained their teachers by creating favorable working conditions, a positive culture, and a climate of teacher support.<sup>16</sup>

Given the mismatch between the number of new credentials the state issues and the number of teachers districts are demanding, it is no surprise that many districts have resorted to hiring teachers on substandard credentials. Between 2013–14 and 2017–18, there was an 11% uptick in the number of preliminary credentials issued to candidates prepared by California institutions of higher education and districts. (See Figure 3.) Meanwhile, estimated teacher hires increased by 43%, outpacing the increases in preliminary credentials issued. New credentials issued to teachers prepared out of state account for about a quarter of all new credentials issued and do not make up for gaps between teacher supply and demand.<sup>17</sup> Further, in reality, not all newly credentialed teachers pursue teaching positions in California right away, or at all. Thus, counts of credentials issued could underestimate the scale of the teacher shortage challenge.

**Figure 3**  
**New Credentials Issued, 2013–14 to 2017–18**



Note: California-prepared preliminary credentials include preliminary credentials issued by California institutions of higher education and local education agencies. New out-of-state credentials include out-of-state and out-of-country preliminary and clear credentials. Figure does not include university or district intern credentials.

Data source: LPI analysis of California Commission on Teacher Credentialing. (2019). *Teacher supply: Credentials* [data dashboard]. <https://www.ctc.ca.gov/commission/reports/data/edu-supl-creds> (accessed 10/17/19).

## What Is Causing California’s Teacher Shortages?

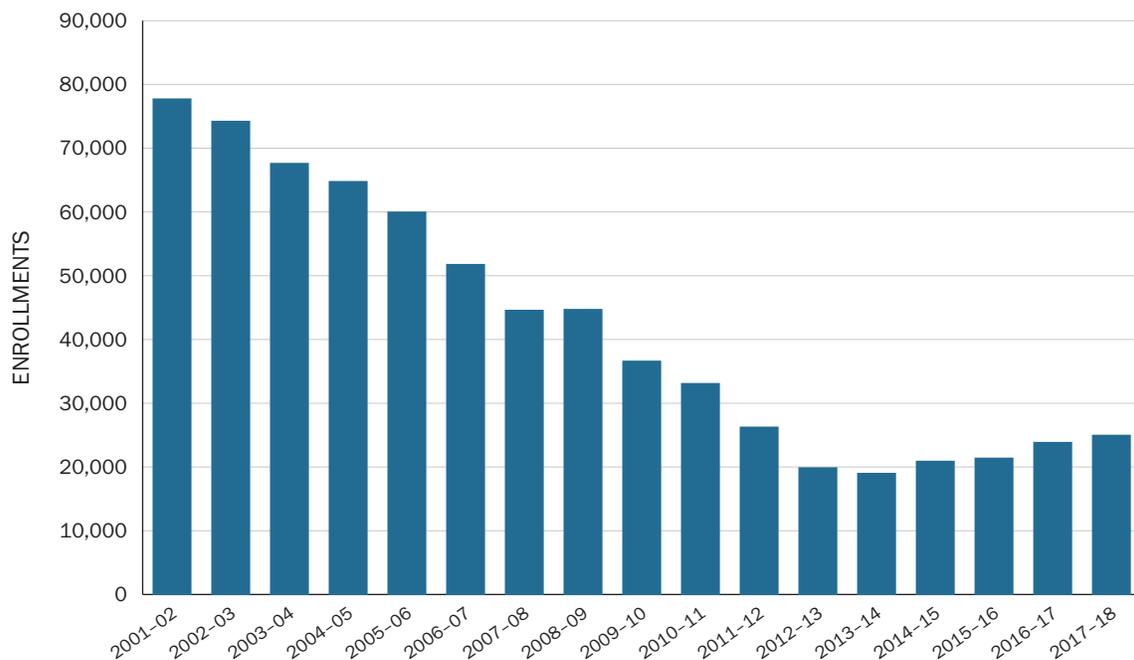
California’s ongoing teacher shortages are part of a nationwide trend. In recent years, states and districts across the country have reported leaving positions vacant and hiring underprepared teachers and substitutes to fill critical shortage areas.<sup>18</sup> While there are commonalities in teacher labor market forces across the country, the factors that drive shortages can vary from state to state. Analysis of statewide teacher supply and demand factors indicates that there are three main factors driving shortages in California:<sup>19</sup>

1. The decline in teacher preparation enrollments
2. Increased demand for teachers, primarily to reduce student–teacher ratios
3. Teacher attrition and turnover

### The Decline in Teacher Preparation Enrollments

Teacher preparation enrollments in California declined by more than 75% between 2001–02 and 2013–14, from 77,705 to 18,984, respectively. (See Figure 4.) As a result, the number of candidates completing teacher preparation has also declined substantially. From this very low base, the modest increase of about 6,000 enrollments between 2013–14 and 2017–18 still leaves a significant gap between teacher supply and demand. At the current rate of growth in enrollments, it would take at least another 17 years to reach 2001–02 teacher preparation enrollment levels.

**Figure 4**  
**Teacher Preparation Enrollments, 2001–02 to 2017–18**



Data source: California Commission on Teacher Credentialing. (2019). Annual report cards (Title II) [Data dashboard]. <https://www.ctc.ca.gov/educator-prep/title2> (accessed 10/17/19).

Research indicates that massive layoffs and limited resources for schools during the Great Recession contributed to diminished interest in the teaching profession.<sup>20</sup> In addition, rising college tuition costs may discourage college students from pursuing a career in teaching, which typically pays less than other professions that require a college education.<sup>21</sup> This is especially true for college students of color, who are more likely to report making education and career decisions based on their college debt burden.<sup>22</sup>

A 2017 survey of California teacher preparation programs found that programs were most likely to cite an inadequate number of qualified applicants and inadequate financial aid as obstacles to increasing enrollments.<sup>23</sup>

## Increased Demand for Teachers

The 43% increase in estimated teacher hires between 2013–14 and 2017–18 far outpaces the 21% increase in the number of candidates completing teacher preparation over the same period.<sup>24</sup> Increases in teacher hires may be due to districts hiring new teachers to reduce student–teacher ratios, to meet the needs of growing student enrollments, or to replace teachers who have left. Statewide, attrition is by far the greatest driver of demand for new teachers; however, the relative weight of these factors varies from district to district.

As mentioned, state budget cuts from 2008 to 2012 caused teacher layoffs and growing class sizes, so in recent years districts have sought to return to pre-recession staffing levels. Data from the National Center for Education Statistics indicate that in 2010–11 California student–teacher ratios rose to 24:1, the highest in the nation.<sup>25</sup> Although the state’s student–teacher ratio is nearing its pre-recession level (21:1), that level is significantly higher than the national average both at that time (15:1) and currently (15.5:1).<sup>26</sup> In fact, many states have even smaller student–teacher ratios, including several states in the Northeast that have student–teacher ratios below 13:1, such as Connecticut, Maine, New Hampshire, New Jersey, New York, and Vermont.

Based on our analysis of CDE student enrollment and staffing data, the state of California would need more than 4,100 additional teachers per year in order to return to its overall pre-recession student–teacher ratio. In 2017–18, roughly 60% of districts still had student–teacher ratios that were larger than their pre-recession levels, and about 10% would need to increase their teacher workforce by 20% or more to reach this benchmark. These districts, and others, may continue to hire to improve upon their pre-recession student–teacher ratios in pursuit of class sizes more aligned with national standards, which tend to be considerably smaller.

## Teacher Attrition and Turnover

Teacher attrition and turnover are primary drivers of shortages. In our analysis, teacher attrition refers to leavers, or the rate at which California teachers leave the state’s public school system, whether to retire, change careers, teach in a private school, or teach in another state, for example. Teacher turnover includes leavers and movers, or teachers who leave public school teaching in California and those who move to teach in a different California district.

Between 2016–17 and 2017–18, 9% of California teachers left teaching in the state’s public school system.<sup>27</sup> This attrition drives nearly all of the demand for teacher hires. Previous research estimates that attrition accounts for the demand of nearly 9 in 10 new hires in California each year.<sup>28</sup> According to national estimates, just one third of attrition is caused by retirements.<sup>29</sup> In fact, most attrition occurs when early- and mid-career teachers leave, often due to dissatisfaction with their positions or with the profession.<sup>30</sup> If incentives could balance the supply across fields, California could essentially eliminate overall teacher shortages by cutting its attrition rate to 4%, comparable with high-achieving countries and low-turnover states, like those in New England.<sup>31</sup> Some California districts already have attrition rates that are this low or lower. Based on our analysis of CDE staffing data, nearly one in five districts has attrition rates that are below 5%. However, alongside these low-attrition districts, just over one in eight districts has attrition rates of 15% or more.

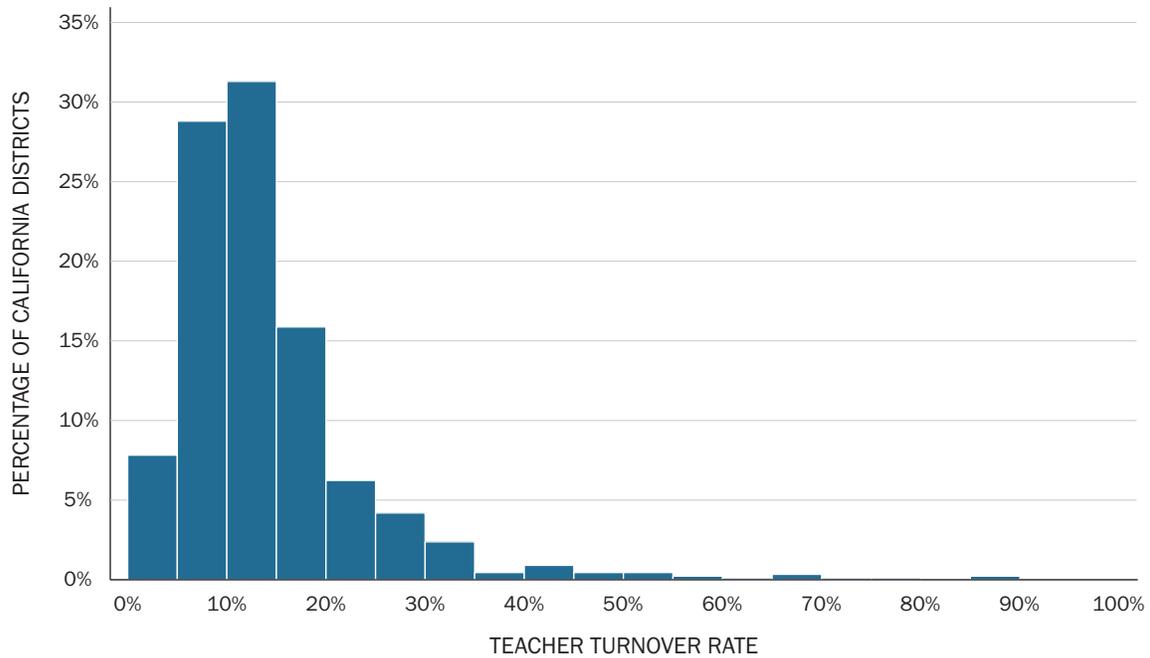
In addition to the impact of attrition, districts are also affected by teacher turnover, or teachers leaving their district for any reason (whether to teach in another California district or to leave teaching altogether). Even if these teachers remain in the profession and continue to teach in California schools, turnover can exacerbate shortages in the districts they leave and present a host of additional challenges to these districts, including declines in student achievement.<sup>32</sup> Prior research suggests that high turnover rates are associated with poor working conditions, lack of teacher preparation, and poor compensation.<sup>33</sup> Lack of administrator support, in particular, is a major predictor of turnover, more than doubling turnover rates.<sup>34</sup> Thus, cutting the overall state turnover rate would only resolve ongoing shortages if particular attention were paid to improving conditions in these high-turnover districts.

Although some amount of turnover is to be expected as teachers retire or find more suitable positions, high turnover rates can exacerbate teacher shortages. In addition to decreasing student achievement, there are also financial costs to replacing teachers who leave. Some historical estimates have placed these costs within a range from \$9,000 per teacher in rural areas to upward of \$20,000 per teacher in urban areas.<sup>35</sup>

Between 2016–17 and 2017–18, 12% of California teachers either left public school teaching in the state (9%) or moved to another California district (3%). Like attrition rates, turnover rates vary across the state. On one end of the spectrum, nearly 1 in 10 districts has turnover rates under 5%. (See Figure 5.) At the other end of the spectrum, roughly 1 in 10 districts has turnover rates of 25% or more. Districts with higher turnover rates also have greater proportions of students from low-income families.

Roughly 1 in 10 districts has turnover rates of 25% or more. Districts with higher turnover rates also have greater proportions of students from low-income families.

**Figure 5**  
**Teacher Turnover Rates in California Districts, 2017–18**



Note: Districts with fewer than five teachers were omitted from the analysis.  
Data source: LPI analysis of California Department of Education restricted-use staffing file.

California mathematics, science, English, and world language teachers have higher turnover rates than teachers in other fields, with turnover rates of about 18% and greater.<sup>36</sup> Due to data limitations, we are not able to calculate turnover rates for special education or English language development teachers. National data, however, indicate that these teachers also tend to have higher turnover rates than teachers in other fields.<sup>37</sup> Indeed, a representative sample of California principals surveyed in 2017 reported that special education, mathematics, science, bilingual education, and world language teachers are the most difficult to retain.<sup>38</sup>

As noted, turnover is also higher among teachers on emergency-style permits. Depending on the subject area, these teachers could have turnover rates up to twice as high as their fully credentialed counterparts.<sup>39</sup> Turnover is also higher in schools serving greater proportions of students from low-income families, in Title I schools, and in schools serving greater proportions of students of color. These schools are more likely to be under-resourced, with poorer working conditions that are associated with teacher turnover.<sup>40</sup> Schools in rural and town areas also have slightly higher turnover rates than do schools in urban areas, and much higher turnover rates than schools in suburban areas.<sup>41</sup>

## The Shape of Teacher Supply

Teacher supply is composed of the total teacher workforce; in a given year, new supply includes new entrants to teaching and re-entrants (those who have left teaching but choose to return). New entrants include those who are fully prepared and those hired on substandard credentials and permits. An important aspect of supply includes the characteristics of teachers entering and staying in the profession, including teacher diversity.

### New Hires and Beginning Teachers

Although new hires and beginning teachers can be assets to a growing district—and an expected component of any district’s teacher supply—research shows that they and their students benefit from a stable and experienced teacher workforce that is largely composed of veteran teachers who anchor the teaching force and provide mentoring to novices.<sup>42</sup> New hires are teachers in their first year of service to their district. While new hires include beginning teachers, they also include veteran teachers who might have moved from a teaching position in another district or state. In 2017–18, new hires made up 10% of California’s teacher workforce. About 5% of districts, though, had no new hires in 2017–18, while at the high end, roughly the same number of districts had 40% or more new hires. These districts with the highest proportions of new hires typically have turnover rates twice as high as districts with average, or below-average, proportions of new hires.

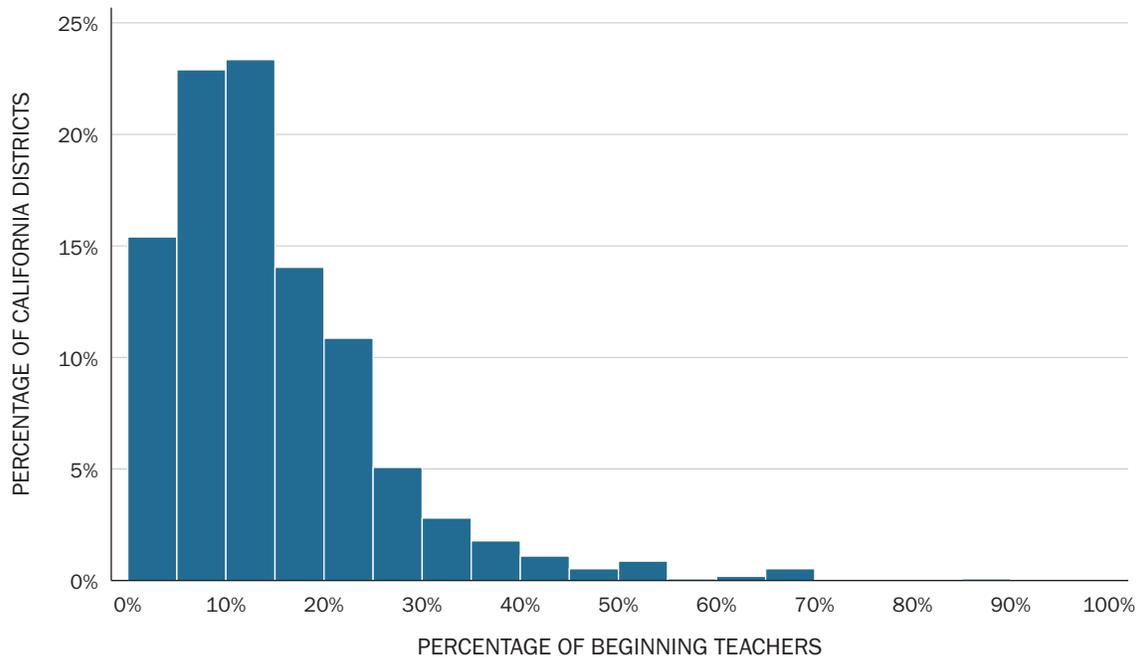
Beginning teachers—those in their first or second year of teaching—comprise 12% of California’s teacher workforce overall. Roughly 10% of districts employ fewer than 3% beginning teachers, and the majority of those districts had no beginning teachers in 2017–18. Meanwhile, about one in four districts employs 20% or more new teachers, who are typically less effective than experienced teachers. (See Figure 6.)

A review of the research finds that teaching experience is positively associated with student achievement gains throughout a teacher’s career.<sup>45</sup> Further, a study of California districts shows that teaching experience is associated with better student achievement among students of color, in particular.<sup>44</sup>

Districts with more beginning teachers may also face increased costs for induction programs and other professional learning opportunities, compared to those with smaller proportions of these teachers.

Roughly 10% of districts employ fewer than 3% beginning teachers. Meanwhile, about one in four districts employs 20% or more new teachers, who are typically less effective than experienced teachers.

**Figure 6**  
**Percentage of Beginning Teachers in California Districts, 2017–18**



Note: Districts with fewer than five teachers were omitted from the analysis.

Data source: LPI analysis of California Department of Education. (2019). *Staff demographics record* [Data file and code book]. <https://www.cde.ca.gov/ds/sd/df/filesstaffdemo.asp> (accessed 05/22/19).

## Re-Entrants

Re-entrants, or California teachers who return to teaching after having left for a period of time, are an important component of teacher supply, making up about a quarter of new hires in recent years.<sup>45</sup> Some re-entrants are teachers who take a leave for family, health, or education reasons, with plans to return to their district. Others have left because of layoffs or dissatisfaction in a district, returning to the profession at a different time or place. Theoretically, California has a large pool of potential re-entrants; however, analysis of state staffing data illustrates that most teachers who leave do not return to the profession. Fully two thirds of teachers who left in 2010–11 had not returned to teaching 5 years later.<sup>46</sup> In addition, most of the teachers who did return did so after 1 year, with significantly fewer teachers returning 2 or more years later. Since recent evidence demonstrates that California re-entrants are most likely to return within 1 year, the following analysis focuses on 1-year re-entry rates.

Based on our analysis of CDE staffing data, nearly 20% of teachers who left after 2015–16 returned to teaching in the state in 2017–18, with about 12% of leavers returning to the same district that they left within a year. This is an important distinction because districts with low re-entrant rates must rely on hiring new and beginning teachers instead, potentially impacting their levels of stability and experience. Districts may also have low re-entry rates because they have less demand for teacher hires, due to declining student enrollments or low teacher attrition rates, for example.

Among the districts that had teachers leave after the 2015–16 school year, about half saw none of those leavers return a year later in 2017–18. About 22% of districts had re-entry rates that met or exceeded the state average of 12%. National teacher survey data suggest that several conditions could encourage leavers to return to the profession, including increases in salary and other financial incentives and improved working conditions, such as smaller class sizes.<sup>47</sup>

## Teachers of Color

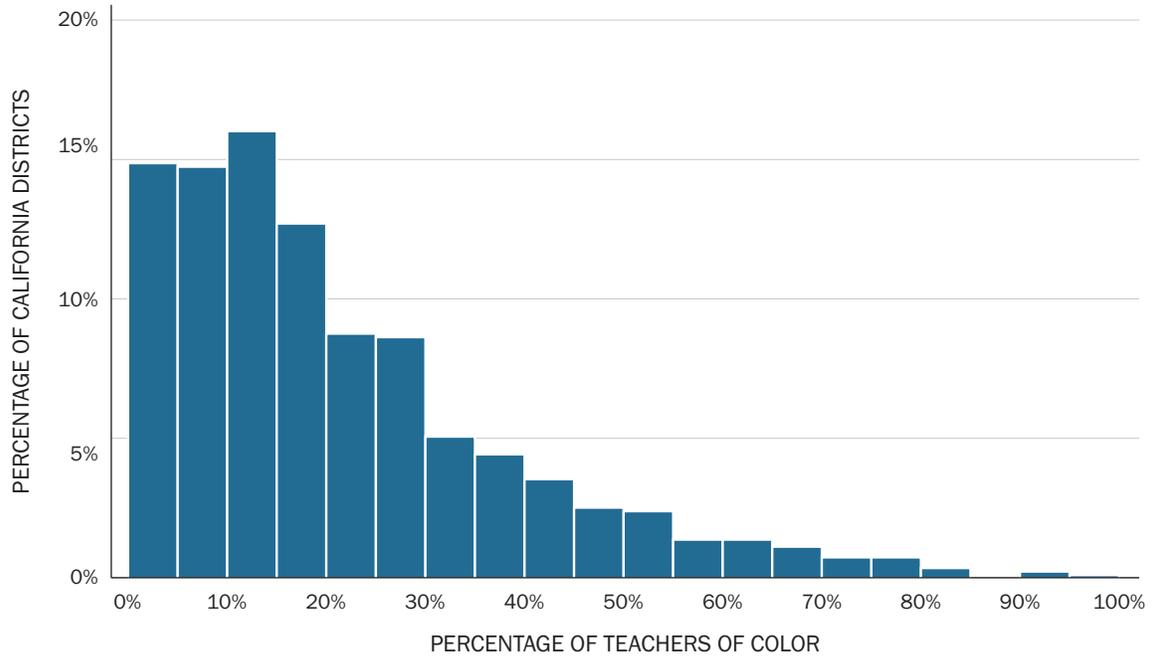
Many California districts are interested in providing students with a teacher workforce that reflects the rich racial, ethnic, and linguistic diversity of the state and are seeking ways to better recruit and retain teachers of color. A wide body of research shows that being taught by teachers of color is associated with benefits to all students, with students of color, especially Black students, experiencing boosts in academic achievement, graduation rates, and aspirations to attend college, among other benefits.<sup>48</sup> With 34% teachers of color statewide, based on our analysis of CDE staffing data, the proportion of teachers of color in California exceeds the national average of 20%.<sup>49</sup> Still, people of color comprise more than 60% of California’s total population and about 75% of California’s public school student population.<sup>50</sup>

Across districts, students have inequitable access to racially and ethnically diverse teachers, with 9% of California districts having no teachers identifying as a person of color in 2017–18, and 58% having a proportion less than 20%, the national average. (See Figure 7.) Just 5% of California districts had 60% or more teachers of color. These districts with the most teachers of color are also those serving the most students from low-income families, with nearly 90% of students from low-income families. National research suggests that several factors can depress the supply of teachers of color, including the debt burden of pursuing comprehensive teacher preparation and high turnover rates associated with working in under-resourced schools with poor working conditions.<sup>51</sup> Indeed, an analysis of California turnover rates finds that teachers of color were more likely than White teachers to report that biases and stereotypes make it difficult for staff of particular backgrounds or identities to advance in their districts, and African American teachers had the highest turnover rates, at more than 20%.<sup>52</sup>

Across districts, students have inequitable access to racially and ethnically diverse teachers, with 9% of California districts having no teachers identifying as a person of color in 2017–18, and 58% having a proportion less than 20%, the national average.

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**Figure 7**  
**Percentage of Teachers of Color in California Districts, 2017–18**



Note: Districts with fewer than five teachers were omitted from the analysis.

Data source: LPI analysis of California Department of Education. (2019). *Staff demographics record* [Data file and code book]. <https://www.cde.ca.gov/ds/sd/df/filesstaffdemo.asp> (accessed 06/03/19).

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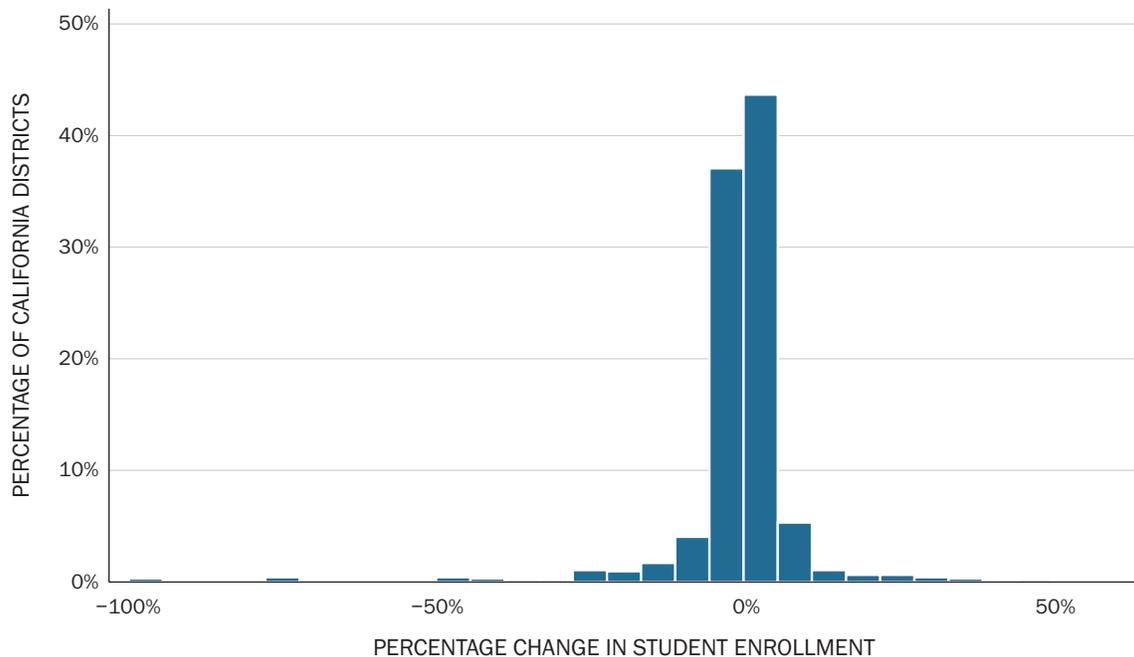
## The Shape of Teacher Demand

Several demand factors can influence district hiring needs. As previously mentioned, teacher attrition and turnover drive the need to hire teachers, and California has seen increased demand for teachers as districts seek to return to pre-recession staffing levels. However, other factors play a role and can have an outsize effect in certain districts. Recent and projected changes in student enrollment influence current and future district hiring needs. Likewise, the percentage of teachers who are age 50 and older or 60 and older can signal the extent to which imminent retirements might create demand for new teacher hires.

### Shifts in Student Enrollment

Student enrollments in California were essentially unchanged between 2016–17 and 2017–18. However, this varied considerably at the district level. About 30% of California districts experienced little to no change in their student enrollments. These districts experienced, at most, a 1% increase or decrease between 2016–17 and 2017–18. (See Figure 8.) Another 12% of districts, however, had student enrollment that decreased by 5% or more. On the other end of the spectrum, about 10% of California districts increased in size by 5% or more.

**Figure 8**  
**Percentage Change in Student Enrollment in California Districts, 2016–17 to 2017–18**



Note: All California districts are represented in this analysis.

Data source: LPI analysis of California Department of Education student enrollment data. California Department of Education. (n.d.). DataQuest. <https://dq.cde.ca.gov/dataquest/dataquest.asp>.

Although statewide student enrollment remained steady over the past year, enrollment in California is projected to decline by about 4% between 2017–18 and 2027–28.<sup>53</sup> Some counties expect to see more substantial increases or decreases in student enrollment.<sup>54</sup> Lake County in Northern California, for example, is expected to grow by 14% and Sutter County, near Sacramento, by 16%. This anticipated growth in student enrollment could increase demand for teachers in these regions. By the same token, some regions might expect declining demand for teachers as their student enrollments decline. Student enrollment in Santa Cruz County is expected to decline by 14% over the next 10 years, and enrollment in Inyo County, on the Nevada border, could decline by 40%. For most counties, however, projected changes in student enrollment hover just above or below 0%, suggesting that other factors may play a greater role in influencing their demand for teachers.

These projected changes, which are only available at the county level, may look different across districts within a county. For that reason, actual changes in district enrollments offer additional insight into how the demand for teachers could be shifting. Even in counties in which enrollments are projected to decline, there are districts that have seen increases in enrollments over the past year. For example, although enrollments in Inyo County are projected to decline by 40% by 2027–28, enrollments in Death Valley Unified School District, in Inyo County, increased by 18% between 2016–17 and 2017–18. Meanwhile, some other districts in the county did see declines over the same year. Similarly, although Santa Cruz County is projected to have declining student enrollment over the next 10 years, its districts have seen a wide range of both increases and decreases in enrollments over the past year. These district-level and regional enrollment shifts are likely to influence the demand for teachers, especially in districts experiencing more significant shifts that are projected to continue over time.

## Retirement

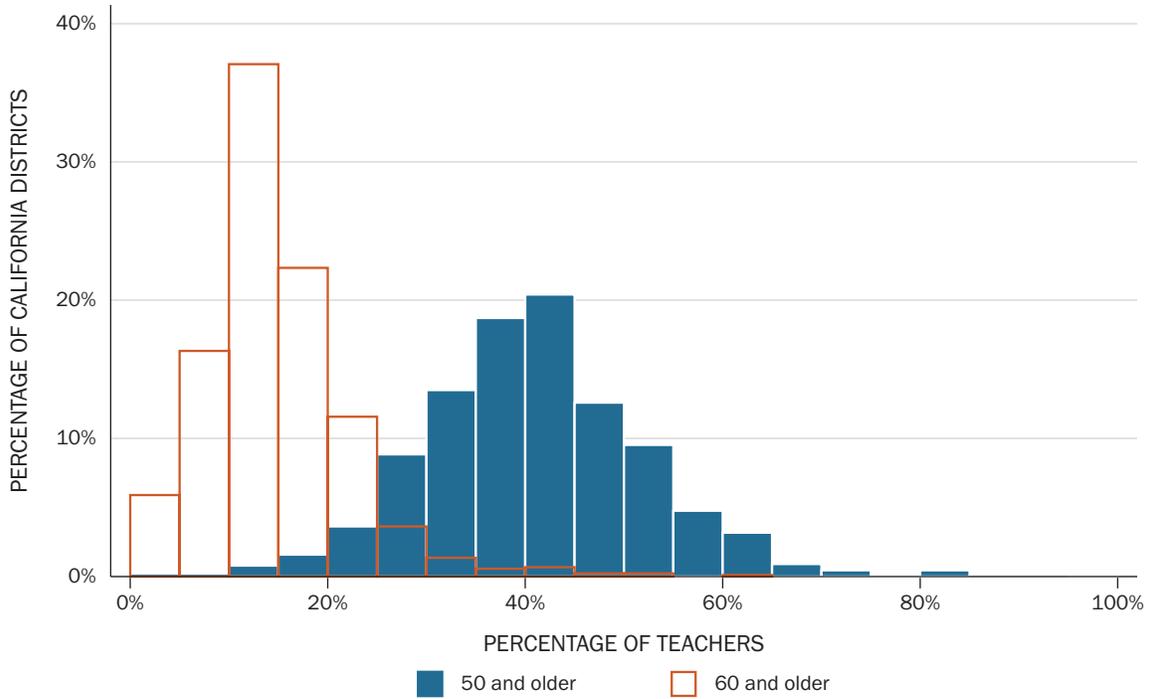
As mentioned earlier, about one third of national annual attrition can be attributed to retirement. Previous research indicates that over the past decade, California’s teacher age distribution has shifted to include more mid- and late-career teachers and fewer early-career teachers.<sup>55</sup> Based on CDE staffing data, currently about 14% of California teachers are age 60 and older and likely to retire within the next 5 to 10 years.<sup>56</sup> Teachers who are 50 or older make up about 40% of the workforce. Many of these teachers can be expected to retire in the next decade or so. This amounts to over 120,000 teachers who may need to be replaced over the next decade or two.



Currently about 14% of California teachers are age 60 and older and likely to retire within the next 5 to 10 years.

Districts with a greater share of older teachers benefit from having a stable and experienced workforce but could also contend with having to replace a significant portion of teachers as they reach retirement age. About one in five districts has a teacher workforce with fewer than one third of teachers age 50 and older, while a roughly equal number of districts has a majority of such teachers. (See Figure 9.) About one in five districts has 10% or fewer teachers age 60 or older, while about the same number of districts has 20% or more teachers in that age group.

**Figure 9**  
**Percentage of Teachers Age 50 and Older and Age 60 and Older in California Districts, 2017–18**



Note: Districts with fewer than five teachers were omitted from the analysis.

Data source: LPI analysis of California Department of Education restricted-use staffing file.

## Teacher Supply, Demand, and Shortages

Teacher supply and demand factors work in concert to produce either equilibrium, surpluses, or shortages. While certain factors, such as the percentage of new hires on substandard credentials or teacher turnover, are especially instructive, the relative weight of each factor varies from district to district. At the state level, a combination of teacher attrition and efforts to restore historic student–teacher ratios created a widespread increase in demand for teachers in California through the 2019–20 school year. Student enrollment plays a significant role in teacher shortages in only a small number of districts. Meanwhile, the drop in teacher supply due to decreased teacher preparation program enrollment over the past 2 decades exacerbates the gap between supply and demand. As described below, the COVID-19 crisis is likely to impact teacher demand and supply in complex ways: The pandemic could increase demand as additional staff are needed to ensure schools can safely reopen with appropriate physical distancing in place; it could also trigger shortages by exacerbating turnover, as many teachers have indicated they may not return to school under current circumstances. At the same time, teacher layoffs could occur if revenues drop as the state and districts grapple with the economic effects of the crisis. In any of these scenarios, long-standing shortages in high-need fields and schools are likely to continue.

In order to understand local teacher workforce conditions, it is important to consider all of these factors together.

Some California districts, such as Long Beach Unified School District (LBUSD), have worked to achieve a reasonable balance between teacher supply and demand, as indicated by lower turnover rates and relatively few teachers who are new to the district or teaching on substandard credentials or permits.

### Spotlight on Long Beach Unified School District

Long Beach Unified School District (LBUSD) has been recognized as a district in which students, and students of color in particular, outperform their peers in the state on measures of student achievement.<sup>57</sup> An in-depth case study of the district finds that staff members attribute this, in part, to the district’s stable workforce of experienced and well-prepared teachers.<sup>58</sup> Indeed, our analysis of supply and demand factors in the district is largely consistent with this view.

LBUSD has relatively low teacher attrition and turnover rates compared to both the state and the surrounding Los Angeles County (see Table 1). The district’s attrition rate of 6% is lower than the state and county rate of 9%. A turnover rate of 7% indicates that, after accounting for the 6% of teachers who leave teaching in California, just 1% of LBUSD teachers leave the district to teach in another California district. This seems to confirm the view that, while teachers might leave teaching in the district for various reasons (e.g., retirement, family reasons, or to pursue other career opportunities), teaching is an especially attractive career in LBUSD compared to other California districts.<sup>59</sup> The district projected needing to hire 198 teachers in 2018–19, which would essentially replace those lost to turnover.

With relatively little turnover, LBUSD has little need to hire new and beginning teachers. Thus, these teachers comprise a smaller proportion of the district’s teacher workforce compared to Los Angeles County and the rest of the state. The district has a higher re-entry rate than both the county and

state, with 16% of teachers who left after 2015–16 returning in 2017–18. By comparison, just 10% of Los Angeles County leavers and 12% of California leavers did the same. This means that LBUSD has a greater supply of teachers who are experienced and familiar with the district to fill teacher vacancies. This, in turn, puts less pressure on the district to fill vacancies with beginning teachers or teachers who are underprepared. Indeed, LBUSD hires fewer teachers on substandard credentials than the rest of the county or the state do. Since the district hires few new teachers to begin with, these teachers on substandard credentials make up a relatively small proportion of the district's overall teacher workforce.

An in-depth case study of LBUSD suggests that the district's favorable balance between teacher supply and demand may be related to its concerted efforts to hire, prepare, and retain teachers. According to the study, LBUSD partners with California State University Long Beach (Cal State Long Beach) and Long Beach City College to improve college readiness and postsecondary attainment.<sup>60</sup> LBUSD students can attend Long Beach City College tuition-free their first year and are guaranteed admission to Cal State Long Beach if they meet entrance requirements. Cal State Long Beach graduates make up about 70% of LBUSD new hires each year.<sup>61</sup>

In addition to developing the teacher preparation pipeline, LBUSD employs a selection process that assesses teachers' persistence and attitudes toward teaching students of all backgrounds and levels.<sup>62</sup> Once these teachers are selected, LBUSD provides comprehensive induction supports. While many California districts have eliminated their Beginning Teacher Support and Assessment (BTSA) programs, Long Beach has maintained its program. New teachers receive a minimum of 4 hours of support each month for 2 years. BTSA participants observe teachers; reflect on how to engage students, particularly English learners, in collaborative conversations; and work on lesson plans that address the varying needs of all students.

Veteran teachers and school leaders, too, receive ongoing supports in LBUSD. LBUSD educators shared that their professional learning experiences helped them improve their instruction.<sup>63</sup> One of the major reasons that teachers and principals said they stay in the district is because of the support they receive to continue to grow as professionals.

Nonetheless, supply and demand factors in LBUSD raise some considerations for the future. Half of the district's teachers, for example, are age 50 or older, with a considerable number of these being 60 or older. The district may need to increase hiring rates as these teachers retire in the next decade or so. An increased demand for new hires could put pressure on the local teacher supply pipeline and could increase vacancy rates or the proportion of new hires on substandard credentials. Some of the district's future attrition might be absorbed by declining student enrollments. Enrollments in Los Angeles County are expected to decline by 11% over 10 years, and LBUSD saw a 2% decline between 2016–17 and 2017–18. However, if the district hopes to return to pre-recession staffing levels, it will still need to hire more than 400 new teachers, in addition to those hired to replace teachers who leave. Finally, LBUSD has more teachers of color than the state average but a smaller proportion than the rest of Los Angeles County.

**Table 1**  
**Long Beach Unified School District Teacher Supply and Demand Factors**

Indicator	District	County	State
<b>Teacher Supply Factors</b>			
Total teachers	3,166	73,737	306,261
% teachers who are new hires	6%	10%	10%
% new hires with substandard credentials	22%	32%	34%
% beginning teachers	10%	11%	12%
% teachers of color	38%	49%	34%
Re-entrants: % leavers who re-enter	16%	10%	12%
<b>Teacher Demand Factors</b>			
Attrition: % left public school teaching in California	6%	9%	9%
Turnover: % left public school teaching in district/county	7%	9%	12%
Student enrollment	74,681	1,492,652	6,220,413
Enrollment change (2016–17 to 2017–18)	-2%	-1%	0%
Projected enrollment growth (2017–18 to 2027–28)	N/A	-11%	-4%
Projected teacher hires (2018–19)	198	3,712	20,918
Teachers needed to reduce student–teacher ratio to pre-recession levels	442	0	4,126
% teachers 50 and older	50%	40%	40%
% teachers 60 and older	17%	14%	14%

Note: Complete notes and source information for each indicator in the table are available here:

<https://learningpolicyinstitute.org/understanding-teacher-shortages-california-definitions-notes-and-sources>.

Last updated November 2019. These data are available for each district and county in California in an interactive map, available here: <https://learningpolicyinstitute.org/product/interactive-map-understanding-teacher-shortages-california>.

Last updated November 2019.

Source: Learning Policy Institute. (2019). *Understanding teacher shortages in California: A district- and county-level analysis of the factors influencing teacher supply and demand (interactive map)*. Palo Alto, CA: Learning Policy Institute.

While LBUSD is a promising example of a district that has been able to keep turnover low and meet its demand for teachers, in many more districts, this is not the case. Indeed, districts with high turnover rates are more likely to rely on beginning teachers, new hires, and new hires on substandard credentials and permits. Another Southern California school district, for example, has a turnover rate of nearly 20%, far exceeding the state average of 12%. About 1 in 10 of the district’s teachers are beginning teachers, and about the same proportion are new hires. More than 40% of those new hires are teachers on substandard credentials and permits. However, examples like LBUSD provide promise that investing in the teaching profession can yield a greater supply of fully prepared teachers who are supported to teach for the long haul.

## Potential Impact of the COVID-19 Pandemic

The analyses and findings described in this report are based on data that predates the COVID-19 pandemic. There has been a great deal of speculation about the potential impacts of the pandemic and the pandemic-induced recession on the teacher workforce. On the one hand, there is fear of massive layoffs precipitated by the COVID-19 recession and state budget cuts. On the other, there are projections of staffing shortages as districts prepare to reopen schools safely, with sufficient social distancing in place, while facing retirements and resignations of teachers who do not feel able to teach under current conditions. As described in this report, shortages of qualified teachers in fields such as math, science, and special education were already widespread before the pandemic closed schools in spring 2020. In this section, we describe how COVID-19 is impacting traditional indicators of teacher demand and supply in California.

**Teacher Demand: Layoffs.** As California began to feel the effects of massive unemployment, dramatically reduced tax revenues, and skyrocketing costs for health care and social services in the spring of 2020 due to COVID-19, significant teacher layoffs seemed likely, given the \$54 billion deficit the state was facing. An April 2020 analysis estimated a loss of nearly 50,000 teaching positions, or 13.8% of the teacher workforce.<sup>64</sup> Indeed, according to the Economic Policy Institute, nationwide more k–12 public education jobs were lost in April 2020 than in all of the Great Recession, with half of these losses among special education teachers, tutors, and teaching assistants.<sup>65</sup> With states facing revenue shortfalls across the country, reports of significant budget cuts and teacher layoffs at the state level were beginning to appear by June 2020.<sup>66</sup>

However, at least for the 2020–21 school year, California appears to have staved off significant layoffs. The state budget passed at the end of June 2020 averts the more severe cuts proposed in May by assuming the federal government will step in to provide additional funding. The budget also prohibits layoffs of teachers and classified employees who provide custodial, nutrition, and transportation services during the 2020–21 school year.<sup>67</sup> As a result, while districts may still seek to consolidate positions and leave vacancies unfilled, there is unlikely to be dramatically reduced demand for teachers due to layoffs in the short term.

**Teacher Demand: Staffing Needs to Reopen Schools Safely.** As districts make decisions about how to reopen schools safely and educate students during the 2020–21 school year, they may in fact require more teachers and other staff, not fewer. Guidance released by the California Department of Education and California Department of Public Health calls for providing 6 feet of physical distance between students and staff where practicable, as well as for smaller classroom groupings and stable cohorts of students and teachers in order to reduce the number of people with whom an individual interacts face-to-face.<sup>68</sup> Moreover, while planning for in-person classes, schools will also need to maintain online learning for students who are unable to attend school for health reasons or who choose to stay home. The decisions that districts make about how to reopen schools safely will have implications for how many teachers and other staff will be needed, and thus may increase teacher demand.

Katie McNamara, Superintendent of the South Bay Union School District in Southern California, explained this conundrum to the California Assembly in June 2020.<sup>69</sup> “The level of difficulty in opening school is very high. [It] feels close to impossible without more staff,” said McNamara. And yet, she also noted, “I am confident that I will be making cuts to personnel in our future board meetings.”

**The Potential Impacts of COVID-19 on Teacher Attrition.** As described in this report, between 2016–17 and 2017–18, 9% of California teachers left teaching in the state’s public school system.<sup>70</sup> This attrition drives nearly all of the demand for teacher hires, accounting for the demand of nearly 9 in 10 new hires in California each year.<sup>71</sup>

However, attrition could significantly increase as a result of the COVID-19 pandemic. In a *USA Today* national poll at the end of May 2020, one in five teachers said they are unlikely to return if schools open in the fall, including one in four teachers over the age of 55. More than 80% said they are having a harder time doing their job.<sup>72</sup> A survey of more than 15,000 Michigan k–12 educators, also conducted in May 2020, found that about 7% of Michigan educators reported they are leaving the profession because of concerns over the coronavirus, and another 24% are considering leaving.<sup>73</sup>

Increased turnover is likely among older staff, who are considered at greater risk for infection.<sup>74</sup> As described above, about 14% of California teachers are age 60 and older. Staff who have underlying health conditions—or who live with someone who does—may also choose to leave the profession rather than put themselves or loved ones at risk. A May 2020 survey of teachers, principals, and district leaders found that 36% of educators say they have a physical condition associated with a higher risk of suffering serious illness from the virus, and nearly 70% report that a close loved one they see often has such a condition.<sup>75</sup>

**Implications for Teacher Supply and Diversity.** During the pandemic, California took some steps to protect the pipeline of teachers who were in the process of completing their preparation and earning a credential when COVID-19 hit.<sup>76</sup> Among other steps, through executive orders as well as actions by the Commission on Teacher Credentialing, California suspended testing requirements, allowing candidates more time to complete the required basic skills, subject matter, reading, and teacher performance assessments. The CTC also waived the requirement for 600 hours of clinical practice as well as provided detailed guidance on how local educational agencies (LEAs) and teacher preparation programs could provide candidates with clinical practice opportunities during distance learning.<sup>77</sup> Finally, the CTC established a variable term waiver process so that candidates who needed extra time to complete credentialing requirements due to impacts from COVID-19 could nonetheless begin teaching in the fall of 2020. According to Mary Sandy, Executive Director of the CTC, these actions could benefit 8,000 new teachers and school administrators and enable more than 10,000 prospective teachers to enter the preparation pipeline in 2020–21.<sup>78</sup>

It is unclear what the longer-term impact of the pandemic will be on enrollment in teacher education programs. During the last recession, widespread layoffs deterred young people from entering teaching while higher education suffered budget cuts. This led to fewer slots in California educator preparation programs that have been challenging to restore and set the stage for even greater shortages when the hiring resumed.<sup>79</sup>

It does appear that COVID-19 will make it even harder for students from low-income families to access higher education, including high-quality teacher preparation programs.<sup>80</sup> Already, the pandemic has had a disproportionate impact on the higher education plans of people of color, with half of Latinos and about 40% of Black and Asian Americans canceling or otherwise changing their plans, including delaying enrollment, reducing courses, or switching institutions.<sup>81</sup> This is likely to negatively impact efforts to increase the diversity of the teacher workforce.

**Shortages Are Likely to Continue in High-Need Subjects and Schools.** As this report documents, California continues to struggle with ongoing teacher shortages, including long-standing shortages in certain high-need subjects and schools. California's shortages in certain subject areas, such as special education, mathematics, science, and bilingual education, persisted through the Great Recession and other economic downturns. A report from the Legislative Analyst's Office notes that in the 26-year period from 1990 to 2016, California reported shortages to the U.S. Department of Education for 24 years in science, 22 years in bilingual education/foreign language, 21 years in special education, and 16 years in mathematics.<sup>82</sup> Schools serving large concentrations of students of color and students from low-income families also experience perennial teacher shortages.<sup>83</sup>

California's shortages in certain subject areas, such as special education, mathematics, science, and bilingual education, persisted through the Great Recession and other economic downturns.

While it may seem paradoxical in light of potential layoffs, teacher shortages are likely to continue in California. A search of the education job board EdJoin for open teaching positions in mid-June 2020 indicated a total of 9,616 job vacancies in California alone.<sup>84</sup> The experience of Jim Brescia, Superintendent of Schools for California's San Luis Obispo County, may reflect broader trends unfolding across the state: "We're still struggling to fill the challenging positions, like special ed, bilingual, specialty services, so in the midst of laying people off we do still have openings, and that's true across the 10 districts in our county. The hard-to-fill positions are still hard to fill."<sup>85</sup>

## Recent State Investments

In recent years, California began to take a proactive approach to addressing teacher shortages. Between 2016 and 2019, the state Legislature invested nearly \$300 million to build the teacher pipeline and recruit and retain well-prepared teachers. While the largest investments are for programs that have not yet been fully launched, and many of the other investments are for programs that will take a number of years to produce graduates, efforts to rebuild the teaching force are beginning to yield modest results, yielding an increase of about 6,000 teacher preparation candidates between 2013–14 and 2017–18. (See Figure 4, p. 7.) This still leaves a significant gap between teacher supply and demand, however, and at the current rate of growth, it would take at least another 17 years to reach 2001–02 teacher preparation enrollment levels. Furthermore, nearly all of these initiatives were funded only on a one-time basis in the state budget.

In 2016 and 2017, legislative investments included designating \$45 million to help classified staff become certified to teach and \$10 million to start new undergraduate programs for teacher education—programs that will begin producing significant numbers of graduates within the next few years. In addition, \$5 million was allocated to increase the number of teachers with bilingual authorizations,<sup>86</sup> a critical shortage area, and \$5 million to launch a Center on Teaching Careers, a recruitment and resource center for teaching candidates and those considering a teaching career.

Early implementation reports from the Commission on Teacher Credentialing are promising. The Classified Staff Teacher Training Program provided grants to LEAs to support up to 2,260 classified staff, such as teacher’s aides, to earn a bachelor’s degree and teaching credential. The program provides classified staff with \$4,000 per year for up to 5 years to subsidize their teacher training costs, such as tuition, fees, books, and examination costs, as well as provide academic guidance and individualized supports. Demand for the program is high: Districts submitted applications for more than 8,000 slots<sup>87</sup>—well above the 2,260 that could be funded—and many districts that were awarded grants have filled their slots and report waiting lists.<sup>88</sup> More than half of candidates in the program are candidates of color.<sup>89</sup>

The Integrated Undergraduate Teacher Preparation Program provided 2-year competitive grants to institutions of higher education (IHEs) to develop new undergraduate teacher preparation programs so that candidates can earn their bachelor’s degree and teaching credential in 4 years, in contrast to the more widespread 5-year, postbaccalaureate pathway to a credential in California. Priority was given to IHEs that partnered with a community college and developed undergraduate programs for shortage areas (special education, math, science, bilingual education). Grants were awarded in late 2016 to 33 IHEs—who partnered with 54 community colleges—to launch undergraduate teacher preparation programs.<sup>90</sup> Programs began enrolling their first candidates in the 2018–19 school year, with 392 teacher candidates enrolled.<sup>91</sup>

Following these initial investments, over the past 2 years California has enacted its largest investments. In 2018, the state allocated \$75 million to support teacher residencies to recruit and train teachers in high-need fields (STEM, special education, bilingual education). During the first year of implementation, the CTC awarded 33 grants to LEAs and partnering teacher preparation programs to launch new teacher residency programs, as well as five grants to expand existing

programs.<sup>92</sup> The CTC also awarded approximately \$1 million in modest capacity-building grants to support residency program design. Programs, which were funded for 5 years, began enrolling candidates during the 2019–20 school year and producing graduates in spring 2020.

In 2018, the state also allocated \$50 million for “local solutions” to special education teacher recruitment and retention, a program designed to allow LEAs the opportunity and flexibility to design and implement local solutions to meet their needs for credentialed special education teachers. Funds were awarded to 41 LEAs, many of which indicated they would use their grant funding to recruit special education teachers, assist special education candidates with tuition, provide signing bonuses, and develop special education teachers by providing induction and assistance from mentor/master teachers.<sup>93</sup>

In 2019, the state allocated nearly \$90 million in one-time funds to launch the Golden State Teacher Grant Program to provide a service scholarship of up to \$20,000 to 4,400 teacher candidates who commit to working in a high-need field at a priority school for 4 years after receiving their credentials. As a result of budget cuts in 2020, this funding was reduced to \$15 million and will be targeted specifically to candidates in special education, though the 2020 budget is structured to restore prior funding, pending additional federal funding.<sup>94</sup> Candidates enrolled in a teacher preparation program on or after January 1, 2020, are eligible, and the California Student Aid Commission will administer the program.<sup>95</sup>

Additionally, in 2019 the state invested nearly \$60 million to support ongoing professional learning for both teachers and school leaders through two new programs—the Educator Workforce Investment Grant program and the 21st Century California School Leadership Academy—as well as continued investments in the California Subject Matter Projects.<sup>96</sup> While some of these funds were reduced due to pressures on the state economy as a result of the pandemic,<sup>97</sup> implementation is proceeding. The California School Leadership Academy has launched,<sup>98</sup> as have some of the funded Educator Workforce Investment Grants,<sup>99</sup> and the California Subject Matter Projects continue to provide strong professional development offerings across the state.<sup>100</sup> These programs can help support, develop, and retain the existing educator workforce. Investments in strengthening school leadership are essential, as research demonstrates that a principal’s ability to create positive working conditions and a collaborative, supportive learning environment plays a critical role in attracting and retaining qualified teachers.<sup>101</sup>

## Policy Considerations

As outlined in this report, given the severity of ongoing shortages and the disproportionate impact of shortages on particular districts, subject areas, and student populations, California may need to go beyond its prior one-time investments and consider further action to address the ongoing need for teachers. Demand from districts and institutions of higher education for the programs the state has invested in is high, with funding insufficient to cover the number of eligible applicants.

Given the severity of ongoing shortages and the disproportionate impact of shortages on particular districts, subject areas, and student populations, California may need to go beyond its prior one-time investments and consider further action to address the ongoing need for teachers.

In his 2020 budget proposal, California Governor Gavin Newsom signaled a strong interest in accelerating the state's efforts to prepare and retain a qualified and diverse teacher workforce as a foundational approach to closing the achievement gap.<sup>102</sup>

A 2020 poll of California voters points to substantial support for addressing these issues.<sup>103</sup> For the second year in a row, reducing the teacher shortage was among the top three most important education issues identified by likely voters. As described above, the impacts of the COVID-19 crisis on teacher shortages are still unfolding. However, long-standing structural shortages of qualified teachers in high-need fields and schools—and the inequities this produces in terms of both educational opportunities and outcomes—are likely to continue to require systemic and ongoing policy attention. Previous research<sup>104</sup> suggests consideration of the following eight evidence-based approaches for addressing California's ongoing teacher shortages in ways that will build a stronger, more stable, and more diverse teacher workforce for the long term:

### **1. Maintain and expand high-retention pathways into teaching, such as teacher residencies and Grow-Your-Own pathways.**

As attrition accounts for 90% of annual demand for new teachers, a key policy strategy is to expand high-retention pathways into teaching that bring individuals into the profession in ways that predict they will stay for a career. Such pathways include high-quality teacher residencies—1-year intensive apprenticeships modeled on medical residencies, which have consistently resulted in higher teacher retention rates. Residents apprentice alongside an expert teacher in a high-need classroom for a full academic year while completing credentialing coursework, and often a master's degree, at a partnering university. They typically receive a stipend and tuition assistance in exchange for a commitment to teach in the district for 3 to 4 post-residency years. Targeting high-need subjects and locations, residencies have also been found to attract more diverse candidates, thus supplying a diverse pool of effective teachers for high-need fields.<sup>105</sup>

Another set of high-retention pathways into teaching are “Grow-Your-Own” (GYO) programs. These programs recruit and train local community members, paraprofessionals, after-school program staff, and others currently working in schools, who are more likely to reflect local

diversity and are more likely to continue to teach in their communities. Research on these programs demonstrates that they have been effective in recruiting racially and ethnically diverse teachers who tend to stay in education in their communities.<sup>106</sup>

California's Classified School Employee Teacher Credentialing Program, funded at a total of \$45 million during 2016 and 2017, offers a strong GYO model on which to build. Data on California's prior incarnation of the program, which was funded from 1995 to 2008 at a significantly smaller level, indicate that the program produced more than 2,200 fully credentialed California teachers.<sup>107</sup> By its 13th year of operation, of the individuals who had earned their teaching credentials through the program, 92% were still serving in California schools.<sup>108</sup>

## **2. Provide service scholarships to all teacher candidates who commit to teach in high-need fields and locations.**

The cost of high-quality preparation is a significant obstacle to entering the teaching profession, one that serves as an even more significant barrier for candidates of color, who typically carry much more debt than their White counterparts. With teachers currently earning about 30% less than other college graduates, and the costs of higher education rising, it is difficult for many individuals to feel they can afford to prepare to teach. Although research finds an association between teachers' level of preparation and both their effectiveness and their likelihood of remaining in the profession, it is not surprising that, due to financial challenges, some candidates choose to enter teaching before they have finished—or sometimes even started—their preparation.<sup>109</sup>

Service scholarship and loan forgiveness programs address this challenge by underwriting the cost of teacher preparation in exchange for a number of years of service in the profession, often in a high-need subject or school. Research on loan forgiveness programs and service scholarships has found these types of programs to be highly effective in recruiting individuals into teaching and directing them to the highest-need fields and locations.<sup>110</sup>

Leveraging federal funds allocated in the 2020 budget, the state is due to launch a service scholarship program: the Golden State Teacher Grant Program, which will provide a \$20,000 service scholarship to teacher candidates in special education who commit to teach in a high-need school for 4 years after earning their credentials. If additional federal funds arrive, the state will expand the program to other high-need fields, consistent with the 2019 budget. Continuation of this program will be important, so that it can effectively serve as a recruitment and retention incentive for prospective teachers.

Demand for these types of programs—which can serve as a teacher recruitment and retention tool in all corners of the state—is high. A 2017 survey by the CTC of California teacher preparation programs found that faculty were most likely to identify lack of financial aid for teaching candidates as the largest obstacle to increasing enrollment in their programs.<sup>111</sup> Similarly, a 2017 survey of district officials found that service scholarships were also their number one recommendation for addressing teacher shortages.<sup>112</sup> Research on California's past incarnations of the program—the now-defunct Assumption Program of Loans for Education (APLE) loan forgiveness program and the Governor's Teaching Fellowship—finds that beneficiaries of those programs were more likely to teach in low-performing schools and had higher retention rates than the state average.<sup>113</sup>

### 3. Ensure equitable access to mentoring and induction programs for novice teachers.

Evidence suggests that strong mentoring and induction for novice teachers can be a valuable strategy to retain new teachers and improve their effectiveness.<sup>114</sup> All beginning California teachers are required to complete an induction program to earn their clear credential. However, state funding once targeted for induction is now folded into the Local Control Funding Formula (LCFF). This has resulted in many districts reducing their support for new teachers, providing support in the second instead of the first year, charging new teachers a fee for induction, or requiring new teachers to enroll at an institution of higher education to complete induction.<sup>115</sup>

Moreover, lack of dedicated state funding for new teacher mentoring and induction means that the cost of providing this support falls disproportionately to districts with high proportions of novice teachers. Our analysis finds that about one in four districts employs 20% or more first- and second-year teachers, while about 10% of districts employ fewer than 3% beginning teachers. As demonstrated in California's educator equity plan submitted pursuant to the Every Student Succeeds Act, the inequitable distribution of beginning teachers also disproportionately impacts students from low-income families and students of color.<sup>116</sup> These districts may find it difficult to properly invest in supporting all of their beginning teachers, with too few mentors to support their needs in schools that are heavily impacted by shortages. Some districts may also make investments, only to see these teachers get recruited by higher-paying districts that will hire them once they gain experience and have earned their clear credential.

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Solving this dilemma may require multifaceted solutions. In local budgeting, it is important for districts to recognize that investing in strong mentoring and induction programs reduces the high costs of turnover—over \$20,000 per teacher who leaves in urban districts—while benefiting student achievement.<sup>117</sup> It may also be useful to develop creative state strategies to support districts with large numbers of beginning teachers and mentoring needs, while preserving the benefits of the LCFF approach that enables local control of spending.

California's significant numbers of National Board Certified teachers (NBCTs) may be a resource to access in terms of providing mentoring. Stipends for NBCTs who serve in high-need schools—which are typically those experiencing the greatest shortages—can incentivize teacher retention and ensure a strong pipeline of expert teacher leaders committed to mentoring novice teachers and playing a leadership role in school improvement in those schools. A number of studies have found that teachers who become nationally certified are, on average, more effective teachers (as measured by their students' test score gains) than non-NBCTs with similar experience, when controlling for student and classroom characteristics.<sup>118</sup> Recent research from

California highlights the effectiveness of NBCTs as mentors, accelerating student learning gains of mentees' students by over 6 months compared to students of other novice teachers mentored by non-NBCTs.<sup>119</sup>

As many states do (and as California once did), the state may want to consider growing the number of NBCT mentors by incentivizing more teachers to earn National Board Certification and to serve in high-need schools, where novice teachers are disproportionately placed.<sup>120</sup>

More than half of states provide stipends to NBCTs, and a dozen target incentives to NBCTs in high-need schools, as California once did at a rate of \$5,000 per year for 4 years (\$20,000 in total) for teachers remaining in these schools.<sup>121</sup> Research on implementation of California's prior program—discontinued in 2009—suggests that it contributed to California having a much greater share of NBCTs in schools serving more students of color and students from low-income families than was true in other states at the time.<sup>122</sup>

#### **4. Streamline requirements for entry into the profession by considering multiple pathways for demonstrating competence for both in-state and out-of-state entrants to the profession.**

An earlier analysis of teacher shortages in California identified CTC testing policies as a contributor to shortages, both because of their financial costs to candidates and their cumulative fail rates, which substantially reduce the pipeline of teachers. At least 40% of all those who initially intend to teach—and more than half in mathematics and science—are waylaid by testing.<sup>123</sup> Whereas professions such as law and medicine require one test after completion of training (e.g., the bar exam or medical licensing exam), the CTC requires four tests for most multiple-subject teaching candidates and three for most single-subject candidates. Only one of these—the teacher performance assessment taken at the end of candidates' training—has been shown to be related to later teaching effectiveness.<sup>124</sup> In addition, fully prepared candidates seeking to transfer in from other states still sometimes face barriers to licensure even when they are highly experienced with successful track records of teaching.

California has taken some steps to remove barriers to entry by easing rules for license reciprocity for teachers from other states and enabling candidates to substitute adequate scores from other academic tests for the basic skills (CBEST) exam. And, due to COVID-19, the state has suspended testing requirements for candidates between March 19 and August 31, 2020, and is giving candidates more time to pass the required assessments.<sup>125</sup> But more can be done. The CTC is currently examining coursework-based pathways with embedded performance measures as a lower-cost, higher-fidelity alternative for demonstrating subject-matter and pedagogical competence. These efforts can be supported with resources to develop and validate alternatives that ensure competence while streamlining pathways to teaching.

## 5. Strengthen systems to recruit and prepare aspiring teachers earlier in the educational process, including through community college and high school pathways.

Policies to recruit and begin preparing future teachers earlier in their educational careers can help attract young people into teaching and reduce the overall costs of their preparation. California has made significant progress on this front through the \$10 million investment in 2016 to launch new undergraduate teacher preparation programs, which were developed in partnership with community colleges.<sup>126</sup>

The state could consider building on these efforts by investing in “2 + 2” partnerships that allow candidates to begin teacher preparation at a community college, with clear course articulation agreements that enable them to complete teacher preparation and credentialing requirements at a 4-year institution. Such programs are particularly critical in rural communities without easy access to a 4-year IHE. Because community colleges often serve students of color, they can also be a useful source for diversifying the pool of aspiring teachers. California has some successful examples of these 2 + 2 partnerships, but state support for intersegmental alignment could help catalyze their creation and make them a seamless, widely available, and more affordable pathway into teaching. A pilot program launching in summer 2020 will support three related partnerships, allowing individuals who already have a bachelor’s degree and are serving on emergency-style permits to access teacher credentialing coursework at a community college via distance learning.<sup>127</sup>

The state could consider investing in “2 + 2” partnerships that allow candidates to begin teacher preparation at a community college, with clear course articulation agreements that enable them to complete teacher preparation and credentialing requirements at a 4-year institution.

Expanding high school pathway programs into teaching can also serve as a critical recruitment strategy and a Grow-Your-Own pipeline for local school districts. Such programs help steer more high school students toward the profession of teaching at a time when there is a declining interest in the field among high school students.<sup>128</sup> In 2015, just 4.6% of U.S. high school graduates who took the ACT test said they intended to pursue a career as an educator, compared to 7% in 2010.<sup>129</sup> In recent years, California has made substantial investments in career technical education (CTE) through programs such as the California Career Pathways Trust and the Career Technical Education Incentive Grants. Additionally, federal funding through the Perkins Act supports CTE programs. Yet few of these programs focus on teaching as a career pathway. Less than 2% of pathways funded through the California Career Pathways Trust were focused on teaching as a career pathway (5 of 261), and just 1% of students served in career pathways were in education.<sup>130</sup>

## 6. Improve teacher compensation and working conditions.

Given the high cost of living in California overall—and with the cost of housing in some regions, such as the Bay Area, among the most expensive in the country—efforts to boost compensation may need to be part of state and local strategies to recruit and retain a qualified and diverse teacher workforce. Salaries vary widely across the state: For example, in the Mountain View–Los Altos School District in Silicon Valley, the beginning teacher salary is more than double—and the maximum teacher salary more than triple—what teachers earn in the Dunsmuir Joint Union High School District north of Redding.<sup>131</sup> While some of this variation responds to differential costs of living, much of it is also tied to the adequacy of school funding and other demands on local resources.

Research finds that compensation—which can take many forms—is associated with both attrition rates and shortage levels.<sup>132</sup> Large inequities in teacher salaries among districts within the same labor market leave some high-need, under-resourced districts at a strong disadvantage in both hiring and retaining teachers; these districts may require overall salary increases to be competitive.<sup>133</sup> Targeted housing supports may be productive strategies for other communities in which housing costs are out of reach for teachers to live in the communities in which they teach.<sup>134</sup>

Large inequities in teacher salaries among districts within the same labor market leave some high-need, under-resourced districts at a strong disadvantage in both hiring and retaining teachers; these districts may require overall salary increases to be competitive.

In addition, working conditions—such as class sizes, opportunities for professional collaboration and shared decision-making, and strong administrative supports—influence teachers’ decisions as to whether to remain in their school or in the profession altogether.<sup>135</sup> Teachers want to work in schools in which they are paid adequately and supported in their work, and they are more likely to stay in schools in which they feel successful. California’s large class sizes and pupil loads may exacerbate turnover, especially for the state’s special education teachers, whose caseloads are far higher than in many other states.<sup>136</sup> A lack of resources and supports in many schools serving concentrations of children living in poverty can also contribute to teacher burnout and drive teachers out of the profession.<sup>137</sup> State and local efforts to reduce pupil loads and provide a broader net of wraparound supports for meeting students’ health, mental health, social service, and other needs may reduce teacher burnout and thereby reduce staff turnover rates.<sup>138</sup>

## 7. Develop strong school leaders.

Comprehensive strategies to address teacher shortages consider the central role principals play in attracting and retaining talented teachers. Teachers cite principal support as one of the most important factors in their decisions to stay in a school or in the profession, especially in high-poverty schools.<sup>139</sup> Research demonstrates that a principal’s ability to create positive working conditions and a collaborative, supportive learning environment plays a critical role in attracting

and retaining qualified teachers.<sup>140</sup> Leveraging ongoing funding provided through the federal Every Student Succeeds Act, California is launching a new effort to provide intensive professional learning opportunities to school leaders through the 21st Century California School Leadership Academy.<sup>141</sup> While recent research suggests that the state’s administrator credentialing reforms since 2013 are resulting in new principals who are better prepared for the complex task of leading schools, a survey of California principals also finds that the area in which principals receive the least preparation and professional development is how to recruit, develop, support, and retain their staff.<sup>142</sup> These important skills should be a key area of focus going forward.

#### **8. Strengthen state educator workforce data systems.**

Recently, California has demonstrated a renewed interest in the development of a statewide data system related to education, including a \$10 million investment in the 2019 budget to develop a statewide cradle-to-career data system. The California Commission on Teacher Credentialing has made significant progress over the past several years in developing stronger data systems for the educator workforce and educator preparation, including through new data dashboards, and is beginning to use this data within a performance-based program accreditation system. Recently, CTC and CDE have begun efforts to link their data systems, which will allow the state, and researchers, to examine entry and exit patterns for teachers of different subjects and training backgrounds and show the productivity—in terms of recruitment and retention—of different pathways and investments in teaching. Such analyses can allow the state to manage supply and demand more effectively, better guide sound state and local policies, and support continuous improvement at the state and local levels.

## Conclusion

The most recently available data shows that the state of California is facing a severe and deepening shortage of fully credentialed teachers. Providing students with access to well-prepared teachers is the cornerstone of education equity, but many districts are instead hiring teachers on substandard credentials and permits at an alarming rate. Shortages are most severe in certain high-need subjects and in districts and schools serving large concentrations of students from low-income families. Although there have been some promising signals that teacher supply could be increasing, California's students cannot wait for the promise of an adequate supply of well-prepared teachers sometime in the future.

While the impacts of the COVID-19 crisis on California's teacher workforce are still unfolding, what is known so far suggests that shortages are likely to continue and may deepen further. It is also important to remember that California's teacher shortages in certain subject areas, such as special education, mathematics, science, and bilingual education, have persisted over decades—including through the Great Recession—especially affecting schools serving large concentrations of students of color and students from low-income families.

It may be that a silver lining to the current COVID-19 crisis is the opportunity to solve California's teacher shortages in subject areas and schools in which they have been long-standing. Of the many Californians who have lost their jobs during the crisis, some qualified individuals may consider a career in teaching who may not otherwise have done so. This may be especially true as nationwide, months-long school closures that require children to stay at home give parents and the public a renewed respect for the work teachers do every day. Districts may find that there are now more qualified applicants for teaching positions and that they no longer need to rely on hiring individuals who have not yet completed teacher preparation. With modest, targeted, and sustained investments, California may be able to use the COVID-19 crisis to hire more qualified teachers and ultimately solve persistent teacher shortages, including in high-need fields and schools.

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8. As explained in table notes, districts with fewer than five teachers were omitted from analyses examining teacher characteristics (i.e., credentials, turnover, experience, and demographic characteristics) because in these small districts, large percentages of teachers represent small numbers of teachers; however, all districts were included in the analysis of student enrollment.
9. The interactive map is available at <https://learningpolicyinstitute.org/product/interactive-map-understanding-teacher-shortages-california>.
10. In this report, students from low-income families are those eligible for free- and reduced-price meals (FRPM). The California Longitudinal Pupil Achievement Data System (CALPADS) includes several measures of FRPM eligibility. For the purpose of this analysis, we use the unduplicated FRPM-eligible count, which includes a total unduplicated count of students who meet household income or categorical eligibility criteria for FRPM based on applying for the National School Lunch Program; submitting alternative household income forms; their foster, homeless, or migrant statuses in CALPADS; or being “directly certified” through CALPADS as participating in California’s food stamp or CalWORKs programs during July–November. This count does not represent the “official” FRPM-eligible count because early TK children have been removed (kindergarten students who turn 5 years old after December 2).
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