Getting Down to FACTS

Trends in California's Teacher Workforce: Understanding Supply, Demand, and Shortages

Melanie Leung-Gagné, Desiree Carver-Thomas, Lucy Sorensen, Tara Kini, Susan Kemper Patrick, Tiffany S. Tan, and Linda Darling-Hammond

Learning Policy Institute

May 2026

Stanford | SCALE Initiative
Accelerator for Learning

Getting Down to FACTS

Table of Contents

Acknowledgements

The authors thank the California Commission on Teacher Credentialing and the California Department of Education, who facilitated our access to the data underlying this report and offered guidance in using it. We are also grateful to Learning Policy Institute Research Associate Chazz Higginbotham and interns Gian Baez, Maria Maria Castillo, and María Giani for their research support. We thank Thomas M. Smith and Yiwang Li from the University of California, Davis for their insightful feedback and advice. We also thank Paul Bruno, Assistant Professor at the University of Illinois Urbana-Champaign, for sharing cleaned Certificated Salaries & Benefits Data for our analyses and for providing guidance on navigating the dataset. Finally, we thank the National Board for Professional Teaching Standards for providing data on National Board Certification candidates in California.

This report benefited from the insights and expertise of Tuan D. Nguyen, Associate Professor at the University of Missouri. We are grateful for the care and attention he gave the report.

This research was supported by the Gates Foundation. Views expressed here are those of the authors and do not necessarily reflect positions or policies of the foundation.

Abstract

California has faced persistent teacher shortages for much of the past 25 years. As a result, the state is increasingly reliant on teachers who are not fully prepared to teach, and the number of substandard credentials issued each year has tripled since 2012–13. This study draws on administrative data from the California Department of Education and the California Commission on Teacher Credentialing to analyze the supply- and demand-side factors shaping teacher staffing challenges in California over time.

Despite declining enrollment across the state, demand for teachers remains high, driven by persistent teacher turnover, increasing student needs, expanded program offerings, and the need to lower pupil-teacher ratios. Teacher attrition accounts for over 85% of new teacher hires each year, and turnover rates are highest among beginning teachers; teachers holding emergency-style permits; Black, Multiracial, and American Indian/Alaska Native teachers; and special education teachers. Meanwhile, teacher preparation remains at roughly half of the levels observed over two decades ago. Teacher shortages are detrimental to students, as districts must resort to hiring teachers who are less qualified to teach or combine or cancel classes altogether, negatively impacting students' opportunities to learn. Importantly, the consequences of teacher shortages are disproportionately borne by students of color and students from low-income families, who are more likely to attend schools contending with high turnover rates and chronic difficulties filling positions.

In recent years, California has made large-scale investments in the teacher workforce to increase access to preservice preparation and to incentivize experienced and effective teachers to work and remain in high-need schools. These investments are beginning to pay off. The number of new preliminary credentials issued to California-prepared individuals increased by 40% from 2022–23 to 2024–25, with growing racial diversity among teacher candidates and beginning teachers. After more than a decade, pupil-teacher ratios are also finally returning to their pre-Great Recession levels. However, while these targeted investments have supported improved teacher recruitment and retention, especially in high-need schools, many of these programs have ended or will sunset soon. Our report findings point to the need for sustained, coordinated, multi-pronged policy action to stabilize the teacher workforce and address persistent shortages across the state, building on recent progress the state has made.

Introduction

Research consistently finds teachers to be a critical factor for a student's learning and well-being in school.[1] Students benefit most from teachers who are well-prepared, experienced, and who stay longer in their schools, which enables them to better understand how to meet the diverse academic and socioemotional needs of their students.[2] However, for much of the past 25 years, California has struggled to recruit and retain qualified teachers, undermining the state's ability to provide its 5.8 million public school students with quality education that will set them up for college and career success.

Teacher shortages, which occur when there are not enough fully credentialed teachers to fill open positions, have tangible and lasting consequences for students. Some districts struggle to hire teachers even after the school year has begun, and many resort to filling positions with long-term substitutes, teachers with emergency-style permits with little or no subject matter expertise or pedagogical training, or interns who are juggling teaching while completing a teacher preparation program.[3] Districts may also cancel or combine courses, limiting students' learning opportunities. Since 2012–13, the number of substandard credentials and permits has more than tripled; these temporary

---

[1] Burroughs, N., Gardner, J., Lee, Y., Guo, S., Touitou, I., Jansen, K., & Schmidt, W. (2019). A review of the literature on teacher effectiveness and student outcomes. In *Teaching for excellence and equity* (pp. 7–17). IEA Research for Education. Springer, Cham. https://doi.org/10.1007/978-3-030-16151-4_2; Chetty, R., Friedman, J. N., & Rockoff, J. E. (2014). Measuring the impacts of teachers II: Teacher value-added and student outcomes in adulthood. *American Economic Review*, *104*(9), 2633-2679; Jackson, C. K. (2018). What do test scores miss? The importance of teacher effects on non–test score outcomes. *Journal of Political Economy*, *126*(5), 2072-2107; Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica*, *73*(2), 417-458.

[2] Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review, 26*(6), 673-682; Papay, J. P., & Kraft, M. A. (2015). Productivity returns to experience in the teacher labor market: Methodological challenges and new evidence on long-term career improvement. *Journal of Public Economics, 130*, 105-119; Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal, 50*(1), 4-36.

[3] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments.* Learning Policy Institute. https://doi.org/10.54300/137.196; Sorensen, L. C., & Ladd, H. F. (2020). The hidden costs of teacher turnover. *AERA Open, 6*(1), https://doi.org/10.1177/2332858420905812; Nguyen, T. D., Lam, C. B., & Bruno, P. (2022). *Is there a national teacher shortage? A systematic examination of reports of teacher shortages in the United States* [EdWorkingPaper 22-631]. Annenberg Institute at Brown University. https://doi.org/10.26300/76eq-hj32

documents allow individuals who are not fully credentialed to teach in California schools.[4] This is concerning not only because these teachers are not fully prepared to teach, but they also leave their schools at much higher rates on average.[5] This undermines the stability of school staffing and the opportunity for students to develop close relationships with their teachers, which is important for effective learning.[6] The ongoing churn of teachers is also expensive for districts. Studies estimate that it costs a large district nearly $25,000 to recruit, hire, and onboard a replacement for a teacher who has left.[7] Importantly, the costs and consequences of teacher shortages are disproportionately borne by students of color and students from low-income families, who are more likely to attend schools contending with high turnover rates and chronic difficulties filling positions.[8]

Teacher shortages arise when the supply of qualified teachers fails to keep pace with demand. In California, new teacher supply plummeted over the course of a decade from 2003–04 to 2013–14 as preservice (i.e., traditional) teacher production dropped by more than 50% (Figure 1). The weakened teacher supply is a reflection of declines in the number of teacher candidates, rising preparation costs, and the financial challenges of entering a profession with relatively low pay in a high-cost state. Meanwhile, teacher demand remains high despite overall declining student enrollment across the state. Most of this demand is driven by high teacher attrition rates, a trend that is exacerbated by the state's reliance on teachers who are not fully credentialed. In addition, greater student needs and

---

[4] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments*. Learning Policy Institute. https://doi.org/10.54300/137.196

[5] Redding, C., & Smith, T. M. (2016). Easy in, easy out: Are alternatively certified teachers turning over at increased rates? *American Educational Research Journal*, *53*(4), 1086-1125. https://doi.org/10.3102/0002831216653206; Tan, T., Wei, W., Carver-Thomas, D., & García, E. (2026). *Teacher turnover in the United States: Who moves, who leaves, and why.* Learning Policy Institute. https://doi.org/10.54300/248.479

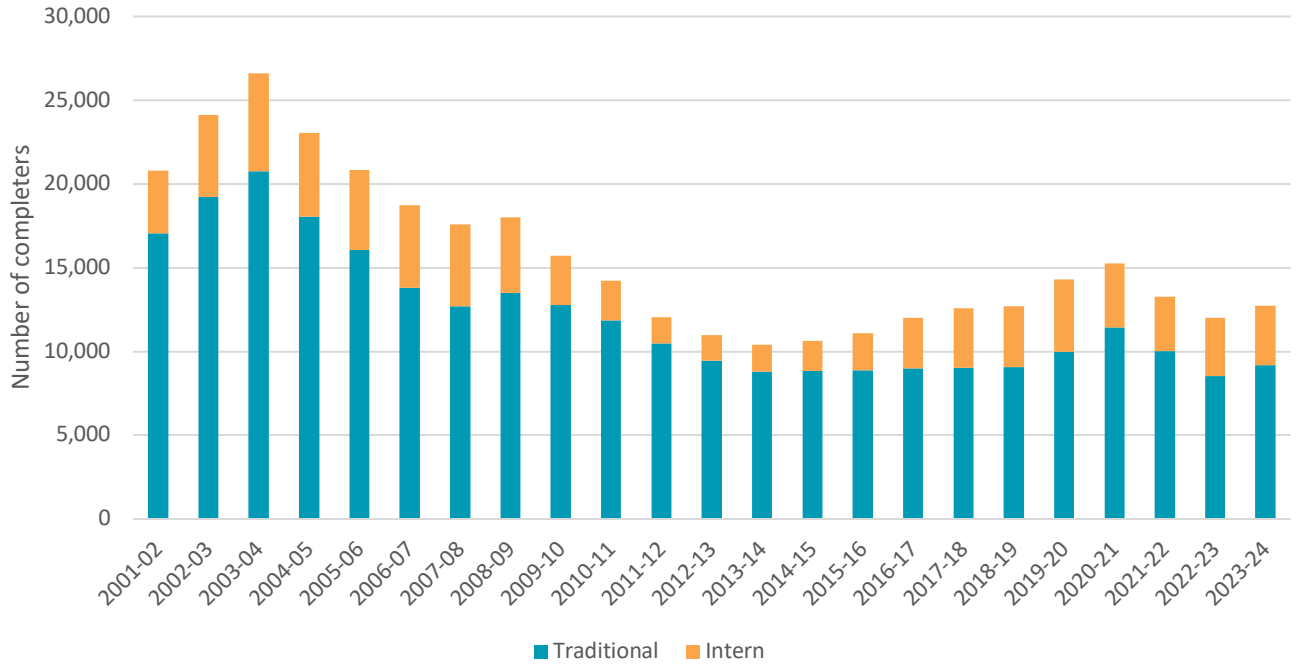
[6] Darling-Hammond, L.., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791; Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal, 50*(1), 4-36.

[7] Learning Policy Institute. (2024). *2024 Update: What's the cost of teacher turnover?* [Fact sheet].

[8] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments*. Learning Policy Institute. https://doi.org/10.54300/137.196; Ingersoll, R. M. (2004). *Why do high-poverty schools have difficulty staffing their classrooms with qualified teachers?* Renewing Our Schools, Securing Our Future: A National Task Force on Public Education. Center for American Progress and Institute for America's Future; Simon, N., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record*, 117(3), 1-36.

efforts to lower pupil-teacher ratios—California has the third-highest pupil-teacher ratios in the nation—as well as policy changes such as the expansion of transitional kindergarten to strengthen early education, alongside investments in arts and music, literacy, and CTE, mean that teacher demand continues to outpace supply.

Figure 1. California Teacher Preparation Completers, 2001–02 to 2023–24



Notes: Traditional teacher preparation providers are typically institutions of higher education (IHEs) offering undergraduate or graduate preservice preparation programs through a student teaching or residency pathway. Interns are candidates who are the teacher of record in a classroom while participating in the program.
Sources: U.S. Department of Education. *Higher Education Act Title II State Report Card System* [Data set]; California Commission on Teacher Credentialing. *Annual Report Cards (Title II)* (accessed 02/01/2026).

Historical events and systemic shocks also shape teacher supply and demand. At the turn of the 21st century, teachers with substandard credentials and permits—which include teachers on emergency-style permits and interns—made up about 14% of the workforce and disproportionately taught in schools serving more students of color and students from low-income families.[9] This inequity in student access to qualified teachers was a major factor in the landmark *Williams vs. the State of*

[9] Shields, P. M., Humphrey, D. C., Wechsler, M. E., Riel, L. M., Tiffany-Morales, J., Woodworth, K., Young, V. M., & Price, T. (2001). *The status of the teaching profession 2001*. Center for the Future of Teaching and Learning.

California lawsuit filed in 2000, which ultimately established qualified teachers as part of a set of basic necessities for educational opportunity in California. As a result of the case, the state allocated funding and implemented accountability measures to improve school staffing, increasing the demand for qualified teachers.[10] The Great Recession, which hit in 2007, was a sudden shock to the teacher labor market. Mass layoffs pushed many teachers—particularly those who were not fully credentialed as well as early career teachers—out of the profession, leading to a drop in the share of underprepared teachers but at the cost of increased pupil-teacher ratios. As the economy recovered, teacher demand increased alongside efforts to restore class sizes to pre-Recession levels. With the COVID-19 pandemic and the resulting influx of state and federal dollars to support learning recovery in more recent years, teacher demand increased greatly, compounded by surging turnover rates surged.[11] As a result of these factors, the state's reliance on teachers with substandard credentials and permits has continued to increase over time. The number of substandard credentials has more than tripled since 2012–13, and in 2023–24, teachers who were not fully prepared made up more than 8% of California's workforce.

California faces a unique set of structural challenges that contribute to persisting teacher shortages, or the lack of fully credentialed teachers to staff teaching positions. High costs of living in the state means that teachers struggle to cover living expenses with the salary they earn, causing some to leave the profession and deterring others from choosing teaching as a career. California's long history of requiring teacher preparation at the graduate level and related federal financial aid provisions also means that becoming a teacher can be particularly costly in the state — a barrier to teacher recruitment. In addition, teacher licensure requirements, which involve multiple rounds of tests and assessments, prevent thousands of teacher candidates who have invested in preparation from earning their credentials each year. These structural barriers to teaching are especially prohibitive

[10] California Department of Education. (2024). *The Williams case — An explanation.* https://www.cde.ca.gov/eo/ce/wc/wmslawsuit.asp (accessed 02/12/2026); Chung, S. (2013). *Williams v. California: Lessons from nine years of implementation.* ACLU Foundation of Southern California. https://www.aclunorcal.org/app/uploads/2013/09/171577475-Williams-v-California-Nine-Years-Later.pdf (accessed 02/12/2026).

[11] Anderson, J., Asch. A., Briggs, M. (2022). *Insights from California education leaders on utilizing COVID-19 relief funding.* California School Boards Association. https://www.csba.org/en/Newsroom/PressReleases/2022/-/media/A77DC3321A044627B4BAE59ECF2793F2.ashx (accessed 02/17/2026).

for candidates of color and candidates from low-income backgrounds, and as a result, the state continues to see significant underrepresentation of these teachers in the workforce. Additionally, the lack of teacher preparation programs in certain regions—particularly rural areas—means that teacher supply is unevenly distributed across the state, such that shortages persist in areas where teachers are needed most. Online preparation programs can improve access, but there is limited research on the quality of these programs.

The good news is that teacher staffing challenges can be effectively tackled by sustained investments that support the recruitment, preparation, and retention of a strong, stable, and equitable teacher workforce. California has made substantial investments in K-12 education aimed at strengthening the teacher workforce. Since 2013, the Local Control Funding Formula (LCFF) has provided additional funding to priority schools (those serving 55% or more unduplicated pupil count of English learners, students eligible for free or reduced-price lunch, and foster youth). Evidence shows these funds have improved student outcomes in priority schools, largely as a function of greater instructional investments, including reduced class sizes, increased teacher salaries, and greater teacher retention.[12] Since 2016, the state has also invested more than $2.3 billion in targeted teacher workforce initiatives, including the Teacher Residency Grant Program, the Golden State Teacher Grant Program, and the National Board Incentive Program. These and other initiatives have supported the teacher workforce by subsidizing the cost of high-quality preparation and incentivizing new and accomplished veteran teachers to teach in the subjects and schools where they are most needed.[13] Over the past decade, teacher numbers have increased by over 10,000, pupil-teacher ratios have returned to pre-Great Recession levels of 21.7 students per teacher, and the share of teachers of color has grown substantially to over 40%, with the most pronounced growth among Latine teachers. The number of new preliminary teacher credentials issued to California-prepared individuals have also

[12] Johnson, R. (2023). *School funding effectiveness: Evidence from California's Local Control Funding Formula*. Learning Policy Institute. https://doi.org/10.54300/529.194

[13] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments*. Learning Policy Institute. https://doi.org/10.54300/137.196; Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program.* Learning Policy Institute. https://doi.org/10.54300/518.478

increased in the most recent years, by nearly 40% from 2022–23 to 2024–25.[14] These numbers point to significant progress the state has made in recent years, even if there is more progress to be made.

The ongoing challenge of teacher shortages, alongside the strides the state has made, raises a central question: **How can California build on recent investments to create a more stable, equitable, and sustainable teacher workforce?**

This report addresses that question by examining trends and patterns in the determinants of teacher supply and demand, including teacher turnover as a key contributor to demand. We used linked administrative data from the California Department of Education and the California Commission on Teacher Credentialing. By analyzing long-run trends in preparation, hiring, credentials, and attrition, we identify the mechanisms driving shortages and assess how recent policy initiatives have shaped the workforce. We conclude by drawing implications for how California can more effectively target future investments to strengthen teacher recruitment, preparation, and retention where they are needed most.

Data and Methodology

This study draws on several public and restricted California administrative datasets provided, primarily by the California Department of Education (CDE) and California Commission on Teacher Credentialing (CTC) (see Appendix A for details). CDE data from 2012–13 to 2024–25 include staff-level demographics, school employment and course assignment data, school-level student demographics, school characteristics, teacher credential distribution, per-pupil spending, and teacher salary schedules. CTC document-level data include each credential or permit that the agency issued to teachers between 2005 and 2025, including clear or preliminary credentials, intern credentials, permits, and waivers. Other datasets used in this study include the California School Staff Survey, Title II data for teacher preparation trends, National Center for Education Statistics (NCES) Education Demographic and Geographic Estimates (EDGE) data on school locales, NCES Comparable Wage Index for Teachers (CWIFT) for adjusting salary and spending figures, and U.S. Census data.

[14] California Commission on Teacher Credentialing. (2026). *Teacher supply in California, 2024–25: A report to the Legislature.*

By merging these datasets, we provide descriptive statistics on teacher characteristics and turnover disaggregated by several key characteristics, including credential type, age, experience, race/ethnicity, subject area, and school characteristics. We analyze data both cross-sectionally, looking at the most recent data available, and longitudinally, over the past 5, 10, or 20 years, depending on the data available. Note that there may be inconsistencies or omitted data in certain years due to changes in data reporting. There were notable changes to staffing data beginning in 2019–20 due to changes in how these data were collected and reported.

We use these data to describe the current state of the teacher workforce in California with a focus on teacher shortages and the underlying determinants of teacher supply and demand. We first examine patterns of teacher shortages, as indicated by the number of substandard credentials and permits issued annually, and how teacher shortages vary by subject area and student population. We then present overarching trends in teacher supply and preparation and describe the current state of the teacher workforce, including notable demographic shifts over time. We investigate trends in teacher turnover, the major driver of teacher demand, and use regression analysis to identify key predictors of turnover. Finally, we describe the state's major investments in the teacher workforce and how future policy efforts can further strengthen California's teacher workforce.

The Scope and Distribution of Teacher Shortages

In this section, we define teacher shortages and the supply and demand factors that shape the teacher workforce in California. We describe trends over time in teacher shortages using data on substandard credentials and permits, discussing in detail the concentration of underprepared teachers in the state's highest-need schools. These trends reflect the disproportionate impacts of sustained teacher shortages on students who are enrolled in these schools.

Understanding Teacher Shortages

Shortages occur when the supply of fully credentialed teachers cannot meet the demand for teachers to fill available positions. When this happens, districts face the difficult choice of either leaving positions unfilled or filling them with teachers who are not fully credentialed—or, in some cases, cancelling or combining classes. **Teacher supply**, or the number of qualified individuals willing

and able to teach, is shaped by multiple factors, including available pathways into teaching, affordability of teacher preparation, teacher preparation completion and credentialing rates, salaries, working conditions, labor market alternatives, and geographic and demographic conditions.[15] **Teacher demand**, or the number of teachers districts want to employ, is determined by a separate set of factors, including student enrollment, student needs, policies governing curriculum and pupil-teacher ratios, salary and tenure commitments, and overall funding levels.[16] Aggregate measures of supply and demand often mask the true nature of teacher shortages, which tend to emerge most acutely in specific subject areas, specializations, school types, and geographic regions.

In California, despite declining enrollment and an increasing number of teachers, teacher shortages have persisted for several reasons. These include the lack of teachers for specific subjects, universal pre-kindergarten expansion (which added a whole grade to the public education system with a pupil-adult ratio capped at 10:1), the need for additional teachers driven by Proposition 28 that funds arts education programs, and the need for additional teachers, coaches, and reading specialists driven by investments in literacy and career and technical education. In addition, there are greater student needs, such as increases in students eligible for special education services and rising mental health needs.[17] State investments in mental health and community schools are enabling the hiring of counselors, social workers, and community school coordinators (which can include teachers).[18] The influence of each of these factors varies from one location to the next as one school or district might have, for example, declining student enrollment, while another has more teachers nearing retirement

---

[15] Boe, E. E., & Gilford, D. M. (1992). *Teacher supply, demand, and quality: Policy issues, models, and data bases.* Washington, DC: National Academy Press; Garcia, E., & Weiss, E. (2019). *U.S. schools struggle to hire and retain teachers*. Economic Policy Institute. https://www.epi.org/publication/u-s-schools-struggle-to-hire-and-retain-teachers-the-second-report-in-the-perfect-storm-in-the-teacher-labor-market-series; Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2019). Understanding teacher shortages: An analysis of teacher supply and demand in the United States. *Education policy analysis archives*, *27*(35). https://doi.org/10.14507/epaa.27.3696

[16] Boe, E. E., & Gilford, D. M. (1992). *Teacher supply, demand, and quality: Policy issues, models, and data bases*. Proceedings of a conference. Washington, DC: National Academy Press.

[17] Learning Policy Institute. (2025). *Student mental health and education [Fact sheet].* https://learningpolicyinstitute.org/product/student-mental-health-education-factsheet (accessed 03/11/2026).

[18] In addition to these reasons for teacher shortages, despite declining enrollment in the state overall, almost a quarter of counties are still experiencing increasing enrollment. California Department of Finance (2025). *California public K-12 graded enrollment and high school graduate projections by county — 2025 series.* State of California, Department of Finance.

age. However, the two key drivers of teacher supply and demand at the state level in California are the number of prepared teachers entering the profession and teacher attrition. In 2023–24, teachers leaving the profession from the year before accounted for 86% of the number of new hires that year.[19] This means that if the state reduced attrition, it would substantially reduce shortages.

Terms and Definitions

This report uses several technical terms related to the teacher workforce and teacher credentialing in California. The definitions below outline how these terms are used throughout the report:

- **Teacher shortage** refers to the lack of fully credentialed teachers available to meet the demand for teaching positions.
- **Turnover** refers to teachers moving to a different school, a different district, or leaving public school teaching in California. **Attrition** refers to teachers leaving public school teaching in California.
- **Fully credentialed** refers to teachers with preliminary or clear credentials (described below).
- **Substandard credentials and permits** refers to teachers identified as out-of-field, interns, or ineffective (described below).
- **Priority schools** are schools with a 55% or more unduplicated pupil count of students identified as English learners, eligible for free or reduced-price meals, or foster youth.
- **Highest-need schools** are the top 10% of schools by unduplicated pupil count of students who are identified as English learners, eligible for free or reduced-price meals, or foster youth.

[19] To calculate the proportion of demand that was driven by teacher attrition, we first estimated the number of new teacher FTE hires between 2022–23 to 2023–24. We calculated this by subtracting the total number of teacher FTEs in 2023—24 by the total number of teachers who remained in the profession between 2022—23 and 2023—24. Then, we divided the total teacher FTEs who left the California education system between 2022—23 and 2023—24 by the number of new teacher FTE hires.

- **Lowest-need schools** are the bottom 10% of schools by unduplicated pupil count of students who are identified as English learners, eligible for free or reduced-price meals, or foster youth.

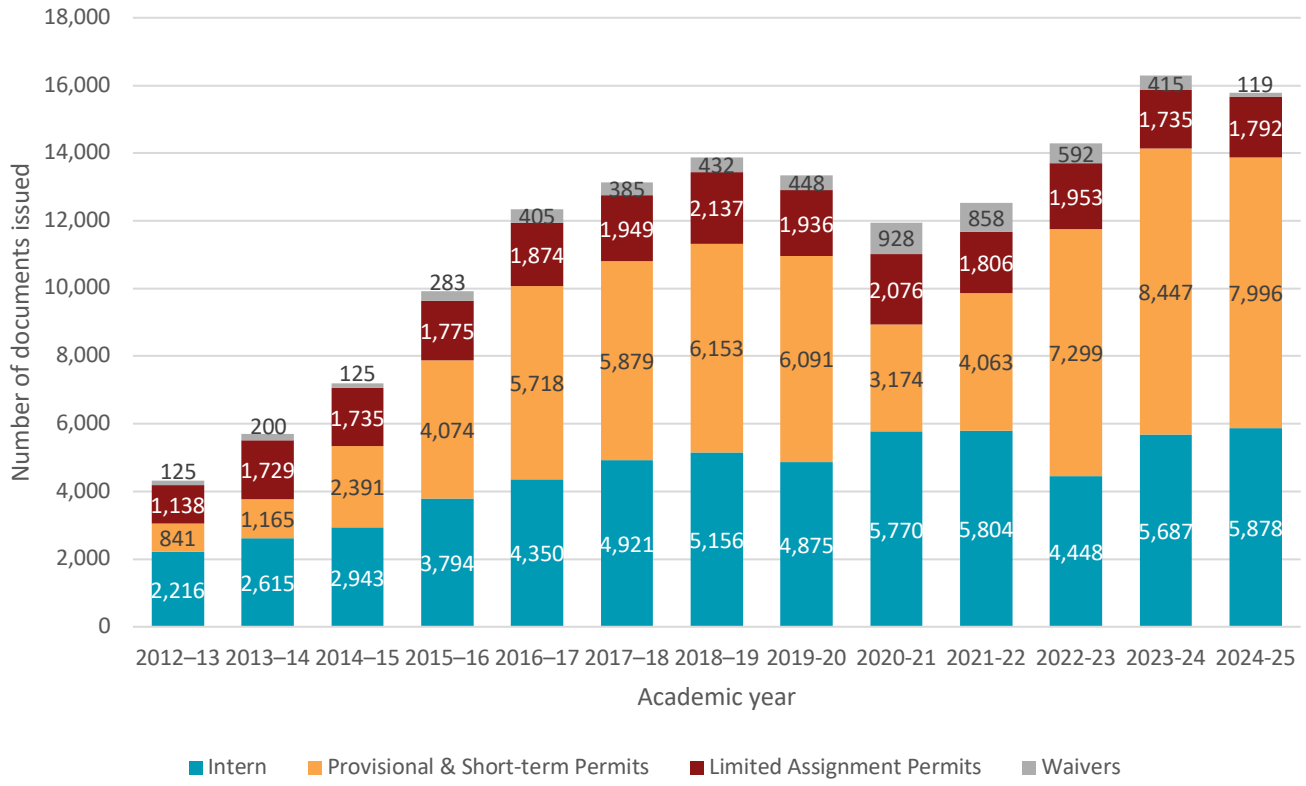
The state of California uses the following definitions to describe teaching assignments and credentials:

- **Clear** includes (1) *preliminary credentials*, awarded to individuals who successfully complete a CTC-approved teacher preparation program and the state assessments required, and (2) *clear credentials*, awarded to preliminary credential holders upon successful completion of an induction program. Preliminary credentials are valid for 5 years and clear credentials are renewable every 5 years.
- **Out-of-field** typically refers to someone who holds a limited assignment permit. These teachers have full credentials but have not yet demonstrated subject matter competence in the subject area(s) or the student population associated with their teaching assignment.
- **Intern** refers to someone who has a bachelor's degree, has demonstrated subject matter competence in their subject area(s), and is completing coursework requirements to obtain a preliminary credential while teaching.
- **Ineffective** refers to a teaching assignment that was not authorized, or was authorized by substitute permits, Teaching Permits for Statutory Leave, or **emergency-style permits and waivers**: provisional internship permits (PIPs), short-term staff permits (STSPs), or waivers.
- **Incomplete, Unknown, and Not Applicable** refer to teaching assignments that included missing, incorrect, or insufficient data, or which did not require authorization. We omit these categories in our reporting.
- **Inexperienced** teachers are teachers with 2 or fewer years of teaching experience. We refer to these teachers as **beginning** teachers throughout the report.

Growth in Substandard Credentials and Permits

A key indicator of teacher shortages is the number of substandard credentials and permits issued, as these are only supposed to be issued when fully credentialed teachers are not available. **The number of substandard credentials has more than tripled since 2013** (Figure 2). The number of intern credentials, which allow someone to work as a teacher of record while completing preparation, doubled between 2012–13 and 2018–19 but has remained fairly stable in the last 7 years. The largest recent growth has been among Provisional Internship Permits (PIPs) and Short-Term Staff Permits (STSPs). These emergency-style permits are used for candidates with limited training and are only available if the school district cannot find a credentialed staff member to fill a vacancy. In 2024–25, close to 8,000 of these emergency-style permits were granted. Overall, California issued just under 16,000 substandard credentials and permits in the most recent year of our data.

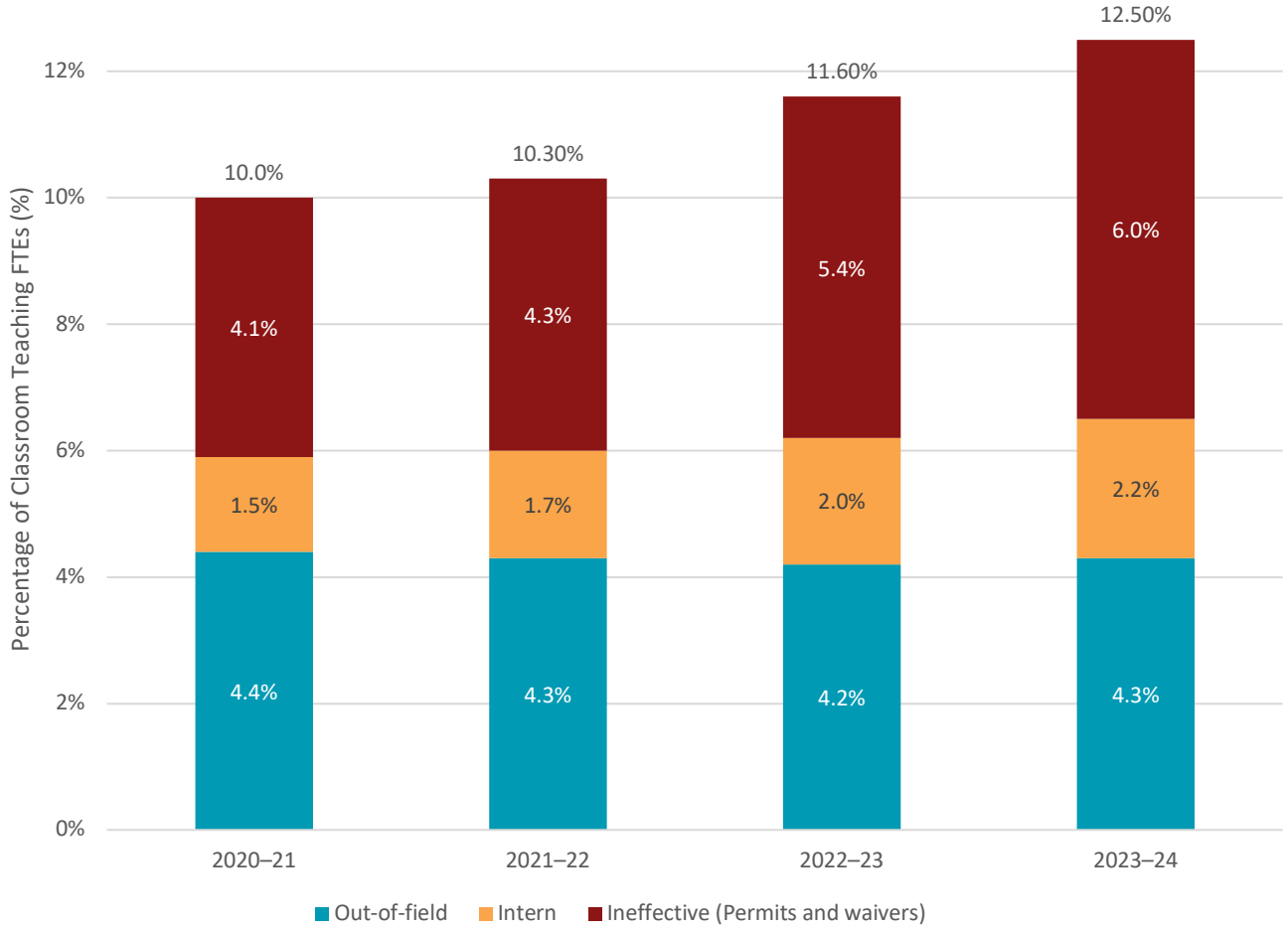
Figure 2. California Substandard Credentials and Permits Issued, 2012–13 to 2024–25



Source: California Commission on Teacher Credentialing. (n.d.). *Teacher supply: Interns, permits, and waivers* [Data dashboard] (accessed 12/16/2020; 4/23/2024, 7/20/2025); California Commission on Teacher Credentialing. (2026). *Teacher Supply in California, 2024–25: A Report to the Legislature.*

It should be noted that credentials and permits issued each year do not directly correspond to the number of teachers entering classrooms. First, individuals can earn multiple credentials or permits at a time. Second, not all individuals who receive a credential or permit begin teaching in California public schools; they may move to a different state, teach in private schools, choose other careers entirely, or defer teaching for a period of time. Still, increases in the number of emergency credentials and permits issued do correspond to increases in these teachers in the workforce. In 2020–21, when data on the distribution of teacher workforce credentials and permits across schools were first publicly available, teacher full-time equivalents (FTEs) under substandard credentials made up of 10% of California's workforce: 4% of teacher FTEs were ineffective (teaching on permits and waivers), nearly 2% were interns, and over 4% had an assignment outside of their credential area (Figure 3). This increased to 13% in 2023–24, the most recent year of data available, driven by increases in ineffective teacher FTEs. Interns and teachers with emergency-style permits and waivers made up of 8% of the workforce in 2023–24 —still far below the high of 14% during the *Williams v. California* era in the early 2000s.

Figure 3. Distribution of Substandard Credentials and Permits for all California Teacher FTEs, 2020–21 to 2023–24



Sources: Learning Policy Institute analysis of California Department of Education 2020–21 to 2023–24 Teaching Assignment Monitoring Outcomes data.

The Inequitable Distribution of Teachers

As mentioned previously, teacher shortages are rarely evenly distributed across a population of students. Just as important as having an adequate supply of fully prepared teachers statewide is having enough fully prepared teachers to meet student need across subjects and schools. Unfortunately, the distribution of teachers in California continues to be inequitable, with the least prepared teachers more likely to teach in the highest-need schools.

Fewer fully credentialed teachers in key subject areas

The Teaching Assignment Monitoring Outcomes (TAMO) dataset from the California Department of Education provides data on the types of credentials and permits California teachers have for their teaching assignments. Statewide, proportions of teacher FTEs identified as ineffective—using permits and waivers for their assignment—were higher than average for English, math, science, foreign languages, career technical education, art, and computer education (Table 1). The percentage of out-of-field teachers, who are teaching in a subject they are not credentialed in, was also higher than average for these subjects. Unfortunately, these data do not allow for an analysis of credentials for special education and bilingual education assignments.

Table 1. Percentage of California Teacher Full Time Equivalents Holding Each Credential and Permit Types by Subject Area, 2023–24

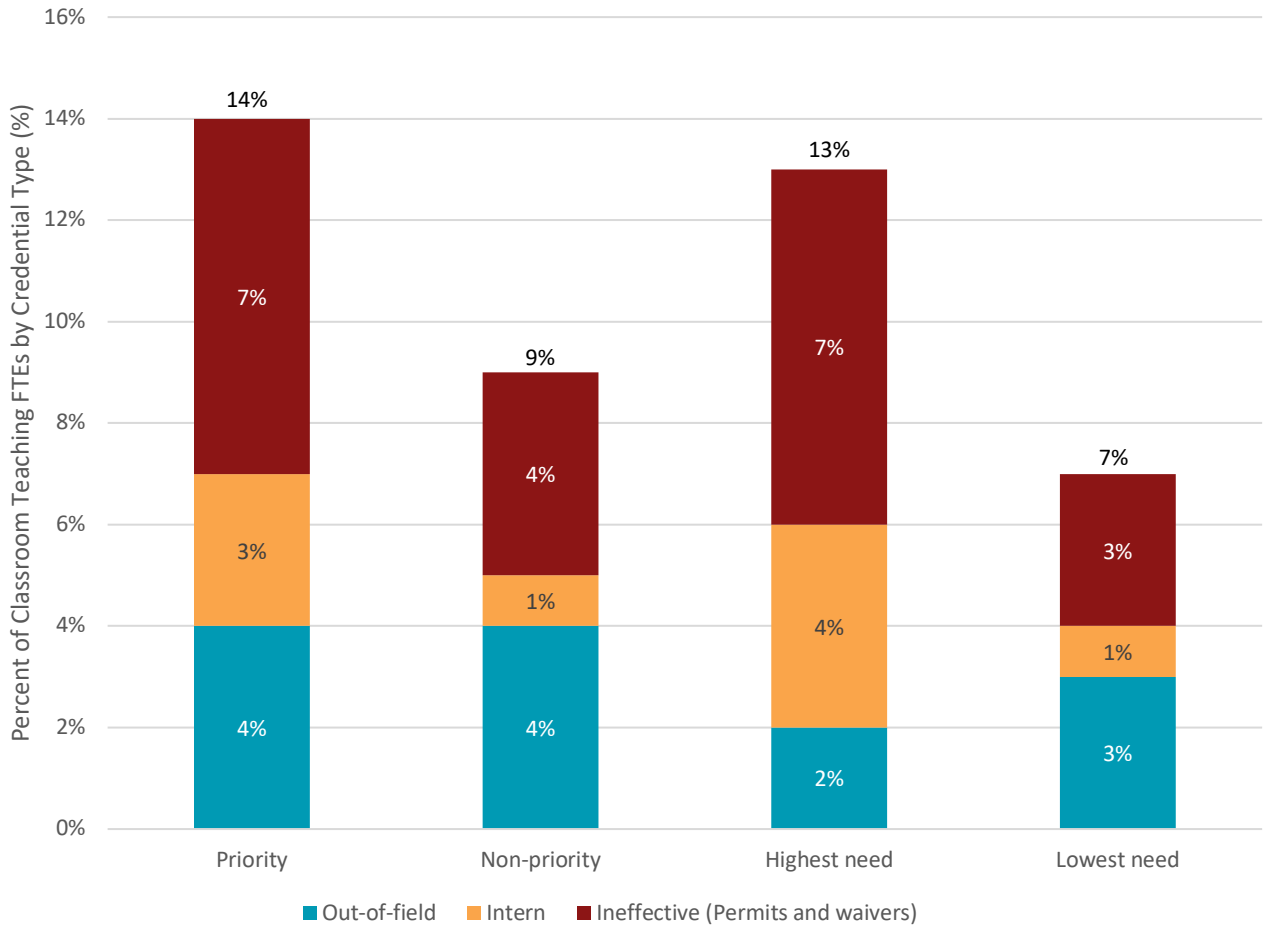
Subjects	Clear and Preliminary	Out-of-Field	Intern	Ineffective (Permits and Waivers)	Incomplete/ Unknown/ Not Applicable
Self-contained	82%	3%	3%	6%	6%
English	73%	8%	2%	8%	9%
Math	71%	10%	3%	9%	7%
History	77%	9%	2%	7%	5%
Science	70%	11%	2%	10%	6%
Physical Education	77%	10%	2%	8%	4%
Foreign Languages	71%	13%	2%	8%	6%
Career Technical Education	66%	10%	0%	15%	9%
Music	84%	6%	3%	6%	1%
Art	68%	16%	2%	10%	5%
Computer Education	57%	21%	1%	16%	5%

Note: Percentages may not sum to 100% due to rounding.
Sources: Learning Policy Institute analysis of California Department of Education 2023–24 Teaching Assignment Monitoring Outcomes data.

Fewer fully credentialed teachers in high-need schools

Schools with higher unduplicated pupil counts (UPC)—serving more English learners, students eligible for free or reduced-price lunch, or foster youth—had fewer fully credentialed teachers and more of the least prepared teachers (those teaching with intern credentials, permits, and waivers). As shown in Figure 4, these disparities were present when comparing priority schools (schools with 55% UPC and above) to non-priority schools but were most pronounced when comparing the highest-need schools (top decile by percentage of UPC enrollment) to lowest-need schools. The highest-need schools, in the top decile of UPC, had 4% interns and 7% ineffective teacher FTEs, whereas the lowest-need schools, in the bottom decile of UPC, had just 1% interns and 3% ineffective teacher FTEs. Out-of-field teaching was more evenly distributed across school types.

Figure 4. Distribution of Substandard Teacher Credential Types by School Proportion of Unduplicated Pupil Count, 2023–24

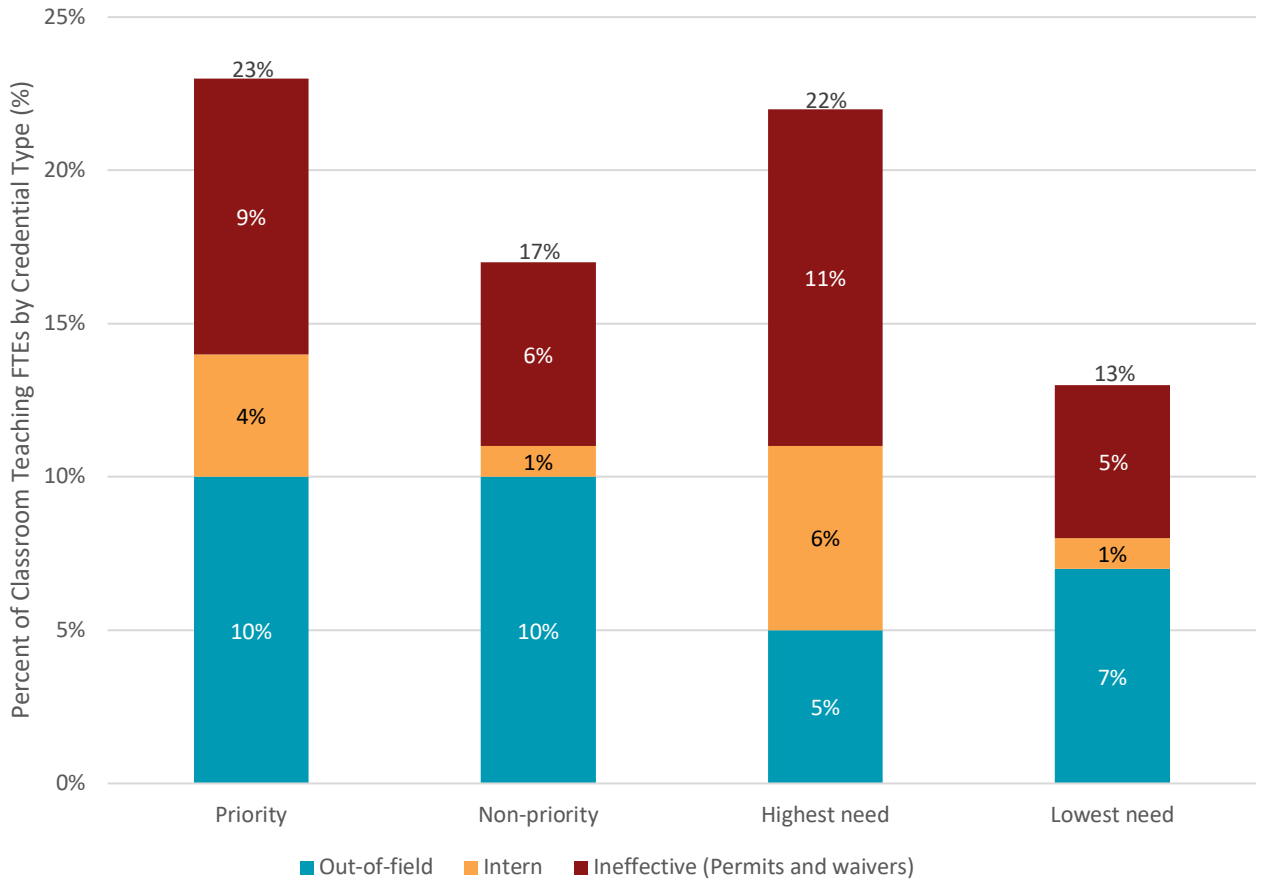


Notes: Includes average of school level credential proportions for all subjects overall. Priority schools are schools serving 55% Unduplicated Student Count (UPC) or above; highest and lowest need schools are the top and bottom decile of schools by percent UPC, respectively.
Sources: Learning Policy Institute analysis of California Department of Education 2023–24 Teaching Assignment Monitoring Outcomes data and California Longitudinal Pupil Achievement Data System data.

Credential disparities were worse in high-need subjects such as mathematics

The disparities in credential types by UPC enrollment were even more pronounced in chronic shortage subjects, such as mathematics. Full credential rates for math teacher FTEs ranged from as high as 82% in the lowest-need schools to as low as 70% in priority schools. Likewise, the proportion of math teacher FTEs with substandard credentials and permits ranged from 13% in lowest-need schools to 23% in priority schools (Figure 5).

Figure 5. Distribution of Mathematics Teacher FTE Substandard Credential and Permit Types by School Proportion of Unduplicated Pupil Count, 2023–24



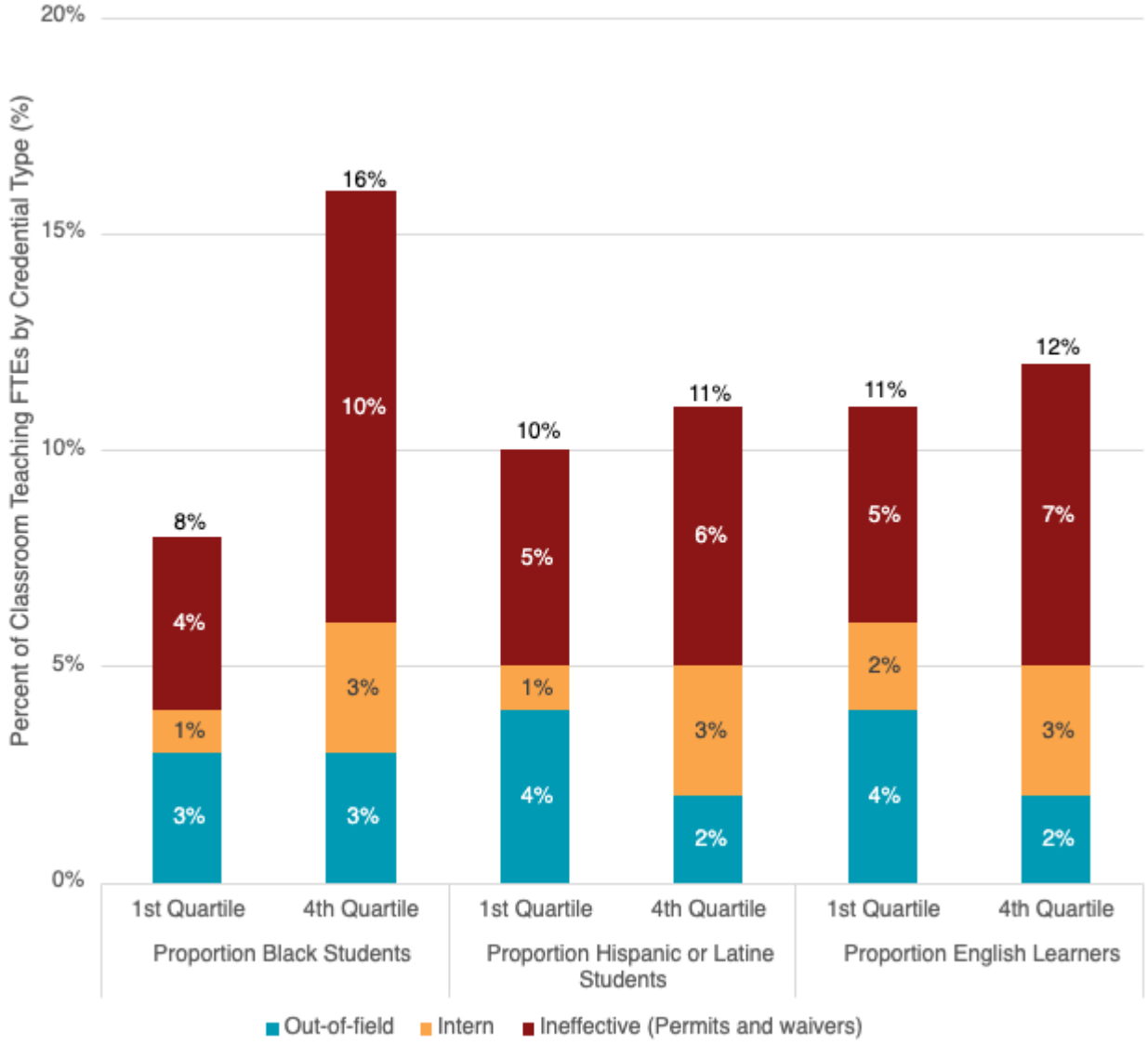
Notes: Data shows the average school-level proportions of mathematics teacher FTEs by substandard credential and permit type. Priority schools are schools serving 55% Unduplicated Student Count or above; highest and lowest need schools are the top and bottom decile of schools by percent UPC respectively.
Sources: Learning Policy Institute analysis of California Department of Education 2023–24 Teaching Assignment Monitoring Outcomes data and California Longitudinal Pupil Achievement Data System data.

Fewer fully credentialed teachers are in schools with larger shares of Black students

Schools serving more Black students also had fewer fully credentialed teachers and more of the least prepared teachers. Just 78% of teacher FTEs in schools serving the greatest proportion of Black students were fully credentialed and 16% held substandard credentials and permits. In comparison, 86% of teacher FTEs were fully credentialed in schools with the lowest proportion of Black students and 8% held substandard credentials and permits (Figure 6). There were also disparities, though less pronounced, between schools serving larger and smaller shares of Hispanic or Latine students and

English learners.

Figure 6. Distribution of Teacher FTE Substandard Credential and Permit Types by Proportion Black, Hispanic or Latine, and English Learner Students, 2023–24



Notes: Quartiles are computed at the state level.
Sources: Learning Policy Institute analysis of California Department of Education 2023–24 Teaching Assignment Monitoring Outcomes data and California Longitudinal Pupil Achievement Data System data.

In summary, California public schools continue to face serious teacher shortages as reflected by the high share of teachers working under substandard credentials and permits. Teachers are least likely to be fully credentialed in the subject areas of computer education, career technical education, art,

science, math, and foreign languages. Staffing challenges are also unevenly distributed across schools. Those serving higher proportions of students from low-income households, English learners, students in foster care, and Black students rely more heavily on teachers holding substandard credentials and permits. Taken together, these patterns suggest that teacher supply and demand are interacting in ways that both constrain average student access to fully prepared teachers statewide and widen socioeconomic and racial disparities in access to qualified educators. The sections that follow examine the specific supply-side and demand-side dynamics underlying these patterns.

Teacher Supply: Entry into the Profession

The supply of fully credentialed teachers includes teachers with a clear or preliminary credential who remain in California public schools, re-entrants who left teaching but then returned to the profession, new out-of-state entrants, and newly-prepared California entrants. When districts cannot hire fully credentialed teachers, they rely on teachers on substandard credentials and permits. Teacher supply in California is directly influenced by factors such as the affordability of teacher preparation and availability of options for meeting teacher credentialing requirements. The policy context related to undergraduate Integrated Teacher Education Program (ITEP) pathways, teacher residencies, and teacher licensure requirements are treated in-depth in the section *Barriers and Policy Opportunities for Strengthening California's Teacher Workforce*. In this section, we present how the number and characteristics of teacher candidates have changed over time. We connect these findings with corresponding demographic shifts observed in the teacher workforce.

Trends in the Number of Newly Prepared Teachers in California

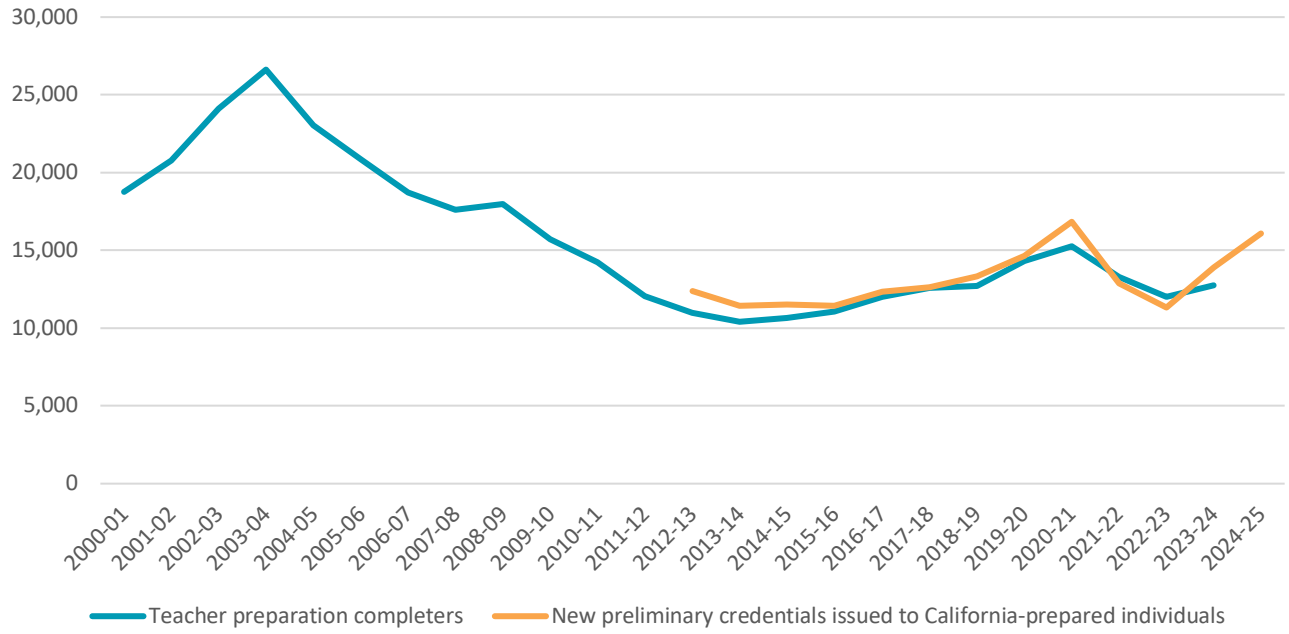
Newly prepared teachers are a crucial component of the state's teacher supply, in addition to re-entrants and out-of-state entrants. The number of teaching candidates enrolling in and completing teacher preparation programs provides an indication of the state's capacity to attract prospective teachers into the profession and produce enough new teachers each year. As we present data on how many candidates California has been preparing, it is important to note that not all enrollees complete their programs, and not all completers enter the classroom.

For most of the past two decades, university teacher production has dropped significantly until beginning to stabilize and increase again more recently. The number of teacher preparation completers plummeted over the course of a decade from a high of 26,624 in 2003–04 to a low of 10,409 in 2013–14—a 60% drop over that decade, as shown in the blue line in Figure 7. Since then, the number of preparation completers has been gradually increasing. During the early years of the COVID-19 pandemic, completer numbers fluctuated, reaching 15,245 completers in 2020–21 when tests were waived—the highest level in the past decade—and then declining from 2021–22 to 2022–23. In 2023-24, 12,750 individuals completed teacher preparation in California through traditional (student teaching or residency) and alternative (intern) pathways—less than half (48%) of the number who did so in 2003-04.

Recent data suggests that teacher production in California may be picking up, likely because of recent state policy changes and initiatives to strengthen the teacher workforce, as discussed in detail later in this report (see *Barriers and Policy Opportunities for Strengthening California's Teacher Workforce*), including investments in the Integrated Teacher Education Program, the Teacher Residency Grant Program, and the Golden State Teacher Grant Program. The orange line in Figure 7 shows the number of new preliminary teaching credentials issued to California-prepared individuals. The trend mirrors that of the blue line showing the number of preparation completers but shows a large jump in the number of new preliminary teacher credentials from 2022–23 to 2024–25, increasing by just over 40% from 11,325 to 16,104 credentials. During these recent years, participation in the Golden State Teacher Grant service scholarship program, which provided significant financial support to teacher candidates in return for a service commitment to teach in a high-need school, was at its highest.[20]

[20] Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program*. Learning Policy Institute. https://doi.org/10.54300/518.478

Figure 7. Number of California Teacher Preparation Completers and Preliminary Credentials Issued to Individuals Prepared in the State, 2001–02 to 2024–25



Sources: Learning Policy Institute analysis of U.S. Department of Education Higher Education Act Title II State Report Card System data; California Commission on Teacher Credentialing. *Annual Report Cards (Title II)*. https://www.ctc.ca.gov/educator-prep/title2 (accessed 02/01/2026); Commission on Teacher Credentialing. (2026). *Teacher Supply in California, 2024–25: A Report to the Legislature.*

Trends in the Number of Preliminary Credentials Issued, by Institution Type

Teachers in California are prepared through four types of institutions, three of which are institutions of higher education (IHE). These include the state's two public IHE systems—the California State University (CSU) and the University of California (UC)—as well as private and independent IHEs. Teachers can also be prepared through Local Education Agencies (LEAs), which include school districts, charter management organizations, and county offices of education. LEAs typically prepare interns, who work as a teacher of record in the LEA while completing their preparation.

Most teachers in California are prepared through the CSUs and private and independent IHEs (Figure 8). In 2024–25, 45% of new preliminary credentials were issued to teacher candidates prepared in private and independent IHEs, 43% to candidates prepared by CSUs, 7% to those prepared through LEAs, and 4% to those prepared by UCs. Over time, teacher production overall has shifted away from public IHEs to private and independent IHEs; two in 2004–05, 55% of preliminary credentials were

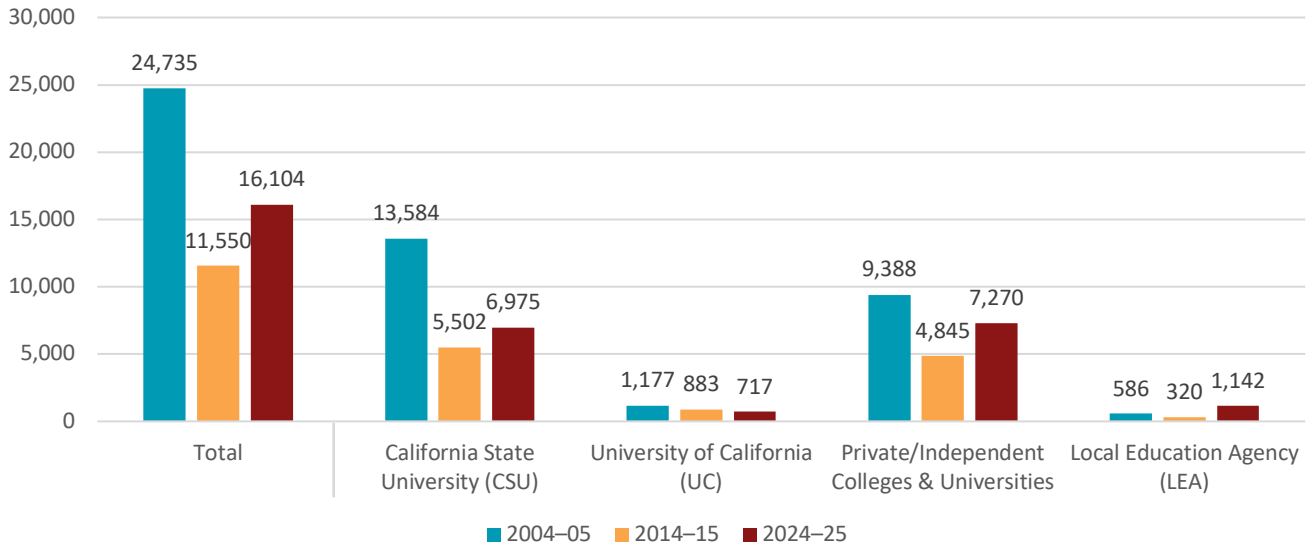
issued to individuals prepared in CSUs and just 38% in private IHEs. The distribution of teacher candidates by institution has implications for teacher candidates' preparation costs. The cost of attendance—which encompasses all the expenses of attending a preparation program, including both tuition and living expenses—is lowest at CSUs, costing approximately $32,000 for a typical teacher candidate.[21] This is considerably lower than programs at LEAs ($43,000) and UCs ($54,000). The average cost for private and independent programs is also higher than CSUs on average ($47,000), but varies widely across the state, ranging from $14,000 to $86,000. Additionally, teacher candidates in public IHEs tend to have more access to state-funded financial aid programs, such as the Middle Class Scholarship and the Cal Grant Teacher Credential Program.[22]

Mirroring trends in Figure 7, Figure 8 shows the number of new preliminary credentials issued by most institutions remains far below 2004–05 levels. However, the number of preliminary credentials issued to individuals prepared through an LEA has increased over time, doubling from 586 credentials in 2004–05 to 1,142 in 2024–25.

[21] Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program*. Learning Policy Institute. https://doi.org/10.54300/518.478

[22] Commission on Teacher Credentialing. (2025). *Teacher Candidate Funding Explorer.* https://www.ctc.ca.gov/credentials/roadmap-to-teaching/tools-for-credentialing/teacher-candidate-funding-explorer

Figure 8. Number of Preliminary Credentials Issued, by Institution Type

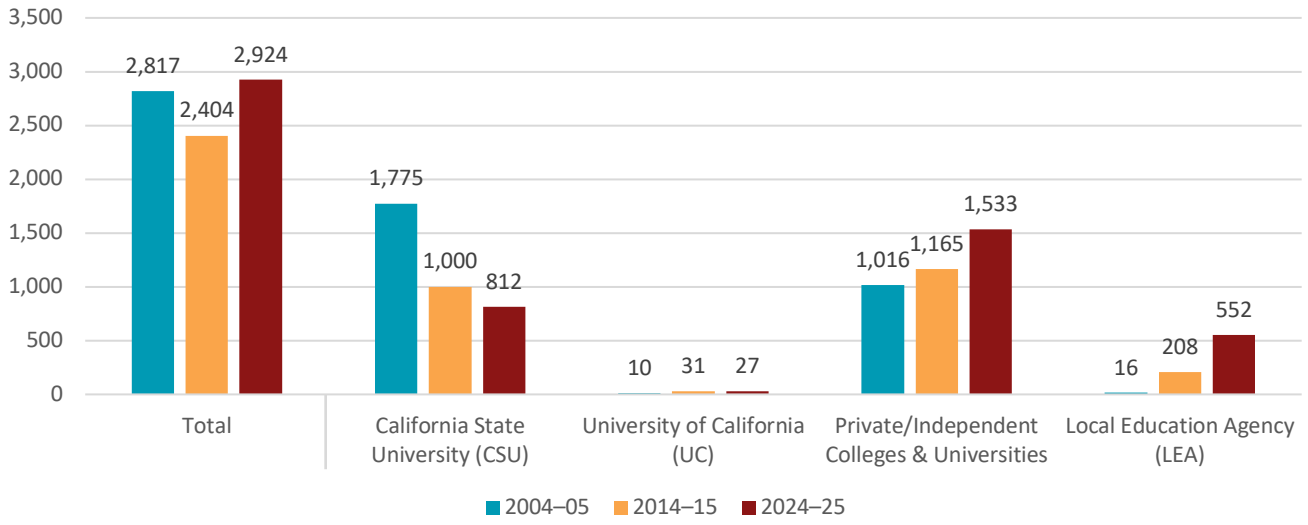


Sources: California Commission on Teacher Credentialing. (2026). *Teacher Supply in California, 2024–25: A Report to the Legislature*; California Commission on Teacher Credentialing. (2016). *Teacher Supply in California, 2014–15: A Report to the Legislature*; California Commission on Teacher Credentialing. (2006). *Teacher Supply in California, 2004–05: A Report to the Legislature*.

Notably, we observed different trends when looking at the number of new Education Specialist (ES) preliminary credentials over time. As shown in Figure 9, the number of new ES credentials declined between 2004–05 to 2014–15, but the decrease was less pronounced than the drop in total number of preliminary credentials shown in Figure 8, indicating that the decline during that period was primarily driven by decreases in the number of new Multiple Subject and Single Subject credentials. In 2024–25, the number of new ES credentials reached 2,924, exceeding 2004–05 levels. However, looking by institution, there has been a clear shift over time in the production of special education teachers away from the public IHEs—primarily the CSUs—toward private and independent IHEs as well as LEAs. In 2004–05, 63% of ES credentials were issued to individuals prepared in CSUs, compared to 36% in private and independent IHEs and 0.6% in LEAs. By 2024–25, this distribution had shifted substantially: only 28% of ES credentials were awarded to CSU-prepared candidates, while 52% were earned through private and independent IHEs and 19% through LEAs. One reason for the shift towards private IHEs and LEAs may be the higher proportion of interns among teacher candidates working toward an ES credential (29% of special education teachers in 2023–24 entered through an intern pathway,

compared to 13% among other teachers). As interns have to balance full-time work with preparation, they may prefer online programs—which are more readily available among private IHEs—as they allow for more flexible scheduling and reduced travel time.

Figure 9. Number of Education Specialist Preliminary Credentials Issued, by Institution Type



Sources: California Commission on Teacher Credentialing. (2026). *Teacher Supply in California, 2024–25: A Report to the Legislature*; California Commission on Teacher Credentialing. (2016). *Teacher Supply in California, 2014–15: A Report to the Legislature*; California Commission on Teacher Credentialing. (2006). *Teacher Supply in California, 2004–05: A Report to the Legislature*.

Trends in Composition of Teacher Candidates

Data reveal that the composition of teacher candidates has shifted notably over time, from 2018–19 to 2024–25, the years for which statewide data on teacher candidates were available. These compositional changes highlight how the characteristics and preparation pathways of new teachers have changed over time, which may have implications for the quality of the teacher workforce as well as the likelihood that teachers will be retained over time. As we discuss below, there is a growing share of undergraduate candidates, residency candidates, and candidates in online programs. In addition, there is a growing share of Hispanic or Latine candidates.

Growing share of undergraduate candidates

Currently, the Integrated Teacher Education Program (ITEP) pathway is the most widely available undergraduate route to a teaching credential in California. In contrast to the more widespread 5-year, postbaccalaureate pathway to a credential in California, ITEP pathways allow candidates to earn their bachelor's degree and teaching credential in 4 years. ITEP students benefit from lower average costs for getting their teacher credential because of the shorter timeframe required and because financial aid is more readily available for students pursuing a bachelor's degree, compared to post-baccalaureate students. As we describe later, there have been recent investments in developing and expanding ITEP pathways; however, policy barriers may limit widespread proliferation of these programs.

Our analysis of data from the California Commission on Teacher Credentialing (CTC) shows that the share of new candidates who were enrolled in ITEP programs has increased over time, from 6% in 2018–19 to 9% in 2024–25. Across all years, 8% of new teacher candidates were enrolled in ITEP programs. Such trends signal that state investments to expand undergraduate credentialing pathways may be starting to pay off, attracting more candidates to enter through this pathway. While research on the outcomes of teachers entering through an ITEP program is limited, teachers coming through this pathway are primarily people of color and they tend to earn credentials in high-demand shortage areas (see *Recent Policy Investments to Recruit, Prepare, and Retain Teachers*).

Growing share of residency candidates

Teacher residency programs are partnerships between local education agencies and teacher preparation programs designed to prepare new teachers for the high-need schools and subject areas where they are most needed. Residency programs have a strong emphasis on clinical training, offering candidates year-long supervised teaching alongside a designated mentor for at least half-time as they complete their credentialing coursework. In California, they typically consist of a one-year, post-baccalaureate route to a teaching credential. Residents typically earn a stipend during their preparation and, in some programs, agree to work in their residency district or another California public school for at least four years. Residencies are often designed to increase the supply of well-prepared teachers in designated shortage fields—including bilingual education, math, science, STEM, special education, multiple subject instruction, and transitional kindergarten—and to recruit and retain

a diverse teacher workforce. As will be described later in the report, recent state investments in teacher residencies have supported planning, implementation, and expansion of teacher residencies across the state.

The share of new candidates enrolled in residency programs has increased from 421 new candidates in 2018–19 (2% of new candidates) to an estimated 2,026 new candidates in 2024–25 (10% of new candidates). Notably, this estimate is an undercount of residents, given limitations in state data systems and the fact that some programs with known residents are categorizing their residents as student teachers. Meanwhile, the share of intern candidates has remained fairly stable, and the share of student teachers has decreased slightly. The larger share of residency candidates means that a growing share of California's new teacher supply is entering the profession through a clinically-intensive pathway with strong preparation outcomes, including high average retention, as reported in research conducted in California and elsewhere.[23]

Growing share of candidates in online programs

In the annual data submission California teacher preparation programs provide to the CTC, programs are asked to categorize their candidates based on whether they were enrolled in face-to-face courses, online courses, or a combination of face-to-face and online courses. We found that a rapidly growing share of candidates are enrolling in programs that only offer online coursework. In 2019–20, 10% of all new candidates were enrolled in online-only programs. By 2024–25, this share more than tripled, surging to 34%, which means over one third of all California teacher candidates are enrolling in online-only programs.

Generally, teacher preparation programs in California have grown to offer online and hybrid options in an effort to increase student reach—especially in rural areas—and offer flexible

[23] Patrick, S. K., Yun, C., Fitz, J., & Tan, T. (in press). *Teacher residencies in California: Enrollment, preparation, and outcomes of residency-trained teachers*. Learning Policy Institute; Bastian, K.C., Fuller, S.C., Otte, A. (2024). *Paid residency programs in Texas: Initial impacts on student achievement and teacher retention*. Education Policy Initiative at the University of North Carolina. https://epic.unc.edu/wp-content/uploads/sites/1268/2024/11/Paid-Residency-Programs-in-Texas.pdf; Papay J. P., West M. R., Fullerton J. B., Kane T. J. (2012). Does an urban teacher residency increase student achievement? Early evidence from Boston. *Educational Evaluation and Policy Analysis*, *34*(4), 413–434. https://doi.org/10.3102/0162373712454328; Silva, T., McKie, A., & Gleason, P. (2015). *New findings on the retention of novice teachers from teaching residency programs* [NCEE Evaluation Brief 2015-4015]. National Center for Education Evaluation and Regional Assistance. https://eric.ed.gov/?id=ED560735

programming, with the trend accelerating during and after the COVID-19 pandemic. Although these programs have broad appeal, there is limited research as to their effectiveness compared to the effectiveness of in-person teacher preparation coursework. While coursework in both preservice and intern programs can be offered fully online, California requires all teacher preparation programs to provide candidates with in-person student teaching or intern experiences that meet state standards. Programs have relationships with districts and sponsor clinical placements in local classrooms with cooperating teachers or mentors. However, university supervisors can be either in-person or online responding to lessons that candidates videorecord, and online programs may vary widely in whether and how they offer in-person clinical support from program staff. A study of teachers prepared online in Texas found that online-prepared teachers were less effective, on average, and more likely to leave the profession compared to traditionally prepared educators.[24]

Racial Diversity of California's Teacher Workforce

Given evidence linking Black and Hispanic or Latine teachers to improved student learning outcomes and school climate,[25] racial and ethnic diversity represents another important aspect of teacher supply. Using teacher-level data provided by the California Department of Education, we examined changes in the racial and ethnic composition of all K-12 teachers between 2012–13 and 2023–24. The proportion of teachers of color in the teacher workforce has increased significantly over the past 11 years, driven largely by growth in the prevalence of Hispanic or Latine teachers (Table 2). In particular, we observed a 9.8 percentage point decrease in the share of White teachers (from 68.0% to 58.2%) and an 8.3 percentage point increase in the share of Latine teachers (from 19.1% to 27.4%). By the end of the period, White teachers still formed the majority at 58.2%, but teachers of color represented a substantially larger share of the workforce. There was also growth among Asian and

[24] Jacob Kirksey, J., & Gottlieb, J. J. (2025). Virtual pathways: Linking online alternative certification programs to student achievement and teacher attrition in Texas. *Educational Researcher*, *55*(3), 186-196. https://doi.org/10.3102/0013189X251386406

[25] Gershenson, S., Hart, C. M. D., Hyman, J., Lindsay, C., & Papageorge, N. (2022). The long-run impacts of same-race teachers. *American Economic Journal: Economic Policy*, *14*(15), 300-342. https://doi.org/10.1257/pol.20190573; Gottfried, M., Kirksey, J. J., & Fletcher, T. L. (2021). Do high school students with a same-race teacher attend class more often? *Educational Evaluation and Policy Analysis*, *44*(1), 149–169. https://doi.org/10.3102/01623737211032241

Multiracial teachers, representing 8.5% and 1.3% of the teacher population in 2023–24, respectively. The proportion of Black teachers, on the other hand, decreased slightly, from 4.1% to 3.8% of all classroom teachers. Of note, Black teachers have consistently made up about 10% of beginning teachers (in their first or second year of teaching) over the past decade, suggesting that high turnover rates could be undermining their growth in the workforce overall.[26] There were no substantive changes in the smaller groups of American Indian, Alaska Native, Native Hawaiian, or Pacific Islander classroom teachers.

Table 2. Racial Composition of California Teachers in 2012–13 and 2023-24

Race/Ethnicity	2012–2013	2023-24	Change
American Indian or Alaska Native	0.6%	0.6%	0.0 p.p.
Asian	7.0%	8.5%	+1.4 p.p.
Black	4.1%	3.8%	-0.3 p.p.
Hispanic or Latine	19.1%	27.4%	+8.3 p.p.
Multiracial	0.8%	1.3%	+0.5 p.p.
Native Hawaiian or Pacific Islander	0.3%	0.3%	0.0 p.p.
White	68.0%	58.2%	-9.8 p.p.

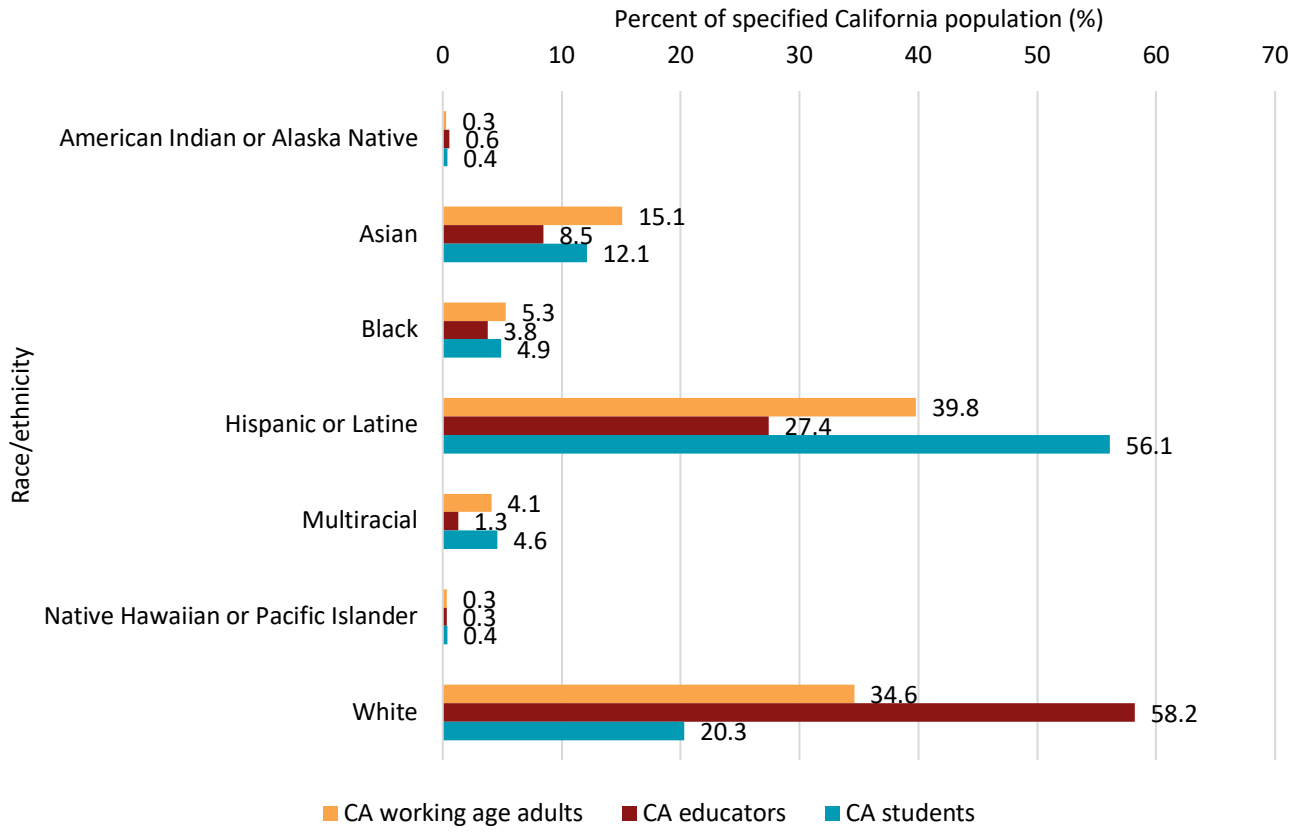
Notes: Categories sum to 100% by column. Sums may exceed 100% due to rounding. For teachers with conflicting racial/ethnic information across years, we use their most recently reported race/ethnicity.
Source: Learning Policy Institute analysis of California Department of Education 2012–13 and 2023–24 restricted Staff Demographics and Staff Assignment data.

Despite these gains, teachers of color remained substantially underrepresented relative to both the student population and California's working-age population (Figure 10). For instance, White individuals represented 58.2% of the classroom teacher workforce but only 34.6% of working-age adults and only 20.3% of California public school students. Hispanic or Latine individuals represented 27.4% of all classroom teachers, but 39.8% of working age adults and 56.1% of students in the

[26] Smith, T. & Li, Y. (2026). *Who stays, who leaves: Five-year retention patterns by teacher entry pathways.* Getting Down to Facts III.

California school system. These discrepancies appeared for other groups as well, such as California's Asian, Black, and Multiracial student and adult populations. Figure 10 presents these comparisons from the 2023-24 school year for students and teachers, along with 2024 American Community Survey estimates for working adults.

Figure 10. Percentage of California Working Age Adults, Classroom Teachers, and Students by Race/Ethnicity (2023-24)



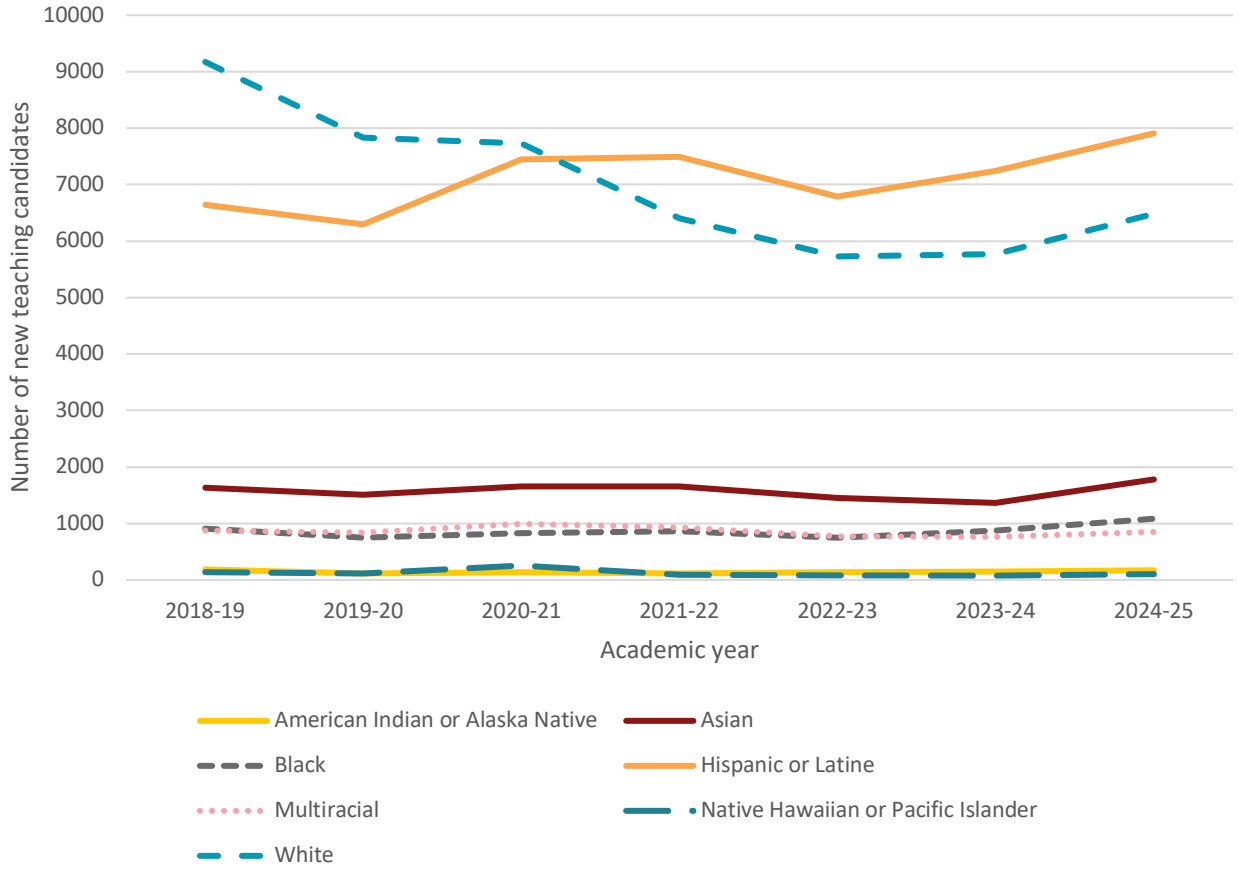
Sources: California Department of Education. (2026). *2023-24 Enrollment by ethnicity*. DataQuest; Learning Policy Institute of California Department of Education 2023-24 restricted Staff Demographics and Staff Assignment data; Thorman, T., & Cremin, S. (2025). *Who are California's workers?* Public Policy Institute of California.

Growing share of teacher candidates of color, especially Latine candidates

There are two main pathways to diversifying the teacher workforce: improving the retention of teachers of color and increasing the supply of new teachers of color. California's teacher pipeline is

increasingly racially and ethnically diverse, and there has been considerable growth in Hispanic or Latine candidates. As shown in Figure 11, the number and share of Latine candidates has grown steadily over time, rising from 33% in 2019–20 to 43% in 2023–24. Meanwhile, the number and share of White candidates have dropped over the same period, with a slight uptick in 2024–25. While the number and share of other racial/ethnic groups have remained fairly stable over the same period, there has also been an uptick in the number of Asian and Black teacher candidates in recent years. Overall, 65% of teacher candidates in 2024–25 were people of color.

Figure 11. New California Teacher Candidates by Race/Ethnicity from 2018–19 through 2024–25



Source: Learning Policy Institute analysis of California Commission on Teacher Credentialing 2018–19 to 2024–25 restricted Program Accreditation data.

These findings show that California's teacher workforce is diversifying, and the state's investments in the teacher pipeline have begun to pay off with a more robust and diverse supply of

teachers. But barriers remain for both entry and retention of teachers of color in California, mirroring national trends.[27] Intentional efforts to recruit people of color into teacher preparation programs—including making these programs more accessible, financially and otherwise—and to retain them in teaching through professional supports and supportive working conditions in schools, will be necessary to ensure continued growth in teacher diversity in the state.

In sum, when it comes to teacher supply in California, the number of teacher candidates completing preparation is substantially lower than two decades ago, although it has stabilized in recent years. At the same time, the composition of candidates has changed. There is a growing share of undergraduate and residency candidates as the state has made strides in cultivating these pathways that support candidates to complete preservice preparation with considerable savings of time and money—and, in the case of residencies, stronger clinical training as well. The share of candidates enrolling in online-only programs has also increased dramatically, warranting further investigation into their capacity to provide rigorous coursework and clinical support. Finally, the share of Latine candidates has grown in recent years, translating to increases in the share of Latine teachers in the teacher workforce as a whole. However, California continues to face challenges in recruiting and retaining teachers of color more broadly.

Teacher Demand: Staffing Needs and Turnover

Teacher demand is driven primarily by three factors: 1) changes in student enrollment; 2) the number of positions that are required to achieve preferred pupil-to-teacher ratios and meet student needs; and 3) the number of teachers who left their position the prior year and need to be replaced.

Trends in student enrollment directly relate to teacher demand. In California, student enrollment is estimated to continue declining, by 4% in the next 5 years, and teacher demand is expected to decrease accordingly.[28] However, enrollment trends vary across the state, with enrollments still projected to increase in nearly a quarter of counties. Additionally, the expansion of

[27] Carver-Thomas, D., Leung-Gagné, M., & García, E. (2025). *Supporting and sustaining a diverse teacher workforce*. Learning Policy Institute. https://doi.org/10.54300/216.666

[28] State of California, Department of Finance (2025). *California public K-12 graded enrollment and high school graduate projections by county, 2025 series.* https://dof.ca.gov/Forecasting/Demographics/public-k-12-graded-enrollment

transitional kindergarten (TK) to all 4-year-olds as of 2025-26—with class size capped at 10:1 students per adult—means that the state has added almost an entire grade to the public education system, greatly increasing the demand for qualified early educators.[29] Between 2021–22 and 2024–25, TK enrollment increased by more than 100,000 children.[30]

Many districts continue to face increasing teacher demand, especially in high-need areas such as bilingual education, special education, STEM, CTE, music, and art subjects.[31] Policy changes such as music and art requirements, as well as investments in literacy, CTE, and student support services, have further increased demand for teachers and other school staff. With increases in the share of students with disabilities and a consistently high share of English learners, demand for special education teachers and bilingual teachers is also growing, along with demand for educators to support post-COVID-19 learning recovery. As funding allows, school districts may also increase their demand for teachers by adding positions to lower pupil-teacher ratios, which remain much higher in California than the national average.

Replacing teachers who left the profession is by far the largest driver of demand. In 2023–24, we estimate that teacher attrition from the prior year accounted for 86% of new teacher hires.[32] Past research demonstrates that several factors influence teacher turnover, including preparation,

---

[29] Melnick, H., & García, E. (2024). *Progressing toward universal prekindergarten in California* [Brief]. Learning Policy Institute. https://learningpolicyinstitute.org/product/progressing-toward-universal-prekindergarten-california; Melnick, H., García, E., & Leung-Gagné, M. (2022). *Building a well-qualified transitional kindergarten workforce in California: Needs and opportunities.* Learning Policy Institute. https://doi.org/10.54300/826.674

[30] California Department of Education. (n.d.). *Annual enrollment data — K-12 Enrollment by Age Group and Grade.* DataQuest. https://dq.cde.ca.gov/dataquest/

[31] California Department of Education. (2025). *Proposition 28 — Arts and music in schools funding.* Retrieved February 28, 2026, from https://www.cde.ca.gov/eo/in/prop28artsandmusicedfunding.asp; California Department of Education. (2025). *Golden State Pathways Program: High school.* Retrieved February 28, 2026, from https://www.cde.ca.gov/ci/gs/hs/gspp.asp; California Department of Education. (2025). *Comprehensive Literacy State Development Grant.* Retrieved February 28, 2026, from https://www.cde.ca.gov/pd/ps/clsd.asp

[32] To calculate the proportion of demand that was driven by teacher attrition, we first estimated the number of new teacher FTE hires between 2022-23 to 2023-24. We calculated this by subtracting the total number of teacher FTEs in 2023-24 by the total number of teachers who remained in the profession between 2022-23 and 2023-24. Then, we divided the total teacher FTEs who left the California education system between 2022-23 and 2023-24 by the number of new teacher FTE hires.

compensation, working conditions, school climate, professional development, and school leadership.[33] Importantly, national data show that three quarters of teacher turnover happens pre-retirement,[34] which means that teacher retention is a critical lever for effectively tackling teacher shortages, especially in high-need schools and districts where teacher turnover is highest and teacher shortages are most severe.

In the following sections, we discuss how teacher demand in California remains high despite declining student enrollment, due to the need to reduce pupil-teacher ratios, meet the increasing needs of students, and—in particular—respond to the persistently high rates of teacher turnover and attrition.

Staffing and Pupil-Teacher Ratios

Over the past several decades, California has experienced enormous education budgetary pressures, but more recently has substantially increased investments in TK-12 education, with funding levels nearly doubling in the 15 years since the Great Recession.[35] In addition, as the Local Control Funding Formula (LCFF) was implemented, districts were required to maintain an average class enrollment of no more than 24 pupils in K-3 classes, and as of 2025–26, an average of one adult for every ten students in TK classes as a condition of funding.[36] Our analyses show that the number of teachers has been increasing, which—alongside declining student enrollment—has allowed pupil-teacher ratios to largely return to pre-Great Recession levels. In particular, the size of the classroom

[33] 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; Guarino, C. M., Sant Ibáñez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research*, *76*(2), 173–208. https://doi.org/10.3102/00346543076002173; Nguyen, T. D., Pham, L., Crouch, M., & Springer, M. (2020). The correlates of teacher turnover: An updated and expanded meta-analysis of the literature. *Educational Research Review*, *31*, 100355. https://doi.org/10.1016/j.edurev.2020.100355

[34] Tan, T., Wei, W., Carver-Thomas, D., & García, E. (2026). *Teacher turnover in the United States: Who moves, who leaves, and why.* Learning Policy Institute. https://doi.org/10.54300/248.479

[35] Lafortune, J., Ugo, I., & Guinan, B. (2025). *Updating California's school funding formula: Assessing alternatives and trade-offs.* Public Policy Institute of California.

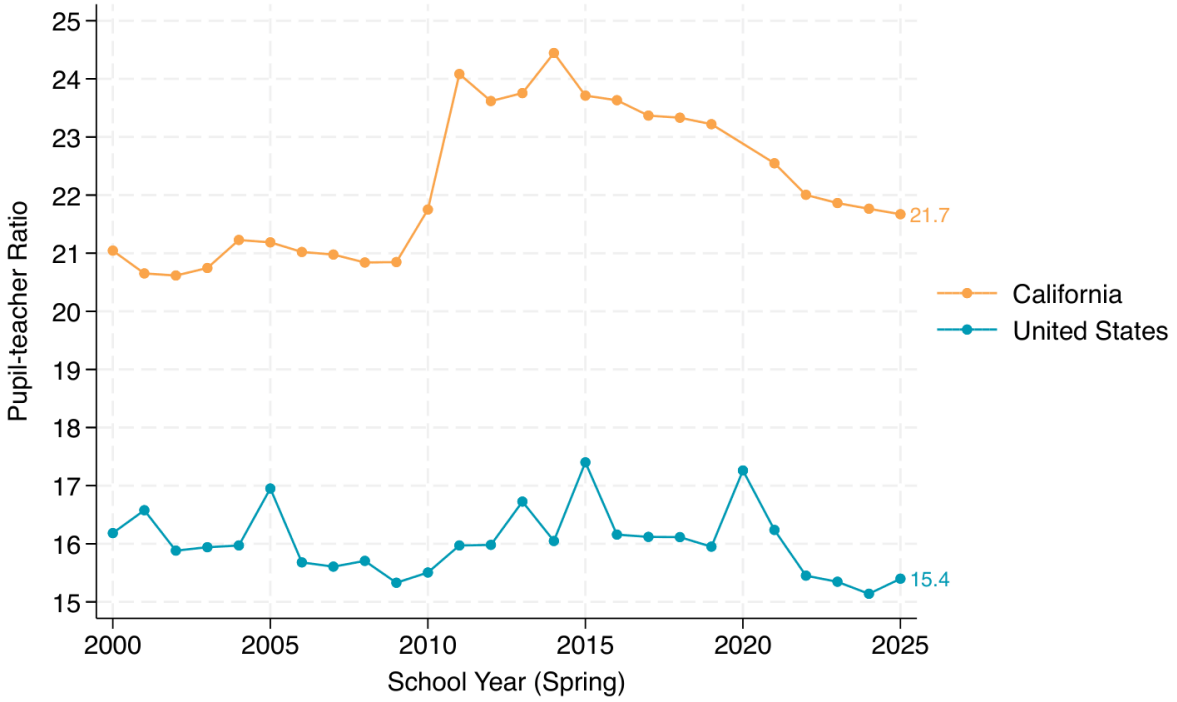
[36] California Department of Education. (2025). *Local control funding formula overview*. Retrieved February 17, 2026, from https://www.cde.ca.gov/fg/aa/lc/lcffoverview.asp ; Petek, G. (2026) *Assessing a shift to enrollment-based school funding.* Legislative Analyst's Office. Retrieved February 18, 2026, from https://lao.ca.gov/reports/2026/5100/Assessing-Shift-to-Enrollment-Based-School-Funding-010626.pdf

teacher workforce increased overall from 256,304 FTEs in 2012–13 to 274,941 FTEs in 2024–25, a net gain of about 18,600 teachers. Meanwhile, student enrollment declined by about 7%, from 6.2 million in 2014–15 to 5.8 million in 2024–25.

Pupil-teacher ratios continued their long post-recession decline, reaching some of the lowest levels observed in the data we have available by 2024–25, reflecting sustained growth in the teacher supply and improved staffing capacity statewide as districts were gradually able to restore teaching positions cut during the Great Recession. Pupil-teacher ratio reductions since 2018–19 were largest in schools serving high-need students and high proportions of students of color, consistent with the stated goals of LCFF and other targeted post-pandemic investments. The orange line in Figure 12 shows historic changes in California's average pupil-teacher ratio going back to 1999–2000, with decreasing trends in pupil-teacher ratios observed in the more recent period. This longer trendline shows the immense impact that budgetary cuts following the 2007–08 Great Recession had on teacher staffing, with pupil-teacher ratios rising to over 24 students per teacher.[37] From 2013–14 to 2018–19, the pupil-teacher ratio declined gradually, falling to about 23.2. A large post-pandemic decline is then visible, decreasing to a pupil-teacher ratio of 22.0 in 2021–22 and then remaining relatively stable. By 2024–25, the pupil-teacher ratio had reached 21.7, one of the lowest levels observed across the series.

[37] Pupil-teacher ratios are distinct from average class size, and typically smaller than class size measures, because pupil-teacher ratios include teachers in classroom and non-classroom assignments.

Figure 12. Trends in Pupil-Teacher Ratios from 1999-2000 to 2024–25



Sources: Learning Policy Institute Analysis 2000-21 to 2024–25 National Center of Education Statistics Common Core of Data.

Despite these marked improvements, California still has one of the highest pupil-teacher ratios in the country. The average pupil-teacher ratio nationally is currently 15.4 students per teacher and has been consistently lower than California during the entire observed time period in Figure 12. In 2022, only Arizona and Utah had higher pupil-teacher ratios, placing California third nationally.[38] Combined with declining enrollment, California's major investments in TK-12 education, including larger and more equitable investments through the LCFF[39] and other investments focused on expanding the teacher workforce, have clearly improved staffing capacity. That said, demand for

[38] National Center for Education Statistics. (2024). *Number of operating elementary and secondary schools, student membership, teachers, and pupil/teacher ratio, by state or jurisdiction: School year 2022-23* (CCD Summary Table 2). U.S. Department of Education. https://nces.ed.gov/ccd/tables/202223_summary_2.asp

[39] Johnson, R. (2023). *School funding effectiveness: Evidence from California's local control funding formula*. Learning Policy Institute. https://doi.org/10.54300/529.194

teachers may remain high to achieve further reductions in class size that would be needed to better meet students' diverse needs and bring California closer to the national average.

Schools serving a higher share of economically or socially disadvantaged students tend to have lower pupil-teacher ratios than more advantaged schools, a gap that has widened over time and a signal that more equitable school funding may be having a desired effect. Comparing schools in the bottom and top deciles of the share of students included in the unduplicated pupil count (UPC), the gap in pupil-teacher ratios was around 1.4 students per teacher in 2013–14 and increased to 2.1 additional students per teacher by 2024–25. Particularly following the pandemic, staffing capacity increased most in schools serving high-need student populations, allowing for smaller pupil-teacher ratios in these schools and for staffing to be concentrated on the students with the greatest needs. These patterns are consistent with a central goal of the LCFF, which allocates additional funding to districts enrolling more students from low-income families, English learners, and foster youth. However, as noted previously (see Figure 4), teachers in high-need schools are more likely to be teaching on a substandard credential, permit, or waiver. This underscores the ongoing challenges that high-need schools face in staffing classrooms with well-prepared teachers, even as they are generally expanding their workforce.

Increasing Student Needs

Despite the gradual reduction in California's overall K-12 enrollment, teacher demand has not fallen proportionately, in part because the educational and support needs of students have intensified over time. Students increasingly require more individualized instruction, specialized services, and non-instructional support, all of which can increase staffing needs even as total enrollment shrinks.

Students with disabilities illustrate this dynamic. Educating a student with an individualized education program (IEP) often requires substantially more instructional time, smaller classes, and specialized staff than educating a student without an IEP. In California, the average cost of educating a student with disabilities is nearly triple the per-pupil cost for a student without an IEP, reflecting the level of instructional intensity, specialized staffing, related services, and compliance requirements

involved.[40] Educating students from low-income backgrounds and English learners can similarly entail higher average costs.[41] These cost differentials translate directly into higher teacher and staff demand per student.

More broadly, the intensity and scope of student needs in California schools have increased. Currently, 17% of students are chronically absent, 64% are socioeconomically disadvantaged, 17% are English learners, 4% are homeless, and 14% have identified disabilities. Other forms of need are also widespread, including foster youth status (0.5%), undocumented status (3%), and living in households with at least one undocumented parent (22%).[42] Many of these needs have also grown over time. Between the 2017–18 and 2024–25 school years, the share of students economically disadvantaged increased from 61.5% to 63.6%, the share of students experiencing homelessness from 3.3% to 4.0%, and the share of students with disabilities from 11.3% to 14.2% (Figure 13). Although the share of English learners declined modestly over this period, the needs of the remaining population have grown, reflecting increasing linguistic diversity and a concentration of socioeconomically disadvantaged students who need additional supports to reach English proficiency.[43]

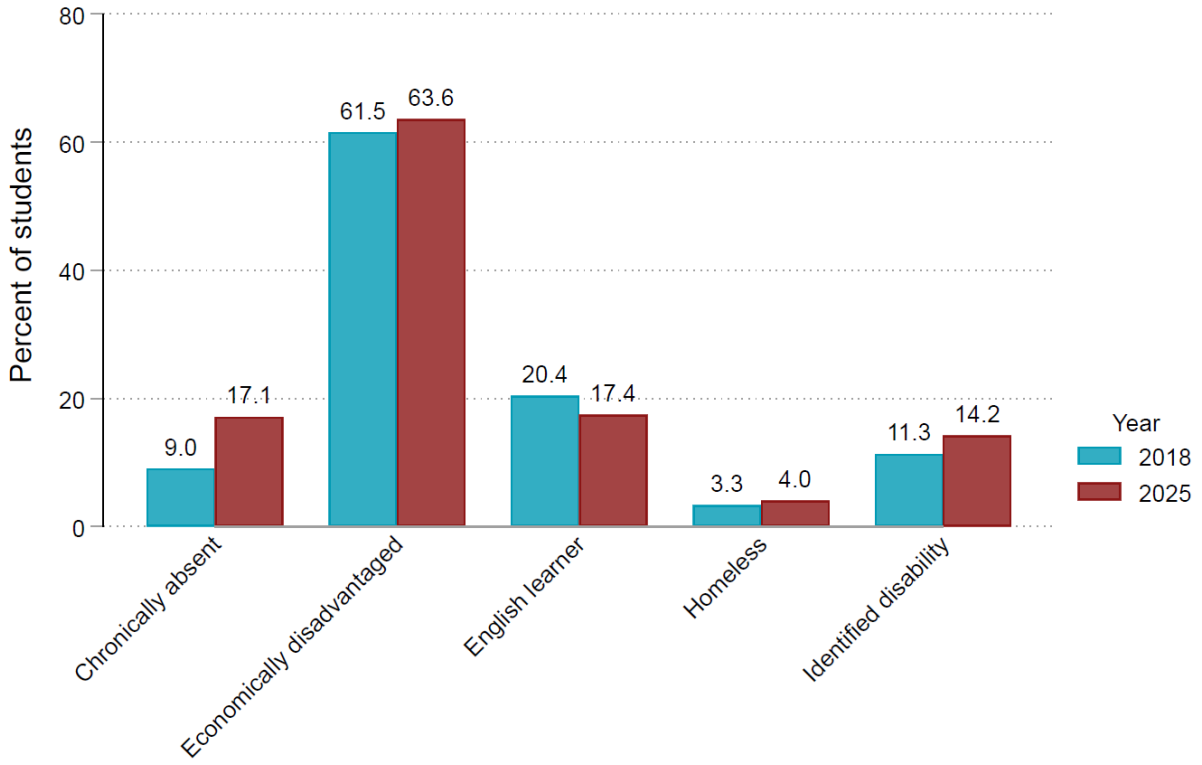
[40] Petek, G. (2019). *Overview of special education in California* (Report No. 4110). Legislative Analyst's Office. Retrieved March 11, 2026, from https://lao.ca.gov/reports/2026/5100/Assessing-Shift-to-Enrollment-Based-School-Funding-010626.pdf

[41] Duncombe, W. D., Nguyen-Hoang, P., & Yinger, J. (2015). Measurement of cost differentials. In H. F. Ladd & M. E. Goertz (Eds.), *Handbook of research in education finance and policy* (2nd ed., pp. 203-221). Routledge.

[42] Deng, B., & Hill, L. (2026). *California's K-12 students*. Public Policy Institute of California. https://www.ppic.org/publication/californias-k-12-students/

[43] Novicoff, S., Reardon, S. F., & Johnson, R. C. (2024). *California's English learners and their long-term learning outcomes.* Learning Policy Institute. https://doi.org/10.54300/636.224; Price, H. Burns, D., Loewe, S., Shields, P., Kaplan, J., & Lee, H. (2024). *Long-term English learners in California*. Learning Policy Institute. https://doi.org/10.54300/496.998.

Figure 13. Change in Student Populations and Engagement, 2017-18 to 2024–25



Source: California Department of Education. (2025; 2018). *California School Dashboard State Summary*.

At the same time, student absence from school has increased sharply, likely reflecting both school-based challenges and broader structural and environmental stressors, including lingering effects of the COVID-19 pandemic, climate change-related events, and heightened immigration enforcement.[44] Between 2017–18 and 2024–25, the share of students who were chronically absent rose by 8.1 percentage points, or a 90% increase, with over 17% of California students now missing

[44] Anderson, J., Asch. A., Briggs, M. (2022). *Insights From California education leaders on utilizing COVID-19 relief funding.* California School Boards Association. Retrieved February 17, 2026, from https://www.csba.org/en/Newsroom/PressReleases/2022/-/media/A77DC3321A044627B4BAE59ECF2793F2.ashx; Bellows, L. (2021). The effect of immigration enforcement on school engagement: Evidence from 287(g) programs in North Carolina. *AERA Open*, *7*. https://doi.org/10.1177/233285842110394; Ee, J., & Gándara, P. (2020). The impact of immigration enforcement on the nation's schools. *American Educational Research Journal, 57*(2), 840-871. https://doi.org/10.3102/0002831219862998; Kirksey, J. J., & Sattin-Bajaj, C. (2021). Immigration arrests and educational impacts: Linking ICE arrests to declines in achievement, attendance, and school climate and safety in California. *AERA Open*, 7. https://doi.org/10.1177/23328584211039787; Singer, J., Pogodzinski, B., Lenhoff, S. W., & Cook, W. (2021). Advancing an ecological approach to chronic absenteeism: Evidence from Detroit. *Teachers College Record*, *123*(4), 1-36.

more than 10% of school days. This rise in absenteeism also coincides with growing mental health needs among California children and youth,[45] which can increase demand for counseling, intervention, and coordination staff while reducing instructional efficiency, further exacerbating teacher demand.

Teacher Turnover and Attrition

Given that teacher turnover is the largest driver of teacher demand, this section describes trends in teacher turnover among California public school classroom teachers and identifies factors that help explain why teachers are leaving their positions. We report turnover and attrition using four measures:

1. **Within-district mover rates**, or the proportion of teachers who switch to a different school within their districts the next school year;
2. **Between-district mover rates**, or the proportion of teachers who move to a different district in California the next school year;
3. **Leaver rates**, or attrition rates, the proportion of teachers who are no longer employed in the California public education system the next school year; and
4. **Total turnover rates**, or the sum of all mover and leaver rates. We refer to movers and leavers collectively as teachers who left their jobs or positions.

Overall, turnover rates have remained high over the past decade, with about 1 in 7 teachers no longer in the teaching position they were in the prior year. Roughly half are leavers and half are movers who switched schools within or between districts.

Turnover rates vary widely, with some teachers and schools at substantially higher risks of teacher turnover. We found teachers with the least amount of preparation to be most likely to leave their jobs, with 40% of teachers on emergency-style permits moving or leaving in 2023–24, a rate that is consistently high over time. As we detail below, turnover rates of beginning teachers, teachers under age 30, special education teachers, and Black teachers were also far above the state average. Teachers in charter schools and schools serving high proportions of students from historically underrepresented

[45] Austin, G., Hanson, T., Bala, N., & Zheng, C. (2023). *Student engagement and well-being in California, 2019–21: Results of the Eighteenth Biennial State California Healthy Kids Survey, Grades 7, 9, and 11*. WestEd.

backgrounds also had above-average rates of turnover. Prior to the COVID-19 pandemic, we observed gaps in turnover rates between more and less advantaged schools narrowing, suggesting that state initiatives promoting more equitable school funding and incentives for well-prepared teachers to stay in high-need schools had been paying off. Unfortunately, pandemic disruptions appeared to have washed away much of this progress.

In 2023–24, the most recent year of data available, 14.3% of classroom teachers left their positions, amounting to over 39,000 teacher full-time equivalents (FTEs). This includes 4.3% of teachers who switched to a different school within their district, 3.2% who moved to a different district, and 6.7% who left the California public education system altogether. While fully comparable data are not available, data from the national 2021–22 Teacher Follow-Up Survey show that California's teacher turnover rates were slightly below the national average, placing the state in the second-highest quintile among all states for teacher retention.[46] Our California data do not include information on why teachers leave or move, but national data suggests that about three quarters of teacher turnover happens pre-retirement.[47]

Turnover rates, including both mover and leaver rates, have been relatively consistent over the past decade in California, except for increases immediately following the pandemic. As shown in Figure 14, total turnover rose to 16.8% in 2021–22, the highest rate in over a decade. This was the year when most schools returned to in-person learning; survey data show that California teachers reported less engagement and more challenging behavior among students, which contributed to greater teacher burnout.[48] This jump in turnover rates also coincided with a rapid expansion of the teacher workforce, along with increases in the number of new intern and emergency-style permits (see Figure 2). This signals that the high demand for teachers following the height of the pandemic, enabled by increases in state and federal funds, may have been met in part by teachers who were hired on short-term

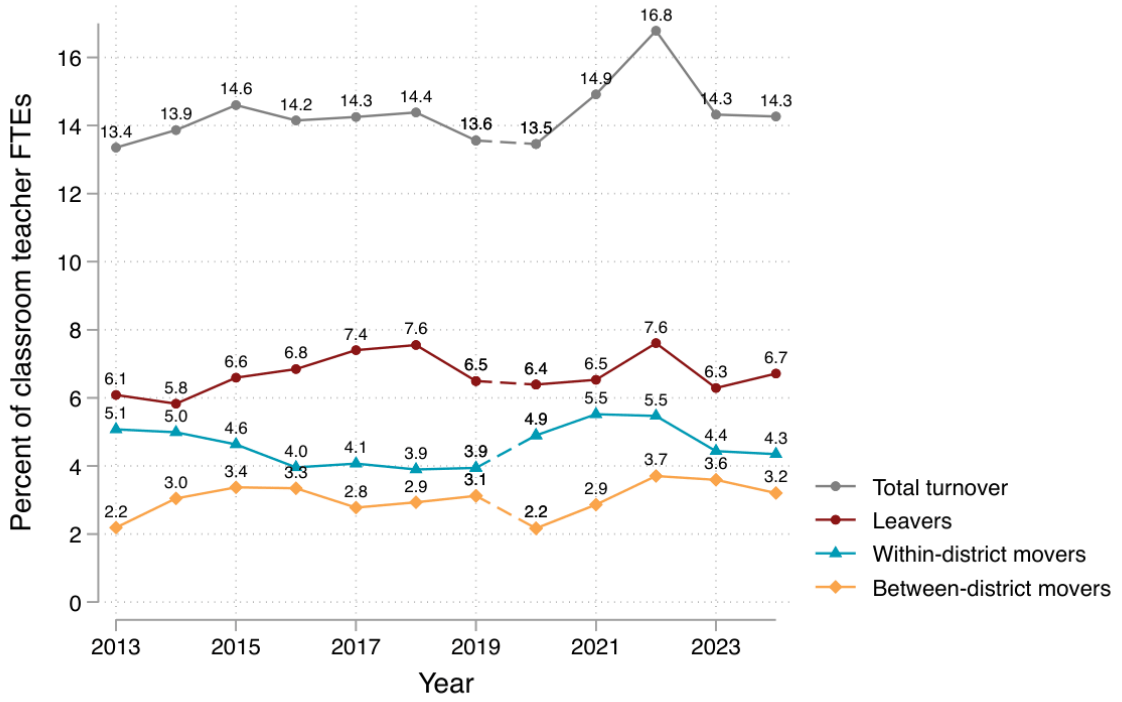
[46] Learning Policy Institute. (2024). The state of the teacher workforce: A state-by-state analysis of the factors influencing teacher shortages, supply, demand, and equity [Interactive map]. https://learningpolicyinstitute.org/product/state-of-teacher-workforce-interactive

[47] Tan, T., Wei, W., Carver-Thomas, D., & García, E. (2026). *Teacher turnover in the United States: Who moves, who leaves, and why.* Learning Policy Institute. https://doi.org/10.54300/248.479

[48] The Inverness Institute. (2022, July 13). *Teacher survey project: Teachers reflect on how students, teachers and the community are doing in the wake of Covid.* EdSource. Retrieved February 26, 2026, from https://edsource.org/2022/californias-leading-teachers-reflect-on-2021-22-school-year/672635

contracts or teachers who were underprepared and less likely to be retained. Following significant state investments in 2021 to strengthen the teacher workforce and broader increases in per pupil funding (see *Recent Policy Investments to Recruit, Prepare, and Retain Teachers*), turnover rates have declined rapidly, but generally continue to be elevated compared to the last pre-pandemic year of 2019–20. Overall, these trends point to the need for California to continue supporting schools and districts as they recover from early pandemic disruptions. As the state continues to grow its teacher workforce to meet increasing student needs, sustained efforts will be needed to retain the newly added teachers.

Figure 14. Teacher Turnover Over Time, 2012–13 to 2023–24



Note: Data collection procedures changed between 2018–19 and 2019–20 school years, as signified by the dashed line between those years.
Source: Learning Policy Institute analysis of California Department of Education 2012–13 to 2024–25 public and restricted Staff Assignment data.

Who Leaves, Where, and Why: Patterns of Teacher Turnover

High levels of teacher turnover can impose adverse organizational, fiscal, and educational consequences for schools and districts. For schools as organizations, constant heightened turnover can lead to a lack of stability, trust, mentorship, and curricular cohesion, than is possible with a more stable teacher workforce.[49] On the purely fiscal level, separation, hiring, recruiting, and training new teachers costs larger districts nearly $25,000 per departed teacher, implying large aggregate expenses associated with teacher attrition.[50] And for educational outcomes, research has shown that high levels of teacher turnover disrupt the student learning environment.[51] These short-term learning losses from turnover can be compounded long-term by the fact that high turnover leads to increased reliance on inexperienced and alternatively certified teachers, who themselves have higher rates of turnover.[52]

Given persistently high rates of teacher turnover in California and a teacher supply that has been insufficient in meeting students' ongoing instructional needs, it is important to identify which types of teachers and school contexts face the greatest risk of turnover. In this section, we disaggregate teacher turnover by teacher and school characteristics and examine policy-relevant factors that predict teacher turnover.

Turnover Rates by Teacher Characteristics

***Teacher credential*.** Results clearly show that teachers who are fully certified are much more likely to be retained in the profession. Teachers who held an emergency-style permit were almost 5 times more likely than fully-prepared teachers with a clear or preliminary credential to leave the profession in 2023–24, and interns left at almost double the rate of fully-prepared teachers (Figure 15). Turnover

[49] Jabbar, H., & Holme, J. J. (2026). Teacher turnover, social capital, and improvement: How instability disrupts schools. *Educational Evaluation and Policy Analysis*, *48*(1), 268-292.

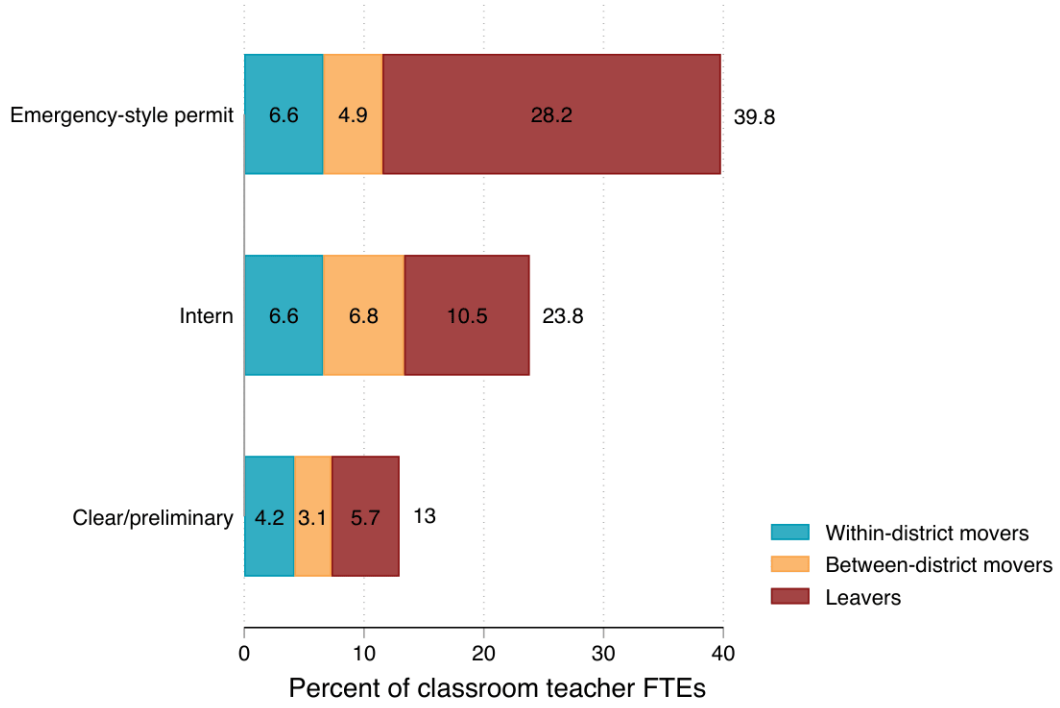
[50] Learning Policy Institute. (2024). *2024 Update: What's the cost of teacher turnover?* https://learningpolicyinstitute.org/product/2024-whats-cost-teacher-turnover

[51] Hanushek, E. A., Rivkin, S. G., & Schiman, J. C. (2016). Dynamic effects of teacher turnover on the quality of instruction. *Economics of Education Review, 55*, 132-148. https://doi.org/10.1016/j.econedurev.2016.08.004; Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal, 50*(1), 4-36.

[52] Redding, C., & Henry, G. T. (2019). Leaving school early: An examination of novice teachers' within-and end-of-year turnover. *American Educational Research Journal, 56*(1), 204-236. Sorensen, L. C., & Ladd, H. F. (2020). The hidden costs of teacher turnover. *AERA open, 6*(1). https://doi.org/10.3102/0002831218790542

rates among teachers holding emergency-style permits have hovered around 40% over the past decade, with a temporary dip in the early years of the pandemic.[53] This is concerning, given the state's increasing reliance on teachers with emergency-style permits over the past decade to fill positions that districts could not staff with fully credentialed teachers (see Figure 2).

Figure 15. Teacher Turnover Between 2023–24 and 2024–25, by Credential



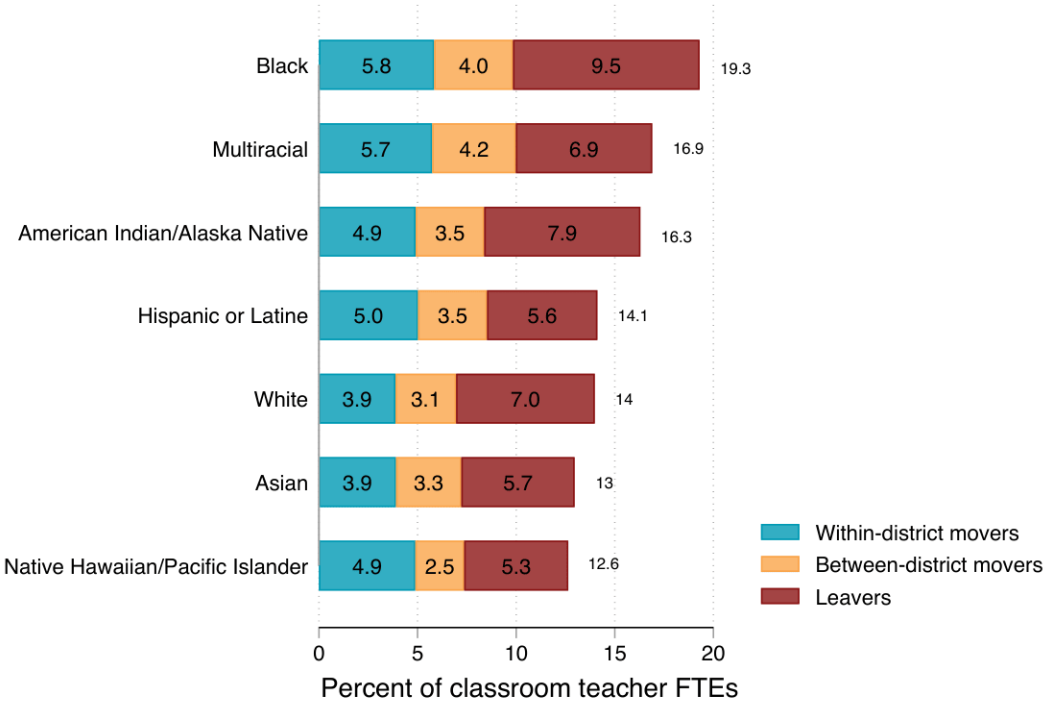
Source: Learning Policy Institute analysis of California Department of Education 2023–24 to 2024–25 restricted Staff Demographics and Staff Assignment data and California Commission on Teacher Credentialing 2023–24 to 2024–25 restricted Credentialing data.

Race/ethnicity. Total turnover was higher than the state average among Black or African American, Multiracial, and American Indian/Alaska Native teachers. In addition, Hispanic or Latine teachers were more likely than the state average to move within or between their districts, and Native Hawaiian/Pacific Islander teachers were more likely than average to move within their district. In

[53] One-year turnover rates were calculated for all classroom teachers based on their highest credential held during each school year.

2023–24, nearly 1 in 5 (19.3%) Black teachers left their jobs, including 1 in 10 who left the profession altogether (Figure 16).

Figure 16. Teacher Turnover Between 2023–24 and 2024–25, by Race/Ethnicity



Source: Learning Policy Institute analysis of California Department of Education 2023–24 to 2024–25 restricted Staff Demographics and Staff Assignment data.

Turnover rates among Black teachers have been consistently high over time and increased the most compared to other groups during the COVID-19 pandemic, to 23.4% in 2021–22. The churn of Black teachers in California could be explained in part by the high rates of Black teachers who enter teaching on emergency-style permits and waivers. In 2023–24, 4.8% of Black teachers taught on an emergency-style permit and 4.9% taught on an intern credential, compared to the state average of 1.9% on an emergency-style permit and 2.3% of interns. Additionally, research consistently shows that teachers of color tend to be concentrated in schools and communities that have fewer school-based resources and face more challenging working conditions, which also contribute to higher turnover

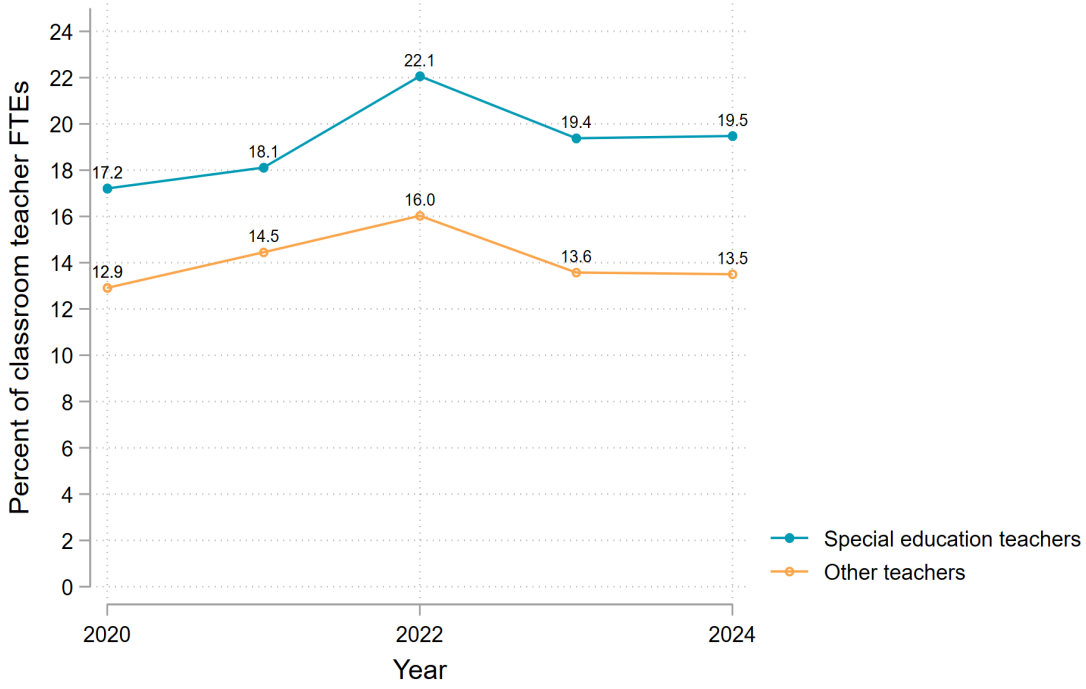
rates.[54] Given the declines in the share of Black teachers over the past decade and the stagnant share of American Indian/Alaska Native and Native Hawaiian/Pacific Islander teachers (see Table 2), California would need to better understand the unique challenges that these teachers may experience in their schools in order to support their retention and progress toward racial diversity and representation in the teacher workforce.

Teaching assignment. Special education teachers are consistently more likely than other classroom teachers to leave their positions (Figure 17). In 2023–24, 1 in 5 (19.5%) special education teachers left their positions: 7.5% left the profession, 5.4% moved to a different district and 6% moved to a different school within the same district. Turnover rates among special education teachers were 30% higher than other classroom teachers (13.5%) in 2023–24. From 2020–21 to 2021–22, when teacher turnover rates increased overall, there was a sharper increase in turnover rates among special education teachers than among non-special education teachers. This is unsurprising, given the demands on special education teachers to meet the increased academic and social and emotional needs of students during the pandemic.

Among academic subject areas, turnover was higher than average among performing arts teachers (17.7%) and computer education teachers (15.5%). Turnover rates were lowest among social science teachers (11%). Turnover rates of math, science, and career and technical education teachers, typically shortage areas, were around 13%, just below the state average, suggesting that state efforts to retain teachers in high-need subject areas could be making a difference.

[54] Carver-Thomas, D., Leung-Gagné, M., & García, E. (2025). *Supporting and sustaining a diverse teacher workforce*. Learning Policy Institute. https://doi.org/10.54300/216.666

Figure 17. Teacher Turnover by Special Education Status, 2019–20 to 2023–24

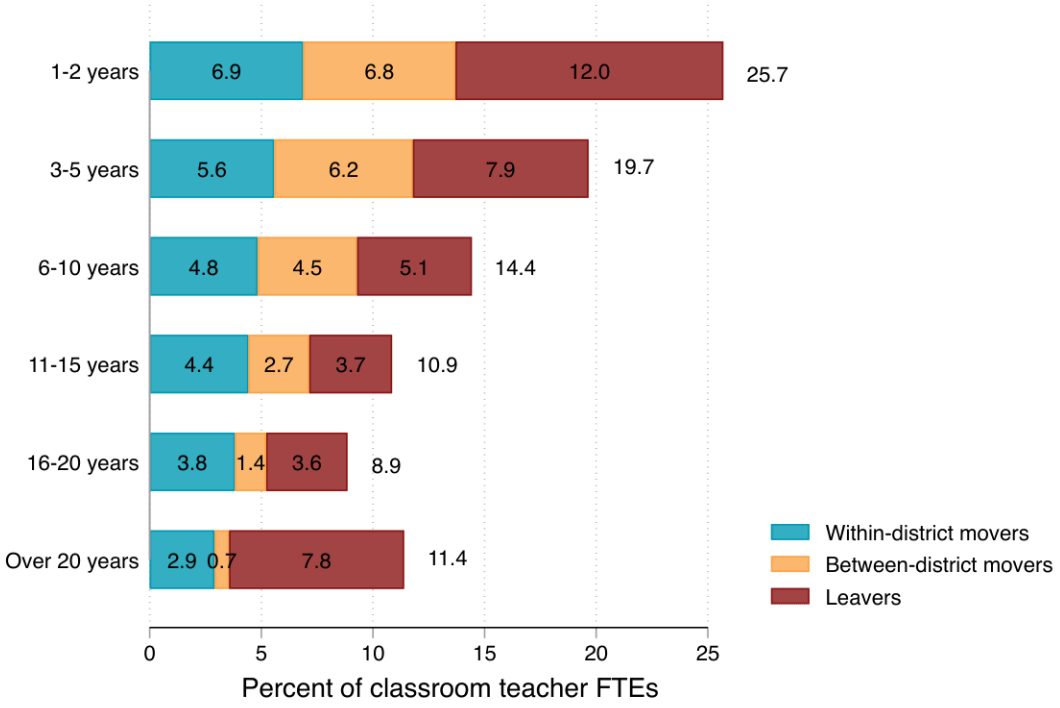


Note: Special education are teachers who either teach a course that is designated as special education or the majority of courses they teach are primarily attended by students with disabilities. This may include teachers of inclusion classes.
Source: Learning Policy Institute analysis of California Department of Education 2020–21 to 2024–25 restricted Staff Demographics, Staff Assignment, Course Section, Student Course Section data.

***Age*.** Consistent with prior literature, turnover rates were highest at both ends of the teacher age distribution. In 2023–24, almost 1 in 10 teachers under 30 left the California teaching profession; another 7.2% moved to a different school in another district and 5.7% switched to a different school within the same district, for a total of 22.5%. This rate is only slightly below the level observed a decade ago (24.3%), suggesting that California continues to face challenges retaining its youngest teachers. Total turnover for teachers over 60 years old was highest among all age groups, at 25.9%, with over 4 in 5 teachers (22%) leaving the profession, likely because of retirement. California's oldest teachers have been leaving the profession at increasing rates over the past decade, with overall turnover up by more than 4 percentage points and leavers up by almost 2 percentage points since 2013–14. This trend may be a result of the aging workforce, with an increasing share of teachers over 60 approaching or considering retirement.

***Experience*.** We see similar trends when looking at turnover rates by teacher experience. More than 1 out of every 4 teachers (25.7%) in their first 1-2 years of teaching left the profession or switched schools, with 12% leaving the profession (Figure 18).[55] Among teachers with 3-5 years of experience, turnover rates remain much higher than the state average, with 1 in 5 teachers leaving their positions (19.7%). These trends point to the importance of policies that support early-career teachers, including strengthening preparation, improving induction, and providing incentives for teachers to stay in the profession. Beyond 6 years of experience, teacher turnover rates tend to decline, particularly rates for leavers and between-district movers, only bouncing back up among the most experienced teachers, who are likely to be considering retirement.

Figure 18. Teacher Turnover Between 2023–24 and 2024–25, by Experience



Source: Learning Policy Institute analysis of California Department of Education 2023–24 to 2024–25 restricted Staff Demographics and Staff Assignment data.

[55] While beginning teachers with 1-2 years of experience tend to be younger than teachers with more experience, almost a quarter (23.2%) are age 40 or older.

Teacher turnover and the graying teacher workforce

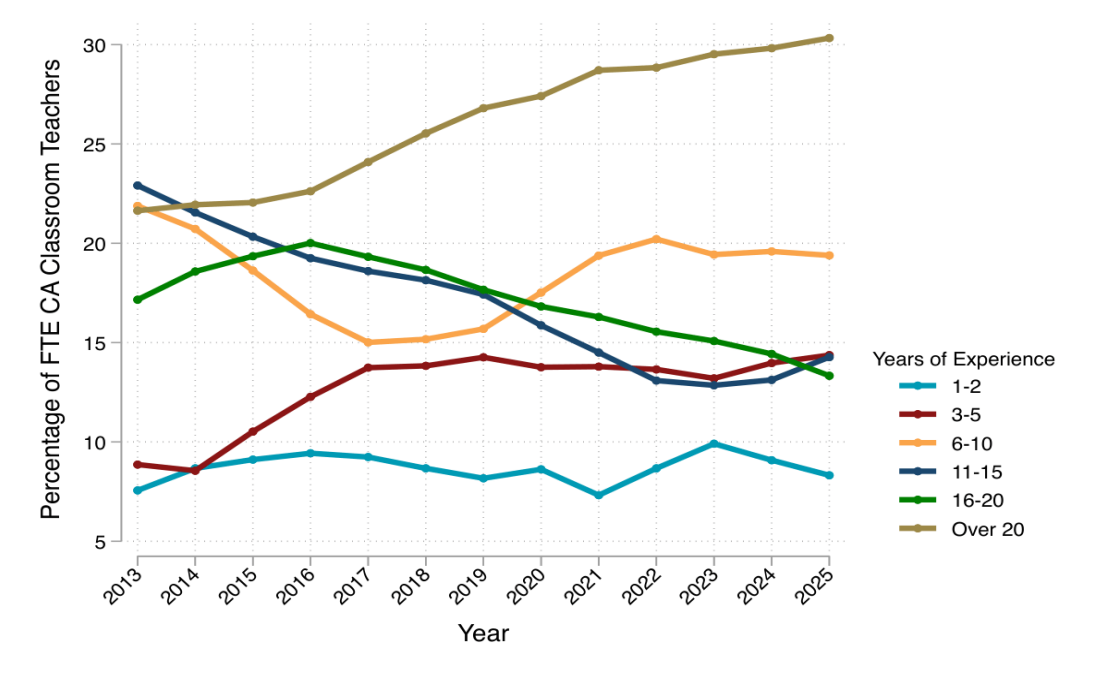
Patterns of teacher attrition, retirement, and entry, jointly shape the experience and age profile of California's teacher workforce. Prior research shows that more experienced teachers provide multiple benefits for student learning and school organizational functioning.[56] Therefore, any shifts toward more experienced teachers could reflect improved retention in the state and improved instructional environments. However, an excessive shift toward more experienced teachers could also signal future challenges for teacher demand, if it becomes difficult to replace retiring teachers with well-prepared novice teachers.

Figure 19 below illustrates the share of classroom teachers by their years of service in certificated positions in California public schools between the 2012–13 and 2024–25 school years. Among early-career teachers, the share of teachers with 1 to 2 years of experience has remained relatively stable over time, representing 7.6% of teachers in 2012–13 and 8.3% in 2024–25. Meanwhile, those with 3 to 5 years of experience have increased meaningfully, from 8.9% to 14.4%, suggesting that more teachers are staying beyond those first couple of years.

Among mid-career teachers, the share with 6 to 10 years of experience declined modestly from 21.9% in the first year to 19.4% in the last year. Teachers with 11 to 15 years of experience declined more dramatically, from 22.9% to 14.3%, and the share of those with 16 to 20 years of experience also declined from 17.2% to 13.3%. Finally, among late-career teachers, the share of classroom teachers with over 20 years of experience grew substantially—from 21.6% in 2012–13 to 30.3% in 2024–25, now representing the single largest experience category.

[56] Kini, T., & Podolsky, A. (2016*). Does teaching experience increase teacher effectiveness? A review of the research.* Learning Policy Institute; Ladd, H. F., & Sorensen, L. C. (2017). Returns to teacher experience: Student achievement and motivation in middle school. *Education Finance and Policy, 12*(2), 241-279; Papay, J. P., & Kraft, M. A. (2015). Productivity returns to experience in the teacher labor market: Methodological challenges and new evidence on long-term career improvement. *Journal of Public Economics, 130*, 105-119. https://doi.org/10.1016/j.jpubeco.2015.02.008

Figure 19. Share of California Teachers by Years of Experience, from 2012–13 to 2024–25



Notes: For teachers with years of missing experience information, we impute experience through backwards interpolation from their most recent non-missing experience year.
Source: Learning Policy Institute analysis of California Department of Education 2012–13 to 2024–25 public and restricted Staff Demographics and Staff Assignment data.

Taken together, these trends illustrate a hollowing out of mid-career teachers and a notable shift toward later-career teachers. This pattern is also evident in the age distribution of teachers. Teachers aged 30 to 39 declined from 28.1% of all classroom teachers to 24.0% in this same period, and teachers aged 40 to 49 also dropped slightly from 29.9% to 28.0%. On the other hand, teachers aged 50 to 59—who would predominantly be in the higher experience categories—increased from 25.4% in 2012–13 to 28.8% in 2024–25 of all classroom teachers. This apparent "graying" of California's teacher workforce may be due to several factors, including the layoffs of tens of thousands of teachers—primarily early-career teachers—during the Great Recession;[57] high attrition rates of beginning teachers and better retention of more experienced teachers; and also increases in the average age of new entrants to the teaching profession. These trends suggest that

[57] Hinkley, S. (2020*). Public sector impacts of the Great Recession and COVID-19.* UC Berkeley Labor Center. https://laborcenter.berkeley.edu/public-sector-impacts-great-recession-and-covid-19

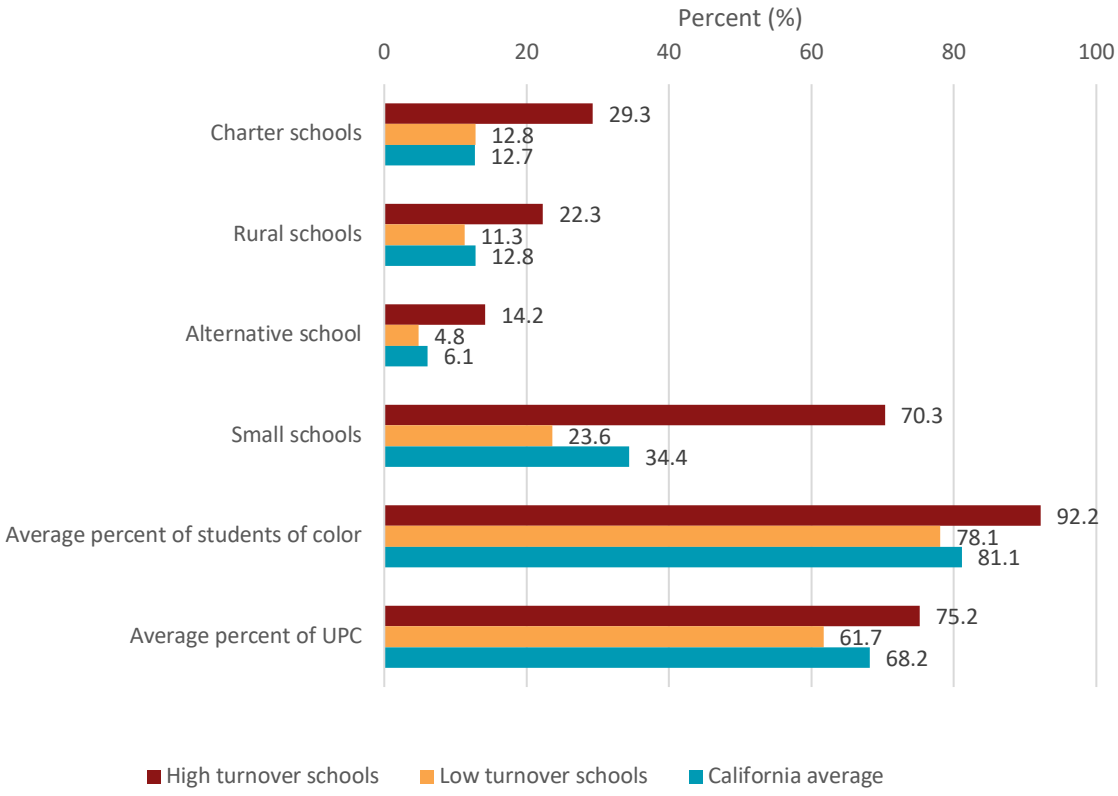
students on average have access to more experienced teachers. However, the state should carefully prepare for larger teacher retirement waves in coming years and the resulting increases in teacher demand.

Turnover Rates by School Characteristics

Statewide averages mask considerable variation in the extent to which students experience teacher turnover within California. At the school level, total turnover rates in 2023–24 ranged from 6% at the 10th percentile to 31% at the 90th percentile.[58] Schools with turnover rates at or above the 90th percentile are about twice as likely as the average California school to be charter schools, rural schools, alternative schools, and small schools (Figure 20). High turnover schools also tend to serve higher proportions of students of color and students included in the unduplicated pupil count (UPC). Schools with high turnover rates bear the cost of frequently replacing teachers who left, often having to rely on underprepared teachers who leave at higher rates, perpetuating a cycle of staffing instability. This is borne out in our previously discussed analysis of the distribution of teacher credentials and permits in California schools (see *The Inequitable Distribution of Teachers*). Schools serving higher proportions of students of color, higher UPC proportions, charter schools, and rural schools had a greater proportion of teachers holding substandard credentials and permits for their roles. Below, we discuss in detail how turnover rates differ by various school characteristics.

[58] We excluded schools with fewer than 20 students from this analysis to prevent skewing of results by very small schools.

Figure 20. Schools Characteristics by Teacher Turnover Rates, 2023–24



Notes: UPC = Unduplicated Pupil Count, which includes students eligible for free or reduced-priced meals, English Learners, and foster youth. Schools are categorized as having high teacher turnover if their total teacher turnover rates are at or above the 90th percentile (31.4%), low turnover schools have turnover rates that are at or below the 10th percentile (5.6%).
Sources: Learning Policy Institute analysis of 2023–24 to 2024–25 California Staff Assignment Data and Annual Enrollment Data from the California Department of Education and Education Demographic and Geocode Estimates Data from the National Center for Education Statistics.

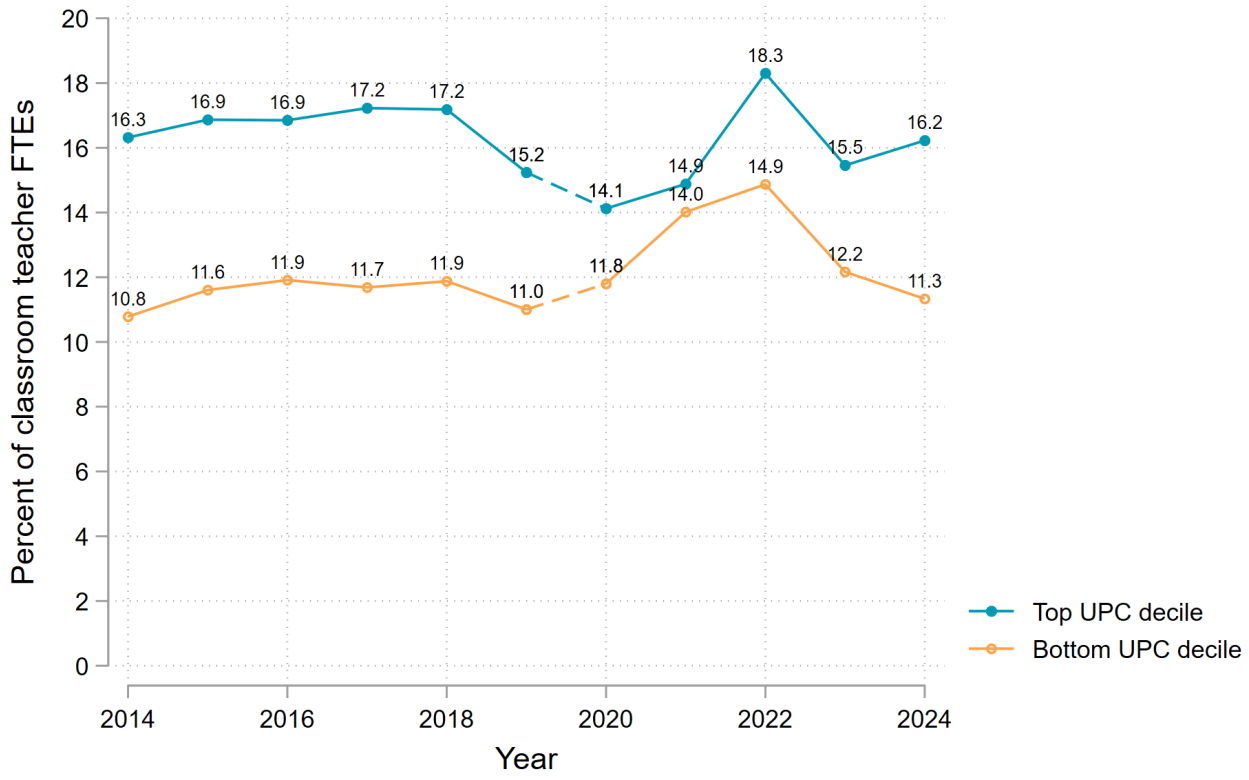
Charters. Charter school teachers leave their positions at higher rates than non-charter school teachers (17.4% vs 13.7% in 2023–24, see Figure 22), a trend that is consistent over time although turnover rates of charter school teachers have declined, from 23.5% in 2016–17. This trend may be due in part to the higher concentration of underprepared teachers in charter schools. In 2023–24, charter schools on average had double the share of underprepared teachers compared to non-charters (4.1% vs 2.1% of interns and 3.8% vs 1.8% of teachers with emergency-style permits). Charter school teachers also tend to be less experienced (10.2 years on average vs 15 years in non-charters). While charter school teachers leave the profession and move across districts at higher rates than teachers in traditional public schools, they are less likely to move within district, likely because charter schools are often

designated as standalone local education agencies (LEA) and therefore teachers who want to switch schools typically cannot stay in the same LEA.

***Proportion of unduplicated student count*.** Teachers in the highest decile of schools by proportion of unduplicated student count (UPC) were more likely to leave their schools compared with teachers in schools serving the lowest decile of UPC (16.2% vs 11.3%). This was not surprising, as teachers in high UPC schools tend to serve students with a wider range of academic, social, and emotional needs, which can result in greater workload and more challenging working conditions. Notably, teachers of color were much more likely to work in the highest-need schools, with 14.9% of Black teachers teaching in the top decile of schools by UPC enrollment, compared to 7.9% of California teachers in 2023–24. As shown in Figure 21, the gap in teacher turnover between schools serving the highest and lowest proportions of UPC in 2023–24 was similar to 2017–18 levels. However, looking over time, this gap had narrowed substantially before the COVID-19 pandemic and then widened again, suggesting that state efforts towards more equitable access to a stable teacher workforce may have been improving teacher retention in high-need schools prior to the pandemic. Unfortunately, pandemic disruptions appeared to have washed away much of this progress, with teacher turnover rates in the highest-need schools skyrocketing in 2021–22. This spike could have arisen for a multitude of reasons, including more temporary staff hired by high-need schools, which received more state and federal funding during the pandemic, as well as more challenging working conditions for teachers, given that students in the highest-need schools were disproportionately impacted by the pandemic.[59] Continued resources to support learning recovery and teacher retention in the highest-need schools will likely be important for rebuilding and sustaining the progress achieved prior to the pandemic.

[59] Gee, K. A., Asmundson, V., & Vang, T. (2023). Educational impacts of the COVID-19 pandemic in the United States: Inequities by race, ethnicity, and socioeconomic status. *Current Opinion in Psychology*, *52*. https://doi.org/10.1016/j.copsyc.2023.101643

Figure 21. Teacher turnover rates by UPC decile, 2013–14 to 2023–24



Note: UPC = Unduplicated Student Count. Schools in the top decile serve 96-100% UPC, while schools in the bottom decile serve 0-25% UPC. Data collection procedures changed between 2018–19 and 2019–20 school years, as signified by the dashed line between those years.
Sources: Learning Policy Institute analysis of California Department of Education 2013–14 to 2024–25 California Staff Assignment Data and CALPADS Unduplicated Pupil Count Data.

***Proportion of students of color*.** Teachers in the highest quartile of schools by proportion of students of color (SOC) were also more likely to leave their schools compared to teachers in schools with lower proportions of students of color. In 2023–24, 15.7% of teachers in the top quartile of schools (97-100% SOC) left their positions, compared to 13.7% of teachers in the bottom quartile of schools (0-61% SOC), a gap of 2 percentage points (Figure 22). This disparity has narrowed over time; in 2016–17, the gap in turnover rates between high- and low- SOC schools was 3.1 percentage points (16.3 vs 13.2%), over 50% greater than in 2023–24. These turnover reductions could reflect improvements in working

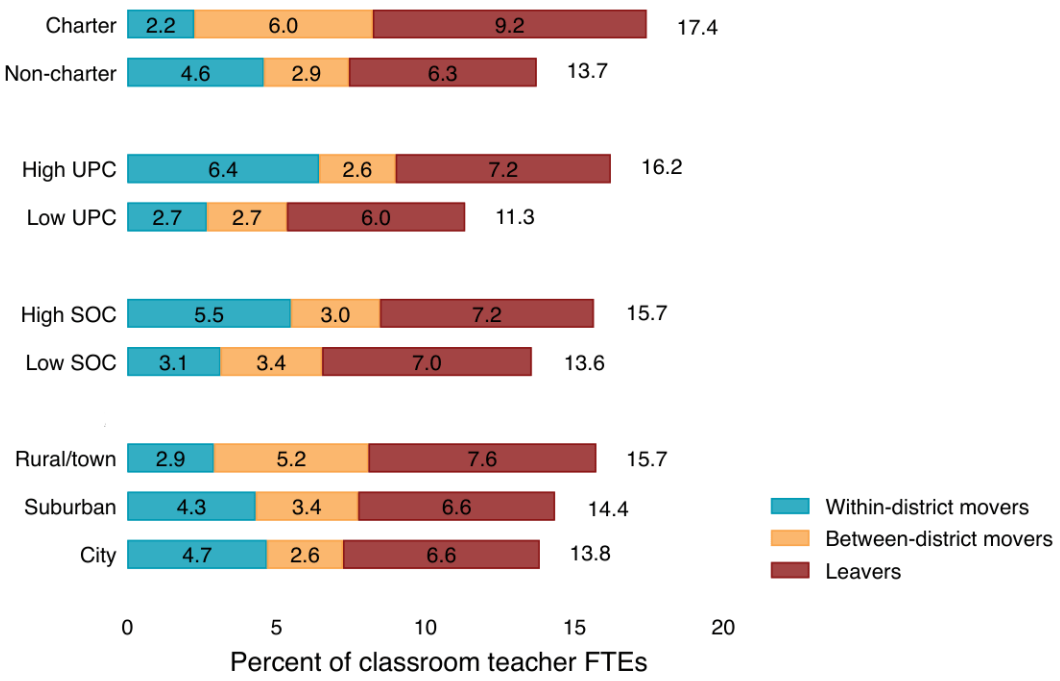
conditions, resources, or leadership, in schools serving more students of color, resulting in teachers staying longer in those schools.[60]

***Urbanicity*.** Teacher attrition rates and movement between districts were higher among teachers in rural districts. In 2023–24, rural teachers were more likely than city and suburban teachers to move to a different district and leave the profession altogether (Figure 22). Rural teachers were less experienced compared to city and suburban teachers (12.4 years of experience on average, vs 14.6 years for city teachers and 14.8 years for suburban teachers in 2023–24), and more likely to be underprepared (7.5% of interns and emergency-style permit holders vs 4.5% among city teachers and 3.3% among suburban teachers); these trends help explain why turnover rates may be higher in rural areas. Rural schools also face additional challenges in meeting their demand for teachers, including a lack of teacher preparation programs within an accessible distance and difficulty in attracting teachers to relocate to a rural area.[61] Rural teachers are also more likely to be White (70.4% vs 53% of city teachers and 61% of suburban teachers), pointing to challenges that rural schools face in achieving a racially diverse teacher workforce. City teachers were most likely to move to a different school within the district, likely a result of the wider availability of other schools within the same district that a teacher could move to in urban areas.

[60] A secondary possibility is that this reduced turnover could reflect in part a changing composition of the types of schools serving predominantly students of color, since the top quartile could contain different schools in different years.

[61] 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; Mathews, K., Huang, H, Yagi, E, Balfe, C, & Bishop, J. P. (2024). *California's teacher education deserts: An overlooked & growing equity challenge.* Center for the Transformation of Schools, School of Education & Information Studies, UCLA.

Figure 22. Teacher Turnover Rates by School Characteristics, 2023–24



Note: UPC = Unduplicated Student Count. High UPC schools serve 96-100% UPC (top decile), while low UPC schools serve 0-25% UPC (bottom decile). SOC = Students of color. High SOC schools serve 97-100% SOC (top quartile), while low SOC schools serve 0-61% SOC (bottom quartile).
Sources: Learning Policy Institute analysis of 2023–24 to 2024–25 California Staff Assignment Data, Annual Enrollment Data, CALPADS Unduplicated Pupil Count Data, and NCES Education Demographic and Geocode Estimates Data.

Taken together, disaggregated turnover rates show that younger and early-career teachers, underprepared teachers, Black, Multiracial, Native American teachers, and special education teachers face higher risk of leaving their positions than other teachers. Students in charter schools, schools serving higher proportions of UPC and students of color, and rural schools are also disproportionately exposed to teacher turnover. These patterns, for the most part, mirror common correlates of teacher turnover found by researchers in other contexts.[62] They are also interconnected. For example, teachers

[62] Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American educational research journal, 38*(3), 499-534; Kraft, M. A., Marinell, W. H., & Shen-Wei Yee, D. (2016). School organizational contexts, teacher turnover, and student achievement: Evidence from panel data. *American Educational Research Journal, 53*(5), 1411-1449. https://doi.org/10.3102/0002831216667478; Nguyen, T. D., & Springer, M. G. (2023). A conceptual framework of teacher turnover: A systematic review of the empirical international literature and insights from the employee turnover

of color, especially Black teachers, are more likely to be teaching on a substandard credential or permit and work in high-need schools where resources are lacking and working conditions more challenging. These compounding risks contribute to the concentration of teacher turnover among the state's highest-need schools and underrepresented teacher groups.

Structural Predictors of Teacher Turnover

Why do teachers leave their schools, and what can policymakers do to improve retention? Decades of research point to multiple contributors of teacher turnover, including preparation, compensation, working conditions, school climate, professional development, school leadership, classroom autonomy, and job satisfaction.[63] In this section, we examine the extent to which factors such as teacher credentialing, salary, workload, and principal retention are related to teacher turnover in California after accounting for detailed teacher and school characteristics.

Our multiple regression analyses focus on three years of data from the 2021–22 to 2023–24 school years. Given volatility in teacher turnover in the pandemic years, pooling data allows us to better identify factors that are overall predictive of teacher turnover in the most recent years coming out of the COVID-19 pandemic. The model controls for teacher demographics such as race and ethnicity, age, experience, and education level, as well as school and student characteristics such as charter status, enrollment, urbanicity, student race and ethnicity, percent of students included in the Unduplicated Pupil Count (UPC), and percent of students experiencing homelessness. Consistent with prior literature, we find that higher teacher turnover is associated with lower salaries, substandard

literature. *Educational Review, 75*(5), 993-1028. https://doi.org/10.1080/00131911.2021.1940103; Simon, N., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record*, *117*(3), 1-36. https://doi.org/10.1177/016146811511700305; Tan, T., Wei, W., Carver-Thomas, D., & García, E. (2026). *Teacher turnover in the United States: Who moves, who leaves, and why.* Learning Policy Institute. https://doi.org/10.54300/248.479

[63] 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; Guarino, C. M., Santibañez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research*, *76*(2), 173–208. https://doi.org/10.3102/00346543076002173; Nguyen, T. D., Pham, L., Crouch, M., & Springer, M. (2020). The correlates of teacher turnover: An updated and expanded meta-analysis of the literature. *Educational Research Review*, *31*, 100355. https://doi.org/10.1016/j.edurev.2020.100355; Tan, T., Wei, W., Carver-Thomas, D., & García, E. (2026). *Teacher turnover in the United States: Who moves, who leaves, and why.* Learning Policy Institute. https://doi.org/10.54300/248.479

teacher credentials and permits, higher principal turnover, lower principal experience, heavier workload, and lower per-pupil spending. These findings point to actionable levers for policymakers to strengthen teacher retention in California (Table 3). Details about our methodology are described in Appendix A, along with full regression tables in Appendix B.

Table 3. Teacher Turnover Regression Results

	Moving within district	Moving between district	Leaving	Total turnover
BA+30 lowest salary, adjusted	0.002	-0.008***	-0.006***	-0.011***
($ten thousand)	(0.00)	(0.00)	(0.00)	(0.00)
Number of courses taught	0.008***	0.000***	-0.000***	0.007***
	(0.00)	(0.00)	(0.00)	(0.00)
Credential				
(Reference group: Clear/preliminary)				
Intern	-0.010***	-0.010***	0.030***	0.009*
	(0.00)	(0.00)	(0.00)	(0.00)
Emergency-style permit	0.005	-0.034***	0.172***	0.143***
	(0.00)	(0.00)	(0.00)	(0.01)
Limited assignment permit to teach	0.025***	0.020***	0.027***	0.071***
out of field	(0.00)	(0.00)	(0.00)	(0.01)
Principal turnover				
(Reference group: Principal stayed)				
Principal left	0.014***	0.008***	0.014***	0.036***
	(0.00)	(0.00)	(0.00)	(0.00)
Principal turnover missing	0.021**	0.002	0.003	0.025***
	(0.01)	(0.00)	(0.00)	(0.01)
Principal experience				
(Reference group: 3-5 yrs)				
1-2 yrs	0.001	0.000	0.005**	0.006

	(0.00)	(0.00)	(0.00)	(0.00)
6-10 yrs	-0.004*	-0.005***	-0.001	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Over 10 yrs	-0.006**	-0.004***	-0.001	-0.011***
	(0.00)	(0.00)	(0.00)	(0.00)
Per pupil spending quartile				
(Reference group: 4th quartile)				
1st quartile	-0.001	0.008***	0.002	0.008*
	(0.00)	(0.00)	(0.00)	(0.00)
2nd quartile	0.003	0.004***	-0.000	0.006
	(0.00)	(0.00)	(0.00)	(0.00)
3rd quartile	-0.003	0.002*	0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Spending missing	-0.029***	0.024***	0.035***	0.029***
	(0.00)	(0.00)	(0.00)	(0.01)
Controls				
Teacher characteristics	Yes	Yes	Yes	Yes
School & student characteristics	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

Notes: * p<0.05, ** p<0.01, *** p<0.001. Teacher characteristics include teacher race/ethnicity, age, experience, and highest degree earned. School and student characteristics include charter status, school level, total enrollment, magnet status, locale, student race/ethnicity, proportion of students included in the Unduplicated Pupil Count, proportion of students experiencing homelessness, and proportion of students with disabilities.
Source: LPI analysis of 2021–22 to 2024–25 public and restricted data from the California Department of Education and the California Commission on Teacher Credentialing, and the National Center for Education Statistics Education Demographic and Geographic Estimates (EDGE) data.

***Salary*.** Insufficient compensation is one reason teachers often cite for leaving their positions.[64] Research finds that California teacher salaries in relation to living costs have been essentially flat since 2004–05.[65] Given California's high costs of living, many teachers experience considerable financial strain (see *Structural Barriers to Recruiting and Retaining Teachers in California*).

In 2023–24, the mean entry-level salary for teachers with a BA plus 30 units of coursework in California was around $58,000, adjusted for cost-of-living differences across the state. Starting salaries varied greatly, ranging from $49,000 at the 5th percentile to $68,000 at the 95th percentile. In our regression, we used the lowest salary for teachers with a BA plus 30 units of coursework as a proxy for teacher salary, as higher-paying districts generally offer higher starting salaries and a higher salary schedule overall. Regression results show that for every $10,000 increase in starting salary, there is a 1.1 percentage point decrease in the probability of teachers leaving their positions, with significant effects for between-district movement and departures from the profession. **The association between salaries and teacher turnover rates translates to an 8.9% reduction in leaver rates and a 25% decrease in between-district mover rates for every $10,000 increase in salary in 2023–24.** Figure 23 shows the estimated teacher turnover rates by salary, holding other school- and teacher-level factors constant, when increasing entry-level salary of teachers from $49,000 to $68,000.

[64] Mathews, K. (2022). *Voices from the classroom: Developing a strategy for teacher retention and recruitment.* California Teachers Association & UCLA Center for the Transformation of Schools; Steiner, E. D., Woo, A., & Doan, S. (2024). *Larger pay increases and adequate benefits could improve teacher retention*. RAND. https://www.rand.org/pubs/research_reports/RRA1108-13.html

[65] Bruno, P. (2026). *District dollars 3: Recent patterns in California school district finances, trends, in teacher compensation, and within-district, between-school spending*. Getting Down to Facts III.

Figure 23. Estimated Teacher Turnover Rates, by Salary

Note: Teacher salaries are proxied by district-level starting salaries for teachers with a BA plus 30 units of coursework. Model controls for teacher credentials, teacher workload and assignment, principal experience and turnover, school resources, and teacher and school characteristics. All shown results are statistically significant.
Sources: Learning Policy Institute analysis of 2021–22 to 2024–25 data from the California Department of Education and the California Commission on Teacher Credentialing.

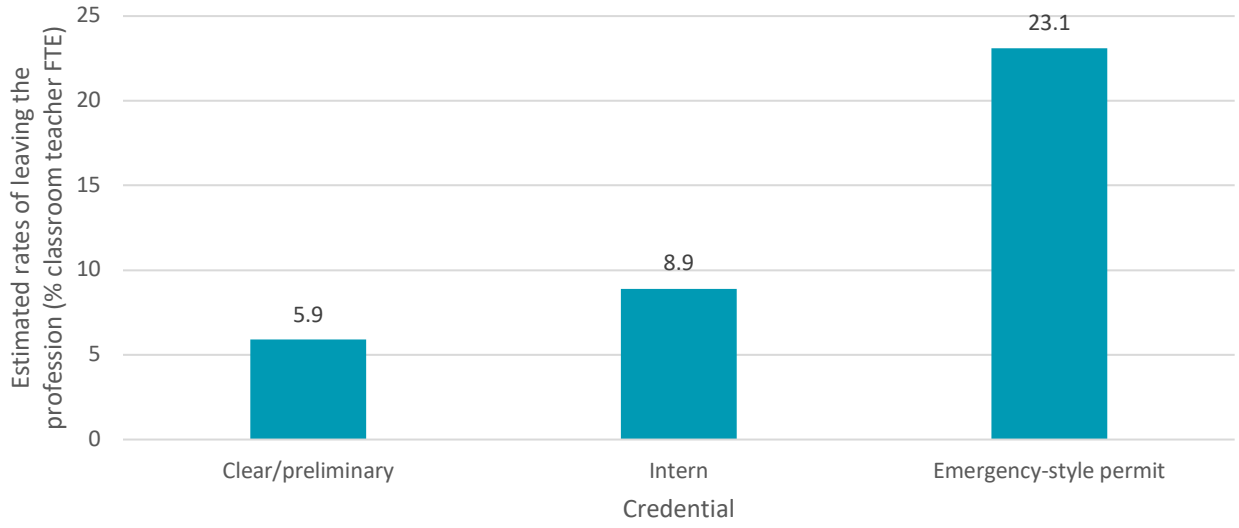
Credential. Prior research consistently shows that teacher preparation is positively associated with both teacher effectiveness and teacher retention.[66] As discussed earlier in this section, the total turnover rate of teachers with emergency-style permits was triple that of teachers with a clear or preliminary credential in 2023–24 (39.8% vs 13%, see Figure 15); interns also left their positions at much higher rates than fully-prepared teachers (23.8% vs 13%).

After accounting for teacher and school characteristics and other predictors of turnover, our model estimates an attrition rate of 5.9% for teachers with a clear or preliminary credential compared with 8.9% for interns and 23.1% for teachers holding an emergency-style permit (Figure 24). This means, compared to fully prepared teachers, interns are 50% more likely to leave, despite the fact that

[66] Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Vasquez Heilig, J. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives, 13*, 42. https://doi.org/10.14507/epaa.v13n42.2005; Hamlin, D., Ford, T., & Moershel, C. (2025). Do emergency certified teachers require differentiated administrative support? A comparison of teacher evaluation scores by certification status. *Leadership and Policy in Schools, 24*(3), 672–687. https://doi.org/10.1080/15700763.2024.2409318

their credential is linked to service in a particular district for the first two years, and teachers with an emergency-style permit are nearly 4 times more likely to leave the profession, all else being equal. These estimated attrition rates are consistent with the actual attrition rates we describe with Figure 15, indicating that the substantial differences in attrition rates we find can be attributed to teacher credential types, and are not explained by other factors included in our model.

Figure 24. Estimated Teacher Attrition Rates, by Credential



Note: Model controls for salary, teacher workload and assignment, principal experience and turnover, school resources, and teacher and school characteristics. All shown results are statistically distinguishable.
Sources: Learning Policy Institute analysis of 2021–22 to 2024–25 data from the California Department of Education and the California Commission on Teacher Credentialing.

Teachers with a clear or preliminary credential but holding a limited assignment permit, an indicator that they taught outside of their certified subject area, were also more likely to leave their jobs compared to teachers who did not teach out of field. Teachers with a limited assignment permit were 7 percentage points more likely to leave their jobs than teachers teaching in their certified subject area. Holding other factors constant, the estimated total turnover of teachers with a limited assignment permit is 22.7% compared to 15.6% of teachers without a limited assignment permit. In 2023–24, about 0.8% of teachers held a limited assignment permit. Most limited assignment permits were issued for single subject teachers (76.4%), primarily for those teaching science (21.8%), English

Language Arts (18.1%), and math (15.2%). Additionally, 16.1% of limited assignment permits were held by special education teachers, underscoring the staffing challenges in these high-need fields.

***Principal turnover and experience*.** Given principals' central role in hiring and managing teachers, shaping school climate, and leading instruction, research finds that stable and supportive school leadership is an important factor for teacher retention,[67] with teachers citing principal support as a key factor in their decisions to remain in their school and in the profession.[68]

Consistent with other studies, we found that principal turnover in the same school year was associated with a higher probability of teacher turnover. Overall, principal turnover in the same year is associated with a 3.6 percentage point increase in the probability of teacher turnover. Results were significant for within- and between- district movement as well as departure from the profession. Holding other teacher and school characteristics constant, the estimated turnover rate among teachers experiencing principal turnover that same year is 18.3%, compared to 14.7% among teachers in schools where their principal stayed (Figure 25). In separate models examining whether principal turnover in the prior year was associated with teacher turnover, we did not find a statistically significant relationship.

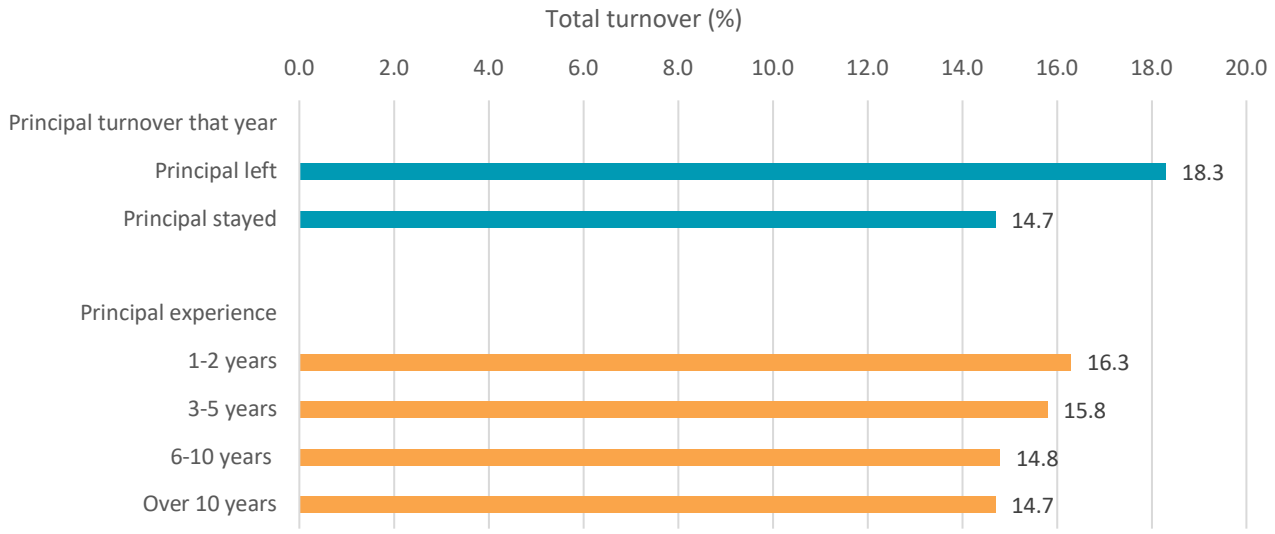
Regression results also suggest that teachers are less likely to leave their schools when they work with principals with more years of experience as a school leader. After accounting for teacher and school characteristics, the estimated teacher turnover rate is 16.3% among teachers with a principal

[67] Bartanen, B., Grissom, J. A., & Rogers, L. K. (2019). The impacts of principal turnover. *Educational Evaluation and Policy Analysis, 41*(3), 350-374, https://doi.org/10.3102/0162373719855044; DeMatthews, D. E., Knight, D. S., & Shin, J. (2022). The principal-teacher churn: Understanding the relationship between leadership turnover and teacher attrition. *Educational Administration Quarterly*, *58*(1), 76-109. https://doi.org/10.1177/0013161X211051974; Grissom, J. A. (2011). Can good principals keep teachers in disadvantaged schools? Linking principal effectiveness to teacher satisfaction and turnover in hard-to staff environments. *Teachers College Record, 113*(11), 2552–2585; Hughes, A. L., Matt, J. J., & O'Reilly, F. L. (2015). Principal support is imperative to the retention of teachers in hard to-staff schools*. Journal of Education and Training Studies, 3*(1), 129–134; Kraft, M. A., Marinell, W. H., & Yee, D. (2016). School organizational contexts, teacher turnover, and student achievement: Evidence from panel data. *American Educational Research Journal, 53*(5), 1411–49. https://doi.org/10.3102/0002831216667478

[68] 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; 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

with 1-2 years of experience compared to 14.7% among teachers with a principal with over 10 years of experience.

Figure 25. Estimated Teacher Turnover Rates, by Principal Turnover and Experience



Note: Model controls for salary, teacher credentials, teacher workload and assignment, school resources, and teacher and school characteristics. All shown results are statistically distinguishable.
Sources: Learning Policy Institute analysis of 2021–22 to 2024–25 data from the California Department of Education and the California Commission on Teacher Credentialing.

***Workload*.** Working conditions and teacher workload shape teachers' daily experiences and are directly related to teacher turnover, including school climate and safety, collegiality, accountability, and instructional supports.[69] Studies show that working conditions explain why teacher turnover rates are often higher in schools serving higher proportions of students from historically marginalized

[69] California Teachers Association (2025). *The state of California's public schools: A survey of TK-12 educators*. https://www.cta.org/document/the-state-of-ca-public-schools; Carver-Thomas, D. & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Learning Policy Institute; Gilmour, A. F., & Wehby, J. H. (2020). The association between teaching students with disabilities and teacher turnover. *Journal of Educational Psychology, 112*(5), 1042–1060. https://doi.org/10.1037/edu0000394; Kraft, M. A., Marinell, W. H., & Shen-Wei Yee, D. (2016). School organizational contexts, teacher turnover, and student achievement: Evidence from panel Data. *American Educational Research Journal*, *53*(5), 1411-1449. https://doi.org/10.3102/0002831216667478; Simon, N., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record 117*(3), 1–36. https://doi.org/10.1177/016146811511700305

backgrounds,[70] as these schools are often under-resourced with less supports and greater workload for teachers. Given the lack of statewide data around teacher working conditions and workload, we proxied teacher workload by the number of class sections taught by each teacher. We found that the number of sections taught by teachers was positively correlated with within-district teacher turnover. Each additional course section taught by a teacher was associated with a 0.8 percentage point increase in the probability of a teacher switching to another school in their district. In 2023–24, teachers taught an average of 4.8 course sections. This varied substantially by subject area, for example CTE teachers had 9 courses on average while self-contained classroom teachers had 1.8 courses on average. Holding other factors constant, within-district mover rates were 3.3% among teachers with just 1 course section, 6.2% among teachers with 4.8 sections, and 9.5% among teachers with 9 sections (90th percentile of teacher course load in California). Course load did not predict teacher turnover between districts or departure from the profession.[71]

What do we know about teacher working conditions?

While teacher-level working conditions could not be incorporated into our turnover analyses due to the lack of statewide data, other data sources provide insights into the experiences of California teachers. Many districts administer the California School Staff Survey (CSSS), which captures aspects of teachers' sense of collegiality, work-related stress, and job satisfaction. The 2023–24 CSSS includes responses from 42,800 teachers from 2,280 schools and 334 districts, representing about 12% of teachers, 21% of schools, and a third of districts in California. In addition,

[70] Geiger, T., & Pivovarova, M. (2018). The effects of working conditions on teacher retention. *Teachers and Teaching*, *24*(6), 604–625. https://doi.org/10.1080/13540602.2018.1457524; Loeb, S., Darling-Hammond, L., & Luczak, J. (2005). How teaching conditions predict teacher turnover in California schools. *Peabody Journal of Education, 80*(3), 44-70. https://doi.org/10.1207/s15327930pje8003_4; Peist, E., McMahon, S. D., Davis-Wright, J. O., & Keys, C. B. (2024). Understanding teacher-directed violence and related turnover through a school climate framework. *Psychology in the Schools*, *61*(1), 220-236. https://doi.org/10.1002/pits.23044; Pogodzinski, B., Youngs, P., & Frank, K. A. (2013). Collegial climate and novice teachers' intent to remain teaching. *American Journal of Education, 120*(1), 27-54. https://doi.org/10.1086/673123

[71] Since teacher courseload and number of students taught were positively correlated, we analyzed the association between student load and turnover in a separate analysis. Results did not indicate that student load was a strong predictor of teacher turnover.

the California Teachers Association (CTA) and the UCLA Center for the Transformation of Schools surveyed over 4,600 CTA members in 2022, and CTA fielded another survey to 2,015 of their members in December 2025. These surveys asked teachers about their working conditions, including their sense of safety and autonomy. Below, we summarize findings from our analysis of the CSSS and highlight relevant findings from the CTA surveys.[72] We calculated weighted averages from the CSSS survey such that the survey responses reflect a representative sample of California teachers. Full results of the CSSS analysis, along with details on data representativeness and our weighting process, are provided in Appendix A.

- **Collegiality.** CSSS data show that most teachers reported having positive relationships at their schools. Over 8 in 10 agreed that they have close professional relationships with their colleagues (86%) and that adults support and treat each other with respect (90%).
- **Workload and job satisfaction.** About half of teachers responding to the CSSS reported that they often feel worn out because of work (52.4%) and that they feel overwhelmed because their workload seemed endless (49%). Over a quarter of teachers found it difficult to separate their personal life from their work life (27%), suggesting that the heavy workload and emotional demands of teaching may take a toll on teachers' wellbeing. This share is higher among less-experienced teachers, with nearly one third of new teachers reporting that they found it difficult to maintain boundaries between their personal and work life. In addition, Black teachers and teachers serving in high-need schools with over 80% unduplicated pupil count (UPC) were most likely to report that they are often affected by the traumatic or stressful life experiences of their students. About 1 in 5 Black teachers and teachers in high-need schools indicated that they are often personally impacted by their students' life experiences (21% and 19% respectively) compared to 14% of teachers overall. Just under two thirds of teachers reported that their work makes them feel satisfied often or very often, with teachers in high-need schools less likely to report feeling satisfied compared to teachers in low-need schools with less than 20% UPC (65% vs 72%).

[72] Mathews, K. (2022). *Voices from the classroom: Developing a strategy for teacher retention and recruitment.* California Teachers Association & UCLA Center for the Transformation of Schools; California Teachers Association. (2026). *The State of California's Public Schools: A Survey of TK-12 Educators*.

- **District/school leadership.** The 2022 teacher survey administered by CTA and UCLA asked current teachers about their satisfaction with various aspects of teaching, including workload, salary, and work environment. Teachers reported the highest levels of dissatisfaction with district administrators and leadership, with 63% of teachers reporting low satisfaction. While teachers reported higher levels of satisfaction around school leadership, 40% still reported low satisfaction with their school principal and leadership; 21% reported medium satisfaction and 39% reported high satisfaction.
- **Teacher supports and professional development.** Over half of teachers (52%) responding to the 2022 CTA and UCLA survey reported low satisfaction with the amount of support and resources they receive to do their jobs. National data show that California teachers on average spent $570 of their own money on classroom supplies without being reimbursed,[73] much higher than the national average, adding to the already high financial strain that teachers face. A third of teachers (32%) also reported low satisfaction for professional development and growth opportunities, suggesting that many teachers may not be receiving the support they need to serve their students effectively and grow in their careers.
- **Safety and autonomy.** While most teachers responding to the CSSS reported feeling safe in their schools (88%), data from CTA surveys indicate that political factors may be undermining teachers' sense of safety, both physically and in what they feel comfortable teaching in the classroom. Two thirds of teachers noted that policies limiting their classroom autonomy, such as restrictions on teaching topics about race, justice, and equity, was a serious issue for them. More than half of teachers also reported that immigration raids were a serious problem in their school community. Immigration policies not only impact teachers' sense of safety, but can also create additional challenges and workload when students become less engaged. Research on California school districts that were subject to immigration raids in early 2025 found that daily student absences rose by 22%,[74] highlighting the additional challenges teachers may face when supporting students in such contexts.

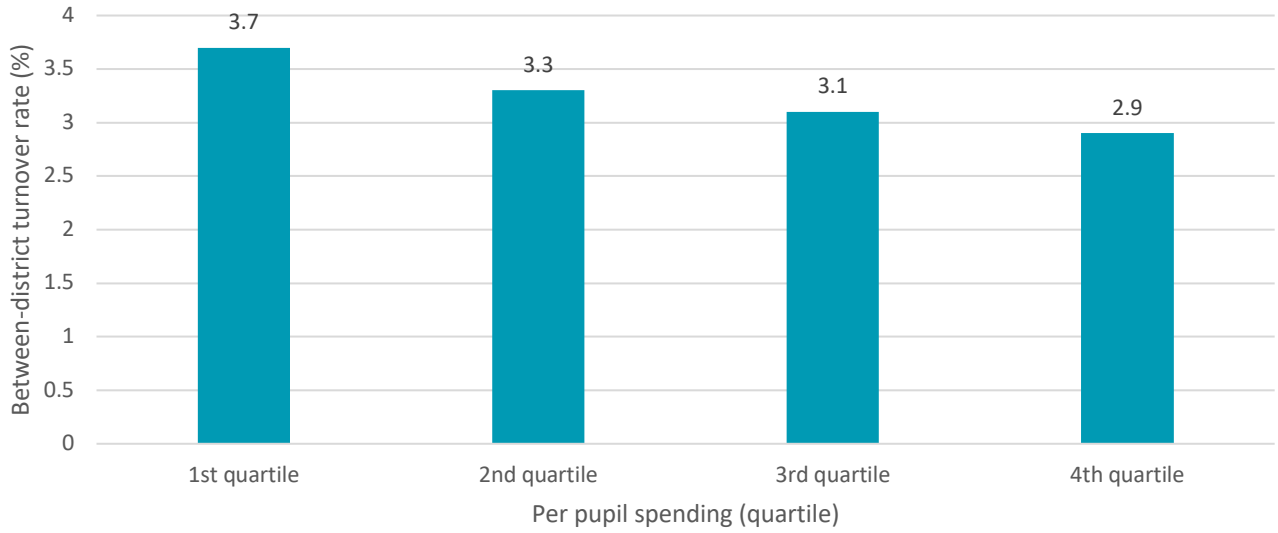
[73] Learning Policy Institute. (2024). *The state of the teacher workforce: A state-by-state analysis of the factors influencing teacher shortages, supply, demand, and equity* [Interactive map].
[74] Dee, T. S. (2025). Recent Immigration Raids Increased Student Absences. *Proceedings of the National Academy of Sciences*, *122*(45), e2510395122.

***School-level per pupil spending*.** School resources and spending are correlated with many factors that explain teacher turnover, including teacher compensation and teacher working conditions. There are large disparities in per pupil spending among schools in California. In 2023–24, schools in the lowest spending quartile in the state spent on average $11,700 per student each year, while the highest-spending quartile of schools spent $22,200 per student.[75]

Compared to the highest-spending schools, and controlling for other district, school and student characteristics including district salary levels, teachers in schools with lower per-pupil spending were more likely to move to a different district. Teaching in a school in the bottom quartile of per pupil spending was associated with a 0.8 percentage point increase in the probability of teacher turnover, compared to teaching in a school in the top quartile of per pupil spending. Holding other factors constant, between-district turnover is estimated to be 3.7% among teachers in the lowest-spending schools, compared to 2.9% of teachers in the highest-spending schools, a difference of over 21% (Figure 26). School spending was not significantly related to within-district movement or departure from the profession.

[75] Per pupil spending averages are based on a school-level analysis of ESSA Per-Pupil Expenditure Reporting, including district public schools, county office of education schools, and charter schools. Values are expected to be lower than district or state-level per-pupil spending which would include additional district and state-level overhead expenses.

Figure 26. Estimated Between-District Teacher Turnover Rate, by School Spending



Notes: Model controls for salary, teacher credentials, teacher workload and assignment, principal turnover, principal experience, and teacher and school characteristics. All shown results are statistically distinguishable. In 2023–24, schools in the 1st quartile spent $8,700-13,400 per pupil; schools in the 2nd quartile spent $13,400 to $15,500; schools in the 3rd quartile spent $15,500 to %18,200; and schools in the 4th quartile spent $18,200 to $34,300. Schools who spent below the 1st percentile and above the 99th percentile were excluded from this analysis. All shown results are statistically distinguishable.
Sources: Learning Policy Institute analysis of 2021–22 to 2024–25 data from the California Department of Education and the California Commission on Teacher Credentialing.

Together, these analyses show that teacher turnover in California remains persistent and inequitably concentrated in high-need schools, impacting students of color and students from historically marginalized backgrounds the most. The supply of well-prepared new teachers remains 25-40% below early-2000s levels and has not kept pace with the demand for teachers, which remains high despite declining student enrollment. Teacher attrition continues to drive most hiring needs, accounting for 86% of new teacher hires in 2023–24. High turnover rates among Black, Multiracial, and Native American teachers also undermine state efforts to diversify the teaching workforce, while the fast-growing share of late-career teachers foreshadows large increases in retirements in the years ahead and the need to replace the state's most experienced teachers.

Our findings also underscore an essential point about teacher shortages and turnover: It is not inevitable. Other states experience lower average turnover rates than California[76] and face fewer challenges filling teaching positions each year. Policies that support more competitive entry-level salaries, promote teacher preparation and credentialing, strengthen the preparation and retention of school leaders, and improve working conditions—among other strategies—have the potential to reduce teacher attrition and, in turn, ease persistent staffing pressures across the state.[77] The following section examines California's unique policy context and discusses the implications of our findings for recent and ongoing policy initiatives.

Barriers and Policies for Strengthening California's Teacher Workforce

California hosts the second largest public K-12 teacher workforce in the United States, with approximately 280,000 teachers providing classroom instruction to over 5.8 million public school students across a diverse range of geographic and institutional settings. While the state faces several challenges that shape its teacher labor market, it also has made substantial investments in strengthening the teacher pipeline and continues to have important opportunities to do so. This section summarizes the key contextual features that constrain teacher supply and retention in

[76] Learning Policy Institute. (2024). *The state of the teacher workforce: A state-by-state analysis of the factors influencing teacher shortages, supply, demand, and equity* [Interactive map]. https://learningpolicyinstitute.org/product/state-of-teacher-workforce-interactive

[77] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments*. Learning Policy Institute. https://doi.org/10.54300/137.196; DeMatthews, D. E., Knight, D. S., & Shin, J. (2022). The principal-teacher churn: Understanding the relationship between leadership turnover and teacher attrition. *Educational Administration Quarterly*, *58*(1), 76-109. https://doi.org/10.1177/0013161X211051974; Theobald, R., Xu, Z., Gilmour, A., Lachlan-Hache, L., Bettini, E., & Jones, N. (2026). The Impact of a $10,000 bonus on special education teacher shortages in Hawai'i. *Educational Evaluation and Policy Analysis*, *48*(1), 238-267. https://doi.org/10.3102/01623737241310905; Nguyen, T. D., & Kremer, K. P. (2022). Burned out and dissatisfied? The relationships between teacher dissatisfaction and burnout and their attrition behavior. *The Elementary School Journal*, *123*(2), 203–227. https://doi.org/10.1086/721772

California, reviews major recent state investments related to teacher preparation and staffing, and concludes by outlining policy implications informed by the evidence presented in this report.

Structural Barriers to Recruiting and Retaining Teachers in California

California faces a unique set of challenges in recruiting and retaining a well-prepared and diverse teacher workforce. This includes a high cost of living that limits teachers' ability to cover living expenses on their salaries, making the teaching profession less attractive and sustainable and driving teacher attrition. In addition, limited undergraduate pathways into teaching require prospective teachers to invest additional time and money to earn their credentials, creating another barrier to entry. Finally, multiple testing requirements for teacher licensure prevent thousands of candidates from earning their credentials each year, further constraining teacher supply.

***Salaries and High Cost of Living*.** Although teacher salaries in California are high in nominal terms relative to those in other states, they are not competitive with other occupations, and the high cost of living makes it difficult for California teachers to live near where they work and survive economically. California had the highest average starting teacher salary of any state in 2023–24, at $58,409, as well as highest average top salary, at $115,531.[78] However, California also has the highest cost of living of any state in 2024, which means the purchasing power of a teacher's salary does not go nearly as far in California, including for big-ticket items like housing. Adjusted for regional cost of living, California ranks 9th in terms of starting teacher salary and in top salary (out of 48 states).[79] About one-third of California teachers carry student loan debt, which further reduces their actual take-home dollars.[80] In a survey conducted by the California Teachers Association in December 2025, over half of the teachers

[78] National Education Association. (2025). *NEA 2023-2024 teacher salary benchmark report.* https://www.nea.org/sites/default/files/2025-04/2023-24-teacher-salary-benchmark-report.pdf

[79] Average top salary information is only available for 47 states plus the District of Columbia. Average starting salary and average top salary were adjusted using the state-level regional price parities released by the Bureau of Economic Analysis. See U.S. Bureau of Economic Analysis. (2026). *SARPP Regional price parities by state*. Retrieved February 19, 2026, from https://www.bea.gov/news/2026/real-personal-consumption-expenditures-state-and-real-personal-income-state-2024

[80] Learning Policy Institute. (2024). *The state of the teacher workforce: A state-by-state analysis of the factors influencing teacher shortages, supply, demand, and equity* [Interactive map]. https://learningpolicyinstitute.org/ product/state-of-teacher-workforce-interactive

surveyed (54%) reported concerns about affording their rent or mortgage, and 83% said they were worried about covering basic living expenses.[81]

Another important economic indicator is how much California teachers earn relative to other college-educated workers in the state. An analysis of wage competitiveness in California—based on weekly wages, which adjusts for any differences in the work year across occupations—finds that California teachers in 2024 earned about 80% of what other college-educated California workers do.[82]

Another challenge is that, although the Local Control Funding Formula (LCFF) has helped to bring greater equity into the school finance system, the LCFF does not include adjustments for differences in cost of living in different regions across California, even though costs such as housing and labor vary considerably across a state as large as California. One measure of these regional variations indicates that labor costs for California's local education agencies (LEAs) are more than 65% higher in the most expensive areas of the state compared with those costs in the least expensive areas.[83] Even within the same regional labor markets, there remain wide disparities in salaries across districts, including the approximately 13% of basic aid districts in the state—districts whose local property tax revenue is above the LCFF target and who retain their excess property tax revenue to spend on local priorities.[84] For example, within the Bay Area, starting salaries in 2024–25 ranged from $62,696 in Oakland, $69,525 in San Francisco, and $70,000 in San Jose, to $91,000 in Palo Alto, and $106,025 in Mountain View-Los Altos.[85] This in turn affects school districts' ability to attract and retain educators and contributes to inequitable access to qualified teachers.

---

[81] California Teachers Association. (2026). *The state of California's public schools: A survey of TK-12 educators.* https://www.cta.org/document/2026-state-of-ca-public-schools-report

[82] Allegretto, S. (2025). *The teacher pay penalty reached a record high in 2024*. Economic Policy Institute and Center for Economic Policy and Research. Retrieved March 11, 2026, from https://files.epi.org/uploads/The-teacher-pay-penalty.pdf

[83] Kaplan, J. (2025). *California's Local Control Funding Formula: Next steps toward equity*. Learning Policy Institute. https://doi.org/10.54300/820.131

[84] Petek, G. (2023). *The Local Control Funding Formula for School Districts and Charter Schools*. California Legislative Analyst's Office. https://lao.ca.gov/reports/2023/4661/LCFF-010923.pdf

[85] California Department of Education. *Salary and benefits schedule for the certificated bargaining unit (Form J-90).* Retrieved February 1, 2026, from https://www.cde.ca.gov/ds/fd/cs/index.asp

***Limited Undergraduate Pathways into Teaching*.** Another challenge to recruiting and preparing qualified teachers in California is the limited undergraduate pathways into teaching. In 2024–25, about 9% of teacher candidates were enrolled in undergraduate Integrated Teacher Education Programs (ITEP). While this share has been growing over time—an important bright spot that coincides with recent state investments to increase this pathway as described below—it is still small compared to other states.[86]

The paucity of undergraduate pathways is due in large part to California's long history of requiring teacher preparation at the graduate level and restrictions in federal financial aid provisions. Dating as far back as 1906, California was the first state to require a full year of post-baccalaureate study for secondary teaching credentials—the only state to do so for nearly 30 years.[87] SB 2042, omnibus legislation enacted in 1998, tried to ease educator preparation requirements by authorizing "integrated" teacher preparation programs (ITEP), which blend teacher preparation courses with subject matter preparation, enabling both to take place at the undergraduate level in four or five years.[88] That same year, federal legislation allowed students receiving Pell Grants (which historically are available only to qualifying undergraduate students) to extend their award for an additional year of post-baccalaureate study leading to a teaching credential—an exception essentially created to benefit California. However, to be eligible for this Pell Grant extension, a student must be pursuing their credential from an institution that does not offer a baccalaureate degree in the same field of education.[89]

---

[86] King, J. (2022). *Colleges of education: A national portrait*. American Associate of Colleges for Teacher Education. https://aacte.org/report/colleges-of-education-a-national-portrait-second-edition/

[87] In the early 1960s, in a Sputnik-era reform to increase U.S. competitiveness, the California Legislature passed the Fisher Act, which required a fifth year of post-BA study for full teacher certification across elementary and secondary and placed a heavy emphasis on subject matter preparation and majors, eliminating the undergraduate major in education. Ten years later, the Ryan Act in 1970 doubled down on this emphasis in subject matter preparation while allowing candidates to demonstrate subject matter expertise via an exam. While the Ryan Act enabled teachers to complete preparation with a four-year college degree, it also limited the number of education courses allowed in undergraduate studies, effectively pushing professional preparation to a fifth year. See Sandy, M. V. (2006). Timing Is everything: Building state policy on teacher credentialing in an era of multiple, competing, and rapid education reforms. *Issues in Teacher Education*, *15*(1), 7-19; Brown, E.G. (2011). *A history of policies and forces shaping California teacher credentialing*. California Commission on Teacher Credentialing.

[88] Cal. Educ. Code 44259.1. SB 2042 (1998).

[89] Higher Education Act, Title IV, Section 401 (d)(4).

In 2017, the California legislature finally removed the prohibition on undergraduate majors in education.[90] The federal Pell statute, however, disincentivizes institutions from offering undergraduate Education majors, especially if they have a teacher education program at the post-baccalaureate level. This has left the ITEP pathway (which often leads to majors in Liberal Studies or Child Development, not Education) as the most widely available undergraduate route to a teaching credential.

***Barriers to Licensure*.** California has historically had four separate tests that teacher candidates must pass in order to get a teaching license: a test of basic skills (California Basic Educational Skills Test (CBEST)), tests of subject matter expertise (California Subject Examinations for Teachers (CSET)), tests of competence in reading instruction (Reading Instruction Competence Assessment (RICA)), and a teaching performance assessment that requires candidates to demonstrate their planning and teaching skills through classroom videos, commentaries, and evidence of student learning drawn from actual teaching experiences. While the state has made progress in reducing testing barriers by creating alternative means of demonstrating competencies and reducing duplication in the assessments, California is still losing thousands of teacher candidates as a result of testing barriers each year.[91] AB 130, enacted in 2021, permitted candidates to demonstrate basic skills and subject matter expertise through coursework and majors, in addition to the several alternative tests that already existed for the CBEST.[92] In addition, recent legislation integrated an assessment of readiness to teach reading into the overall teaching performance assessment for multiple subject and education specialist candidates, strengthening and streamlining the assessments.[93]

---

[90] Fensterwald, J. (2017, August 10). *Undergraduate education major, banned for 56 years, returns*. EdSource. https://edsource.org/2017/undergraduate-education-major-banned-for-56-years-returns/585830#0

[91] California Commission on Teacher Credentialing (2025). *Annual report on passing rates of commission-approved examinations from 2019-20 to 2023-24*. https://meetings.ctc.ca.gov/Details/220

[92] California Commission on Teacher Credentialing (2023, March 30). *California approves new options for incoming teachers to demonstrate professional competency*. https://www.ctc.ca.gov/commission/newsroom/press-releases/2021-to-2022/2021-02; see also SB 153 (2024), which allows a candidate's bachelor's degree to meet the basic skills requirement for most credentials.

[93] California Commission on Teacher Credentialing (2025, July 1). *Program sponsor alert.* https://www.ctc.ca.gov/docs/default-source/educator-prep/ps-alerts/2025/psa-25-07.pdf?sfvrsn=b6543eb1_3

Candidates are increasingly using these alternative methods of demonstrating competencies. Data from the California Commission on Teacher Credentialing (CTC) show that between 2021–22 and 2023–24, the number of candidates meeting the subject matter requirement by examination declined from 7,178 to 5,441, a reduction of 24% that occurred during a period when total credentials issued increased. Similarly, during this same period, the number of candidates meeting the basic skills requirement through an option other than CBEST—most likely coursework, according to CTC—increased by over 200% (from 1,932 to 6,108).[94] Nonetheless, a 2025 CTC report on examination pass rates shows thousands of candidates who are continuing to fail the CSET subject matter exams, suggesting that teacher tests continue to pose a significant barrier to licensure and that additional work is needed to fully implement and make the coursework alternatives more widely known (Table 4). Cumulative pass rates are particularly low in persistent shortage areas such as mathematics (69%), foundational science (58%), physics (64%), as well as in multiple subjects (71%). Pass rates are also lower for teachers of color.

[94] California Commission on Teacher Credentialing (2025). *Annual report on passing rates of commission-approved examinations from 2019–20 to 2023–24*. https://meetings.ctc.ca.gov/Details/220

Table 4. Annual (2023–24) and Cumulative (Life of Examination) Passing Rates of the CSET Exam, by Race/Ethnicity and Subject Area

CSET Exam	Breakdown	Annual N Attempted	Annual % Passed	Cumulative N Attempted	Cumulative % Passed
Race/Ethnicity	Overall	11,367	59.2	419,468	80.8
	Black	659	37.3	20,088	65.2
	Asian	1,751	67.2	52,785	80.7
	Hispanic or Latine	4,167	49.3	100,439	75.9
	Native American	93	49.5	2,986	76.0
	White	4,697	68.1	243,170	84.2
Subject Areas	Overall	7843	60.2	39,020	73.9
	Art	278	86.0	419	86.4
	Dance	60	86.7	122	90.2
	English	823	64.3	12,678	83.3
	Foundational Math	440	33.2	5,079	52.8
	Foundational Science	332	39.4	2,273	57.9
	Health Science	243	51.9	4,678	76.1
	Home Economics	44	52.3	694	71.8
	Industrial Technology Education	42	83.3	1,146	85.6
	Math	330	53.6	3,076	69.2
	Multiple Subjects	5,554	64.0	11,888	70.7
	Music	68	85.3	102	85.3
	Physical Education	777	43.6	12,158	73.0
	Science: Life Science	364	53.0	4,026	78.0
	Science: Chemistry	195	53.3	1,696	76.9
	Science: Earth and Space Sciences	109	32.1	786	57.9
	Science: Physics	115	36.5	957	64.1
	Social Science	958	60.8	34,071	81.5
	Theatre	63	90.5	152	92.1

Sources: California Commission on Teacher Credentialing. (2025). *Annual Report on Passing Rates of Commission-Approved Examinations from 2019–20 to 2023–2024.* California Commission on Teacher Credentialing, Division of Research, Evaluation and Assessment.

Teachers moving to California from outside of the state make up roughly one-fifth of the annual supply of new fully credentialed teachers,[95] yet these teachers face additional barriers to licensure. California's licensure reciprocity policies are challenging for out-of-state candidates and their potential California employers to navigate. Additionally, out-of-state teachers need to earn an authorization to teach English learners if they do not yet have one by taking the California Teachers of English Learners (CTEL) examination or completing additional coursework.[96] The pass rate for CTEL between 2019–20 and 2023–24 was only 68%.[97]

In addition, licensure categories have not yet caught up with the modern economy and schooling needs. Training for career technical education (CTE) fields like biophysics, solar technologies, and aerospace engineering, for example, no longer fit the old model of CTE licensing used to enable a skilled craftsperson, plumber, or carpenter to transfer into a school setting with 3,000 hours of industry experience and a short course of study. These interdisciplinary fields requiring university-based expertise are in fields for which credential areas with clear subject matter requirements have not yet been designed, and thus do not have straightforward content-based credential pathways. Candidates who hold the expertise for these fields also often do not have 3,000 hours of industry experience and if they were to secure that experience, they would have to take a huge pay cut to enter education as a teacher. The path to solving these problems will likely require new approaches like performance-based micro-credentialing.

Recent Policy Investments to Recruit, Prepare, and Retain Teachers

While broad-based investments like salary increases and expanded per-pupil expenditures are impactful and should continue, this report's findings on the current state of our workforce points to particular promise in initiatives that target stronger preparation, development, and retention of early- and mid-career teachers in high-need schools. These equity-oriented reforms address the core drivers

[95] California Commission on Teacher Credentialing. (2024). *Teacher supply: Credentials* [Data dashboard]. Retrieved July 20, 2025, from https://www.ctc.ca.gov/commission/reports/data/edu-supl-creds

[96] California Committee on Teacher Credentialing (2025, October 8). *Teaching in California - Prepared in another state*. https://www.ctc.ca.gov/credentials/roadmap-to-teaching/teaching-in-california---prepared-in-another-state

[97] California Commission on Teacher Credentialing (2025). *Annual report on passing rates of commission-approved examinations from 2019-20 to 2023-24.* https://meetings.ctc.ca.gov/Details/220

of California's most persistent challenges—breaking the cycle by ensuring teachers are better prepared for the demands they face and supported to stay in the profession.

California has launched a number of initiatives in the past decade to address its persistent teacher shortages and build a more strong, stable, and diverse teacher workforce. Since 2016, the state has invested more than $2.3 billion in targeted funds to support teacher recruitment, preparation, and retention, with the most significant investments beginning in 2021 (see Table C1, Appendix C). In this section, we provide an overview of several of these investments, describing the initiative and what is known about its early impacts: the Teacher Residency Grant Program, Golden State Teacher Grant Program, Classified School Employee Teacher Credentialing Program, Integrated Teacher Preparation Program, and National Board Certification Incentive Program.

By design, most of these programs help to address the high costs of teacher preparation, which are a major barrier in expanding the teacher workforce. Given large increases in higher education costs over time and California's already high cost of living, many teacher candidates struggle to afford the costs of teacher preparation.[98] The annual cost of attendance for average teacher candidates in California ranges from approximately $32,000 in the California State University system to $54,000 in the University of California system, with widely varying costs at private and independent institutions of higher education, up to $86,000.[99] As a result, about one-third of California teachers carry student loan debt.[100] The Teacher Residency Grant Program, Golden State Teacher Grant Program, and Classified School Employee Teacher Credentialing Program all provide funding directly to candidates to cover tuition costs and/or living expenses, in exchange for a commitment to teach for a certain period of time. The Integrated Teacher Preparation Program expands access to undergraduate teacher education programs, which enable candidates to complete teacher preparation through a more

[98] Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program*. Learning Policy Institute. https://doi.org/10.54300/518.478

[99] Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program*. Learning Policy Institute. https://doi.org/10.54300/518.478

[100] Learning Policy Institute. (2024). *The state of the teacher workforce: A state-by-state analysis of the factors influencing teacher shortages, supply, demand, and equity* [Interactive map]. https://learningpolicyinstitute.org/product/state-of-teacher-workforce-interactive

streamlined and low-cost route. A new program, the Paid Student Teaching Program, was funded in the 2025 budget at $300 million, with implementation underway to provide student teachers with a $10,000 stipend beginning in July 2026.[101]

In addition to these programs, several other major investments have supported teacher recruitment, preparation, development, and retention, including two block grants which could be used for these purposes, among others, as well as several other more targeted investments aimed at addressing teacher shortages (see Table C1, Appendix C). Additionally, given the critical role that principals play in supporting and retaining teachers in their schools,[102] California has also made several small investments to strengthen the school leader workforce, including providing professional learning and support opportunities through the 21st Century California School Leadership Academy ($13.8 million) and the Diverse Education Leaders Pipeline Initiative ($10 million). These programs are taken up in an associated report for the Getting Down to Facts Project, *Principal Trends in Supply, Distribution, Preparation, and Retention*.[103]

Teacher Residency Grant Program

The largest investment that California has made to expand access to high-quality teacher preparation and increase teacher retention has been the Teacher Residency Grant Program (TRGP). Administered by the Commission on Teacher Credentialing (CTC), the TRGP provides competitive grants to local education agencies (LEAs)—that is, districts, county offices of education, and charter schools— to build teacher residency programs in partnership with teacher preparation programs.[104] In California, residencies are typically a one-year, post-baccalaureate route to a teaching credential,

[101] California Commission on Teacher Credentialing. (2026). *Student Teacher Stipend Program.* https://www.ctc.ca.gov/educator-prep/grant-funded-programs/student-teacher-stipend-program

[102] Campoli, A. K., & Darling-Hammond, L. With Podolsky, A., & Levin, S. (2022). *Principal learning opportunities and school outcomes: Evidence from California*. Learning Policy Institute. https://doi.org/10.54300/438.376; Learning Policy Institute. (2017). *The Role of Principals in Addressing Teacher Shortages* [research brief]. Learning Policy Institute.

[103] Darling-Hammond, L., Arshan, N., & Wei, W. (2026). *Principal trends in supply, distribution, preparation, and retention.* Getting Down to Facts III.

[104] Cal. Educ. Code Sec. 44415 – 44415.8.

providing on average the shortest post-baccalaureate pathway to a credential while also offering more intensive clinical experiences.[105]

The program received more than $740 million in funding between 2018 and 2025, the vast majority—$690 million—of which was allocated between 2021 and 2025. Residency programs may receive up to $40,000 in grant funding per resident and have flexibility on how they use the funds. For example, grants can support mentor teacher stipends, residency program staff at the LEA or teacher preparation program, induction, coursework, and stipends for residents. Starting in 2023, programs were required to provide residents with a living stipend of at least $20,000.[106] Over time, the program has funded capacity building, implementation, and expansion grants for residency programs, and, in 2022, funding was made available to launch school counselor residency programs. The most recently available TRGP grant funding can be awarded through 2030, and programs have five years to spend the funding.[107] The state has also funded a Statewide Residency Technical Assistance Center to support LEAs in launching, strengthening, and scaling residencies, an effort that has been led by the Santa Clara County Office of Education since 2023.[108]

Although residency programs have taken hold in districts across the state, not all residents are funded through the TRGP, with programs also drawing on federal Teacher Quality Partnership grants, Hawkins Centers of Excellence funds, and district funds.[109] Districts receiving TRGP funds must contribute matching funds or in-kind support, but some have gone beyond these requirements and also allocated Local Control Funding Formula dollars to expand what they see as a highly successful strategy for preparing and recruiting teachers.[110]

---

[105] Patrick, S. K., Yun, C., Fitz, J., & Tan, T. (in press). *Teacher residencies in California: Enrollment, preparation, and outcomes of residency-trained teachers*. Learning Policy Institute.

[106] TRGP grants initially provided $20,000 per resident. 2021 legislation increased the amount to $25,000 and 2023 legislation increased it to $40,000, with the requirement that residents be paid a stipend of at least $20,000. California Commission on Teacher Credentialing. (2024, April). *Agenda item 3E: Update on the residency grant programs.*

[107] Cal. Educ. Code Sec. 44415.8

[108] Statewide Residency Technical Assistance Center. (n.d.). https://srtac.sccoe.org/

[109] Fitz, J., & Yun, C. (2024). *Successful teacher residencies: What matters and what works [Brief]*. Learning Policy Institute. https://learningpolicyinstitute.org/product/successful-teacher-residencies-brief

[110] State Residency Technical Assistance Center (2025, February 14). *Leveraging LCAP funding: Insights and best practices for sustainable residency programs*. Association of California School Administrators, Resource Hub. Retrieved January 19,

Evaluations of the TRGP as well as analyses of teacher residency completer data demonstrate that the TRGP, as well as other funding sources, have been supporting a diverse and increasingly large pool of candidates to enroll in and complete residencies, teach in the high-need subjects and schools where they are needed, and stay in teaching over time. As of July 2024, a formative evaluation of the TRGP showed that California residencies graduated nearly 1,400 TRGP-funded residents, although these data do not yet include 2023–24 graduates.[111] In 2023–24, there were another 1,150 TRGP-funded residents enrolled, a 170% increase over the prior year and evidence that the state's much larger TRGP investments in 2021 supported a sharp uptick in the number of residents participating in the program.[112]

Evaluation data on the much larger residency cohorts funded after 2021 are not yet available. However, a 2023 report to the legislature on the initial 2018 TRGP investment provides insight on the first 38 TRGP-funded residency partnerships, including the diversity of residents, their subject matter areas, and their rates of entry and longevity in teaching.[113] Among the initial four resident cohorts for which data were available (2019–20 through 2022–23), 1,089 candidates completed the residency program and earned their preliminary credential in special education, STEM, or bilingual education.[114] Among the first 3 cohorts—those cohorts for whom employment data are available—83% were hired by the LEA in which they completed their residency, and 98% were hired by a California LEA. Retention is also high for TRGP completers, with 93% of Cohort 1 residents still teaching in California public schools 3 years later and 85% of Cohort 2 residents still teaching 2 years later. By comparison, just 75%

2026, from https://content.acsa.org/leveraging-lcap-funding-insights-and-best-practices-for-sustainable-residency-programs/

[111] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments.* Learning Policy Institute. https://doi.org/10.54300/137.196; WestEd. (n.d.) *Formative evaluation of the California Teacher Residency Grant Program*. Retrieved January 19, 2026, from https://www.wested.org/support/formative-evaluation-of-the-california-teacher-residency-grant-program/

[112] WestEd. (2022). *California Teacher Residency Grant Program Dashboard*. Retrieved January 19, 2026, from https://public.tableau.com/app/profile/westedimprovementscience/viz/CaliforniaTeacherResidencyGrantProgramDashboard/TeacherResidencyPipeline

[113] Brannegan, A., & Hirschboeck, K. (2024). *Scaling California's Teacher Residency Grant Program.* WestEd; California Commission on Teacher Credentialing. (2023). *Report to the Legislature on the 2018 Teacher Residency Grant Program*. https://docs.ctc.ca.gov/Document/Download/30012

[114] The 2018 teacher residency program was focused on these high-need areas.

of interns and 58% of teachers on emergency-style permits remained in California classrooms for at least 3 years.[115] These improvements in retention also suggest that residency programs may generate cost savings by reducing the need for repeated recruitment, hiring, and training of replacement teachers, thereby improving the overall cost-effectiveness of these investments.[116]

Other data also indicate the growing reach and impact of residency programs in California since the TRGP was launched, as described earlier in this report (see *Teacher Supply: Entry into the Profession*). The number of program-reported residency candidates more than quadrupled between 2018–19 and 2024–25, with approximately 7,500 new residency candidates reported statewide during this time. As of 2024–25, about 10% of new teaching candidates were enrolled in residencies. Residencies enrolled a very racially and ethnically diverse pool of candidates, with more than 70% of all residency candidates identified as people of color.

The vast majority of residency completers rated their programs highly and reported positive perceptions of their preparedness to teach. Statewide, 90% of residency completers rated their program as effective or very effective for developing their teaching skills and tools, with residents more likely to rate their programs as very effective compared to completers of other pathways.[117]

Golden State Teacher Grant Program

Another major investment California has made to help address persistent teacher shortages and increase access to teacher preparation has been the Golden State Teacher Grant (GSTG) Program, a financial aid program for educators administered by the California Student Aid Commission (CSAC). The program first launched in 2020–21 at a small scale, focused just on special education teachers. Since then, the state has invested more than $570 million to provide upfront grants to teacher candidates, and, later, Pupil Personnel Services (PPS) candidates (i.e., those training to be school

[115] 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, & if they stay.* California Teacher Education and Improvement Network, University of California. Retrieved October 27, 2024, from https://cterin.ucop.edu/resources/cterin-briefs/policy-briefs/policy-brief-vol1no1-diversifying-ca-teaching-force.html

[116] Barnes, P. D. (2007). *The cost of teacher turnover in five school districts: A pilot study*. The National Commission on Teaching and America's Future.

[117] Patrick, S. K., Yun, C., Fitz, J., & Tan, T. (in press). *Teacher residencies in California: Enrollment, preparation, and outcomes of residency-trained teachers*. Learning Policy Institute.

counselors, social workers, and psychologists) to offset the cost of educator preparation. Grant recipients commit to serve in a California priority school (schools in which at least 55% of enrolled students are eligible for free or reduced-price meals, are English learners, or are living in foster care) or a State Preschool Program.[118] By design, this requirement helps recruit and retain qualified educators in the schools with students who need them the most.

GSTG parameters have evolved over time. The maximum grant amount started at $20,000 in 2020 but was reduced to $10,000 in July 2024 as funding for the grant ran short due to the popularity of the program. At the same time, the service commitment was reduced from 4 years to 2 years, and the program began prioritizing applicants with greater financial need and excluded interns from eligibility.

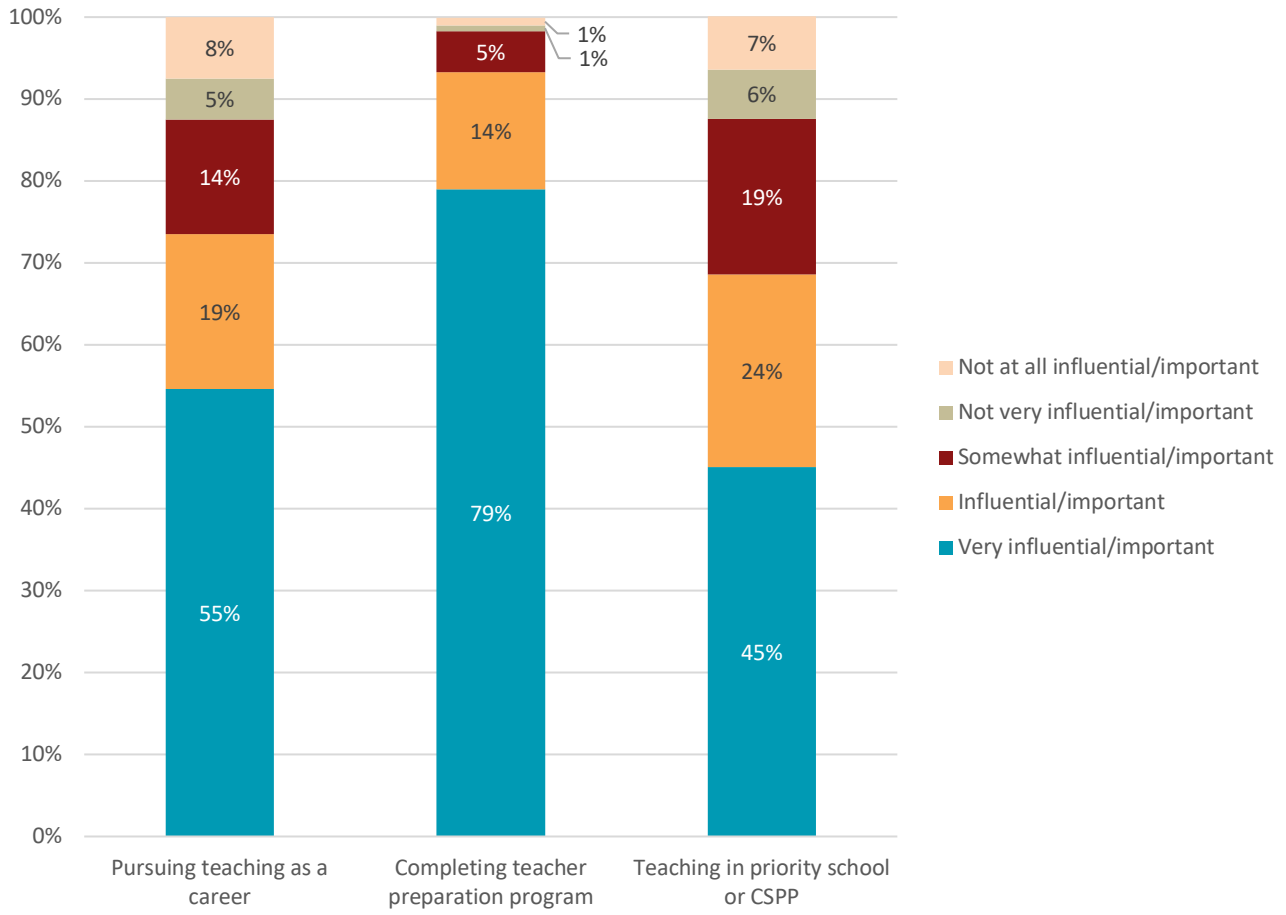
A 2025 study of the program over its first five years (2020–21 to 2024–25) found that the program has had broad participation and reach.[119] Since its launch, the GSTG has supported more than 28,000 aspiring educators, including 22,851 teacher candidates and 5,812 PPS candidates. In 2023–24, nearly half (45%) of California's new teacher candidates were GSTG recipients.

The study also found that the GSTG program encouraged thousands of teacher candidates to pursue teaching and to work in high-need schools and fields, based on data from a survey of all GSTG recipients conducted by CSAC in April 2025. As shown in Figure 27, nearly three quarters of survey respondents said the GSTG was influential in their decision to pursue teaching, and two thirds said the grant was influential in their decision to teach in a high-need school. These perceived impacts were strongest among teacher candidates of color. As one candidate shared, "I would not be able to go to school, become a teacher, and afford basic living costs without this grant. With this grant, I am now in year 3 of teaching. … I am about to clear my credential, and I have earned a master's degree." Nearly 9 in 10 of surveyed GSTG recipients teach in priority schools, and most plan to stay beyond their service commitment. Most recipients reported teaching in hard-to-staff fields, including special education, mathematics, and science.

[118] California Education Code § 69617 (2025).

[119] Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program*. Learning Policy Institute. https://doi.org/10.54300/518.478

Figure 27. Recipients' Perceptions of Golden State Teacher Grant Impacts on Their Decisions to Pursue Teaching, Complete Preparation, and Teach in a Priority School



Notes: Priority schools are schools with at least 55% of students included in the unduplicated student count (UPC).
Source: Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). *Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program.* Learning Policy Institute. https://doi.org/10.54300/518.478

The same study also found that the GSTG program expanded access to preparation for candidates with high financial need as well as candidates of color. Nearly 4 in every 5 GSTG teacher candidate recipients were income-eligible for the federal Pell Grant. Survey respondents report using GSTG funds to cover living expenses and reduce their reliance on loans or the need to work a second job, with 42% indicating they would not have been able to finish their teacher preparation without it. More than 71% of the survey respondents identified as people of color, compared to 57% of new teacher candidates statewide.

The GSTG has been funded with one-time funding, most recently receiving $50 million in the 2025–26 budget. Based on the popularity of the program—there were nearly 7,500 GSTG teacher and PPS recipients in 2024–25—these funds may be insufficient to meet current and future demands. The proposed 2026-27 budget includes a reappropriation of $14.4 million but does not include new funds for the program.[120]

California Classified School Employee Teacher Credentialing Program

Another longstanding and successful program to expand and diversify the teacher pipeline is California's Classified School Employee Teacher Credentialing Program.[121] Classified staff are school or district employees who are not in certificated positions but may have instructional experience, such as paraprofessionals. The program was first funded in 2016 ($20 million) and 2017 ($25 million), and then substantially expanded with a $125 million investment of one-time funds in the 2021–22 state budget. The program provides grants to LEAs to recruit and support classified school employees in earning their California teaching credential, providing $4,800 per year for up to five years per participant ($24,000 total).[122] Funds can be used to support tuition, fees, books, and related services (including living stipends) for participating classified staff. The program targets shortage areas and focuses on classified staff who have already earned an associate or higher-level degree. Participating classified staff must commit to one year of teaching in the district for each year they receive assistance under the program.

The initial 2016 and 2017 investments funded 2,250 participant slots, with just over half (1,145) earning their teaching credential and teaching in California public schools by the end of the grant period.[123] Nearly 70% of these completers earned an education specialist credential.

[120] State of California. (2026). *Governor's budget summary 2026–27.* https://ebudget.ca.gov/2026-27/pdf/BudgetSummary/FullBudgetSummary.pdf

[121] Cal. Educ. Code Sec. 44391–44393.

[122] This award amount was increased from $4,000 per year when the program was first funded in 2016 and 2017.

[123] California Commission on Teacher Credentialing (2021). *Report to the Legislature on the Classified School Employee Teacher Credentialing Program*; California Commission on Teacher Credentialing (2022). *Report to the Legislature on the Classified School Employee Teacher Credentialing Program*.

Since the program was re-funded in 2021, it has provided 121 grants to LEAs, funding more than 6,700 slots for classified staff, the vast majority of whom are paraprofessionals.[124] In 2024–25, about two-thirds of participants were enrolled in a credential program, while the rest were in earlier stages of their education (e.g., earning their BA/BS or enrolled in a California Community College). Over the first three years of the program (2022–23 through 2024–25), more than 800 candidates earned their teaching credential, 40% of whom earned a special education credential and 65% of whom identified as a person of color.[125] In its 2025 Annual Report to the Legislature, the CTC notes that "The program demonstrated particular success in providing comprehensive support systems, with many LEAs implementing cohort models, individualized advising, and targeted professional development." However, attrition is high for the program, with more than 1,000 participants exiting early. No additional funding has been provided for the program since 2021, and existing funding has now been fully committed.

Integrated Undergraduate Teacher Preparation Program

The ITEP grant program—which was designed to expand access to the ITEP undergraduate pathway to a teaching credential—was first funded at $10 million in 2016. Administered by the CTC, grants of up to $250,000 were awarded to 33 Institutions of Higher Education (IHEs)—who partnered with 54 community colleges—to launch new undergraduate teacher preparation programs, with priority given to IHEs that partnered with a community college and developed undergraduate programs for shortage areas.

In 2022, the program received additional funding of $20 million, with grants provided to support both planning (with grants up to $250,000) and implementation, or expansion (with grants up to $500,000).[126] The CTC awarded 26 planning grants and 18 implementation or expansion grants to

[124] California Commission on Teacher Credentialing. (2026, March 10). *2021 California Classified School Employee Credentialing Program: Grants Awards Announcement*. https://www.ctc.ca.gov/educator-prep/grant-funded-programs/Classified-Sch-Empl-Teacher-Cred-Prog/2021-california-classified-school-employee-teacher-credentialing-program

[125] California Commission on Teacher Credentialing (2025). *Report to the Legislature on the Classified School Employee Teacher Credentialing Program*.

[126] Cal. Educ. Code Sec. 44259.1.

IHEs, 70% of whom developed partnerships with California community colleges focused on transfer pipelines, dual enrollment, and recruitment of teacher candidates. Grantees focused on meeting shortage areas, with PK-3 Early Childhood Education (ECE) Specialist Instruction Credential the most common program focus area for planning grants (29%) and Education Specialist the most common program focus area (33%) for implementation or expansion grants.

A 2025 CTC report notes the promise of the ITEP program in expanding undergraduate teacher preparation:

> A major success among [IHE grantees] has been the comprehensive redesign of Liberal Studies and related teacher preparation programs. Campuses aligned coursework with current Teaching Performance Expectations (TPEs) and strategically reduced unit counts to accelerate time to degree. Several programs now allow students to complete a bachelor's degree and credential in four years, increasing accessibility and reducing costs.[127]

The report indicates that in 2024–25, there were 1,218 candidates enrolled in grant-funded ITEP programs and 115 completers who earned their undergraduate degree and preliminary credential. More than 75% of candidates and completers were people of color. Completers earned credentials in high-demand shortage fields, with 30% earning a Multiple Subject credential with Bilingual Authorization, 28% an Education Specialist credential, and 17% a Math credential. Statewide analyses in this report also indicate that candidates completing ITEP programs represent a growing share of California-prepared candidates, making up 9% of new teaching candidates in 2024–25, up from 6% in 2018–19.

National Board Certification Incentive Program

While most of the new workforce investments over the past decade have focused on recruiting and preparing teachers new to the workforce, the National Board Certification Incentive Program targets existing teachers, recognizing and rewarding demonstrated expertise and incentivizing accomplished teachers to serve in the highest-need schools. The prestigious National Board

[127] California Commission on Teacher Credentialing (2025*). Report to the Legislature on the Integrated Undergraduate Teacher Preparation Grants Program.* https://docs.ctc.ca.gov/Document/Download/30730

Certification process allows experienced teachers to demonstrate teaching expertise through a rigorous, standards-based performance assessment requiring submission of a teaching portfolio, videos of teaching, reflections on teaching, lesson plans, and evidence of student learning. Certification is offered in 25 certificate areas. The certification process can take between one and five years, requiring 200-400 hours of effort from the candidate.[128]

Research on National Board Certification (NBC) indicates that National Board Certified Teachers (NBCTs) 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, and that other teachers benefit from having NBCTs in the school.[129] Effects are greatest in math.[130] Other research finds that supporting cohorts of teachers in low-performing schools to pursue NBC can be an effective school improvement strategy.[131] Studies have also found that NBCTs appear to offer especially substantial educational benefits to students from low-income families,[132] and that National Board financial incentives attract and retain NBCTs in high-poverty schools.[133]

---

[128] Washington Office of Superintendent of Public Instruction. (n.d.) *National Board candidates*. Retrieved February 28, 2026, from https://ospi.k12.wa.us/certification/national-board-certified-teachers/national-board-candidates.

[129] Cantrell, S., Fullerton, J., Kane, T. J., & Staiger, D. O. (2008). *National Board Certification and teacher effectiveness: Evidence from a random assignment experiment* [No. w14608]. National Bureau of Economic Research; Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review, 26*, 673–682; Goldhaber, D., & Anthony, E. (2007). Can teacher quality be effectively assessed? National Board Certification as a signal of effective teaching. *The Review of Economics and Statistics, 89(1)*, 134–150; Harris, D. N., & Sass, T. R. (2009). The effects of NBPTS-certified teachers on student achievement. *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management, 28*(1), 55–80.

[130] Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review, 26*, 673–682; Goldhaber, D., & Anthony, E. (2007). Can teacher quality be effectively assessed? National Board Certification as a signal of effective teaching. *The Review of Economics and Statistics, 89(1)*, 134–150.

[131] Jaquith, A., Snyder, J., & Bristol, T. (2016). *Turning schools around: The National Board certification process as a school improvement strategy*. Stanford Center for Opportunity Policy in Education.

[132] Goldhaber, D., & Anthony, E. (2007). Can teacher quality be effectively assessed? National board certification as a signal of effective teaching. *The Review of Economics and Statistics, 89*(1), 134–150.

[133] Cowan, J. & Goldhaber, D. (2018). Do bonuses affect teacher staffing and student achievement in high poverty schools? Evidence from an incentive for National Board Certified teachers in Washington state. *Economics of Education Review, 65*, 138–152. https://doi.org/10.1016/j.econedurev.2018.06.010

California has joined more than half of states in providing financial incentives to teachers who earn National Board Certification.[134] The state's National Board Certification Incentive Program, currently administered by the California Department of Education, provides two types of grants.[135] First, teachers who have earned NBC and who work at a priority school (a school serving 55% or more students who are low-income, English learners, or foster youth) are eligible to receive an award of $5,000 per year for five years ($25,000 total). Second, teachers currently working in a priority school can receive a grant of up to $2,500 to cover the costs of the National Board certification or recertification process. The 2021–22 California budget included $250 million in one-time funds for the program, with the 2025-26 budget providing an additional $30 million and extending the timeline for the program through 2030.[136]

Recent research indicates that the program is incentivizing more teachers—particularly teachers of color—to earn National Board Certification and stay in the priority schools where they are needed most.[137] The number of candidates pursuing certification more than tripled after the National Board subsidy and incentive became available in 2022, with an average of 2,287 candidates working towards their Board Certification in each year from 2021–22 to 2024–25 (Figure 28). These figures include all National Board candidates, not just those in priority schools.

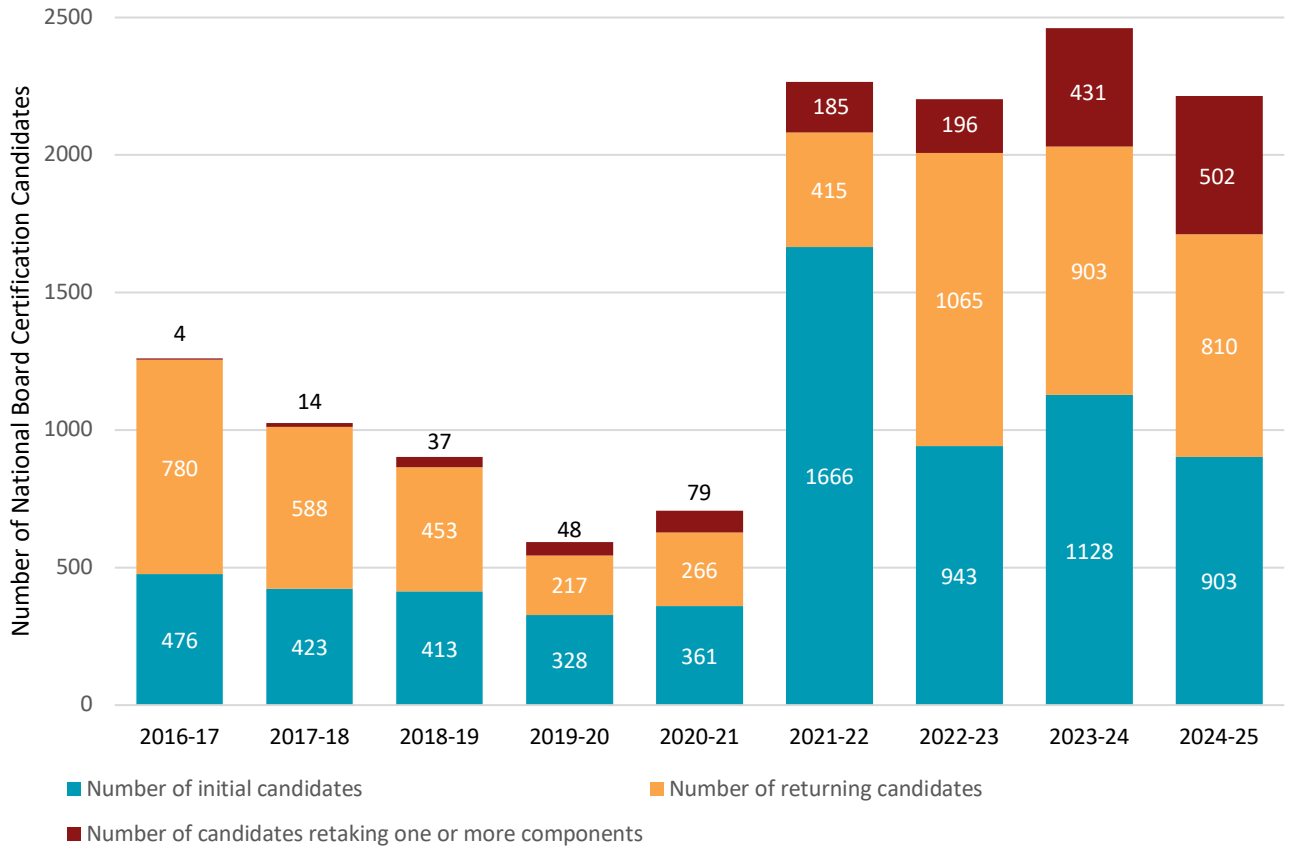
[134] National Board for Professional Teaching Standards. (2024). *State financial incentives for national board certification*. Retrieved January 11, 2026, from https://www.nbpts.org/wp-content/uploads/2021/03/State-Incentives-Chart.pdf

[135] Beginning on July 1, 2027, the program will be administered by the Commission on Teacher Credentialing pursuant to statute.

[136] Cal. Educ. Code Section 44395, AB 30, Sec. 42 (2021); AB 121, Sec. 35, 60 (2025). Funds are available for encumbrance until June 30, 2030, and for liquidation until June 30, 2034.

[137] Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). *Tackling teacher shortages: What we know about California's teacher workforce investments*. Learning Policy Institute. https://doi.org/10.54300/137.196

Figure 28. Number of National Board Certification Candidates, 2016–17 to 2024–25



Source: Data provided by the National Board for Professional Teaching Standards.

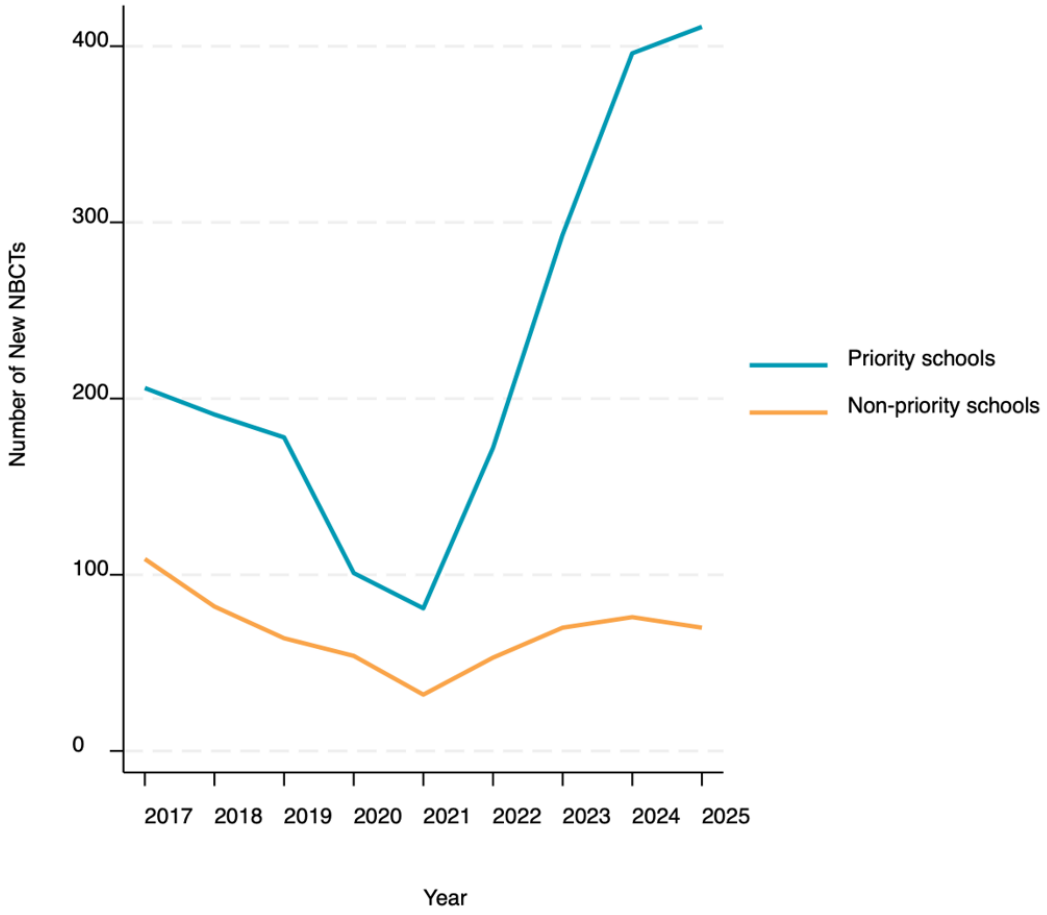
While data on the program are not publicly reported, 2,696 California NBCTs teaching in a high-priority school received the incentive award for the 2024-2025 school year.[138] Data from the National Board for Professional Teaching Standards show that 508 California teachers became newly Board Certified in 2025, and 207 recertified, making California among the top 3 states in the country for producing new Board certified teachers, with Los Angeles Unified, San Francisco Unified, and Long Beach Unified among the leading districts.[139] The incentive also increasingly drew NBCTs into priority schools, expanding access for low-income students, English learners, and foster youth to more

[138] National Board for Professional Teaching Standards (email communication, March 17, 2026). This number may change slightly based on LEA verification as teachers change schools.

[139] National Board for Professional Teaching Standards. (2025). *California*. Retrieved February 28, 2026, from https://www.nbpts.org/wp-content/uploads/2023/01/State_Profile_CA.pdf

experienced and accomplished teachers. Specifically, in the year prior to implementation of the NBCT Incentive Program (2021), only 81 of the new NBCTs taught in priority schools (Figure 29). Under the incentive, increasing numbers of NBCTs moved to or remained in priority schools, such that by 2025 over 400 of the new NBCTs were teaching in these schools. These patterns demonstrate that the program substantially expanded equitable access to high-quality instruction across the state. The pool of newly certified National Board teachers has also become more racially diverse in recent years, with increasing shares of Latine and Black teachers.

Figure 29. Number of New National Board Certified Teachers by Priority School Status, 2017 to 2025



Note: This figure is an undercount of the total number of new National Board Certified Teachers in California, as 6% of teachers were missing school information in the data. In addition, because teachers can update school information in the system, this may reflect their current school rather than original school assignment.
Source: Learning Policy Institute analysis of 2017 to 2025 data provided by the National Board for Professional Teaching Standards.

In summary, California has made large-scale investments in the teaching workforce in recent years to tackle persistent shortages and curb the state's growing reliance on teachers on substandard credentials and permits, who leave their positions at high rates. These state investments have focused on improving the quality and accessibility of preparation by expanding teacher residencies, offering service scholarships and—beginning in 2026–27—paid student teaching, and incentivizing undergraduate pathways. By reducing financial barriers to teacher preparation, these programs have been able to attract a more diverse pool of candidates into teaching, including people of color and paraprofessionals with experience working with students in their communities. The 40% increase in new preliminary credentials issued to California-prepared individuals from 2022–23 to 2024–25 is likely tied to these investments (see Figure 7). Many of the state investments also reduce inequities by incentivizing well-prepared and National Board Certified teachers to remain teaching in high-need schools.

However, all of these programs have been funded with one-time, rather than ongoing annual investments. Some programs without additional funding (e.g., Classified Staff, ITEP, potentially Golden State Teacher Grants) have or will sunset after only a few years of implementation, limiting long-term impact. California had invested in several programs designed to strengthen teacher recruitment and retention in the past. These programs, including the Assumption Program of Loans for Education (APLE) program, which provided loan forgiveness of $11,000-$19,000 in exchange for teaching for at least 4 years in a low-performing school, and the Governor's Teaching Fellowship (GTF), a $20,000 selective scholarship for prospective teachers, have been found to be effective in recruiting and retaining teachers in high-need schools.[140] However, both these programs were discontinued, with the GTF ending after just 2 years.[141] Research shows that it often requires at least 2-4 years to fully implement a new policy or program, as it requires time to develop implementation capacity, establish

[140] Podolsky, A., & Kini, T. (2016). *How effective are loan forgiveness and service scholarships for recruiting teachers?* [Policy brief]. https://learningpolicyinstitute.org/media/185/download?inline&file=How_Effective_Are-Loan_Forgiveness_and_Service-Scholarships_Recruiting_Teachers.pdf; Darling-Hammond, L., Furger, R., Shields, P. M., & Sutcher, L. (). *Addressing California's emerging teacher shortage: An analysis of sources and solutions.* Learning Policy Institute.

[141] Steele, J. L., Murnane, R. J., & Willett, J. B. (2010) *Do financial incentives draw promising teachers to low-performing schools? Assessing the impact of the California Governor's Teaching Fellowship* [Policy brief]. Policy Analysis for California Education. https://edpolicyinca.org/sites/default/files/PACE_BRIEF_MAY_2010.pdf

sites and staffing, build awareness of the program, evaluate outcomes, and adjust strategies through an iterative process.[142] In addition, most of the programs discussed here increase preparation of new teachers, which affects the flow of entrants into the workforce rather than the overall stock of teachers. Given that new teachers make up just 4% of the workforce, it will take time even for well-implemented investments to produce shifts in the overall workforce. As such, one-off investments that expire after a few years are likely to prevent the state from reaping the full benefits these programs could bring over the long term.

As findings from this report show, much remains to be done. The state is still recovering from disruptions from the COVID-19 pandemic, which led to spikes in teacher turnover, chronic absence rates, and also increased student needs. Meanwhile, teacher salaries continue to be stagnant and lag behind wages of similarly-educated peers. Pupil-teacher ratios, while greatly reduced since the Great Recession, are still much higher than the national levels. Teachers also face challenging working conditions in a charged political climate, and California lacks data on teachers' experiences in schools and classrooms that could enable policymakers to provide the supports needed. In the next section, we discuss policy opportunities that the state can take to strengthen its teacher pipeline and retention.

Summary of report findings

Policy context

Since 2016, California has invested more than $2.3 billion in recruitment, preparation, and retention initiatives, most significantly beginning in 2021. Many programs reduce the cost of teacher preparation and have encouraged diverse teacher candidates to work and remain in high-need schools and subjects. However, most investments have been one-time funding rather than ongoing, and some programs are scheduled to sunset after only a few years, limiting potential future impact. This report has analyzed administrative data on California's public K-12 teacher workforce and reviewed recent policy investments across the state to draw the following overarching conclusions:

[142] Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M. & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa, FL: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network (FMHI Publication #231).

Key findings

1. The teacher preparation pipeline contracted substantially between 2003–04 and 2013–14 but is beginning to rebound and diversify.

- University teacher production dropped dramatically from 2003-04 to 2013–14. Although preparation enrollments and completions have begun to stabilize and increase, they are still about 50% lower than they were in 2003-04.
- Recent data shows a 40% jump in the number of new preliminary teacher credentials issued to California-prepared individuals from 2022–23 to 2024–25 (11,325 to 16,104 credentials), suggesting that new teacher supply may be picking up.
- In recent years, due to state investments, California's teacher candidates have been more likely to enroll in undergraduate teacher preparation pathways and teacher residency programs compared to prior years. In 2024–25, 9% of new teacher candidates were enrolled in undergraduate pathways and 10% were enrolled in residency programs.
- The share of new teacher candidates enrolling in online-only preparation programs increased sharply from 10% in 2018–19 to 34% in 2024–25. While research on the effectiveness of online programs is limited, they allow for broader participation in teacher preparation. California also requires online programs to provide mentored clinical practice, which research finds to be important for preparing teachers well.
- California's workforce has grown since 2013 and become more diverse, driven primarily by rising shares of teachers of color, especially Latine teachers. In 2024-25, 65% of new teaching candidates were people of color.[143]

2. Demand for new teachers is driven primarily by high turnover, with continued pressure to reduce class sizes and meet growing student needs.

- Teacher attrition—teachers leaving teaching—accounted for 86% of the demand for teachers in 2023–24.

[143] 9% of teacher candidates did not report their race/ethnicity, and so this 65% represents the percent of teachers reporting racial/ethnic information that were teachers of color.

- The rate of teacher turnover—teachers moving schools and leaving teaching—was 14% in 2023–24. This average masks considerable variation across schools, with turnover rates ranging from 6% at the 10th percentile to 31% at the 90th percentile.
- Despite substantial declines since the Great Recession and some more recent declines, California still has one of the highest pupil-teacher ratios in the nation. Ongoing efforts to reduce class sizes and meet the increasing needs of students continue to drive teacher demand.
- Policy changes such as the addition of universal transitional kindergarten and music and art requirements, as well as investments in literacy, CTE, and student support services, have further increased demand for teachers and other school staff.

3. Turnover is concentrated among specific teacher groups and school contexts.

- Turnover was highest among beginning teachers (in their first or second year of teaching); teachers holding emergency-style permits; Black, Multiracial, and American Indian/Alaska Native teachers; and special education teachers.
- Turnover rates were also higher in charter schools, schools with the highest proportion of unduplicated pupil count, schools serving the largest proportion of students of color, and in rural schools.
- Holding many school, district, and teacher characteristics constant, higher levels of teacher turnover are associated with lower teacher salaries, higher principal turnover, heavier workload, and lower per-pupil spending.

4. Despite state investments, teacher shortages remain a serious and unevenly distributed challenge in California.

- Often a proxy for teacher shortage, the number of teachers working under substandard credentials and permits has more than tripled since 2013, driven by rapid growth in the number of emergency-style permits and waivers issued.
- In 2023–24, shortages continued to disproportionately affect schools serving more students from low-Income families and more Black and Latine students.

Policy Opportunities Moving Forward

Given that the state's teacher shortages stem from declines in the production of new teachers, combined with rising student needs and high rates of teacher attrition, policy strategies to address these shortages will need to address both the teacher pipeline—recruiting new teachers and preparing them well—as well as teacher retention. There is no silver bullet solution to teacher shortages. Rather, a long-term, multi-pronged approach will be needed, building on recent progress the state has made.

Expand and Strengthen the Teacher Pipeline & Teacher Preparation

1. **Continue to broaden access to high-quality teacher preparation through stable ongoing investments in effective programs**, such as the Teacher Residency Grant Program. As shown in this report, California has made progress in shifting the composition of its teacher pipeline, with a substantial and growing share of the teacher preparation program completers (10 % in 2024–25) coming through teacher residency programs, which research shows are effective in preparing teachers well who are in turn more likely to stay. The Golden State Teacher Grant Program has encouraged thousands of teacher candidates to pursue teaching and to work in high-need schools and fields. The Classified School Employee Teacher Credentialing Program has been particularly effective in supporting the recruitment and preparation of special education teachers, given that many paraprofessionals and other classified staff have prior experience working with California's large and growing share of students with disabilities. Each of these programs helps to underwrite the cost of teacher preparation in exchange for a commitment to serve in California's public schools for a period of time, which means that the programs address both teacher recruitment and retention. However, all of these programs have been funded with one-time funds, rather than ongoing annual investments. Some programs without additional funding (e.g., Classified Staff, Integrated Undergraduate Teacher Credential Program (ITEP), potentially Golden State Teacher Grant) have or will sunset after only a few years of implementation, limiting long-term impact. Given the unique role of the state—rather than districts—in ensuring an adequate statewide supply of qualified teachers so that districts are not left competing with each other, policymakers may want to consider stable ongoing funding for effective teacher pipeline programs.

2. **Incentivize teacher education, including undergraduate preparation pathways, at California universities.** The current economics of teacher preparation within the higher education system are challenging. Teacher preparation—with its critical clinical education component in actual schools—carries higher supervision costs than most other courses of study as well as costs associated with accreditation and program approval from the state, but generates only standard undergraduate or graduate tuition revenue. Costs are higher for specializations that may serve smaller numbers of teacher candidates (e.g., education specialists, P-3 credential, or specialty fields like art), but require similar staffing and administrative burden. The ITEP grant program and Teacher Residency Grant program have incentivized more Institutions of Higher Education (IHEs) to design undergraduate ITEP pathways, in partnership with community colleges, and to launch teacher residency programs. However, to shift the financial calculus for universities may require additional financial incentives, for example, state funding tied to the number of teacher preparation program (TPP) completers, with greater per-candidate funding for graduating candidates in high-need fields (e.g., education specialists). Financial supports for teacher candidates are also critical. To incentivize more undergraduate pathways into the profession, the state may need to both address the potential loss of federal Pell funding and clarify requirements for the integrated, rather than additive, design of programs so that they can reasonably be completed in 4 years. Expanding access to 2 + 2 programs—which enable candidates to complete their first two years of an undergraduate teacher preparation program at a community college—can also be a key policy strategy to broaden access to and affordability of teacher preparation, especially in rural areas.
3. **Support strong implementation of recent teacher testing reforms.** As described in this report, California's recent policy changes to enable candidates to demonstrate both basic skills and subject matter competency through coursework or standardized tests—and its streamlining and integration of instructional expertise in teaching reading into the teaching performance assessment—are beginning to make a difference. Recent reporting from the California Commission on Teacher Credentialing (CTC) demonstrates that thousands of candidates are taking up these alternatives. However, thousands more are still failing the CSET exams every year, suggesting that additional strategies are needed—likely both at CTC as well as within TPP

admissions and curricular departments—to fully implement and make coursework alternatives more widely known. Additionally, the state may also want to consider alternative ways for out-of-state teachers to demonstrate proficiency in teaching English learners, in order to reduce barriers to entry for out-of-state teachers.

4. **Modernize California's teacher credentialing system**. California's schools are working to design themselves in ways that better prepare students for the demands of the modern economy, including through more robust college and career pathways, work-based learning, and dual enrollment options. This requires the state's teacher credentialing system to similarly adapt and respond, enabling teachers to more easily teach integrated coursework (e.g., a biology teacher teaching a new biotech class) without necessarily having to obtain an additional credential. As the state works to expand access to art and music classes, supported by the infusion of funds through Proposition 28, passed in 2022, as well as access to career and technical education classes, internships, and other work-based learning, additional efforts may be needed to recruit, prepare, and enable existing career professionals in the state to bring their expertise into schools. This could involve exploring micro-credentials and other innovations—as more than 30 other states have done—as well as reviewing existing Career Technical Education (Designated Subjects) credentialing requirements.[144]

Support Teacher Retention

1. **Enable and incentivize competitive salaries.** Our findings indicate that lower entry-level salaries were strongly associated with higher rates of turnover. The effect of entry-level salaries on teacher turnover rates translates to an 8.9% reduction in leaver rates and a 25% reduction in between-district mover rates for every $10,000 increase in entry-level salary in 2023–24. Other research has found that maximum teacher salaries are a strong predictor of turnover.[145] Thus,

[144] Tooley, M. & Partelow, L. (2025). When micro goes macro: A nationwide review of states' educator micro-credential policies. New America. Retrieved February 28, 2026, from https://abgt.assembly.ca.gov/system/files/2025-03/march-25-agenda.pdf

[145] 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

policymakers at the state and local levels should consider strategies to increase teacher salaries as a lever to increase teacher retention, thereby reducing demand for new teachers and reducing shortages, as other states have recently done.[146] Recent research finds that inflation-adjusted starting salaries are no higher than they were in the early 2000s, and that more teachers are now at the lower end of the pay scale.[147] Complementary research conducted for the Getting Down to Facts project finds that real teacher salaries overall have been essentially flat since 2004–05.[148] In California, salaries and benefits—which are locally bargained –make up about 80% of school spending, with teachers by far the largest single staffing category. As such, increasing salaries will require overall funding increases or budget tradeoffs in other areas. Prior research on the impacts of the Local Control Funding Formula (LCFF) indicate that LCFF funding has improved student outcomes in priority schools, largely as a function of greater instructional investments, including increased teacher salaries and greater teacher retention.[149] Given the persistent and disproportionate impact of shortages on the highest-need schools serving larger proportions of low-income students, English learners, and foster youth, continued attention to the equitable distribution of funding through LCFF—and potential opportunities to strengthen LCFF—is warranted.[150]

2. **Strengthen the special education teacher pipeline and improve retention of special education teachers.** Consistent with prior research, the findings from this study point to ongoing, critical shortages of special education teachers as well as high rates of turnover for this group of

[146] Patrick, S. K., & Carver-Thomas, D. (2024, April 13). Teacher salaries: A key factor in recruitment and retention. *Learning Policy Institute.* Retrieved February 28, 2026, from https://learningpolicyinstitute.org/blog/teacher-salaries-key-factor-recruitment-and-retention

[147] Lafortune, J., Ugo, I., & Guinan, B. (2025*). Teacher staffing trends in California: Assessing the impact of recent staffing.* Public Policy Institute of California. https://www.ppic.org/publication/teacher-staffing-trends-in-california-assessing-the-impact-of-recent-spending

[148] Bruno, P. (2026). *District dollars 3: Recent patterns in California school district finances, trends, in teacher compensation, and within-district, between-school spending*. Getting Down to Facts III.

[149] Johnson, R. (2023). *School Funding Effectiveness: Evidence from California's Local Control Funding Formula.* Learning Policy Institute. https://doi.org/10.54300/529.194

[150] Kaplan, J. (2025). *California's Local Control Funding Formula: Next steps toward equity*. Learning Policy Institute. https://doi.org/10.54300/820.131; Lafortune, J., et al. (2025). *Updating California's school funding formula: Assessing alternatives and tradeoffs*. Public Policy Institute of California.

teachers. In 2023–24, 1 in 5 special education teachers left their positions, a rate 30% higher than other classroom teachers. Complementary research conducted as part of Getting Down to Facts finds that, in 2025, 50% of new education specialist teachers were on emergency permits, and about 25% were serving as interns. Just under a quarter were fully prepared to teach, with about 23% holding preliminary credentials.[151] These findings suggest a need for concerted, ongoing attention in California to strengthen the pipeline of special education teachers, as outlined above, as well as increasing their retention. Productive strategies may involve partnering with labor organizations, including the California Labor Management Initiative, to inform productive bargaining approaches in this area (e.g., retention bonuses, shortage area stipends, caseload caps, administrative supports), as well as strengthening technical assistance from California Department of Education, the California Collaborative for Educational Excellence (CCEE), and county offices of education.[152] A recent synthesis of research on special educators highlighted the importance of investing in effective school leadership to support special educators, managing caseloads, improving induction and collaboration for early career special educators, and providing differentiating financial compensation, for increasing retention.[153]

3. **Consider complementary policy approaches to support school principals' preparation and retention, especially in high-need schools.** Prior research in California finds that principal preparation and training can also help curb teacher attrition, and findings from this study demonstrate that principal experience and retention are also associated with lower rates of teacher turnover.[154] Research demonstrates that a principal's ability to create both positive working conditions and collaborative, supportive learning environments plays a critical role in

[151] Smith, T. & Li, Y. (2026). *Who stays, who leaves: Five-year retention patterns by teacher entry pathways.* Getting Down to Facts III.

[152] Ondrasek, N., Carver-Thomas, D., Scott, C., & Darling-Hammond, L. (2020). *California's special education teacher shortage.* Policy Analysis for California Education.

[153] Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. *Review of Educational Research, 89*(5), 697-744. https://doi.org/10.3102/0034654319862495

[154] Campoli, A. K., & Darling-Hammond, L. With Podolsky, A., & Levin, S. (2022). *Principal learning opportunities and school outcomes: Evidence from California* [Brief]. Learning Policy Institute.

attracting and retaining qualified teachers.[155] California has taken steps in recent years to strengthen its principal workforce. This includes strengthening the preparation and induction that principals receive as well as launching two new programs: the 21st Century California School Leadership Academy in 2019 to provide ongoing professional learning supports to principals and the Diverse Education Leaders Pipeline Initiative in 2023 to support principal preparation and retention. Recent research on 21CSLA finds that it has broad reach and has been important for expanding access to high-quality professional learning for California's school leaders.[156] Policymakers should consider strategies to provide ongoing, stable funding for principal support, leveraging, as California has done in the past, federal funds through the Title II optional 3% school leadership set-aside.

Strengthen Data Collection to Inform Policy Development and Enable Improvement

1. **Implement regular, statewide surveys of teacher and other staff perceptions of working conditions.** California has little statewide data available on teaching and learning conditions in schools. This limits the ability to understand which conditions are most important to teacher retention and student outcomes and to implement responsive policies and practices at the state and local levels. While some data are available through the California School Staff Survey as well as other district staff and student surveys collected and reported locally as part of Priority 6 of LCFF (School Climate), California lacks a common, comparable statewide measure. Other states, including North Carolina, South Carolina, Kentucky, and Arizona, have implemented statewide surveys to better understand and address the influence of working

[155] Hughes, A. L., Matt, J. J., & O'Reilly, F. L. (2015). Principal support is imperative to the retention of teachers in hard-to-staff schools. *Journal of Education and Training Studies, 3*(1), 129–134; Learning Policy Institute. (2017). *The role of principals in addressing teacher shortages* [Brief]. Learning Policy Institute.

[156] Fitz, J., Levin, S., & Wechsler, M. E. (2024). *Developing educational leaders in California: The 21st Century California School Leadership Academy*. Learning Policy Institute. https://doi.org/10.54300/515.306; Wisniewski, R., Pierce, J., Hong, Y., Boyette, J., Reddig, N., Campbell, T., Venkateswaran, N. (2026). *21st Century California School Leadership Academy external evaluation report cohort 2, year 2 (2024–2025).* RTI International.

conditions on teacher retention.[157] Such surveys may be especially important to understanding and addressing working conditions in schools serving high proportions of unduplicated pupils, high proportions of students of color, as well as rural schools, where turnover is particularly high.

2. **Study the impact of recent, high growth in online teacher preparation.** One striking new finding from this study is the dramatic growth in online teacher preparation in California. The share of all new teacher candidates enrolled in online-only programs more than tripled over the past six years, from 10% in 2019–20 to 34% in 2024–25. With over one-third of all California teacher candidates now enrolling in online-only programs, the state should seek to better understand the population of candidates enrolling in these programs and the impact of these programs across a variety of measures, including program completion, hiring, retention, and effectiveness.
3. **Strengthen state data systems to enable better evaluation of state investments.** While California has made significant investments in strengthening the teacher workforce, data limitations undermine the pace and depth at which the state can evaluate the impacts of these investments, as well as its capacity to identify challenges and offer strategies to support better program implementation. A systematic approach to collecting, linking and analyzing data across state agencies, such as the California Department of Education, the California Commission on Teacher Credentialing, and the California Student Aid Commission, could improve long-term tracking of state investments and the teacher workforce overall.

[157] 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; Fischer, A., Erwin, B., Pechota, D., & Syverson, E. (2022). *50-state comparison: Teacher recruitment and retention.* Education Commission of the States; Gao, R., Starrett, A., Cartiff, B., & Dmitrieva, S. (2025). *The 2025 SC teacher working conditions survey*. SC Teacher. Retrieved February 18, 2026, from https://www.sc-teacher.org/TWC-survey-report-june2025; Impact Kentucky. (2025). *Impact Kentucky working conditions survey*. Retrieved February 18, 2026, from https://goteachky.com/resources/grow-your-own/educator-retention/impact-kentucky-working-conditions-survey; Starrett, A., Dmitrieva, S., & Cartiff, B. (2026). *South Carolina teacher attrition, mobility, and retention report for 2024–25*. SC Teacher. February 18, 2026, from https://www.sc-teacher.org/EPR-teacher-retention-mar2026

Conclusion

In recent years, California has made significant strides toward supporting a strong, stable, and diverse teacher workforce through large-scale and targeted investments aimed at boosting the supply of fully-prepared teachers, especially in high-need schools that are often most impacted by teacher shortages. These investments, which increase access to preservice preparation and incentivize experienced and effective teachers to work and remain in high-need schools, are beginning to pay off: the number of new preliminary credentials issued to California-prepared individuals increased by 40% from 2022–23 to 2024–25. California's workforce has grown since 2013 and become more racially diverse, driven primarily by rising shares of Latine teachers. In 2024-25, 65% of entering teachers were teachers of color. The share of new teacher candidates in teacher residencies, a clinically-rich and high-retention pathway, also increased from 2% in 2018–19 to 10% in 2024–25. The number of National Board Certified teachers—who meet nationally recognized standards for accomplished teaching—has also increased substantially across the state and especially in high-need schools.

These numbers point to significant progress the state has achieved in recent years, even if there is more progress to be made. Teacher preparation remains at about half of levels observed over two decades ago. Persistent rates of teacher turnover, especially among beginning teachers; teachers with emergency-style permits; Black, Multiracial, and American Indian/Alaska Native teachers; and special education teachers, continue to drive teacher demand even as enrollments decrease. Ongoing efforts to reduce class sizes and meet the increasing needs of students, as well as policies expanding early education and other programs, have further increased demand for teachers. Importantly, teacher shortages are inequitably distributed in California and disproportionately affect schools serving more students from low-income families and more students of color. These schools tend to face risk factors associated with higher teacher turnover that further exacerbate shortages, including lower teacher salaries, greater shares of teachers with substandard credentials and permits, higher principal turnover, and heavier workloads.

As California contends with reduced federal education funding and uncertainty about the state's fiscal outlook, several recent investments in the teacher workforce have ended, with others due to sunset soon. Because investments that support the teacher workforce take time and sustained resources to yield results, letting these investments expire after a few years could prevent the state

from reaping the full benefits these programs could bring over the long term. To build on the recent progress documented in this report, California should continue to broaden access to high-quality teacher preparation through stable ongoing investments in effective programs, support teacher retention, and enhance data collection to better inform policy development and enable improvement. Through coordinated and sustained policy action, California can strengthen its teacher workforce and address persistent shortages across the state, ensuring that all students have access to a well-prepared, stable, and diverse teacher workforce.

Appendix A: Technical Appendix

Data

This study draws on a host of state and federal administrative datasets, including restricted-use data obtained from the California Department of Education (CDE) and California Commission on Teacher Credentialing (CTC). We utilized the following data sources:

California Staff Assignment Data

Staff assignment data, collected and reported by CDE, are available in two datasets. The first includes data from 2012–13 to 2018–19 and is publicly available. The second includes restricted data for 2019–20 to 2024–25 provided to the Learning Policy Institute through a data-sharing agreement. Both datasets provide school-year staffing records, including job classification(s) of staff by school, district, and year. The file identifies teachers and other staff (e.g., administrator, pupil services, non-certified administrator), the school(s) and district(s) in which they work, total FTE, and if applicable, their non-classroom-based assignments. Some staff appear multiple times per year (multi-school or multi-job classifications). Because the 2012–13 to 2018–19 dataset is public, we used a crosswalk provided by CDE to identify the unique staff identifier (SEID). The SEID was included in the 2019–20 to 2024–25 dataset and allows us to link staff records over time and connect staffing data to other datasets.

California Staff Demographic Data

Similar to the staff assignment data, staff demographic data are available in two datasets: public data from 2012–13 to 2018–19 and restricted data with unique staff identifiers from 2019–20 to 2024–25. These data provide the following information on all LEA staff: race/ethnicity, age, gender, education level, employment status, and years of experience in any LEA certificated position. Staff may have more than one observation per year if they work in more than one district. In cases where staff data were inconsistent over time, we made decisions to ensure consistency. For age and years of experience, we changed values to missing if any observations did not match. For race/ethnicity, gender, and highest degree earned, we changed values to the most-recent non-missing value.

California Course Section Data

This data is available from 2019–20 to 2024–25. It contains information such as course name and codes, which can be used to determine the subject of the course, including English, World Languages, Visual and Performing Arts, Math, Science, Social Science, Health/Physical Education, Computer Science/Tech/STEM, Career Technical Education, Electives/Interdisciplinary, Agriculture, Special Ed/Support, and Misc/Non-academic. This dataset also includes the unique staff identifier SEID and can be linked with other datasets to determine the main subject assignment of a teacher.

California Student Course Section Data

Similar to the California Course Section data, this dataset is available from 2019–20 to 2024–25 and includes information on course sections along with a unique student identifier (SSID). Using the course codes, we linked the Student Course Section data with the teacher-level Course Section to connect students to their teachers. This allows us to obtain data on the number of students a teacher taught, and the characteristics of those students.

California Longitudinal Pupil Achievement Data System (CALPADS)

CALPADS (2013–14 to 2024–25) is a longitudinal data system used to maintain individual-level data including student demographics, discipline, assessments, staff assignments, and other data for state and federal reporting. By linking this data to the Student Course Section Data and the teacher-level Course Section Data, we were able to know characteristics of students that teachers taught. This allowed us to identify special education teachers, which we define as teachers who taught a majority of students with disabilities in the majority of their courses or who taught a special education class.

Teacher Credential Data

Teacher credential data, provided by the California Commission on Teacher Credentialing (CTC), are at the document level and include information from permits, waivers, and credentials authorized by the CTC. Notably, this dataset does not include all documents authorized by the CTC (see Table A1). The dataset provides information on a document's iteration (i.e., whether it was issued for the first time, is a new credential type, or a re-issuance), the date a document was issued (ranging from July 1, 2005 to June 1, 2029), the document expiration date, a recommending institution, and details on the subject,

grade, and student population the document authorizes a teacher to teach.

Table A1. Documents Included and Excluded from the CTC Teacher Credential Data

Documents Included:	Documents Excluded:
• Administrative Services Credentials (certificate of eligibility, intern, preliminary, clear, professional, etc.) • District Intern Credential • Education Specialist Instruction Credential (intern, preliminary, clear, Level I, Level II, waiver) • Limited Assignment Teaching Permit (General Education, Education Specialist) • Multiple Subject Teaching Credential (Intern, Preliminary, Clear, Professional Clear, Waiver) • Provisional Internship Permit • Short-Term Staff Permit • Single Subject Teaching Credential (Intern, Preliminary, Clear, Professional Clear, Waiver) • Teaching Permit for Statutory Leave • Added Authorizations (e.g., adding a subject area to their credential, bilingual authorizations)	• Certificate of Clearance • Substitute Permits • Child Development Permits • Emergency Crosscultural, Language, and Academic Development Permits and Emergency Bilingual Authorization Permit • Emergency Specialist Teaching Permit in Early Childhood Education (as of July 2022) • Pupil Personnel Services Credentials • Speech Services Credentials • School Nurse Services Credential • Teacher Librarian Services Credential

Teacher Preparation Program Information from the Accreditation Data System

All approved preparation programs are required to submit data annually to the CTC through the accreditation data system. The annual data submission requires that institutions submit information on all of their approved TPPs, and this programmatic data must be submitted by level (i.e., undergraduate, postgraduate), credential area (i.e., multiple subject, single subject, education specialist), delivery method (i.e., face-to-face, online), and pathway. Within each of these categories, programs must report the number of new and continuing candidates as well as details on the candidates and

programs. Programs must all report on the racial/ethnic background and gender identity of their candidates. This data, provided by the CTC, is available for the 2018–19 through 2024–25 school years.

Title II Data

The U.S. Department of Education maintains a dataset capturing information on the nation's teacher preparation programs, as required by the Higher Education Act. For this analysis, we focused on the number of program completers reported for all programs in California across time (2001–02 to 2023–24). Title II data requires that programs are categorized as either traditional or alternative. Traditional programs are typically defined as preservice programs (i.e., those completed before a teaching candidate becomes a teacher of record) run by colleges or universities. Alternative programs are typically defined as in-service programs (i.e., programs in which teachers complete preparation on the job) run by colleges and universities or other types of institutions.

Teaching Assignment Monitoring Outcomes (TAMO) Dataset

California's Teaching Assignment Monitoring Outcomes (TAMO) dataset includes school-, district, county-, and state-level data on the number of teacher full-time equivalents (FTEs) by their credential status for their teaching assignment. Our analysis was conducted using 2023–24 TAMO data. TAMO data were aggregated at the state level to obtain full-time equivalents (FTEs) for various credential types, including clear or preliminary, out of field, intern, or ineffective credentials and permits for their assignment. Further, the TAMO data allow us to compute FTE counts and proportions by subject area, teacher experience level school level, and charter school status. Notably, the TAMO dataset accounts for teacher FTEs that are not authorized to teach special education and English language development assignments, but do not provide identifiers that would allow us to analyze these misassignments. For example, if a teacher is identified as not fully credentialed for their self-contained assignment, it could be because they do not hold a multiple subject credential for the general education class they teach, or because they do not hold an education specialist credential for their special education assignment, but there is no way to differentiate between these cases.

California Department of Education Public Data

The California Department of Education releases public school-level and state-level data on school, student, and staff characteristics, including school level, school type, enrollment, number of students by race/ethnicity, English Learner status, disability status, as well as chronic absence rates. These data contain a unique school identifier (CDS) that can be used to link with other public and restricted CDE data. This data is generally available from 2016–17 to 2024–25.

Certificated Salaries & Benefits Data

This dataset is available from 2012–13 to 2024–25 and is collected from a voluntary survey of California school districts and county offices on their salary schedules and benefits for certificated staff. The data covers over 80% of districts and county offices, and in 2024–25 represented about 96% of California's non-charters students. This data includes a unique district identifier that links to other state-level data and provides information such as the entry-level salaries for teachers.

NCES Education Demographic and Geocode Estimates (EDGE) Data

This is a national dataset compiled by the National Center for Education Statistics, and includes data on the urbanicity of schools and districts. This data is available from 2015–16 to 2024–25. We utilized a crosswalk that is published by the California Department of Education to link the EDGE data with other school-level CDE data.

NCES Common Core of Data Membership and Staff Data

We collect annual membership and staff data from 1999–2000 to 2024–25 at the district level from the Common Core of Data, accessed through the Urban Institute Education Data Explorer. Teacher FTE and student counts from this data were aggregated to the state-year level.

ESSA Per-Pupil Expenditure (PPE) Reporting Data

Collected from local education agencies (LEAs) pursuant to the Every Student Succeeds Act (ESSA), this dataset contains per pupil expenditure (PPE) data for county offices of education, school districts, direct funded charter schools, and individual schools within districts. We include data from 2021–22 to

2023–24. LEAs determine what should be included in their PPE calculation, however, CDE guidance indicates that current expenditures represent the ongoing, day-to-day operations of schools and LEAs for public elementary and secondary education. They include, but are not limited to, instruction, instructional support, student support services, pupil transportation services, plant maintenance and operations, and general administration. The law requires actual expenditures to be used in the PPE calculation, as opposed to budgeted expenditures. Expenses include 1) school level costs, such as teacher salaries and 2) central expenditures, such as the portion of district transportation and maintenance costs allocated to each school site. Some expenses would be excluded from this calculation, such as large, one-time capital outlay expenditures and Adult Education. Districts use their discretion to calculate PPE based on their annual average daily attendance, Census Day enrollment, or cumulative enrollment. We use the National Center for Education Statistics (NCES) 2022 district-level Comparable Wage Index for Teachers (CWIFT) and the US Bureau of Labor Statistics (BLS) Consumer Price Index (CPI-U) to adjust values for regional cost of labor differences, in 2024 dollars.

Current Expense of Education

This dataset provides school, district, county, and state calculations of current expense of education per average daily attendance (ADA). We include data from 2021–22 to 2023–24. Expenditures include expenses such as salaries, employee benefits, supplies, and equipment. Some expenses would be excluded, such as capital outlay expenditures and food service. This dataset does not include county offices of education or most charter schools. For that reason, the ESSA Per-Pupil Expenditure Reporting Data is our primary dataset for per pupil spending calculations, and we use the Current Expense of Education to evaluate and impute missing or illogical values in our primary dataset. We use the National Center for Education Statistics (NCES) 2022 district-level Comparable Wage Index for Teachers (CWIFT) and the US Bureau of Labor Statistics (BLS) Consumer Price Index (CPI-U) to adjust values for regional cost of labor differences, in 2024 dollars.

California School Staff Survey (CSSS)

This data is collected from a companion survey to the California Healthy Kids Survey. The CSSS is an anonymous survey that schools and districts voluntarily administer to their staff, including

administrators, teachers, and other certificated and classified staff. The survey includes questions about school climate, student behavior, as well as questions about teacher job satisfaction and work-related stress. For this study, we analyzed the 2023–24 CSSS, the most recent year of data available. This data includes responses from 42,800 teachers in 2,280 schools and 334 districts, representing about 12% of teachers, 21% of schools, and a third of districts in California.

Methodology

State of the teacher workforce analyses. We used a combination of public staffing data and restricted administrative data on teachers and their assigned schools and classrooms from the California Department of Education (CDE) between the 2012–13 and 2024–25 school years to examine trends in the teacher workforce. We restricted the sample to classroom teachers not on leave and present all figures in full-time-equivalent (FTE) values[158]. For national and California pupil-teacher ratios going back to the 1999-2000 school year, we calculate these from CCD district-level membership and staff data as total number of students divided by total FTE teachers. To calculate the proportion of teachers by years of experience and by race/ethnicity, we used a sample of K-12 classroom teachers tracked from 2012–13 to 2024–25, with the following restrictions: (1) keep staff labeled as teachers, itinerant teachers, pull-in and push-out teachers, and non-certificated charter school teachers; (2) restrict to teacher classroom assignments, measured in FTE; (3) cap FTE for a single teacher at a single school at 100% and for a single teacher in a single year at 200%. We excluded non-classroom assignments because of changes in reporting of non-classroom assignments that occurred in the switch of data collection procedures between 2018–19 and 2019–20. For missing annual values of teacher race/ethnicity, we imputed using the most common race/ethnicity reported for that teacher during the full time period. For teacher-year observations with missing years of experience, we imputed experience using backwards extrapolation from the most recent year of non-missing experience of that

[158] Non-classroom activity designations changed significantly between the 2013-2019 and 2020-2025 staffing data collections. For this reason, it is not possible to track non-classroom FTE consistently across the two data time periods. Consistent with other studies (Lafortune, Ugo, & Guinan, 2025), we therefore restrict to classroom-based assignments even though this leads to lower counts of teachers than publicly reported by CDE. Staff are supposed to be limited to 100% FTE in any one job type in a given school and limited to a total of 200% FTE across all schools and job types. We restrict the FTE variable according to these limits.

teacher, subtracting any years in between that the teacher was not working in the classroom.

Teacher preparation analysis. We conducted descriptive analyses to examine longitudinal trends and conduct subgroup analyses using two sources of teacher preparation data, Title II data from the U.S. Department of Education and program-level data from the Commission on Teacher Credentialing's accreditation data system. In this analysis, we primarily examined trends over time in the number and composition of teacher preparation program candidates and completers. We also explored program-level information that captures information on federally-defined program type (i.e., traditional/preservice vs. alternative), state-defined program type (i.e., student teaching, residency, internship), credential area (i.e., multiple subject, single subject, education specialist), program level (i.e., undergraduate vs. postbaccalaureate), and program modality (i.e., fully in-person, fully online, or a mix of in-person and online).

Teacher turnover analysis. We conducted descriptive and correlational analyses to examine trends in teacher turnover and identify factors that predict whether teachers switch schools within their district, move to a different district, or leave the California teaching profession altogether. In both analyses, the sample was restricted to classroom teachers only, including itinerant teachers, pull-out or push-in teachers, and charter school non-certificated teachers. We measured four types of turnover:

1) Within-district movement – the share of total teacher full-time equivalents (FTEs) who move to a different school within the same district the next school year.
2) Between-district movement – the share of total teacher FTEs who switch to a different district within the state the next school year.
3) Leaving the profession – the share of total teacher FTEs who are no longer employed by the California Department of Education the next school year.
4) Total turnover – the total share of teachers FTEs who moved within district, moved between district, or left the profession the next school year.

Descriptive analyses

Proportion of demand driven by teacher attrition. To calculate the proportion of demand that was driven by teacher attrition, we first estimated the number of new teacher FTE hires between 2022–23 to 2023–24. We calculated this by subtracting the total number of teacher FTEs in 2023–24 by the total number of teachers who remained in the profession between 2022–23 and 2023–24. Then, we divided the total teacher FTEs who left the California education system between 2022–23 and 2023–24 by the number of new teacher FTE hires.

Disaggregated trends in teacher turnover. To understand the trends in teacher turnover by teacher and school characteristics, we disaggregated our analyses at the state level. In calculating turnover rates by groups, we divided the sum of teacher FTE in that group who left their positions by the total teacher FTE in that group. We disaggregated our analyses by the following categories:

- **Teacher characteristics**
    - **Race/ethnicity.** Teachers were sorted into seven mutually exclusive race/ethnic groups, including American Indian or Alaska Native (non-Hispanic), Asian American (non-Hispanic), Black or African American (non-Hispanic), Hispanic or Latine, Native Hawaiian or Pacific Islander (non-Hispanic), White (non-Hispanic), and Multiracial (non-Hispanic). For missing annual values of teacher race/ethnicity, we imputed using the most common race/ethnicity reported for that teacher during the full time period.
    - **Age.** Teacher age was calculated by subtracting the teacher's birth year from the year of data. We grouped teachers by the following age categories: Under 30 years old, 30-39 years old, 40-49 years old, 50-59 years old, and over 60 years old.
    - **Experience.** Teacher experience is measured by their years as a certificated staff in the California public education system. We grouped teachers by the following experience categories: 1-2 years, 3-5 years, 6-10 years, 11-15 years, 16-20 years, and over 20 years of experience. For teacher-year observations with missing years of experience, we imputed experience using backwards extrapolation from the most recent year of non-missing experience of that teacher, subtracting any years in between that the teacher was not working in the classroom.

- **Education level.** We grouped teachers by highest degree earned as follows: BA or less, BA + 30 units, Masters, Masters + 30 units or doctorate.
- **Credential.** We categorized teachers by highest credential earned: preliminary/full credential, intern credential, or emergency-style permit. A teacher who has both a preliminary and an intern credential is coded as holding a preliminary/clear credential; a teacher who has both an intern credential and an emergency permit is coded as having an intern credential as their highest credential.
- **Subject.** We categorized teachers by their main subject assignment, defined as the subject in which the majority of their courses are taught. Subjects include Career and Technical Education, Computer Education, English Language Arts, Health Education, History-Social Science, Mathematics, Performing Arts, Physical Education, Science, Self-Contained Class, Visual and Media Arts, World Languages, and Other Subject.
- **Special education assignment.** We defined special education teachers as teachers who either teach a course that is designated as special education or the majority of courses they teach are primarily attended by students with disabilities. This may include teachers of inclusion classes.

- **School characteristics**
  - **Proportion of students of color.** We compared turnover rates among schools in the top and bottom quartiles based on the proportion of students of color enrolled in the school. Schools in the top quartile served 97-100% students of color, while schools in the bottom quartile served 0-61% students of color. These ranges were determined by assigning schools to quartiles within each year based on the share of students of color and then averaging the annual minimum and maximum values to produce overall quartile ranges.
  - **Proportion of Unduplicated Pupil Count (UPC).** We compared turnover rates of schools in the top and bottom deciles based on the proportion of Unduplicated Pupil Count enrolled in the school. Schools in the top quartile served 96-100% students of color, while schools in the bottom quartile served 0-25% students of color. These ranges were determined by assigning schools to quartiles within each year based on the share of

students of color and then averaging the annual minimum and maximum values to produce overall quartile ranges.

- **Size.** We grouped schools based on total student enrollment. Schools with 400 students or less were categorized as small, schools with 401-1,000 students were categorized as medium, and schools with over 1,000 students were categorized as large.
- **Level.** Schools were grouped by level, including Elementary, Middle, High, and K-12.
- **Urbanicity.** We grouped schools based on locale, including City, Suburban, and Town or Rural schools.
- **Charter.** We compared turnover rates among teachers in charter and non-charter schools.

Regression analyses

To understand the determinants of teacher turnover, we conducted both bivariate and multiple regression. The bivariate regressions allowed us to understand the extent to which individual variables correlate to teacher turnover and inform the design of our final, multivariate models.

Sample. Our sample includes all public school classroom teachers in California from 2021–22 to 2023–24. Given volatility in teacher turnover in the pandemic years, pooling data from the most recent three years of data available allows us to better identify factors that are overall predictive of teacher turnover in the years coming out of the COVID-19 pandemic. Classroom teachers include staff labeled as: (1) teachers; (2) itinerant, pull-in, and push-out teachers; and (3) charter school non-certificated teachers. We excluded teachers designated as being on leave (1.8% of teachers). We also excluded teachers who had inconsistent birth years (0.7% of teachers), as these inconsistencies may be due to data errors in either birthyear or teacher ID (i.e. separate individuals with the same teacher ID). We excluded the top 1 percent of teachers who had outlier values for courses taught and teachers who had no students according to the dataset (4.8% of teachers). We also excluded all non-classroom assignments from our sample to focus our analysis on classroom teachers. Because special education teachers such as resource teachers may be teaching students regularly but not have classroom

assignments, we conducted separate analyses focusing on special education teachers that include non-classroom assignments.

Variables. Past research has identified a wide range of factors that are associated with teacher turnover. However, data limitations restrict our ability to account for all factors in our modeling, especially around teacher working conditions and school leadership. Table A2 lists the variables included in our analyses. Some variables are included only in separate models due to collinearity or substantial missing data. For example, entry-level salary and highest salary are highly correlated within districts, so we only included entry-level salary in our main model but examined highest salary in a separate model. In another case, data on pathway into teaching were missing for over 40% of teachers, since we determine pathway based on a teacher's first teaching document on record, and data on documents issued prior to 2005 were unavailable. We present findings from the main model in the report. For variables analyzed in separate analyses, we present findings in the main text where salient. Multivariate regression is used for all analyses.

Table A2. Variables Included in Teacher Turnover Analyses

Category	Variable Group	Variable	Included in primary model	Included only in alternative analyses
Outcome variables	Turnover	Turnover within district	x	
		Turnover between districts	x	
		Turnover from the state or profession	x	
		Total turnover	x	
Independent variables	Salary	Entry-level salary (BA +30)	x	
		Highest salary (BA +60)		x
		Entry-level salary (BA +30) squared		x
		Highest salary (BA +60) squared		x
	Workload	Number of students taught		x

Category	Variable Group	Variable	Included in primary model	Included only in alternative analyses
		Number of distinct courses taught	x	
	Work assignment	Main subject taught	x	
		Bilingual teacher	x	
		Special education teacher	x	
	Preparation	Highest current credential	x	
		Limited assignment permit	x	
		Credentialed out of state		x
		Education specialist credential		x
	School leadership	Principal experience as administrator	x	
		Principal experience as administrator in current school		x
		Principal turnover (current year)	x	
		Principal turnover (prior year)		x
	School resources	Per-pupil funding		x
		Per-pupil funding squared		x
		Per-pupil funding, quartile	x	
		Pupil personnel services staff-to-student ratio	x	
		Special education teacher bonus		x
	Teacher demographics	Race/ethnicity	x	
		Age	x	
		Experience	x	
		Highest degree earned	x	
		Charter indicator	x	

Category	Variable Group	Variable	Included in primary model	Included only in alternative analyses
	School & student characteristics	School level	x	
		Total enrollment	x	
		Magnet indicator	x	
		Locale	x	
		Student characteristics	x	

Note: x indicates that the variable was included in the analysis.

Data analysis. We utilized linear probability models for both bivariate regression and our multivariate analysis. We also ran additional models with district and school fixed effects to assess the robustness of results (see Table B2, Appendix B). While logistic regression would be appropriate for binary outcomes such as teacher turnover, linear models allow for easy interpretation of the coefficients and produced similar findings as the logistic regression (see Table B3, Appendix B). The final model includes all variables of interest as noted in Table A2 and year fixed effects. In all models, we clustered standard errors at the school level. We also tested for correlation between variables as well as the variance inflation factor to check for multicollinearity. The highest correlation among variables were between teacher age and experience (0.73), total enrollment and elementary level (-0.54), and proportion of UPC and entry-level salary (0.21). However, while the final, multivariate model included these variables, the Variance Inflation Factor was maintained under 5 and therefore should not pose significant threats to our model.

Teacher job satisfaction analysis

To understand teacher perceptions of job satisfaction and work-related stress, we analyzed data from the 2023–24 California School Staff Survey (CSSS), which is a companion survey to the California Healthy Kids Survey.

Sample. The CSSS is a survey that districts and schools voluntarily administer to their staff. The 2023–24 dataset includes 72,060 responses from 2,345 schools and 335 districts; including responses from teachers, administrators, pupil personnel services staff, and classified staff. After removing non-

teacher responses, our sample included 42,789 teachers from 2,280 schools and 334 districts, representing about 12% of teachers, 21% of schools, and a third of districts in California.

Data representativeness. On average, the teacher response rate within each school that administered the survey was 63%. In nearly two thirds of schools (65%), the response rate was over 50%. In 103 schools, the response rate of the school was less than 50% and less than 5 teachers responded to the survey. We dropped these schools from our sample to mitigate biases that may come from certain teachers in a school who may be particularly motivated to respond to the survey.

Comparing the characteristics of schools represented in the data and statewide data, we found that surveyed schools tended to have lower enrollment and were much less likely to be charter schools. K-12 schools were also underrepresented among surveyed schools, as well as city schools, while suburban schools were overrepresented. To improve the representativeness of the survey, we conducted entropy balancing on a range of school characteristics, including student race/ethnicity, Unduplicated Pupil Count, school level, and urbanicity. The balanced data achieved a standardized difference that approaches zero across all covariates and the ratio in variance approaches 1; suggesting that both the means and variance of the survey data and statewide data are balanced in terms of the school-level covariates. Table A3 compares the means of surveyed schools with statewide averages before and after weighting.

Table A3. Means of school-level characteristics, statewide & surveyed schools

School characteristics	State	Surveyed schools (Pre-weighting)	Surveyed schools (Post-weighting)
Enrollment (tens of students)	987.4	906.5	999.5
% UPC	65.3	63.5	66.9
% Socioeconomically disadvantaged	64.5	62.5	66.1
% EL	18.8	19.2	19.2
% White	19	21.5	19.5
% Black	4.9	4.3	5.0
% Asian	8.8	9.4	9.0

% Hispanic/Latino	55.7	54.5	57.0
Charter	11.9	3.5	11.9
School level			
Elementary	48.7	49.0	48.8
Elementary-High	6.7	2.1	6.6
High	29.4	31.3	29.4
Middle	15.2	17.7	15.2
Urbanicity			
City	47.8	34.2	47.5
Suburban	42.9	55.1	43.1
Rural/Town	9.3	10.7	9.5

Data analysis. We conducted a simple descriptive analysis of select Likert-style survey items that reflect teachers' perceptions on job satisfaction and work-related stress. We further disaggregated our analysis to compare whether teacher responses varied by teacher race/ethnicity, experience, and whether the teacher taught at schools serving higher or lower proportions of Unduplicated Pupil Count.

Appendix B: Tables and Graphs

Teacher Job Satisfaction and Work-Related Stress

Table B1. Results from California School Staff Survey, 2023–24

	Category	Teacher race/ethnicity				Teacher years of experience (years)					Percent of UPC	
	Overall	Asian	Black	Latine	White	<1	1-2	3-5	6-10	>10	Over 80%	Under 20%
N	42,789	2,541	959	10,656	22,750	1,910	2,578	5,260	6,896	25,731	16,173	3,454
% Strongly agree or agree												
This school is a safe place for staff	87.8	91.1	82.9	89.5	88	94.4	92	89.2	87.8	86.6	84.5	90.5
Adults who work at this school have close professional relationships with one another	85.9	89.2	75.5	87	86.5	90.4	88.4	86.7	84.3	85.8	85.1	87.2
Adults who work at this school support and treat each other with respect	90.2	91.8	81.8	91.6	90.4	92.9	92.1	91.3	89	89.9	90.1	91.5

	Category	Teacher race/ethnicity				Teacher years of experience (years)					Percent of UPC	
This school provides the supports needed for teaching culturally and linguistically diverse students	80.8	85.1	74	82.4	80	83.4	83.5	82.1	79.4	80.4	81.1	80.9
% Very often or often												
My work makes me feel satisfied	65.8	70.9	60.5	68.3	64.8	68.8	73.5	67.1	66.6	64.4	65	72.3
I find it difficult to separate my personal life from my work life	26.7	28.9	26.1	24.4	27.8	32.3	28.1	31.9	24.8	25.7	26.2	38.2
I think that I might have been affected by the traumatic or stressful life experiences of the youth I work with	14.4	13.8	21.2	13.5	14.4	8.4	9.8	21.6	16	13.2	19.3	7.4

	Category	Teacher race/ethnicity				Teacher years of experience (years)					Percent of UPC	
I feel worn out because of my work	52.4	45.2	45.2	48.7	54.6	38	45.4	59.7	53	52	55.7	57.9
I feel overwhelmed because my workload seems endless	49	50.3	39.2	45.7	50	37.7	35.2	56	47.4	49.9	51.6	56.1
I believe I can make a difference through my work	77.9	80.6	80.5	78.3	77.8	79.8	78.4	73.5	79.6	78.3	77.7	81.4

Note: UPC = Unduplicated Pupil Count, which includes students eligible for free or reduced-priced meals, English Learners, and foster youth. Probability weights were applied to improve representativeness of results.
Source: Learning Policy Institute analysis of the 2023–24 California School Staff Survey.

Teacher Turnover Regression Results

Table B2. Teacher Turnover Regression Results: Linear Probability Models With Year Fixed Effects (Main Models)

	Moving within district	Moving between district	Leaving	Total turnover
BA+30 lowest salary, adjusted (ten thousand)	0.002	-0.008***	-0.006***	-0.011***
	(0.00)	(0.00)	(0.00)	(0.00)
Number of courses taught	0.008***	0.000***	-0.000***	0.007***
	(0.00)	(0.00)	(0.00)	(0.00)
Credential				
(Reference group: Clear/preliminary)				
Intern	-0.010***	-0.010***	0.030***	0.009*
	(0.00)	(0.00)	(0.00)	(0.00)
Emergency-style permit	0.005	-0.034***	0.172***	0.143***
	(0.00)	(0.00)	(0.00)	(0.01)
Limited assignment permit to teach out of field	0.025***	0.020***	0.027***	0.071***
	(0.00)	(0.00)	(0.00)	(0.01)
Principal turnover				
(Reference group: Principal stayed)				
Principal left	0.014***	0.008***	0.014***	0.036***
	(0.00)	(0.00)	(0.00)	(0.00)
Principal turnover missing	0.021**	0.002	0.003	0.025***
	(0.01)	(0.00)	(0.00)	(0.01)
Principal experience				
(Reference group: 3-5 yrs)				
1-2 yrs	0.001	0.000	0.005**	0.006
	(0.00)	(0.00)	(0.00)	(0.00)
6-10 yrs	-0.004*	-0.005***	-0.001	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Over 10 yrs	-0.006**	-0.004***	-0.001	-0.011***
	(0.00)	(0.00)	(0.00)	(0.00)
Per pupil spending quartile				

(Reference group: 4th quartile)				
1st quartile	-0.001	0.008***	0.002	0.008*
	(0.00)	(0.00)	(0.00)	(0.00)
2nd quartile	0.003	0.004***	-0.000	0.006
	(0.00)	(0.00)	(0.00)	(0.00)
3rd quartile	-0.003	0.002*	0.001	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Spending missing	-0.029***	0.024***	0.035***	0.029***
	(0.00)	(0.00)	(0.00)	(0.01)
PPS to student ratio	0.001**	ref	ref	0.001**
	(0.00)	(0.00)	(0.00)	(0.00)
Main subject taught				
(Reference group: History-Social Science)				
Career and Technical Education	0.002	0.006**	0.013***	0.021***
	(0.00)	(0.00)	(0.00)	(0.00)
Computer Education	0.014**	0.008	0.010	0.032***
	(0.01)	(0.00)	(0.01)	(0.01)
English Language Arts	0.008***	0.006***	0.008***	0.021***
	(0.00)	(0.00)	(0.00)	(0.00)
Health Education	0.060***	0.003	0.003	0.066***
	(0.01)	(0.00)	(0.00)	(0.01)
Mathematics	0.011***	0.007***	0.005***	0.023***
	(0.00)	(0.00)	(0.00)	(0.00)
Other Subject	0.027***	0.009***	0.009***	0.044***
	(0.00)	(0.00)	(0.00)	(0.00)
Performing Arts	0.039***	0.016***	0.010***	0.065***
	(0.00)	(0.00)	(0.00)	(0.00)
Physical Education	0.020***	0.005***	0.002	0.026***
	(0.00)	(0.00)	(0.00)	(0.00)
Science	0.006***	0.008***	0.009***	0.023***
	(0.00)	(0.00)	(0.00)	(0.00)
Self-Contained Class	0.034***	0.001	0.003	0.039***
	(0.00)	(0.00)	(0.00)	(0.01)
Visual and Media Arts	0.010***	0.011***	0.006*	0.027***
	(0.00)	(0.00)	(0.00)	(0.00)

World Languages	0.019***	0.009***	0.006***	0.035***
	(0.00)	(0.00)	(0.00)	(0.00)
Special education teacher	0.026***	0.018***	-0.002	0.043***
	(0.00)	(0.00)	(0.00)	(0.00)
Active bilingual authorization	-0.013***	0.000	-0.005***	-0.018***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher race/ethnicity				
(Reference group: White)				
American Indian or Alaska Native	0.013**	0.008*	-0.005	0.016*
	(0.00)	(0.00)	(0.00)	(0.01)
Asian American	-0.002	-0.000	-0.005***	-0.008***
	(0.00)	(0.00)	(0.00)	(0.00)
Native Hawaiian/Pacific Islander	-0.003	-0.006	-0.007	-0.016*
	(0.00)	(0.00)	(0.00)	(0.01)
Black/African American	0.014***	0.005***	-0.002	0.016***
	(0.00)	(0.00)	(0.00)	(0.00)
Hispanic/Latino	-0.000	-0.002**	-0.014***	-0.016***
	(0.00)	(0.00)	(0.00)	(0.00)
Multiracial	-0.001	0.002	-0.000	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Race missing	0.000	-0.047***	0.005	-0.042***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher age				
(Reference group: 40-49)				
Under 30	-0.006***	0.015***	0.021***	0.031***
	(0.00)	(0.00)	(0.00)	(0.00)
30-39	-0.003**	0.004***	0.016***	0.018***
	(0.00)	(0.00)	(0.00)	(0.00)
50-59	-0.005***	-0.002***	0.008***	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Over 60	-0.019***	-0.007***	0.171***	0.144***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher experience (years)				
(Reference group: 6-10)				
1-2	0.022***	0.035***	0.020***	0.077***

	(0.00)	(0.00)	(0.00)	(0.00)
3-5	0.004**	0.020***	0.019***	0.043***
	(0.00)	(0.00)	(0.00)	(0.00)
11-15	-0.004***	-0.015***	-0.012***	-0.031***
	(0.00)	(0.00)	(0.00)	(0.00)
16-20	-0.012***	-0.024***	-0.015***	-0.052***
	(0.00)	(0.00)	(0.00)	(0.00)
Over 20	-0.021***	-0.030***	-ref	-0.052***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher education level				
(Reference group: BA + 30 or fifth year)				
BA or less	-0.001	-0.002**	0.002	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Masters	0.006***	0.003***	0.001	0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Masters + 30 or Doctorate	0.018***	0.006***	0.004***	0.029***
	(0.00)	(0.00)	(0.00)	(0.00)
Education level missing	0.001	0.002	0.003	0.006
	(0.00)	(0.00)	(0.00)	(0.00)
Charter indicator	-0.032***	0.012***	0.017***	-0.002
	(0.00)	(0.00)	(0.00)	(0.00)
School level				
(Reference group: Elementary)				
Elementary-High Combination	-0.024***	0.001	-0.003	-0.026**
	(0.01)	(0.00)	(0.00)	(0.01)
High School	-0.038***	0.00	0.004	-0.034**
	(0.01)	(0.00)	(0.00)	(0.01)
Intermediate/Middle/Junior High	-0.020***	0.002	0.001	-0.017***
	(0.00)	(0.00)	(0.00)	(0.00)
Total enrollment (hundred)	0.000	-0.001***	-0.000*	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Magnet indicator	-0.005	-0.005***	-0.000	-0.010*
	(0.00)	(0.00)	(0.00)	(0.00)
Locale				

(Reference group: City)				
Suburban	-0.012***	0.009***	0.005***	0.002
	(0.00)	(0.00)	(0.00)	(0.00)
Rural	-0.033***	0.022***	0.006***	-0.005
	(0.00)	(0.00)	(0.00)	(0.00)
Proportion White students	-0.018**	-0.000	0.008*	-0.011
	(0.01)	(0.00)	(0.00)	(0.01)
Proportion Hispanic/Latino students	0.000	-0.002	0.013***	0.010
	(0.01)	(0.00)	(0.00)	(0.01)
Proportion of Black students	0.032**	0.026***	0.025***	0.083***
	(0.01)	(0.01)	(0.01)	(0.01)
Proportion of Unduplicated Pupil Count	0.037***	0.006*	-0.012***	0.030**
	(0.01)	(0.00)	(0.00)	(0.01)
Proportion of students experiencing homelessness	-0.005	0.027***	0.028**	0.050**
	(0.01)	(0.01)	(0.01)	(0.02)
Proportion of students with disabilities	-0.021	-0.009*	0.012	-0.018
	(0.01)	(0.00)	(0.01)	(0.01)
Constant	0.023**	0.068***	0.061***	0.152***
	(0.01)	(0.00)	(0.01)	(0.01)
Year fixed effects	Yes	Yes	Yes	Yes
R-squared	0.040	0.030	0.059	0.055
N	769,060	769,060	769,060	769,060

Notes: * p<0.05, ** p<0.01, *** p<0.001. PPS = Pupil Personnel Services.
Source: Learning Policy Institute analysis of 2022–23 to 2024–25 public and restricted data from the California Department of Education, the California Commission on Teacher Credentialing, and the National Center for Education Statistics Education Demographic and Geographic Estimates (EDGE) data.

Table B3. Teacher Turnover Regression Results: Linear Probability Models With Year and School Fixed Effects (Secondary Analyses)

	Moving within district	Moving between district	Leaving	Total turnover
BA+30 lowest salary, adjusted (ten thousand)	-0.042***	-0.003	0.004	-0.041***
	(0.00)	(0.00)	(0.00)	(0.00)
Number of distinct courses taught	0.008***	0.000***	-0.000*	0.008***
	(0.00)	(0.00)	(0.00)	(0.00)
Credential				
(Reference group: Clear/preliminary)				
Intern	-0.009***	-0.016***	0.026***	0.002
	(0.00)	(0.00)	(0.00)	(0.00)
Emergency-style permit	0.003	-0.043***	0.163***	0.122***
	(0.00)	(0.00)	(0.00)	(0.00)
Limited assignment permit to teach out of field	0.020***	0.017***	0.021***	0.058***
	(0.00)	(0.00)	(0.00)	(0.00)
Principal turnover				
(Reference group: Principal stayed)				
Principal left	0.007***	0.003***	0.009***	0.019***
	(0.00)	(0.00)	(0.00)	(0.00)
Principal turnover missing	0.019***	0.002	0.005*	0.026***
	(0.00)	(0.00)	(0.00)	(0.00)
Principal experience				
(Reference group: 3-5 yrs)				
1-2 yrs	-0.005***	-0.000	0.003**	-0.003
	(0.00)	(0.00)	(0.00)	(0.00)
6-10 yrs	-0.003**	-0.002*	-0.001	-0.006***
	(0.00)	(0.00)	(0.00)	(0.00)
Over 10 yrs	-0.004**	-0.001	0.001	-0.005
	(0.00)	(0.00)	(0.00)	(0.00)
Per pupil spending, quartile				

(Reference group: 4th quartile)				
1st quartile	-0.009***	0.001	-0.004*	-0.012***
	(0.00)	(0.00)	(0.00)	(0.00)
2nd quartile	-0.007***	0.001	-0.004**	-0.011***
	(0.00)	(0.00)	(0.00)	(0.00)
3rd quartile	-0.007***	0.001	-0.004**	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Spending missing	-0.009***	0.011***	0.007**	0.009*
	(0.00)	(0.00)	(0.00)	(0.00)
PPS to student ratio	0.001	0.000	0.001	0.002
	(0.00)	(0.00)	(0.00)	(0.00)
Main subject taught				
(Reference group: History-Social Science)				
Career and Technical Education	-0.007***	0.006***	0.015***	0.014***
	(0.00)	(0.00)	(0.00)	(0.00)
Computer Education	0.022***	0.008*	0.009	0.039***
	(0.01)	(0.00)	(0.01)	(0.01)
English Language Arts	0.007***	0.006***	0.008***	0.021***
	(0.00)	(0.00)	(0.00)	(0.00)
Health Education	0.050***	0.006	0.003	0.059***
	(0.00)	(0.00)	(0.00)	(0.01)
Mathematics	0.009***	0.007***	0.006***	0.022***
	(0.00)	(0.00)	(0.00)	(0.00)
Other Subject	0.023***	0.008***	0.009***	0.040***
	(0.00)	(0.00)	(0.00)	(0.00)
Performing Arts	0.038***	0.017***	0.011***	0.065***
	(0.00)	(0.00)	(0.00)	(0.00)
Physical Education	0.017***	0.004**	0.002	0.023***
	(0.00)	(0.00)	(0.00)	(0.00)
Science	0.005**	0.008***	0.009***	0.022***
	(0.00)	(0.00)	(0.00)	(0.00)
Self-Contained Class	0.041***	0.004**	0.005**	0.050***
	(0.00)	(0.00)	(0.00)	(0.00)
Visual and Media Arts	0.007**	0.010***	0.005*	0.022***
	(0.00)	(0.00)	(0.00)	(0.00)

World Languages	0.020***	0.007***	0.006**	0.033***
	(0.00)	(0.00)	(0.00)	(0.00)
Special education teacher	0.027***	0.020***	-0.000	0.047***
	(0.00)	(0.00)	(0.00)	(0.00)
Active bilingual authorization	-0.012***	-0.000	-0.005***	-0.017***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher race/ethnicity				
(Reference group: White)				
American Indian or Alaska Native	0.009*	0.007**	-0.005	0.012*
	(0.00)	(0.00)	(0.00)	(0.01)
Asian American	-0.001	0.000	-0.006***	-0.007***
	(0.00)	(0.00)	(0.00)	(0.00)
Native Hawaiian/Pacific Islander	0.001	-0.007	-0.015**	-0.020**
	(0.00)	(0.00)	(0.00)	(0.01)
Black/African American	0.012***	0.007***	-0.004*	0.015***
	(0.00)	(0.00)	(0.00)	(0.00)
Hispanic/Latino	0.001	-0.000	-0.014***	-0.014***
	(0.00)	(0.00)	(0.00)	(0.00)
Multiracial	0.001	0.003	-0.000	0.003
	(0.00)	(0.00)	(0.00)	(0.00)
Race missing	-0.011***	-0.049***	0.009***	-0.050***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher age				
(Reference group: 40-49)				
Under 30	-0.006***	0.015***	0.018***	0.027***
	(0.00)	(0.00)	(0.00)	(0.00)
30-39	-0.002*	0.005***	0.015***	0.018***
	(0.00)	(0.00)	(0.00)	(0.00)
50-59	-0.005***	-0.003***	0.007***	-0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Over 60	-0.019***	-0.008***	0.171***	0.143***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher experience				
(Reference group: 6-10)				

1-2	0.019***	0.034***	0.017***	0.070***
	(0.00)	(0.00)	(0.00)	(0.00)
3-5	0.002*	0.019***	0.018***	0.040***
	(0.00)	(0.00)	(0.00)	(0.00)
11-15	-0.002*	-0.014***	-0.012***	-0.029***
	(0.00)	(0.00)	(0.00)	(0.00)
16-20	-0.011***	-0.022***	-0.014***	-0.048***
	(0.00)	(0.00)	(0.00)	(0.00)
Over 20	-0.021***	-0.027***	0.001	-0.047***
	(0.00)	(0.00)	(0.00)	(0.00)
Teacher education level				
Reference group: BA + 30 or fifth year)				
BA or less	-0.001	0.001	0.001	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Masters	0.005***	0.006***	0.000	0.012***
	(0.00)	(0.00)	(0.00)	(0.00)
Masters + 30 or Doctorate	0.012***	0.007***	0.003**	0.022***
	(0.00)	(0.00)	(0.00)	(0.00)
Education level missing	-0.001	0.008***	0.003	0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Total enrollment (hundred)	0.007***	0.000	0.000	0.007***
	(0.00)	(0.00)	(0.00)	(0.00)
Proportion White students	-0.117***	-0.036*	-0.013	-0.166***
	(0.02)	(0.02)	(0.02)	(0.03)
Proportion Hispanic/Latino students	-0.068***	-0.004	-0.000	-0.073**
	(0.02)	(0.01)	(0.02)	(0.03)
Proportion of Black students	0.065	0.056*	0.014	0.136*
	(0.04)	(0.03)	(0.04)	(0.06)
Proportion of Unduplicated Pupil Count	-0.033***	-0.003	-0.005	-0.041**
	(0.01)	(0.01)	(0.01)	(0.01)
Proportion of students experiencing homelessness	0.075***	0.028*	0.063***	0.166***
	(0.02)	(0.01)	(0.02)	(0.02)
Proportion of students with disabilities	0.073***	0.007	0.011	0.091**
	(0.02)	(0.02)	(0.02)	(0.03)

Constant	0.236***	0.050**	0.010	0.296***
	(0.02)	(0.02)	(0.02)	(0.03)
Year fixed effects	Yes	Yes	Yes	Yes
School fixed effects	Yes	Yes	Yes	Yes
R-squared	0.105	0.061	0.091	0.106
N	769,022	769,022	769,022	769,022

Notes: * p<0.05, ** p<0.01, *** p<0.001. PPS = Pupil Personnel Services.
Source: Learning Policy Institute analysis of 2022–23 to 2024–25 public and restricted data from the California Department of Education and the California Commission on Teacher Credentialing, and the National Center for Education Statistics Education Demographic and Geographic Estimates (EDGE) data.

Table B4. Teacher Turnover Regression Results: Logistic Models (Secondary Analyses) With Year Fixed Effects

	Moving within district	Moving between district	Leaving	Total turnover
BA+30 lowest salary, adjusted (ten thousand)	1.033	0.779***	0.897***	0.909***
	(0.03)	(0.02)	(0.01)	(0.02)
Number of courses taught	1.082***	1.011***	0.994***	1.048***
	(0.00)	(0.00)	(0.00)	(0.00)
Credential				
(Reference group: Clear/preliminary)				
Intern	0.858***	0.815***	1.507***	1.049*
	(0.03)	(0.03)	(0.05)	(0.02)
Emergency-style permit	1.098*	0.518***	4.385***	2.031***
	(0.05)	(0.03)	(0.13)	(0.05)
Limited assignment permit to teach out of field	1.478***	1.378***	1.488***	1.563***
	(0.07)	(0.07)	(0.07)	(0.05)
Principal turnover				
(Reference group: Principal stayed)				
Principal left	1.295***	1.262***	1.260***	1.314***
	(0.04)	(0.03)	(0.04)	(0.03)
Principal turnover missing	1.413***	1.055	1.045	1.210***
	(0.12)	(0.04)	(0.03)	(0.06)
Principal experience				
(Reference group: 3-5 yrs)				
1-2 yrs	1.020	0.991	1.077*	1.044
	(0.04)	(0.03)	(0.03)	(0.02)
6-10 yrs	0.915*	0.851***	0.975	0.919***
	(0.03)	(0.02)	(0.02)	(0.02)
Over 10 yrs	0.886**	0.847***	0.977	0.902***
	(0.03)	(0.03)	(0.03)	(0.02)
Per pupil spending quartile				
(Reference group: 4th quartile)				

1st quartile	0.982	1.285***	1.028	1.065*
	(0.04)	(0.04)	(0.03)	(0.03)
2nd quartile	1.034	1.150***	0.985	1.046
	(0.05)	(0.03)	(0.03)	(0.04)
3rd quartile	0.936	1.065*	1.016	0.991
Spending missing	0.523***	1.495***	1.530***	1.192***
	(0.06)	(0.09)	(0.07)	(0.06)
PPS to student ratio	1.000***	1.000*	1.000	1.000**
	(0.00)	(0.00)	(0.00)	(0.00)
Main subject taught				
(Reference group: History-Social Science)				
Career and Technical Education	1.016	1.268***	1.246***	1.215***
	(0.08)	(0.08)	(0.04)	(0.05)
Computer Education	1.394**	1.378*	1.185	1.328***
	(0.15)	(0.20)	(0.11)	(0.09)
English Language Arts	1.233***	1.253***	1.167***	1.220***
	(0.03)	(0.04)	(0.03)	(0.02)
Health Education	2.662***	1.106	1.071	1.766***
	(0.21)	(0.17)	(0.10)	(0.12)
Mathematics	1.268***	1.286***	1.116***	1.234***
	(0.04)	(0.05)	(0.03)	(0.02)
Other Subject	1.687***	1.335***	1.174***	1.446***
	(0.07)	(0.06)	(0.04)	(0.03)
Performing Arts	2.094***	1.692***	1.195***	1.685***
	(0.09)	(0.09)	(0.05)	(0.05)
Physical Education	1.533***	1.197***	1.034	1.270***
	(0.05)	(0.06)	(0.03)	(0.03)
Science	1.142***	1.338***	1.186***	1.236***
	(0.04)	(0.05)	(0.03)	(0.03)
Self-Contained Class	1.757***	1.105	1.084**	1.374***
	(0.09)	(0.07)	(0.03)	(0.05)
Visual and Media Arts	1.337***	1.460***	1.135**	1.295***
	(0.06)	(0.09)	(0.05)	(0.04)
World Languages	1.500***	1.369***	1.148***	1.357***
	(0.06)	(0.07)	(0.04)	(0.04)

Special education teacher	1.453***	1.629***	0.985	1.356***
	(0.03)	(0.04)	(0.02)	(0.02)
Active bilingual authorization	0.804***	0.979	0.869***	0.847***
	(0.02)	(0.04)	(0.02)	(0.02)
Teacher race/ethnicity				
(Reference group: White)				
American Indian or Alaska Native	1.235***	1.245**	0.914	1.123*
	(0.08)	(0.10)	(0.06)	(0.05)
Asian American	0.948*	0.980	0.906***	0.937***
	(0.02)	(0.03)	(0.02)	(0.01)
Native Hawaiian/Pacific Islander	0.958	0.843	0.880	0.882*
	(0.09)	(0.11)	(0.08)	(0.05)
Black/African American	1.217***	1.162***	0.955	1.106***
	(0.03)	(0.04)	(0.03)	(0.02)
Hispanic/Latino	1.001	0.950**	0.750***	0.881***
	(0.02)	(0.02)	(0.01)	(0.01)
Multiracial	0.985	1.040	0.996	1.005
	(0.05)	(0.05)	(0.04)	(0.03)
Race missing	0.966	0.176***	1.045	0.739***
	(0.04)	(0.01)	(0.04)	(0.02)
Teacher age				
(Reference group: 40-49)				
Under 30	0.910***	1.330***	1.655***	1.268***
	(0.02)	(0.03)	(0.04)	(0.02)
30-39	0.947***	1.106***	1.566***	1.168***
	(0.01)	(0.02)	(0.03)	(0.01)
50-59	0.918***	0.921***	1.300***	0.989
	(0.02)	(0.02)	(0.02)	(0.01)
Over 60	0.660***	0.689***	8.305***	2.841***
	(0.02)	(0.03)	(0.17)	(0.05)
Teacher experience (years)				
(Reference group: 6-10)				
1-2	1.364***	1.910***	1.436***	1.647***
	(0.03)	(0.05)	(0.04)	(0.03)
3-5	1.044*	1.473***	1.417***	1.342***

	(0.02)	(0.03)	(0.03)	(0.02)
11-15	0.934***	0.660***	0.745***	0.773***
	(0.02)	(0.02)	(0.02)	(0.01)
16-20	0.801***	0.380***	0.661***	0.623***
	(0.02)	(0.01)	(0.02)	(0.01)
Over 20	0.661***	0.170***	0.944**	0.630***
	(0.02)	(0.01)	(0.02)	(0.01)
Teacher education level				
(Reference group: BA + 30 or fifth year)				
BA or less	0.987	0.930***	1.038*	0.992
	(0.02)	(0.02)	(0.02)	(0.02)
Masters	1.127***	1.084***	1.014	1.085***
	(0.03)	(0.02)	(0.02)	(0.02)
Masters + 30 or Doctorate	1.395***	1.245***	1.082***	1.268***
	(0.03)	(0.03)	(0.02)	(0.02)
Education missing	1.036	1.054	1.047	1.044
	(0.05)	(0.05)	(0.04)	(0.03)
Charter indicator	0.491***	1.346***	1.324***	0.991
	(0.04)	(0.07)	(0.04)	(0.03)
School level				
(Reference group: Elementary)				
Elementary-High Combination	0.817	1.053	0.984	0.858*
	(0.10)	(0.09)	(0.04)	(0.05)
High School	0.570***	1.035	1.064	0.789*
	(0.07)	(0.05)	(0.05)	(0.07)
Intermediate/Middle/Junior High	0.808***	1.082	1.027	0.906**
	(0.04)	(0.06)	(0.03)	(0.03)
Total enrollment (hundred)	1.005	0.979***	0.992*	0.993
	(0.01)	(0.00)	(0.00)	(0.01)
Magnet indicator	0.933	0.792***	1.001	0.917*
	(0.04)	(0.03)	(0.04)	(0.03)
Locale				
(Reference group: City)				
Suburban	0.828***	1.394***	1.087***	1.021
	(0.02)	(0.03)	(0.02)	(0.02)

Rural	0.569***	1.811***	1.108***	0.976
	(0.03)	(0.09)	(0.03)	(0.03)
Proportion White students	0.688**	0.998	1.190*	0.939
	(0.08)	(0.09)	(0.09)	(0.06)
Proportion Hispanic/Latino students	0.919	0.960	1.276***	1.105
	(0.09)	(0.07)	(0.09)	(0.06)
Proportion of Black students	1.585**	1.794***	1.500***	1.771***
	(0.26)	(0.28)	(0.17)	(0.18)
Proportion of Unduplicated Pupil Count	2.233***	1.202*	0.796***	1.294***
	(0.29)	(0.09)	(0.05)	(0.10)
Proportion of students experiencing homelessness	0.855	2.189***	1.677***	1.434**
	(0.15)	(0.32)	(0.25)	(0.17)
Proportion of students with disabilities	0.692	0.884	1.224*	0.882
	(0.13)	(0.10)	(0.12)	(0.10)
Constant	0.032***	0.093***	0.055***	0.175***
	(0.00)	(0.01)	(0.01)	(0.01)
Year fixed effects	Yes	Yes	Yes	Yes
N	768,488	768,488	768,488	768,488

Notes: * p<0.05, ** p<0.01, *** p<0.001. PPS = Pupil Personnel Services.
Source: Learning Policy Institute analysis of 2022–23 to 2024–25 public and restricted data from the California Department of Education and the California Commission on Teacher Credentialing, and the National Center for Education Statistics Education Demographic and Geographic Estimates (EDGE) data.

Appendix C: Overview of California Investments in the Teacher Workforce

Table C1. Teacher Recruitment, Preparation, and Retention Investments, 2016-2025

Program	Purpose (as of most recent year of funding)	Budget Year Funding Was Provided	Funding (total funding in bold)	Funding Timeline	Additional Sources
Targeted Programs					
Teacher Residency Grant Program	To launch or expand teacher and school counselor residency programs, with a focus on addressing shortage fields and increasing educator diversity; includes $20M for statewide residency technical assistance center. Grant amount is $40,000 per resident, with $20,000 minimum stipend required per resident.	2018-19 2021-22 2022–23 2025-26	52M 350M 270M 70M **742M**	Grants can be awarded by CTC through June 30, 2030 and LEAs have 5 years to spend.	Cal. Educ. Code Sec. 44415.8; Carver-Thomas, D., Leung-Gagné, M., & Jeannite, D. (2024). Tackling teacher shortages: What we know about California's teacher workforce investments. Learning Policy Institute.
Golden State Teacher Grant Program	Provides up to $10,000 in financial assistance to candidates enrolled in teacher preparation or pupil personnel services credential programs who commit to working in priority schools (55% or more unduplicated pupils).	2020-21 2021-22 2023-24 2024-25 2025-26	15M 500M 6M 1.5M 50M **572.5M**	Candidate applications accepted by California Student Aid Commission through June 30, 2026.	Leung-Gagné, M., Maria Castillo, M., Patrick, S. K., Carver-Thomas, D., Kini, T., Bingener, C., & Giani, M. V. (2025). Strengthening the educator pipeline through service scholarships: California's Golden State Teacher Grant Program. Learning Policy Institute.

Program	Purpose (as of most recent year of funding)	Budget Year Funding Was Provided	Funding (total funding in bold)	Funding Timeline	Additional Sources
Student Teacher Stipend Program	Provides stipends of $10,000 to be paid to credential candidates during the school year in which they are completing their student teaching.	2025-26	300M	LEAs may apply beginning July 1, 2026; $100M per year beginning in fiscal year 2026-27, to the extent funds are available.	California Commission on Teacher Credentialing. Student Teacher Stipend Program. (accessed 02/24/26)
National Board Certified Teacher Certification Incentive Program	Provides financial awards to teachers holding National Board certification who teach in priority schools ($5K/year for 5 years); provides up to $2500 to subsidize the cost of certification/recertification for teachers working in priority schools.	2021-22 2025-26	250M 30M **280M**	Funds are available for encumbrance until June 30, 2030 and for liquidation until June 30, 2034.	Cal. Educ. Code Sec. 44395, AB 30, Sec. 42 (2021); AB 121, Sec. 35, 60 (2025).
Classified School Employee Teacher Credentialing Program	Provides financial assistance to classified school employees to pursue teaching credentials ($4,800 per year for up to five years per participant ($24,000 total).	2016-17 2017-18 2021-22	20M 25M 125M **170M**	No funding remains.	Cal. Educ. Code Sec. 44391 – 44393.
Early Education Teacher Development Grant	Competitive grants to LEAs to increase the number of early educators available to serve in the	2021-22	**108M**	Grant period runs July 1, 2022 through June 30, 2028.	California Department of Education. Early Education

Program	Purpose (as of most recent year of funding)	Budget Year Funding Was Provided	Funding (total funding in bold)	Funding Timeline	Additional Sources
	California State Preschool Program (CSPP) and Transitional Kindergarten (TK), and increase specific competencies for early educators within CSPP, TK, or Kindergarten (K) programs				Teacher Development Grant. (accessed 02/24/26)
Local Solutions to the Shortage of Special Education Teachers Grant	Provided competitive grants to LEAs to design and implement local solutions to address the shortage of special education teachers (up to $20,000 per participating teacher to assist with expenses related to earning a special education credential, including tuition, stipends, signing bonuses, and induction).	2018-19	**50M**	N/A	California Commission on Teacher Credentialing. Grant Attracts Thousands of Special Education Teachers to Help Fill Statewide Vacancies (May 23, 2024).
California Examination and Assessment Fee Waiver Program	Subsidized teacher preparation examination fees for teacher and administrator candidates, which were awarded automatically by CTC.	2022–23 2023-24	**48M**	No funding remains.	California Legislative Analyst's Office. The 2025-26 Budget: Educator Workforce (2025).
Integrated Undergraduate	Supported expanding integrated programs that allow participants to	2016-17 2022–23	10M	Grantees must expend grant funds	Cal. Educ. Code Sec. 44259.1.

Program	Purpose (as of most recent year of funding)	Budget Year Funding Was Provided	Funding (total funding in bold)	Funding Timeline	Additional Sources
Teacher Preparation Grants	earn an undergraduate degree and a teaching credential within four years.		20M **30M**	by the end of the two-year liquidation period that follows the grant end date of June 30, 2025, i.e. by June 30, 2027.	California Commission on Teacher Credentialing, Report to the Legislature on the Classified School Employee Teacher Credentialing Program (Dec. 2025).
Bilingual Teacher Professional Development Program	Provides grants to LEAs to support existing teachers pursuing authorization to teach bilingual and multilingual classes and related PD for teachers/paras.	2017-18 2023-24	5M 20M **25M**	Grant funds awarded by CDE in most recent round of funding cover the period from January 1, 2024, to June 30, 2029.	California Department of Education. Bilingual Teacher Professional Development Program. (accessed 02/24/26).
California Center on Teaching Careers	Established a statewide teacher recruitment center. CTC competitively awarded grant to Tulare COE to operate center.	2016-17 2021-22	5M 1.7M **6.7M**	N/A	California Legislative Analyst's Office. The 2025-26 Budget: Educator Workforce (2025).
STEM Teacher Recruitment Grant Program	Provides a funding opportunity for non-profit organizations to develop or expand a program that recruits individuals into a STEM teaching	2021-22 2025-26	3M 3M	Grant funds are available for encumbrance or expenditure through	California Legislative Analyst's Office. Proposition 98 and K-12 Education Spending Plan (2025); Office

Program	Purpose (as of most recent year of funding)	Budget Year Funding Was Provided	Funding (total funding in bold)	Funding Timeline	Additional Sources
	pathway, with priority to recruitment programs that recruit teachers into public school districts in underserved areas.		**6M**	the 2027–28 fiscal year.	of Public School Construction. Access STEM Teacher Recruitment Grant Funding; AB 104, Sec. 25 (2025); AB 164, Sec. 29 (2021).
Total Targeted Programs			**2.338 billion**		
Block Grant Programs					
Educator Effectiveness Block Grant	Formula funding to LEAs for professional learning for teachers, administrators and classified staff. Allowable uses include beginning teacher induction and a focus on retaining teachers.	2021-22	1.5B	Funding can be expended through the 2025–26 fiscal year.	California Department of Education. Educator Effectiveness Block Grant (accessed 02/24/26).
Student Support and Professional Development Block Grant	Formula funding to LEAs. Allowable uses include developing and expanding teacher recruitment and retention strategies.	2025-26	1.7B	Funds may be expended during the 2025–26, 2026–27, 2027–28, and 2028–29 fiscal years.	California Department of Education. Student Support and Professional Development Block Grant (accessed 02/24/26).