



Teacher Shortages During the Pandemic

How California Districts Are Responding

Desiree Carver-Thomas, Dion Burns, Melanie Leung, and Naomi Ondrasek

Teacher Shortages During the Pandemic: How California Districts Are Responding

Desiree Carver-Thomas, Dion Burns, Melanie Leung, and Naomi Ondrasek

Acknowledgments

The authors thank Maxine Dimalanta for her intern support and our LPI colleagues Linda Darling-Hammond, Michael DiNapoli, Tara Kini, Hanna Melnick, and Susan Kemper Patrick for their valuable input and feedback. In addition, we thank Erin Chase and Aaron Reeves for their editing and design contributions to this project and the entire LPI communications team for its invaluable support in developing and disseminating this report. Without their generosity of time and spirit, this work would not have been possible.

This research was supported by the S. D. Bechtel, Jr. Foundation and the Bill & Melinda Gates Foundation. Core operating support for the Learning Policy Institute is provided by the S. D. Bechtel, Jr. Foundation, Heising-Simons Foundation, William and Flora Hewlett Foundation, Raikes Foundation, and Sandler Foundation. We are grateful to them for their generous support. The ideas voiced here are those of the authors and not those of our funders.

External Reviewers

This report benefited from the insights and expertise of two external reviewers: Sarah Lillis, Executive Director of Teach Plus California; and Tine Sloan, Professor of Education at UC Santa Barbara, Chair of the California Commission on Teacher Credentialing, and Director of the California Teacher Education Research and Improvement Network. We thank them for the care and attention they gave the report.

The appropriate citation for this report is: Carver-Thomas, D., Burns, D., Leung, M., & Ondrasek, N. (2022). *Teacher shortages during the pandemic: How California districts are responding*. Learning Policy Institute. <https://doi.org/10.54300/899.809>.

This report can be found online at <https://learningpolicyinstitute.org/product/california-teacher-shortages-response-report>.

This work is licensed under the Creative Commons Attribution-NonCommercial 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/4.0/>.



Document last revised January 21, 2022

Table of Contents

Executive Summary	v
Introduction	1
Study Description.....	1
Summary of Findings	3
California Districts Struggle to Fill Vacancies	4
Increased Vacancies and Staffing Struggles	4
Sources of Shortages.....	5
Hiring Underprepared Teachers.....	6
How Districts Are Working to Reduce Shortages	8
Increased Compensation.....	8
High-Retention Pathways Into Teaching.....	9
Investing in Recruitment and Hiring Capacity.....	10
Adding Staff to Support Students and Teachers	10
The Importance of State Investments for Addressing Teacher Shortages	12
Policy Considerations	14
Conclusion	19
Appendix: Participating Districts	20
Endnotes	21
About the Authors	26
List of Figures	
Figure 1 Map of Participating Districts.....	2

Executive Summary

How are California districts handling deepening teacher shortages 18 months into the COVID-19 pandemic? Following up on a March 2021 study, *California Teachers and COVID-19: How the Pandemic Is Impacting the Teacher Workforce*, this report describes the severe shortages many districts are experiencing and the strategies some are using to mitigate these shortages. Through a survey of a sample of California superintendents and human resources administrators conducted in August and September 2021, this study investigates the role COVID-19 has had on key aspects of teacher supply and demand, including teacher retirements, resignations, vacancies, and hiring strategies. Leaders from eight of the largest California districts participated in the study. In addition, the study included leaders from four small rural districts because research shows these types of districts often have additional challenges recruiting and retaining teachers. Together, these districts serve nearly 1 in 6 California students.

California Districts Struggle to Fill Vacancies

Consistent with news stories from across the state, district leaders confirmed that ongoing shortages had made filling back-to-school vacancies even more challenging than usual. This study finds that increases in teacher retirements and resignations, alongside a limited supply of candidates and a need for more teaching positions, led to unusually high levels of vacancies in several districts.

- **Increased vacancies and staffing struggles.** Districts have to fill vacancies both to replace teachers who have left their positions and to fill new teaching positions. Most districts surveyed for this study (8 of 12) faced an increased number of vacancies over pre-COVID-19 years and experienced greater challenges in filling these positions. At the time of this study, six districts indicated they still had to fill 10% or more of their total vacancies. While the total number of vacancies had increased from previous years, the greatest demand was still the hard-to-staff areas of mathematics, science, and special education.
- **Sources of shortages.** An increased number of retirements and resignations over pre-COVID-19 years was one factor contributing to shortages. Five out of eight large districts reported that increased retirements and resignations contributed to having more vacancies than usual. A further contributing factor was the creation of additional positions facilitated by federal recovery funds. Districts allocated recovery funds to creating additional teaching positions in order to provide smaller class sizes, more personalized learning for students, and additional academic support. Finally, while the demand for teachers in the state is increasing, the supply of teachers has not kept pace.
- **Hiring underprepared teachers.** In recent years, due to a shortage of fully qualified teachers in California, positions have increasingly been filled with underprepared teachers who have not completed the requirements for full credentials—either interns or those teaching on 1-year permits or waivers. The number of substandard credentials and permits issued in California nearly tripled from 2012–13 to 2019–20, numbering more than 13,000 annually. Among the districts surveyed for this study, every district filled some

vacancies with teachers on intern credentials, permits, and waivers. Most districts (10 out of 12) hired about the same or more teachers on substandard credentials compared to pre-COVID-19 years. Just two districts were on pace to hire fewer of these teachers in 2021–22.

How Districts Are Working to Reduce Shortages

In order to reduce shortages, districts were using state and federal recovery funds to increase compensation, develop high-retention pathways into teaching, invest in their hiring capacity, and support students and teachers.

- **Increased compensation.** Several districts sought to improve teacher retention by increasing direct compensation to teachers. Districts offered wage increases, stipends, and bonuses, especially for hard-to-fill positions. Districts also extended rate increases to substitute teachers, who were also in short supply.
- **High-retention pathways into teaching.** Several districts developed new teaching talent through high-retention pathways into teaching, including Grow Your Own (GYO) initiatives and teacher residencies. GYO programs recruit local community members, such as classified school employees, into teaching. Districts used state funding to help with tuition reimbursement as classified staff completed coursework toward their credentials. Residencies are 1-year intensive apprenticeships. Some districts with well-established teacher residency programs were able to anticipate how many new teachers would be available to fill some positions in hard-to-staff schools and subject areas. At least one district was working to launch a new residency program. District leaders noted that GYO approaches and residencies were important strategies for recruiting more teachers of color, which was a priority in several districts.
- **Investing in recruitment and hiring capacity.** A majority of districts in this study had stepped up recruitment activities in response to known and anticipated shortages. Districts increased their presence at job fairs and hosted their own virtual recruitment fairs. Districts developed more competitive hiring strategies, such as streamlining hiring processes; hiring additional recruitment staff; and offering open teaching contracts, which enabled them to secure hires before vacancies became available.
- **Adding staff to support students and teachers.** Several districts in our study described leveraging funds to improve working conditions with an eye toward teacher retention. Some districts hired additional staff to reduce pupil–teacher ratios, which could allow districts to approach the smaller pupil–teacher ratios common in other states and ease some of the demands on teachers. Districts also created and filled additional positions for intervention and strategic academic support, including counselors, psychologists, social workers, instructional coaches, and assistant principals. These expanded student supports were crucial as districts welcomed students back to campus. By supporting students’ learning recovery and social and emotional well-being, districts were also providing supports for teachers.

The Importance of State Investments for Addressing Teacher Shortages

The record-setting 2021–22 California state education budget includes considerable investments in building the educator pipeline and supporting the existing workforce. These funds could not have come at a more critical time given the shortages districts are facing. The budget includes nearly a billion dollars to increase access to comprehensive teacher preparation pathways. These programs are designed to both recruit and retain new teachers by incentivizing candidates to pursue comprehensive preservice preparation that includes a robust program of study alongside student teaching, which is associated with higher retention rates.

The state also provided \$1.1 billion through concentration grants, which will target additional funds to high-need districts for the purpose of hiring additional classified and certificated staff for their highest-need schools.

In addition, the state appropriated nearly \$2 billion in funds for professional learning on a range of topics, as well as to develop statewide resources for literacy instruction, multi-tiered systems of support, learning acceleration, and school leadership that are intended to support student learning and well-being. Funds will also go to growing the number of accomplished National Board Certified Teachers (NBCTs) teaching and mentoring other staff in high-poverty schools. This can help to remedy teacher shortages, as research indicates that teachers who are more fully prepared and well mentored are more likely to stay in the classroom, reducing annual teacher demand.

Policy Considerations

California districts have worked hard to provide the supports students need to be successful after more than a year of disrupted learning. It is critical that their efforts not be stymied by a lack of teachers and other support staff to carry them out. State and federal policymakers might consider the following evidence-based approaches for resolving teacher shortages, which focus on recruiting and preparing more candidates, retaining new teachers through early-career mentoring, and improving teacher working conditions.

1. **Recruit and retain teachers by improving compensation through additional federal action.** Although the federal government has a limited role in addressing locally set salaries for educators, federal policies can extend the financial capacity of teachers by reducing the college debt they must incur to become teachers, providing income tax credits, and making housing subsidies more readily available to teachers.
2. **Implement a statewide recruitment initiative to help potential candidates navigate the complex process of becoming a teacher.** California is implementing multiple programs aimed at ending teacher shortages by training a well-prepared, stable teacher workforce. The state could support the success of these efforts by providing career counseling and navigation supports to prospective teacher candidates to help them negotiate the complex gauntlet of programs, credentialing requirements, and funding opportunities that are part of the teacher preparation process.
3. **Invest in community college to 4-year university pathways that recruit and prepare aspiring teachers earlier in the educational process.** 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. 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.

4. **Increase the capacity of higher education to prepare teachers in high-demand fields.** Fully prepared teachers are more likely than underprepared teachers to stay in the profession, minimizing disruptions to student learning and district hiring costs, estimated at more than \$20,000 for each teacher who must be replaced in a large district. Teacher preparation programs will need support to increase enrollments of candidates who can teach in high-demand fields and to grow the state’s supply of fully prepared teachers. Programs will also need support to implement the state’s new standards for general and special education teachers and to create new and adapt existing preparation programs for early educators. To support this work, the state could establish capacity-building grants for teacher preparation programs. Now that there are recruitment incentives for candidates and program enrollments have been increasing, there may also be a need for the state to work with university leadership to incentivize the growth of teacher preparation programs to ensure that university funding rules and allocation practices do not constrain the ability of programs to admit eligible candidates.
5. **Support teacher recruitment by ensuring strong uptake of scholarships awarded through the Golden State Teacher Grant Program.** State agencies could engage in a shared communication campaign that disseminates information about the scholarships to teacher preparation programs, financial aid offices, and potential teacher candidates. School districts operating teacher residency programs should also be informed that residents can receive Golden State Teacher Grant awards in addition to residency stipends, which may help candidates afford living costs during teacher preparation.
6. **Support the retention of new teachers by cultivating the development of teacher mentors.** In addition to comprehensive preparation, strong early-career mentoring and induction can play a critical role in supporting the retention of novice teachers. California could help cultivate teacher mentors by supporting strong uptake of its recent \$250 million investment in the National Board for Professional Teaching Standards Certification Incentive Program, which should help grow the state’s number of NBCT mentors and incentivize their service in high-need schools, where novice teachers are disproportionately placed. Through the 21st Century California School Leadership Academy—established in 2019 to provide professional learning opportunities to educational leaders—the state could also continue building a professional development infrastructure that trains principals and teacher leaders on how to provide strong mentoring and early-career supports to novice teachers.
7. **Support teacher retention by improving working conditions.** The state could support data-informed improvement efforts by establishing a teacher working conditions survey, as other states have, that collects information about factors that may influence their decisions to stay in or leave the field. Finally, teachers experiencing workplace stress or trauma from the pandemic may benefit from school staff wellness programs. With the influx of federal COVID-19 relief funds to districts, the state could play a role in supporting teacher wellness by providing guidance and model policies that inform district investments in employee wellness policies and practices.

Introduction

California's teacher shortages were severe and worsening before COVID-19; since the pandemic started, the crisis has deepened, with district leaders sounding the alarm about paralyzing teacher shortages. At the start of the 2021–22 school year, Hayward Unified School District (USD) still had 53 teacher job openings to fill and a staggering number of substitute requests that went unfilled on any given day.¹ Similarly, according to West Contra Costa USD Associate Superintendent Tony Wold, “The district opened this year with 50—that’s five-zero—teaching positions open. That means students are going to 50 classrooms that do not have a permanent teacher.”² In September, Los Angeles USD had “more than 500 teacher vacancies, a fivefold increase from previous years.”³

Around the country, severe teacher shortages have put greater pressure on teachers and administrators to scramble to cover positions that lack permanent teachers, commonly referred to as vacancies.⁴ Even substitute teachers are difficult to find. Reports indicate that, in addition to hiring untrained individuals to fill classrooms, districts are asking teachers and administrators to cover unsupervised classes, sacrificing their planning periods or lunchtime to do so.⁵ As San Lorenzo USD Superintendent Daryl Camp shared, “In San Lorenzo USD, directors, principals, assistant superintendents, and the superintendent are in classrooms trying to support school sites. Teachers are subbing during their prep time way too much.”⁶

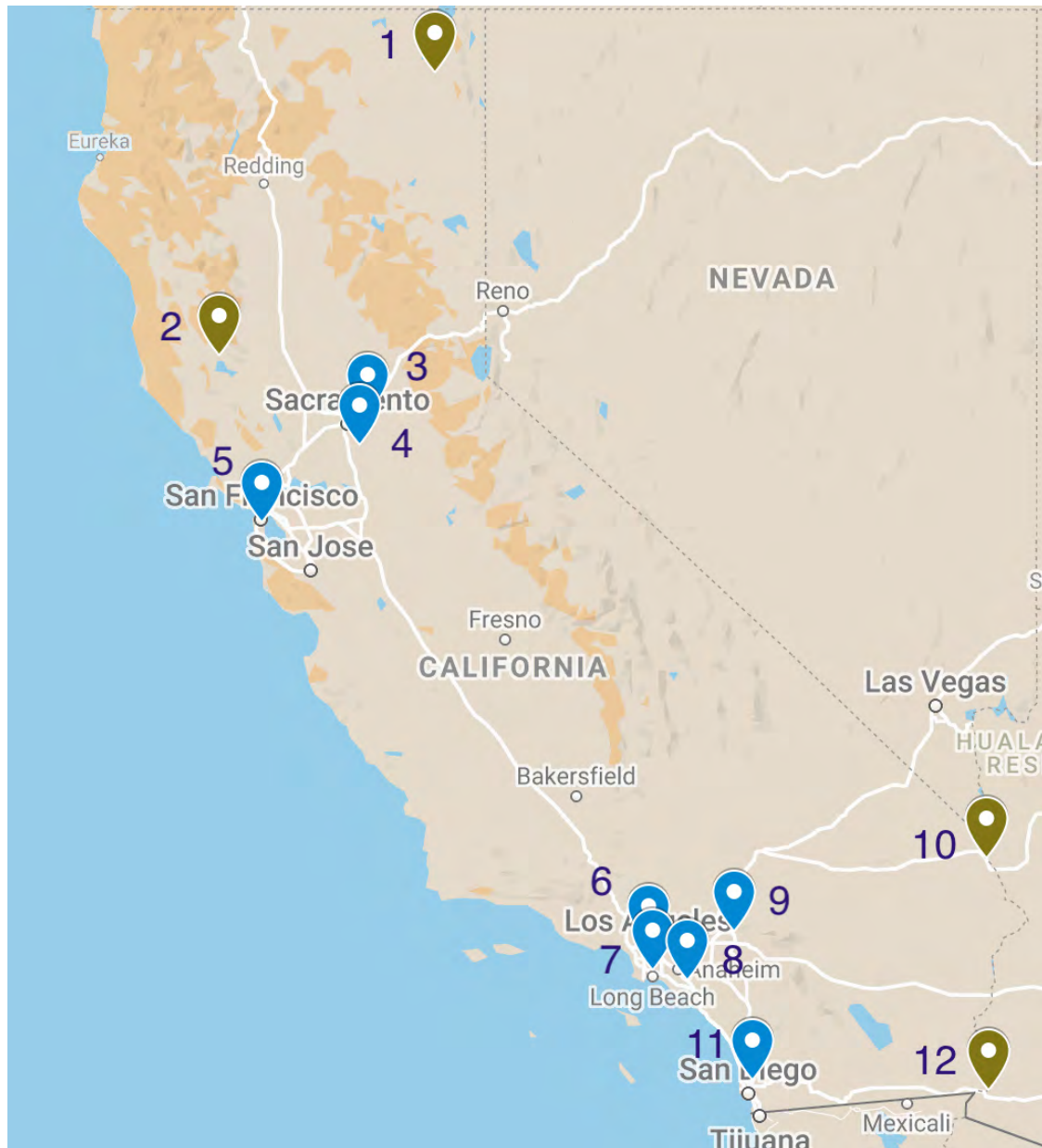
California districts are taking drastic measures to mitigate shortages. For example, at the start of the school year, Clovis High School was among at least a thousand schools across the country that closed at the beginning of the school year because of the pandemic.⁷ Clovis High was forced to close for a day and revert to remote learning due to staff shortages.⁸ Districts often respond to shortages by filling vacancies with substitutes (who are also in short supply) or by hiring teachers on substandard credentials and permits, which can significantly depress student achievement.⁹ These strategies are especially cause for concern as districts attempt to bring students back to stable, supportive school environments after many have spent more than a year at home due to the COVID-19 pandemic.

Study Description

This study, conducted in August and September 2021, updates one that the Learning Policy Institute conducted in fall of 2020, *California Teachers and COVID-19: How the Pandemic Is Impacting the Teacher Workforce*. At that time, district administrators attributed shortages to both inadequate financial aid for teacher preparation and teacher testing policies that posed barriers to entry. In addition, teacher workload and burnout were major concerns as teachers transitioned to online and hybrid learning models. Some districts were seeing growing retirements and resignations that further reduced the supply of teachers, a perception that was borne out by statewide teacher retirement data showing a 26% increase in retirements in the second half of 2020 compared to the same period in 2019.¹⁰ Meanwhile, there was considerable uncertainty about whether the pandemic would lead to an economic recession and school budget cuts. Between the time that study was conducted and fall 2021, the nature of the pandemic shifted considerably. During the summer of 2021, for example, it was clear that many districts would see substantial boosts in their budgets due to federal recovery measures and state surplus dollars.¹¹ In 2021, COVID-19 vaccines became widely available for adults and youth 12 and older; however, the Delta variant of the virus emerged as a new health concern.

Given this shifting pandemic landscape, we followed up with the 17 districts in our 2020 study to learn about the status of their teacher retirements, resignations, vacancies, and hiring strategies. In August and September 2021, we received responses to an open-ended survey from 12 districts via email, phone, and video call (see Figure 1 and the appendix).¹² These districts, which include eight of the largest districts in the state and four small rural districts, serve 1 in 6 California students.

Figure 1
Map of Participating Districts



 Largest California districts  Small rural districts

Note: Numbers correspond to district details in the appendix.

Data source: Google Maps, by Google.

Summary of Findings

Districts experienced a greater level of difficulty in filling vacancies this school year compared to pre-pandemic years. District leaders attributed this difficulty not only to the retirements and resignations they had experienced, but also to their desire to recruit additional staff as they leveraged increased funding to create new positions to support students who experienced trauma and reduced instructional time as a result of the pandemic. We found that many districts are putting state and federal recovery dollars to work in a variety of creative ways and will likely continue to need state support to incentivize much-needed teacher supply.

California Districts Struggle to Fill Vacancies

Consistent with news stories from across the state, district leaders confirmed that ongoing shortages had made filling back-to-school vacancies even more challenging than usual. Not one district was able to fill every vacancy with a fully credentialed teacher at the time of the study.¹³ As a result, many turned to substitute teachers and individuals on substandard credentials and permits to fill these open teaching positions.

Increased Vacancies and Staffing Struggles

It is not uncommon for districts to have open teaching positions, commonly referred to as vacancies, to fill before the beginning of the school year. Districts have to fill vacancies both to replace teachers who have left their positions and to fill new teaching positions. Two thirds of districts surveyed for this study faced an increased number of vacancies over pre-COVID-19 years and experienced greater challenges in filling

Two thirds of districts surveyed for this study faced an increased number of vacancies over pre-COVID-19 years and experienced greater challenges in filling these positions.

these positions. Some districts still needed to fill a significant number of vacancies in August, just as California schools were reopening their doors to students. An inability to fill these vacancies led to thousands of students going without a dedicated teacher on the first day of school.

At the time of this study, six districts indicated they still had to fill 10% or more of their total vacancies. One district still had more than a quarter of its vacancies to fill on the first day of school, amounting to hundreds of open positions. In one large urban school district, 90% of teacher vacancies had been filled by the time of the interview; at the same time the previous year, 98% of vacancies had been filled. A superintendent in one rural district described filling vacancies for the current school year as “extremely difficult.” Only one responding district reported a reduction in vacancies.

These difficulties were apparent even in districts that have historically had few shortages. One district, for example, which had typically attracted several candidates for each of its open teaching positions, was having a harder time filling vacancies this school year. That district’s human resources officer noted, “For the 2021–22 school year, [our school] sites are struggling to find qualified teachers to fill a variety of openings.” In addition, districts reported concerns that substitute teachers, paraeducators, counselors, and school nurses were also in short supply.

While the total number of vacancies had increased from previous years, the greatest demand was still the hard-to-staff areas of mathematics, science, and special education. A representative from a large urban district explained that the district is constantly hiring for these positions as teachers resign midyear and create new vacancies: “On any given day, we probably have an average of 10 to 15 vacancies. The majority of those are in special education.... Generally, single subjects and special education are hard to fill.”

Sources of Shortages

An increased number of retirements and resignations over pre-COVID-19 years was a contributing factor to these shortages. Five out of eight large districts reported that increased retirements and resignations contributed to having more vacancies than usual. In one large district, retirements in the 2020–21 school year increased by nearly a quarter compared to the 2018–19 school year, resignations increased by about two thirds, and leaves of absence increased by about 50%. Another large district had more than double the typical number of retirements. This district offered a retirement incentive at the end of the 2020–21 school year as a cost-saving measure for the district, which likely contributed to the increase. However, a district administrator also attributed the increased retirements to burnout associated with distance learning and surmised that “we would have had a higher retirement rate [than usual] even without the incentive.” Another large district that had not been hit hard by teacher shortages before the pandemic saw a 17% increase in retirements and an 11% increase in resignations since the 2018–19 school year.

In small rural districts, even one teacher leaving can have a significant impact on staffing and course offerings. One superintendent described having a teacher retire due to concerns about COVID-19 health complications. The teacher held a technology credential and was difficult to replace. As a result, the district was not offering its usual course options at the beginning of the school year.

A further contributing factor was the creation of additional positions facilitated by federal recovery funds. These funds are flexible in nature to address needs associated with the pandemic, but they must be used at least in part to support learning recovery, which in turn could increase staffing needs.¹⁴ Los Angeles USD, for example, allowed a significant increase in the number of high schools offering 4x4 block schedules for the 2021–22 school year. This scheduling model supports students by allowing them to take fewer classes at a time, with longer class periods. As implemented in Los Angeles USD, this scheduling model also requires about 25% more teachers than the traditional 6-period schedule. The number of Los Angeles USD high schools choosing this schedule more than doubled this year, requiring hundreds more teachers than usual.

Another large district committed to eliminating combination-grade classrooms, which meant hiring more staff. Previously, the district might have combined students from two grade levels, (e.g., 2nd and 3rd grade or 4th and 5th) if there were few students in each. The new staffing model reduces class size while allowing a teacher to focus on teaching one set of grade-level material.

The creation of new positions often meant a reallocation of staff, leading to shortages in other areas. One district representative explained, “We have been able to offer quite a few intervention positions. And a lot of times that doesn’t go to new hires. It’s more of our current teachers who are interested in those intervention positions, and then we have to backfill those teachers.” In this district, the number of vacancies this year had nearly tripled over its pre-COVID-19 average. The administrator there reported, “With the [federal recovery] funds, we were able to hire quite a few more teachers.... We typically hire around 140 each year. This year we’ve hired 375, so far. The [vast majority] of those are teachers, but it does include some counselors, psychologists, [and] social workers.”

District reports of increased retirements, resignations, and new teaching positions indicate that the demand for teachers in the state is increasing. However, the supply of teachers is not keeping pace. In the decades before the pandemic began, enrollments in California teacher preparation

programs were in sharp decline, having dropped by more than 75% between 2001–02 and 2013–14.¹⁵ There was a modest uptick in enrollments between 2014–15 and 2019–20, but a previous report has estimated that it would take at least another 17 years at that rate of increase to return to 2001 enrollment levels.¹⁶

In our initial district interviews in 2020, administrators explained that at the start of the pandemic, existing teacher pipeline problems were exacerbated by teacher testing policies and inadequate financial aid for completing preparation.¹⁷ Governor Newsom issued an executive order in May 2020 allowing some waivers and postponements of licensure exams, and California’s 2021–22 budget legislation allows teacher candidates to demonstrate subject-matter competency through coursework in lieu of standardized tests.¹⁸ In addition, significant investments have been earmarked to develop the teacher pipeline, as described later in this report. These efforts may be responsible for the sizable increase in new teachers completing teacher preparation in California. The number of program completers increased by about a third between 2016–17 and 2020–21, totaling nearly 14,000 program completers in the most recent year.¹⁹ This increase, however, still falls far short of teacher demand, as indicated by the number of underprepared teachers hired each year.

Hiring Underprepared Teachers

In recent years, due to a shortage of fully qualified teachers in California, positions have increasingly been filled with underprepared teachers—either interns or those teaching on 1-year permits or waivers. These substandard credentials and permits are issued to candidates who have not completed the coursework, clinical practice, tests, or other requirements that the state requires for full credentials.²⁰ By law, districts are authorized to hire a teacher on a substandard credential or permit only when a suitable fully credentialed teacher is not available.²¹ Although this was designed as an emergency stopgap measure, some districts rely on hiring these teachers year after year. The number of substandard credentials and permits issued in California nearly tripled from 2012–13 to 2019–20, now numbering more than 13,000 annually.²²

The number of substandard credentials and permits issued in California nearly tripled from 2012–13 to 2019–20, now numbering more than 13,000 annually.

While providing short-term relief from teacher shortages, the increased reliance on underprepared teachers does not solve the underlying teacher shortage challenge. A 2021 report found higher turnover among underprepared teachers in California, with 40% of new teachers hired on permits or waivers leaving teaching altogether by the end of their third year. Elevated turnover was also found among those entering teaching as interns.²³

Among the districts surveyed for this study, every district filled some vacancies with teachers on intern credentials, permits, and waivers. Most districts (10 out of 12) hired about the same or more teachers on substandard credentials as during pre-COVID-19 years. Just two districts were on pace to hire fewer of these teachers this year.

District leaders noted that the number of staff teaching on substandard credentials and permits was likely to increase as they continued hiring to fill remaining and midyear vacancies. As one district leader noted, “We’re getting to the point where we’re starting to [hire underprepared teachers]. Right now, [our numbers are the] same as previous years, but until we fill [all the vacancies] we will be using more waivers and interns than previous years.”

Similarly, another district leader explained that while they had initially avoided relying on underprepared teachers, as they got deeper into the hiring season, the applicant pool thinned and they began reinterviewing candidates they had previously rejected: “In the [past month], sometimes we’ve seen individuals who have not been selected by other districts, and [who have] not necessarily been selected by us [either], coming back up for a second consideration.”

At least one district had also hired teachers with more complete training under new Variable Term Waivers. Unlike teachers on substandard credentials and permits, these waivers are granted to teacher preparation candidates who were not able to complete their licensure requirements on time as a result of the pandemic. These teacher candidates may have had limited opportunities to complete clinical practice and performance assessment requirements or may not have been able to complete exams while testing centers were closed. Teachers on these permits will transition to preliminary credentials as they complete their remaining requirements.²⁴

How Districts Are Working to Reduce Shortages

Filling vacancies at the beginning of this school year was a tall order for districts, given that chronic teacher shortages were compounded by even more new teaching positions to fill. Districts were using a host of approaches and leveraging state and federal dollars to do so. Most districts (9 out of 12) reported using recovery funds specifically to recruit and retain teachers, as allowed under the law.²⁵ In addition, other investments in student supports may have made teaching more attractive by easing teacher workloads.

District strategies for addressing teacher shortages included increasing teacher compensation, improving recruitment and hiring capacity, developing high-retention pathways into teaching within the district, and adding new staff to improve teaching and learning conditions.

Increased Compensation

Several districts sought to improve teacher retention by increasing direct compensation to teachers. One large district focused on building its pool of substitute teachers through rate increases. A district representative explained: “Anticipating some challenges with our substitute pool, we started our recruitment back in spring, and we increased the daily rate for substitutes. Part of our strategy was to get people on board, on rolls.” The same district was then able to undertake targeted recruiting among its substitutes for permanent teaching positions.

Similarly, a 2021 report highlighting Chula Vista USD demonstrates how recruiting a robust substitute pool through increased compensation can also help districts weather teacher absences due to quarantining. Chula Vista took emergency action to grow its substitute pool by increasing the daily rate for substitutes from \$122 to \$200 and the daily pay for long-term substitutes from \$132 to \$283. It also began a marketing campaign to recruit substitutes from the community and parents with bachelor’s degrees.²⁶ This has allowed the district to fill in for most teacher absences when they arise.²⁷

A small rural district made use of stipends and bonuses to recruit and retain teachers, especially for hard-to-fill positions. These included an initial signing bonus, annual bonuses for each of 4 contract years, and a stipend to move to the area. This district demonstrated the limitations of this approach for staffing hard-to-fill subject areas in a rural locale. The district offered a \$15,000 signing bonus and \$3,000 moving stipend to fill positions in high school mathematics and music, but had not received any applicants.

Stipends were used in other districts around the state. For example, a 2021 news report explained that Los Angeles USD, facing a significant shortage, offered teachers a one-time stipend of \$2,500 and a 5% wage increase as part of a series of measures to bring educators back for school reopening.²⁸

Although some districts mentioned implementing new compensation strategies, not all did. National reports suggest that well-resourced districts may be able to outspend other districts and poach their teaching talent.²⁹ In California, most of the federal and state recovery dollars have been directed to districts identified as having the greatest need, which may allow historically

under-resourced districts to provide more competitive compensation than in previous years. Districts that choose to commit funds to increasing compensation may recruit teachers away from districts that do not.

High-Retention Pathways Into Teaching

In response to hiring challenges, several districts developed new teaching talent through high-retention pathways into teaching, including Grow Your Own (GYO) initiatives and teacher residencies.

GYO programs recruit local community members into teaching, including high school students, paraprofessionals, after-school program staff, and others. Some of the districts in this study developed programs to help substitutes and classified staff earn a teaching credential. As one district administrator noted, “We have what we call our Grow Your Own strategy [for] our substitute teachers [and] our classified employees [who] are working on credentials. We participated in grant opportunities for them.” The district used state funding from the Classified School Employee Credentialing Program to help with tuition reimbursement as classified staff completed coursework toward their credentials. One administrator noted that the district encouraged substitutes to its teaching staff because their experience working within the cultural context of the district gave them a valuable set of skills.

In response to hiring challenges, several districts developed new teaching talent through high-retention pathways into teaching, including Grow Your Own (GYO) initiatives and teacher residencies.

District leaders noted that GYO approaches were an important strategy for recruiting more teachers of color, which was a priority in several districts. Initial evaluation findings on the Classified School Employee Credentialing Program suggest that the grant program is making progress in increasing both the number of teachers of color and the number of teachers in hard-to-fill subject areas, including STEM subjects, bilingual education, and special education.⁵⁰

Teacher residencies, which have consistently resulted in higher teacher retention rates, are 1-year intensive apprenticeships modeled on medical residency programs. 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. Following their preparation, when they become teachers of record, residents also receive mentoring for 2 years. They typically receive a stipend and tuition assistance in exchange for a commitment to teach in a high-need subject and location in the district for 3 to 4 post-residency years.⁵¹

Some districts, such as Los Angeles USD and San Francisco USD, have well-established teacher residency programs. Our earlier study found that residencies have helped districts anticipate some of the supply of new teachers for hard-to-staff schools and subject areas during the uncertainty of the pandemic.⁵² Previous research suggests that high-quality teacher residencies can also help districts recruit and retain teachers of color, in particular.⁵³ State investments in teacher residency programs over the past several years have helped more districts develop these programs. At least

one district in this study is working to launch a new residency program that may help to mitigate shortages in the coming years. The district administrator explained that the new residency program should “bring in two things: people from our community [and] a more diverse workforce.”

Investing in Recruitment and Hiring Capacity

A majority of districts in this study had stepped up recruitment activities in response to known and anticipated shortages. Districts increased their presence at job fairs, many of which had moved online. Some districts also hosted their own virtual recruitment fairs, with a benefit of giving them greater flexibility over timing.

With teacher shortages statewide, district leaders also understood they were in competition with other districts for hiring. One district began offering open contracts—that is, a teaching job without a specified school or grade assignment. This allowed the district to secure new hires ahead of anticipated openings becoming available. Another district reorganized its recruitment processes, with principals conducting hiring interviews during the summer months to increase the speed at which they could make job offers. A representative there explained:

When we got started with hiring, we had about six people who let us know that, after we interviewed them, in the 3 days it took for us to follow up with them, they had already accepted a position with another district. We really stepped up our efficiency to the point where I was able to offer a contract to a person within 24 hours of their interview if they were selected.

The same hiring manager described how a conversation with colleagues from districts in the same region spurred the district to streamline its processes: “As soon as we got the [federal recovery] funds, we realized we were going to increase our hiring, and we also realized that our neighbors were probably going to do the same thing. And we immediately jumped on hosting our own recruitment night.”

The availability of federal funds helped support some of these recruitment efforts. One administrator noted that the district had used funds to hire additional staff on a temporary basis to help with recruitment, including creating more effective and efficient hiring processes.

Adding Staff to Support Students and Teachers

Teaching conditions matter for retention.³⁴ Investing in student supports, such as counselors and smaller class sizes, could help ease teachers’ workload and support teacher retention. Easing teacher workloads may help teachers to be more effective at managing a host of new challenges. Several district administrators in our study described leveraging funds to improve working conditions with an eye toward teacher retention.

Some district leaders reported that recovery funds were used to hire additional staff to reduce pupil–teacher ratios. One district, for example, hired dedicated staff to work full time in distance learning to serve those students continuing to stay home. Additional funds were then used to hire more teachers for in-person learning, allowing the district to reduce class sizes. This arrangement allows teachers to focus on one mode of instruction, virtual or in-person, rather than both. In our earlier report, district leaders reported that teaching in hybrid mode—both in-person and distance learning—had significantly increased teacher workload and stress.³⁵

District administrators reported using recovery funds to create and fill additional positions for intervention and strategic academic support, including counselors, psychologists, social workers, instructional coaches, and assistant principals. As one administrator described: “We’ve created smaller classrooms for our math students at the high school level. We have added more counseling and social-emotional learning positions, social workers, after-school tutoring, [and] summer programs to address [loss of instructional time]. There are quite a bit of extra positions put into our plan using the [recovery] money from the government.”

Research suggests these expanded student supports will be crucial for districts that have welcomed back to campus students who may be experiencing chronic stress, trauma, and anxiety nearly two years into the pandemic.³⁶ Further, by supporting students’ learning recovery and social and emotional well-being, districts also provided supports for teachers.

Even before the pandemic, California’s pupil-to-staff ratios for student services, as well as teachers, fell far short of recommended staffing levels.³⁷ For example, at over 600:1, pupil–counselor ratios were well above the national average and the recommended 250:1.³⁸ Similarly, California’s pupil–teacher ratio was 23:1, substantially above the national average of 16:1. Most New England states have pupil–teacher ratios of just 12:1.³⁹ Elevated pupil-to-staff ratios mean that California’s educators already faced overwhelming stresses in meeting student needs before the pandemic. Funds for additional staffing could allow districts to approach smaller pupil–teacher ratios common in other states and ease some of the demands on teachers.

The Importance of State Investments for Addressing Teacher Shortages

Districts have been leveraging considerable state and federal resources to provide safe, supportive learning environments in the midst of an ongoing health crisis. These resources have been essential to designing approaches that will meet student needs. Still, teacher supply has not kept up with increasing demand. According to one hiring manager, “Our hiring initiatives for certificated teachers this year have been way more than we’ve done in the last 2 years. But we still have some vacancies, and we continue to try to meet the need.” In addition to district-level efforts to recruit and retain teachers, districts will likely benefit from state-level investments in building a stable, high-quality teacher workforce.

The record-setting 2021–22 California state education budget includes considerable investments in building the educator pipeline and supporting the existing workforce.⁴⁰ These funds could not have come at a more critical time given the shortages districts are facing.

The budget includes nearly a billion dollars to increase access to comprehensive teacher preparation pathways through the Teacher Residency Grant Program, the Classified School

Employee Teacher Credentialing Program, and the Golden State Teacher Grant Program. Teacher residencies are district–university partnerships that offer yearlong comprehensive clinical experiences tightly linked to coursework and include financial support for residents.⁴¹ The Classified School Employee Teacher Credentialing Program subsidizes education costs while also providing academic guidance to classified staff earning a bachelor’s degree and teaching credential. The Golden State Teacher Grant Program is a service scholarship of up to \$20,000 for teacher candidates who commit to work in a high-need subject area and school.

These programs address the critical need for greater financial support for aspiring teachers. Further, they are designed to both recruit and retain new teachers by incentivizing candidates to pursue comprehensive preservice preparation that includes a robust program of study alongside student teaching, which is associated with higher retention rates.⁴² The state also provided \$1.1 billion through concentration grants, which will target additional funds to high-need districts for the purpose of hiring additional classified and certificated staff for their highest-need schools. By building the pool of teachers across the state and targeting hiring resources to districts with the greatest need, these programs could limit the likelihood of poaching across districts while supporting students’ needs and reducing the state’s extremely high pupil–staff ratios to levels that place students and teachers under less stress in more personalized settings.

In addition, the state appropriated \$1.5 billion for the Educator Effectiveness Block Grant, which districts can use to provide professional learning on a range of topics, including accelerated learning, social and emotional learning, early childhood education, language acquisition for

The record-setting 2021–22 California state education budget includes considerable investments in building the educator pipeline and supporting the existing workforce. These funds could not have come at a more critical time given the shortages districts are facing.

English learners, and creating a positive and inclusive school climate. The budget also includes more than \$100 million in funds for developing statewide resources for literacy instruction, multi-tiered systems of support, learning acceleration, and school leadership through the 21st Century California School Leadership Academy. These investments in educator professional learning are intended to support student learning and well-being. Another \$250 million is allotted to growing the number of accomplished National Board Certified Teachers (NBCTs) teaching and mentoring other staff in high-poverty schools. This may help to remedy teacher shortages, as research indicates that teachers who are more fully prepared and well mentored are more likely to stay in the classroom.⁴³

Policy Considerations

California districts have worked hard to provide the supports students need to be successful after more than a year of disrupted learning. It is critical that their efforts not be stymied by a lack of teachers and other support staff to carry those efforts out. Districts have developed strategies to address shortages, but in order to build and sustain the teacher workforce statewide, it will be crucial to effectively implement ongoing state investments and complementary federal actions.

California districts have worked hard to provide the supports students need to be successful after more than a year of disrupted learning. It is critical that their efforts not be stymied by a lack of teachers and other support staff to carry those efforts out.

Consistent with news stories from across the state, most districts surveyed for this study faced an increased number of vacancies over pre-COVID-19 years and experienced greater challenges in filling these positions. Vacancies were particularly difficult to fill in the hard-to-staff areas of mathematics, science, and special education. Overall, districts attributed teacher shortages to increases in teacher retirements and resignations, a limited supply of fully prepared candidates, and a need to fill new teaching positions.

Five out of eight large districts reported that increased retirements and resignations contributed to unusually high vacancy rates, indicating that improving teacher retention will be necessary to address teacher shortages. Interviews of district administrators in fall 2020 demonstrated that teacher workload and burnout were major concerns as teachers transitioned to online and hybrid learning models.⁴⁴ The results of this study confirm that, in some districts, teacher burnout continues to contribute to elevated turnover rates. In line with a wide body of research on teacher retention, some districts worked to better retain their teachers by offering more competitive compensation and more supportive working conditions.⁴⁵ These will be key approaches for other districts across the state that are seeking to stem an increase in retirements and resignations.

Another factor contributing to shortages was the creation of additional teaching positions facilitated by federal recovery funds. Districts created additional teaching positions in order to provide smaller class sizes, more personalized learning for students, and additional academic supports. These expanded student supports will be crucial to supporting students' learning recovery and social and emotional well-being and will also help ease the burden on teachers. Districts will need a pool of qualified teachers to fill these important positions. However, with a shortage of fully qualified teachers in California, positions have increasingly been filled with underprepared teachers who have not completed the requirements for full credentials. Every district in this study filled some vacancies with teachers on intern credentials, permits, and waivers, and most hired about the same or more teachers on substandard credentials as during pre-COVID-19 years.

Successful district efforts to cultivate and recruit new fully prepared teachers will be instructive for expanding these efforts on a statewide scale. Districts that had well-established Grow Your Own programs and teacher residencies noted that these programs provided assurances about the number of new teachers entering the district, particularly to teach in high-need subjects and locations. Some districts also developed intensive recruitment strategies to successfully secure qualified teacher hires.

Likewise, considerable state investments in building the teacher pipeline, including the Golden State Teacher Grant Program, offer the opportunity to develop the teacher workforce on a statewide level. For these funds to effectively deepen the pool of fully prepared teachers, potential teacher candidates will need to be aware of the resources available, candidates will need to be able to navigate a complex teacher licensure process, teacher preparation programs will need to have adequate capacity to accommodate an influx of new candidates, and new teachers will need access to high-quality mentoring and induction programs that support them through the early years of their careers.

Given these findings, state and federal policymakers might consider the following evidence-based approaches for resolving teacher shortages, which focus on recruiting and preparing more candidates, retaining new teachers through early-career mentoring, and improving teacher working conditions.

- 1. Recruit and retain teachers by improving compensation through additional federal action.** Although the federal government has a limited role in addressing locally set salaries for educators, federal policies can extend the financial capacity of teachers by reducing the college debt they must incur to become teachers, providing income tax credits, and making housing subsidies more readily available to teachers.⁴⁶ A substantial body of research demonstrates that teachers' wages affect the quality of those who choose to enter the teaching profession—and how long they stay once they get in.⁴⁷ On average, U.S. teachers currently earn at least 20% less than other college-educated workers, even after the work year difference is taken into account.⁴⁸ In addition, two thirds of those entering the education field borrow in order to earn their degrees, averaging \$20,000 of debt for a bachelor's degree and \$50,000 for a master's degree, often costing far more in repayment than a teacher's salary will support.⁴⁹ Research also shows that students of color are more heavily impacted by student loan debt than their white peers.⁵⁰

College should be debt-free for educators. A debt-free education for teachers can be accomplished in part by reforming federal loan forgiveness and service scholarship programs so that they are administratively manageable and the awards are commensurate with the cost of college. In addition, these programs can be structured so that loans are paid for by the government, and not the borrower, until teachers meet the service requirement to retire their debts completely.⁵¹

A teacher tax credit could be structured on a sliding scale so that all teachers receive at least \$5,000 annually and those teaching in the highest-poverty schools and in early education settings receive as much as \$12,500 annually. In addition, the federal government can make federal housing subsidies more readily available to educators and appropriate matching grants to districts that provide housing supports, as housing is one of the costs that drives teachers out of many urban and rural communities or out of the profession itself.

- 2. Implement a statewide recruitment initiative to help potential candidates navigate the complex process of becoming a teacher.** California is implementing multiple programs aimed at ending teacher shortages by training a well-prepared, stable teacher workforce. The state could support the success of these efforts by helping potential teacher candidates navigate the complex gauntlet of programs, credentialing requirements, and funding opportunities that are part of the teacher preparation process. Through the Teacher Recruitment Incentive Program, which operated from 2000 to 2004, California had six

regional teacher recruitment centers that employed full-time recruiters, provided credential and career counseling to prospective teachers, disseminated information on available state-funded incentives, conducted college campus and community-based information sessions on job opportunities in teaching, and referred candidates to teacher preparation programs.⁵² The state could consider investing in a similar set of career counseling and navigation supports for prospective teacher candidates, perhaps through the California Commission on Teacher Credentialing, which issues teacher credentials and administers most of the state’s teacher recruitment and retention programs.

3. Invest in community college to 4-year university pathways that recruit and prepare aspiring teachers earlier in the educational process. 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. 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. These pathways can help build the pipeline of teachers in hard-to-staff rural communities that do not have a nearby 4-year institution of higher education but are served by a community college. In addition, because California’s community colleges serve a diverse student population—nearly 70% of the population in 2017–18 were students of color—2+2 programs have the potential to attract more candidates of color into the teaching profession.⁵³

4. Increase the capacity of higher education to prepare teachers in high-demand fields. Demand for teachers in the state is increasing, but the supply of new teachers is not keeping pace. Even with a modest increase in enrollments in teacher preparation programs in recent years, it will take an estimated 17 years for the state to reach the enrollment levels

Teacher preparation programs will need support to increase enrollments of candidates who can teach in high-demand fields.

seen in 2001.⁵⁴ Teacher preparation programs will need support to increase enrollments of candidates who can teach in high-demand fields; to implement the state’s new standards for general and special education teachers, which include a much more extensive common foundation of knowledge about development, learning, and teaching of both general and special education students; and to create new and adapt existing preparation programs for early educators, which will be critical as the state works to achieve universal preschool. To support this work, the state could establish capacity-building grants for teacher preparation programs. A similar program, funded at \$10 million in 2016, was successful in launching new 4-year teacher preparation programs in certain high-need fields at more than 30 institutions of higher education that partnered with more than 50 community colleges.⁵⁵ Allowable uses for state capacity-building grants could include the creation of new and adaptation of existing preparation programs for early educators, hiring and training well-qualified faculty, supporting coursework design and redesign, supporting supervised student teaching experiences, and investing in the development of teacher educators with needed areas of expertise.

Now that there are recruitment incentives for candidates and program enrollment is increasing, there may also be a need for the state to work with university leadership to incentivize the growth of teacher preparation programs.⁵⁶ In prior research, we learned that the higher cost of providing high-quality teacher preparation—which involves management of clinical placements and supervision—compared to many liberal arts majors may disincentivize the creation of additional teacher slots at universities. We also found that the amount of funding allocated to teacher education slots is often constrained by California State University practices that typically determine annual slots based on the size of enrollments in the previous year or two.⁵⁷ This may create a mismatch between current demand for teachers—which this report suggests may be growing due to teacher resignations and retirement as well as the creation of additional positions facilitated by federal funds—and the ability of higher education to supply those teachers.

5. **Support teacher recruitment by ensuring strong uptake of scholarships awarded through the Golden State Teacher Grant Program.** Over the past 5 years, California has made significant progress in establishing and implementing complementary strategies that should help resolve the state’s long-standing teacher shortages, including the Teacher Residency Grant Program and the Classified School Employee Teacher Credentialing Program. More recently, in 2019 California created the Golden State Teacher Grant Program, which provides service scholarships of up to \$20,000 to teacher candidates who commit to working in a high-need subject area and school. The first year of implementation was disrupted by the emergence of COVID-19 and projected economic declines, which led the state to reduce the program’s funding from \$89 million to \$15 million. With better-than-expected state revenues and a budget surplus in 2021, the state was able to invest an additional \$500 million in the program, which will provide at least 25,000 scholarships to teacher candidates.⁵⁸ To ensure candidates are aware of these funds and to support strong uptake, institutions of higher education, the California Student Aid Commission, the California Commission on Teacher Credentialing, and the California Department of Education could engage in a shared communication campaign that disseminates information about the scholarships to teacher preparation programs, financial aid offices, and potential teacher candidates. School districts operating teacher residency programs should also be informed that residents can receive Golden State Teacher Grant awards in addition to residency stipends, which may help candidates afford living costs during teacher preparation.
6. **Support the retention of new teachers by cultivating the development of teacher mentors.** As California works to recruit new teachers into the profession, it will be equally as important to retain those teachers, since new teachers are among those most likely to leave the profession. Attrition from the field accounts for nearly 90% of the annual demand for teachers and drives many of the shortages we see today, particularly in high-need schools.⁵⁹ The state’s investments in increasing access to comprehensive preparation pathways, such as teacher residencies, and strategies that can help recruit candidates into these pathways, such as scholarships through the Golden State Teacher Grant Program, will play an important role in supporting teacher retention.

In addition to comprehensive preparation, strong early-career mentoring and induction can play a critical role in supporting the retention of novice teachers and improving their effectiveness.⁶⁰ Although beginning teachers in the state are required to complete an induction program to earn their clear credential, many districts reduced their support for new teachers when state funding targeted for induction through the Beginning Teacher Support and Assessment Program was folded into the Local Control Funding Formula.⁶¹

California could help ensure new teachers have access to strong mentorship by supporting the development of teacher mentors. The state could accomplish this by supporting strong uptake of its \$250 million investment in 2021–22 in the National Board Professional Teaching Standards for Certification Incentive Program, which should help grow the state’s number of NBCT mentors and incentivize their service in high-need schools, where novice teachers are disproportionately placed.⁶² Research from California highlights the effectiveness of NBCTs as mentors. The learning gains of students who are taught by novice teachers who have NBCTs as mentors is accelerated by more than 6 months, compared to students of novice teachers who are mentored by non-NBCTs.⁶³ Through the 21st Century California School Leadership Academy—established in 2019 to provide professional learning opportunities to educational leaders⁶⁴—the state could also continue building a professional development infrastructure that trains principals and teacher leaders on how to provide strong mentoring and early-career supports to novice teachers.

- 7. Support teacher retention by improving working conditions.** Research shows that multiple teaching and learning conditions can impact teacher retention, including teacher and school leadership, professional learning and collaboration, community support and parent engagement, teachers’ collective practice and efficacy, time for teaching, and student conduct. In the long term, the state could support data-informed improvement efforts by establishing a teacher working conditions survey that collects information across these domains. In North Carolina, state funding supports administration of a working conditions survey to teachers every 2 years, which some districts have used to inform improvement efforts.⁶⁵ A number of states, including Kentucky, Ohio, and Oregon, have used the New Teacher Center’s Teaching, Empowering, Leading, and Learning (TELL) Survey for this purpose.⁶⁶

Finally, myriad challenges during the COVID-19 pandemic, including difficult working conditions, have pushed many teachers to leave, or consider leaving, the profession.⁶⁷ Several district leaders surveyed for this report shared that they have noted increased teacher resignations or retirements, some of which may be connected to teacher burnout. Teachers experiencing workplace stress, secondary trauma—or compassion fatigue—or trauma from the pandemic may benefit from school staff wellness programs.⁶⁸ With the influx of federal COVID-19 relief funds to districts, the state could play a role in supporting teacher wellness by providing guidance and model policies that inform district investments in employee wellness policies and practices. Along these lines, in 2021 Washington state passed legislation that will result in the creation of model policies and procedures for school districts to address compassion fatigue among school staff.⁶⁹

Conclusion

District leaders were raising the alarm about severe teacher shortages before COVID-19 emerged. Now, in many ways, the pandemic has exacerbated teacher shortage conditions, forcing some districts into a crisis as they attempt to fill overwhelming numbers of vacancies. Fortunately, the state has matched the severity of shortages during the pandemic with historic investments dedicated to building and strengthening the educator workforce. As these crucial investments roll out, the state's teacher shortage problem could be at an inflection point. The success of these initiatives rests on careful attention to their effective implementation and ongoing efforts to build a comprehensive educator workforce development system in California.

Appendix: Participating Districts

Map #	Unified School District (USD)	County	Student Enrollment (2019–20)	Percentage Unduplicated Pupils (2019–20)
1	Modoc Joint	Modoc	857	63%
2	Upper Lake	Lake	844	80%
3	San Juan	Sacramento	39,740	56%
4	Elk Grove	Sacramento	63,660	56%
5	San Francisco	San Francisco	52,811	58%
6	Los Angeles	Los Angeles	483,234	85%
7	Long Beach	Los Angeles	71,712	67%
8	Santa Ana	Orange	47,780	88%
9	San Bernardino City	San Bernardino	48,755	90%
10	Needles	San Bernardino	998	76%
11	San Diego	San Diego	102,609	59%
12	San Pasqual Valley	Imperial	654	94%

Note: Excludes directly funded charter schools. Percentage unduplicated pupils is an estimate based upon total student enrollment and the California Longitudinal Pupil Achievement Data System (CALPADS) unduplicated pupil count of free or reduced-price meal eligibility, English learner, and foster youth data.

Sources: LPI analysis of CALPADS UPC Source File (K–12) [Data file and file structure]. <https://www.cde.ca.gov/ds/sd/sd/filescupc.asp> (accessed 01/06/21); California Department of Education. (2020). Public schools and districts data files [Data file and file structure]. <https://www.cde.ca.gov/ds/si/ds/pubschls.asp> (accessed 01/06/21).

Endnotes

1. Tucker, J. (2021, September 18). Bay Area schools are facing dire teacher shortages. The result: Other staff running classrooms. *San Francisco Chronicle*. <https://www.sfchronicle.com/bayarea/article/Bay-Area-schools-are-facing-dire-teacher-16468690.php> (accessed 01/06/22).
2. Gecker, J. (2021, September 22). COVID-19 creates dire US shortage of teachers, school staff. *Associated Press*. <https://apnews.com/article/business-science-health-education-california-b6c495eab9a2a8f1a3ca068582c9d3c7> (accessed 01/06/22).
3. Gecker, J. (2021, September 22). COVID-19 creates dire US shortage of teachers, school staff. *Associated Press*. <https://apnews.com/article/business-science-health-education-california-b6c495eab9a2a8f1a3ca068582c9d3c7> (accessed 01/06/22).
4. In this report, vacancies refer to any teaching positions that are not filled with a permanent teacher, including positions created due to a retirement or resignation or to entirely new teaching positions.
5. Lieberman, M. (2021, October 15). How staff shortages are crushing schools. *EducationWeek*. <https://www.edweek.org/leadership/how-staff-shortages-are-crushing-schools/2021/10> (accessed 10/20/21).
6. Tucker, J. (September 18, 2021). Bay Area schools are facing dire teacher shortages. The result: Other staff running classrooms. *San Francisco Chronicle*. <https://www.sfchronicle.com/bayarea/article/Bay-Area-schools-are-facing-dire-teacher-16468690.php> (accessed 01/06/22).
7. Koh, Y. (2021, September 5). Child Covid-19 cases rise in states where schools opened earliest. *Wall Street Journal*. <https://www.wsj.com/articles/child-covid-19-cases-rise-in-states-where-schools-opened-earliest-11630834201> (accessed 01/03/22).
8. Chavez, G. (2021, September 10). Staffing shortage causes Clovis school to temporarily close. *KRQE*. <https://www.krqe.com/news/education/staffing-shortage-causes-clovis-school-to-temporarily-close/> (accessed 01/06/22).
9. Podolsky, A., Darling-Hammond, L., Doss, C., & Reardon, S. (2019). *California's positive outliers: Districts beating the odds*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/positive-outliers-districts-beating-odds-report>; Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
10. California State Retirement System. (2021, February 10). Understanding the increase in teacher retirements [Blog post]. <https://www.calstrs.com/blog-entry/understanding-increase-teacher-retirements> (accessed 10/18/21).
11. Hong, J. (2021, June 28). Special ed and high-needs students get windfall in budget deal. *CalMatters*. <https://calmatters.org/education/k-12-education/2021/06/california-education-budget-2021/> (accessed 10/18/21); California Department of Education. (n.d.). Budget Act for 2021–22: Information. <https://www.cde.ca.gov/fg/fr/eb/yr21ltr0811.asp> (accessed 10/18/21).
12. Due to the open-ended structure of the survey instrument, not all data are comparable across districts. The data presented in this brief aggregate data across districts where possible.
13. Fully credentialed teachers are those who have completed the testing, coursework, and clinical practice required by the California Commission on Teacher Credentialing. “Preliminary” credentials are issued to new, fully prepared teachers, and “clear” credentials are issued to fully prepared teachers who have also completed an induction program. See Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
14. Griffith, M. (2021, March 11). An unparalleled investment in U.S. public education: Analysis of the American Rescue Plan Act of 2021 [Blog post]. <https://learningpolicyinstitute.org/blog/covid-analysis-american-rescue-plan-act-2021> (accessed 10/25/21).
15. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.

16. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
17. Carver-Thomas, D., Leung, M., & Burns, D. (2021). *California teachers and COVID-19: How the pandemic is impacting the teacher workforce*. Learning Policy Institute. <https://doi.org/10.54300/987.779>.
18. California Commission on Teacher Credentialing. (2020). *Guidance regarding Executive Order/SB820 actions related to COVID-19. Updated: September 21, 2020*. <https://www.ctc.ca.gov/docs/default-source/commission/files/guidance-regarding-eoa-related-to-covid-19.pdf> (accessed 01/13/21).
19. California Commission on Teacher Credentialing. (2021). Program completion surveys [Dashboard]. <https://www.ctc.ca.gov/educator-prep/program-completion-surveys> (accessed 12/17/21).
20. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
21. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California's teacher shortages expand inequality*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
22. California Commission on Teacher Credentialing. (2021). Teacher supply: Interns, permits and waivers [Data dashboard]. <https://www.ctc.ca.gov/commission/reports/data/edu-supl-ipw> (accessed 10/07/21).
23. La Torre, D., Leon, S., Ong, C., Sloan, T., & Smith, T. (2021). *Diversifying California's teaching force: How teachers enter the classroom, who they serve, and if they stay*. California Teacher Education Research and Improvement Network.
24. California Commission on Teacher Credentialing. (2020, April 6). *Variable term waivers due to emergency health and safety restrictions (COVID-19)*. https://www.ctc.ca.gov/docs/default-source/commission/files/covid-19-vtw-guidance.pdf?sfvrsn=a8502cb1_18 (accessed 10/07/21).
25. U.S. Department of Education. (2020). Frequently asked questions: Elementary and secondary school emergency relief programs, governor's emergency education relief programs. https://oese.ed.gov/files/2021/05/ESSER.GEER_FAQs_5.26.21_745AM_FINALb0cd6833f6f46e03ba2d97d30aff953260028045f9ef3b18ea602db4b32b1d99.pdf; Learning Policy Institute. (2021). *How can states and districts use federal recovery funds strategically? Supporting the educator pipeline*. <https://learningpolicyinstitute.org/federal-funds-factsheets>.
26. Lambert, D. (2021, September 2). Substitute shortages so severe, some districts may have to temporarily close classrooms. *EdSource*. <https://edsources.org/2021/substitute-shortages-so-severe-some-districts-may-have-to-temporarily-close-classrooms/660540> (accessed 10/27/21).
27. Ondrasek N., Edgerton, A. K., & Bland, J. A. (2021). *Reopening schools safely in California: District examples of multilayered mitigation*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/safe-school-reopening-ca-multi-district-brief>.
28. City News Service. (2021, September 22). LAUSD agrees to 5% wage increase for employees, \$2,500 one-time stipends. *Fox 11*. <https://www.foxla.com/news/lausd-agrees-to-5-wage-increase-for-employees-2500-one-time-stipends> (accessed 10/04/21).
29. Einhorn, E. (2021, October 1). Behind the teacher shortage, an unexpected culprit: Covid relief money. *NBC News*. <https://www.nbcnews.com/news/education/behind-teacher-shortage-unexpected-culprit-covid-relief-money-n1280491> (accessed 10/25/21).
30. California Commission on Teacher Credentialing. (2021). *Educator Preparation Committee: Evaluation of the California Classified School Employee Teacher Credentialing Program*. https://www.ctc.ca.gov/docs/default-source/commission/agendas/2021-06/2021-06-4a.pdf?sfvrsn=26ca2ab1_2 (accessed 10/07/21).
31. Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/teacher-residency>.
32. Carver-Thomas, D., Leung, M., & Burns, D. (2021). *California teachers and COVID-19: How the pandemic is impacting the teacher workforce*. Learning Policy Institute. <https://doi.org/10.54300/987.779>.

33. Carver-Thomas, D. (2018). *Diversifying the teaching profession: How to recruit and retain teachers of color*. Learning Policy Institute. <https://doi.org/10.54300/559.310>; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Learning Policy Institute. <https://doi.org/10.54300/262.960>.
34. Berry, B., Bastian, K. C., Darling-Hammond, L., & Kini, T. (2021). *The importance of teaching and learning conditions: Influences on teacher retention and school performance in North Carolina*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/leandro-teaching-and-learning-conditions-brief>; Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research*, 78(3), 367–409. <https://doi.org/10.3102/0034654308321455>.
35. Carver-Thomas, D., Leung, M., & Burns, D. (2021). *California teachers and COVID-19: How the pandemic is impacting the teacher workforce*. Learning Policy Institute. <https://doi.org/10.54300/987.779>.
36. Darling-Hammond, L., Schachner, A., & Edgerton, A. K. (with Badrinarayan, A., Cardichon, J., Cookson, P. W., Jr., Griffith, M., Klevan, S., Maier, A., Martinez, M., Melnick, H., Truong, N., & Wojcikiewicz, S.). (2020). *Restarting and reinventing school: Learning in the time of COVID and beyond*. Learning Policy Institute. <https://restart-reinvent.learningpolicyinstitute.org/>.
37. Jones, C. (2019, November 20). Schools keep hiring counselors, but students' stress levels are only growing. *EdSource*. <https://edsources.org/2019/schools-keep-hiring-counselors-but-students-stress-levels-are-only-growing/620281> (accessed 10/25/21).
38. American School Counselor Association. (2020). *Student-to-school-counselor ratio 2019–2020*. <https://www.schoolcounselor.org/getmedia/cd689f6a-252a-4e0a-ac8b-39b9b66d700d/ratios-19-20.pdf> (accessed 12/13/21); American School Counselor Association. (2021). *ASCA research report: State of the profession 2020*. <https://www.schoolcounselor.org/getmedia/bb23299b-678d-4bce-8863-cfcb55f7df87/2020-State-of-the-Profession.pdf> (accessed 12/13/21).
39. U.S. Department of Education, National Center for Education Statistics. (2020). Table 208.40. Public elementary and secondary teachers, enrollment, and pupil/teacher ratios, by state or jurisdiction: Selected years, fall 2000 through fall 2018. *Digest of Education Statistics*. https://nces.ed.gov/programs/digest/d20/tables/dt20_208.40.asp (accessed 12/13/21).
40. A.B. 130, Education finance: Education omnibus budget trailer bill. (Calif. 2021). https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=20210220AB130 (accessed 10/25/21). See also: EdSource staff. (2021, July 13). Unprecedented California budget to usher in sweeping education changes. *EdSource*. <https://edsources.org/2021/unprecedented-california-budget-to-usher-in-sweeping-education-changes/657849> (accessed 10/25/21).
41. Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/teacher-residency>.
42. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Learning Policy Institute. <https://doi.org/10.54300/262.960>.
43. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Learning Policy Institute. <https://doi.org/10.54300/262.960>.
44. Carver-Thomas, D., Leung, M., & Burns, D. (2021). *California teachers and COVID-19: How the pandemic is impacting the teacher workforce*. Learning Policy Institute. <https://doi.org/10.54300/987.779>.
45. Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Learning Policy Institute. <https://doi.org/10.54300/454.278>.
46. Bahn, K., Benner, M., Johnson, S., & Roth, E. (2018). *How to give teachers a \$10,000 raise*. Center for American Progress. <https://americanprogress.org/article/give-teachers-10000-raise/>.
47. Baker, B. D. (2018). *How money matters for schools*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/how-money-matters-report>.
48. Baker, B., Sciarra, D., & Farrie, D. (2015). *Is school funding fair? A national report card*. Education Law Center.

49. Podolsky, A., & Kini, T. (2016). *How effective are loan forgiveness and service scholarships for recruiting teachers?* Learning Policy Institute. <https://learningpolicyinstitute.org/product/how-effective-are-loan-forgiveness-and-service-scholarships-recruiting-teachers>.
50. Carver-Thomas, D. (2018). *Diversifying the teaching profession: How to recruit and retain teachers of color.* Learning Policy Institute. <https://doi.org/10.54300/559.310>.
51. Learning Policy Institute. (2020). *The federal role in advancing education equity and excellence.* <https://learningpolicyinstitute.org/product/advancing-education-2020-brief> (accessed 01/06/22).
52. California S.B. 1666. (2000–2001 Reg. Sess.). Teachers: Recruitment and incentives. https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=199920000SB1666 (accessed 12/15/21); Darling-Hammond, L., Furger, R., Shields, P., & Sutcher, L. (2016). *Addressing California’s emerging teacher shortage: An analysis of sources and solutions.* Learning Policy Institute. <https://learningpolicyinstitute.org/product/addressing-californias-emerging-teacher-shortage>.
53. California Community Colleges. (n.d.). Key facts. <https://www.cccco.edu/About-Us/Key-Facts> (accessed 12/15/21).
54. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California’s teacher shortages expand inequality.* Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
55. California Commission on Teacher Credentialing. (2021). *Educator Preparation Committee: Report on the Integrated Undergraduate Teacher Preparation Program grants.* https://www.ctc.ca.gov/docs/default-source/commission/agendas/2021-06/2021-06-4b.pdf?sfvrsn=21ca2ab1_2 (accessed 12/16/21).
56. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California’s teacher shortages expand inequality.* Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
57. Darling-Hammond, L., Sutcher, L., & Carver-Thomas, D. (2018). *Teacher shortages in California: Status, sources, and potential solutions.* Policy Analysis for California Education.
58. Newsom, G. (2021). *Enacted budget summary: 2021–22. State of California.* <http://www.ebudget.ca.gov/budget/2021-22EN/#/BudgetSummary> (accessed 12/15/21).
59. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California’s teacher shortages expand inequality.* Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>; Darling-Hammond, L., Sutcher, L., & Carver-Thomas, D. (2018). *Teacher shortages in California: Status, sources, and potential solutions.* Policy Analysis for California Education.
60. Ingersoll, R. M., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research*, 81(2), 201–233. <https://doi.org/10.3102/0034654311403323>; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators.* Learning Policy Institute. <https://doi.org/10.54300/262.960>.
61. California Commission on Teacher Credentialing. (2015, September). *Report on new teacher induction.* <https://www.ctc.ca.gov/docs/default-source/commission/reports/new-teacher-induction-2015.pdf?sfvrsn=0> (accessed 09/18/21).
62. Carver-Thomas, D., Kini, T., & Burns, D. (2020). *Sharpening the divide: How California’s teacher shortages expand inequality.* Learning Policy Institute. <https://learningpolicyinstitute.org/product/sharp-divide-california-teacher-shortages-report>.
63. Zhu, B., Gnedko-Berry, N., Borman, T., & Manzeske, D. (2019). *Effects of National Board Certified instructional leaders on classroom practice and student achievement of novice teachers.* American Institutes for Research.
64. California S.B. 75. (2019–20 Reg. Sess.). Education finance: education omnibus budget trailer bill. https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201920200SB75 (accessed 01/03/22).

65. Berry, B., Bastian, K. C., Darling-Hammond, L., & Kini, T. (2021). *The importance of teaching and learning conditions: Influences on teacher retention and school performance in North Carolina*. Learning Policy Institute. <https://learningpolicyinstitute.org/product/leandro-teaching-and-learning-conditions-brief>.
66. Ingersoll, R., Sirinides, P., & Dougherty, P. (2017). *School leadership, teachers' roles in school decisionmaking, and student achievement* [CPRE Working paper]. Consortium for Policy Research in Education, University of Pennsylvania; Maddock, A. (2017). *Recruiting and keeping good teachers* [PowerPoint slides]. <https://www.csgwest.org/policy/documents/CSGteachershortageswebinar-Maddock.pdf> (accessed 01/04/22).
67. Heyward, G. (2021, December 9). Schools are closing classrooms on Fridays. Parents are furious. *New York Times*. <https://www.nytimes.com/2021/12/08/us/schools-closed-fridays-remote-learning.html> (accessed 12/15/21); Will, M. (2021, September 14). Teachers are not OK, even though we need them to be. *EducationWeek*. <https://www.edweek.org/teaching-learning/teachers-are-not-ok-even-though-we-need-them-to-be/2021/09> (accessed 12/15/21).
68. Lever, N., Mathis, E., & Mayworm, A. (2017). School mental health is not just for students: Why teacher and school staff wellness matters. *Report on Emotional & Behavioral Disorders in Youth*, 17(1), 6–12.
69. Washington H.B. 1363. (2021–22 Reg. Sess.). K-12 workforce secondary traumatic stress: Model policy and procedure. <https://lawfilesexternal.wa.gov/biennium/2021-22/Pdf/Bills/Session%20Laws/House/1363-S.SL.pdf?q=20211215231325> (accessed 12/15/21).

About the Authors

Desiree Carver-Thomas is a Researcher and Policy Analyst at LPI. Her research has focused on equity with regard to educator quality issues, including teacher supply and demand, teacher diversity, and school and district leader preparation and development. She is the author of *Diversifying the Teaching Profession: How to Recruit and Retain Teachers of Color* and lead author of *Teacher Turnover: Why It Matters and What We Can Do About It*. Previously, she was an elementary special education teacher in New York City public schools.

Dion Burns is a Senior Researcher at LPI, where he is a member of the Educator Quality and Equitable Resources and Access teams. He conducts qualitative and quantitative research on issues of educational equity. He is a co-author of several LPI reports, including *California Teachers and COVID-19: How the Pandemic Is Impacting the Teacher Workforce* and *Sharpening the Divide: How California's Teacher Shortages Expand Inequality*. He is also co-author of *Empowered Educators: How High-Performing Systems Shape Teaching Quality Around the World*. He has more than 20 years of experience in education serving in a variety of roles, including teaching, policy analysis, and international diplomacy.

Melanie Leung is a Research and Policy Associate at LPI, where she is a member of the Educator Quality and the Equitable Resources and Access teams. She is the co-author of the LPI reports *California Teachers and COVID-19: How the Pandemic Is Impacting the Teacher Workforce* and *Supporting a Strong, Stable Principal Workforce: What Matters and What Can Be Done*. Prior to joining LPI, she conducted research on educating boys and the role of philanthropy in education and participated in mixed-methods research and workshops to boost student engagement. She was also a reporter covering youth and education issues in Hong Kong and has worked as an elementary school teacher in a school serving migrant workers' children in mainland China.

Naomi Ondrasek is a Senior Researcher and Policy Advisor at LPI. She is lead author of the LPI report *California's Special Education Teacher Shortage* and co-author of *Leveraging Resources Through Community Schools: The Role of Technical Assistance*, and she leads LPI's COVID-19 School Health and Safety team. Before working at LPI, she conducted research in behavioral neuroscience and later served in the California state legislature, where she reviewed, analyzed, amended, and drafted education-related legislation.



1530 Page Mill Road, Suite 250
Palo Alto, CA 94304
p: 650.332.9797

1100 17th Street, NW, Suite 200
Washington, DC 20036
p: 202.830.0079

@LPI_Learning | learningpolicyinstitute.org

The Learning Policy Institute conducts and communicates independent, high-quality research to improve education policy and practice. Working with policymakers, researchers, educators, community groups, and others, the Institute seeks to advance evidence-based policies that support empowering and equitable learning for each and every child. Nonprofit and nonpartisan, the Institute connects policymakers and stakeholders at the local, state, and federal levels with the evidence, ideas, and actions needed to strengthen the education system from preschool through college and career readiness.