Getting Down to FACTS

California Principals: Trends in Supply, Preparation, Distribution, Retention, and Turnover

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Executive Summary

A growing body of research has demonstrated the impact of principals on a wide variety of school outcomes, including teacher retention and student test scores, graduation, and attendance. Research also confirms that principal turnover is generally associated with both teacher turnover and student achievement dips. Finally, evidence shows that principal effectiveness and retention are impacted by the quality and content of principals' preparation and their access to particular kinds of professional development.

In this paper, we examine the conditions of the principalship in California in recent years, including trends in preparation, experience, and turnover over time; the distribution of principals to schools of different types; and the factors associated with principal turnover. We leverage statewide, restricted-use, staff-level data from the California Department of Education (CDE) and California Commission on Teacher Credentialing (CTC). We also model principal turnover using a regression analysis that examines turnover as a function of principal characteristics (age, experience, preparation), school characteristics (type, locale, resources) and district characteristics (size, type, expenditures, salary level.

Key Findings

The California principalship is growing more diverse by race and gender: Between 2012–13 and 2024–25, the proportion of principals of color increased from 35% to 42%, with large increases for Latino/a principals and smaller gains for African American and Asian principals. The proportion of women principals also grew at each level of the system, to 47% of high school principals, 55% of middle school principals, and 74% of elementary school principals.

The principalship is aging: A larger share of principals (28%) is 55 or over than at any other time over the past 13 years, signaling pending retirements.

A small, but growing number of principals are entering via the "test-only" route: In 2024–25, 6.0% of principals had entered by passing the CPACE rather than through a preparation program, an increase from 4.6% in 2020–21.

Principal experience and preparation are inequitably distributed across the state: Rural schools, charter schools, alternative schools of choice, special education schools, and virtual schools are less

likely to have experienced and prepared principals than mainstream and non-rural schools. Inequities are not generally associated with student body composition aside from those associated with these school types.

Principals' wages are largely stagnant: After a brief increase in wages following the initial implementation of LCFF funding, wages for principals declined in real dollar terms. Over the last 3 years, salaries have been increasing once again, but they remain lower than they were at the height of the pandemic in 2020–21.

Principal turnover in California is higher than the national average: Principals in California are less likely to stay in their schools than principals nationally, with about 78% of principals remaining in their schools in 2020–21 as compared to 80% nationally. As of 2024–25, California principal retention in the same school was 78.4%.

Principal turnover in California is associated with compensation, preparation, and aspects of school working conditions. Controlling for school and principal characteristics, turnover is higher for principals who have lower salaries, those who enter through the test-only route, and those in settings that have higher teacher turnover, higher suspension rates, and higher ratios of students to teachers.

Recent improvements in preparation, induction, and professional development are appreciated by California principals and appear to impact their effectiveness. Studies of principals' experiences of preparation and induction following the adoption of new standards for licensure and accreditation find stronger perceptions of preparedness. Those who have experienced coaching and professional learning communities through 21CSLA also acknowledge the value of those experiences. Other California studies have found that principals' access to high-quality preparation and professional development related to these reforms is associated with their ability to enable greater teacher retention and student achievement gains.

Implications for California

To increase the pipeline of principals, reduce barriers to traditional preparation programs, and support equitable distribution of principal preparation and stability, California could provide funding to cover the cost of high-quality preparation programs or create paid internships in the context of an

assistant principalship or other clinical opportunity, as states like Illinois, Mississippi, and North Carolina have. While salary decisions are local in California, the state could contribute to educators' compensation through loan forgiveness, housing supports, or tax credits for educators, potentially focused on those working in particular kinds of schools.

To support ongoing supports for principals, California can ensure ongoing funding for the work of 21 CSLA, which has been funded from the federal Title II 3 percent set-aside and expand funding to support training and coaching in schools with higher levels of inexperienced and untrained principals, such as special education, alternative, and rural schools.

Both the state and districts can improve working conditions by providing sufficient resources for principals to accomplish their educational objectives. Districts can ensure that principals have support staff, such as assistant principals, counselors, and teacher leaders to address student and school needs. To address administrator overload, California could pare back unnecessary reporting requirements to reduce compliance tasks that do not contribute to effective school leadership. Further, to reduce barriers to administrative support, California could relax the 5% cap on administrative spending enforced by proposition 223 and/or the restrictions on specific program oversight funding that limit them to 1% of revenues.

Principal training in how to create a supportive school climate can make a difference in teacher turnover. The state can facilitate this learning by offering targeted training, professional learning communities, and coaching around how to create a positive school climate that enhances engagement and belonging for both students and teachers. This is already happening as part of California's large investment in technical assistance for its community schools (about ¼ of the state's schools) and could be expanded via 21CSLA or other support.

Introduction

A growing body of research demonstrates that principals have strong impacts on a wide variety of school outcomes, ranging from student test score gains[1] to graduation rates,[2] student attendance,[3] teacher retention,[4] and parent satisfaction.[5] Furthermore, principals' experience and training are associated with their effectiveness in retaining and supporting teachers, as well as enabling student learning gains.[6]

Focusing on the effectiveness of principals may be "the most efficient [school-based] way to affect student achievement".[7] As the leader of the building, the principal is responsible for, among other things, a school's instructional priorities, the recruitment and development of teachers, and the allocation of resources for teaching and learning.

Despite this critical leadership role, principals are frequently armed with inadequate preparation for the role or professional development while in the role; difficult working conditions; insufficient salaries; lack of autonomy; and ineffective accountability policies—the very factors most

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[1] Bartanen, B., Grissom, J. A., & Rogers, L. K. (2019). The impacts of principal turnover. *Educational Evaluation and Policy Analysis, 41(*3), 350-374. https://journals.sagepub.com/doi/abs/10.3102/0162373719855044; Béteille, T., Kalogrides, D., & Loeb, S. (2012). Stepping stones: Principal career paths and school outcomes. *Social Science Research, 41(*4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003; Branch, G., Hanushek, E., & Rivkin, S. (2012). *Estimating the effect of leaders on public sector productivity: The case of school principals.* In National Bureau of Economic Research (17803; NBER Working Paper Series). https://doi.org/10.3386/w17803; Coelli, M., & Green, D. A. (2012). Leadership effects: School principals and student outcomes. *Economics of Education Review, 31*(1), 92-109.; Dhuey, E., & Smith, J. (2014). How important are school principals in the production of student achievement?. *Canadian Journal of Economics/Revue canadienne d'économique, 47*(2), 634-663.; Miller, A. (2013). Principal turnover and student achievement. Economics of Education Review, 36, 60–72. https://doi.org/10.1016/j.econedurev.2013.05.004

[2] Coelli, M., & Green, D. A. (2012). Leadership effects: School principals and student outcomes. Economics of Education Review, 31(1), 92-109.

[3] Bartanen, B., Grissom, J. A., & Rogers, L. K. (2019). The impacts of principal turnover. Educational Evaluation and Policy Analysis, 41(3), 350-374. https://journals.sagepub.com/doi/abs/10.3102/0162373719855044

[4] Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). The influence of school administrators on teacher retention decisions. American educational research journal, 48(2), 303-333.; Grissom, J. A., & Bartanen, B. (2019). Principal effectiveness and principal turnover. Education Finance and Policy, 14(3), 355-382. DOI: https://doi.org/10.1162/edfp_a_00256

[5] Grissom, J. A., & Loeb, S. (2011). Triangulating principal effectiveness: How perspectives of parents, teachers, and assistant principals identify the central importance of managerial skills. American Educational Research Journal, 48(5), 1091-1123.

[6] Darling-Hammond, L., Wechsler, M. E., Levin, S., Leung-Gagné, M., & Tozer, S. (2022). *Developing effective principals: What kind of learning matters?* Learning Policy Institute. https://doi.org/10.54300/641.201; 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

[7] Grissom, J. A., Egalite, A. J., & Lindsay, C. A. (2021). How principals affect students and schools: A systematic synthesis of two decades of research. Wallace Foundation. http://www.wallacefoundation.org/principalsynthesis%60

likely to undermine effectiveness and lead to principal turnover.[8] These challenges are greatest in schools with the fewest resources—which also tend to serve the most students of color, and the lowest income students. Such schools—and their students--therefore are most likely to bear the brunt of the destabilizing effect of principal turnover.

For many years, California's school leaders have faced a challenging environment. Following the enactment of Proposition 13, which led to declining revenues and repeated budget cuts from the 1980s through the early 2000s, California became one of the most poorly funded states in the nation. By 2010, the state had the largest ratios of students to teachers and administrators in the nation, lagging salaries, and deteriorating working conditions. In addition, almost all of the professional learning supports for educators that had once been offered by the state were eliminated between 2000 and 2010. In that era, many principals entered their jobs without preparation and stayed for a short period of time; turnover rates for California principals were much greater than the national average and were particularly high in rural and urban schools serving low-income students.[9]

In this paper, we examine the conditions of the principalship in California in more recent years, including trends in preparation, experience, and turnover over time; the distribution of principals to schools of different types, and the factors associated with principal turnover. We begin with a discussion of policy changes affecting the principalship over the last decade as background for these trends. We conclude with a discussion of the policy considerations relevant to achieving a well-prepared, diverse, and stable principal workforce for the future.

The Principalship in California

California's student population comes to school with great needs. Approximately 65% of California's public-school students are classified as socioeconomically disadvantaged, a proportion that has been rapidly increasing over the last decade.[10] A growing share of the state's students, currently

[8] Levin, S. & Bradley, K. (2019). *Understanding and Addressing Principal Turnover: A Review of the Research*. National Association of Secondary School Principals and Learning Policy Institute. https://learningpolicyinstitute.org/product/nassp-understanding-addressing-principal-turnover-review-research-report

[9] Podolsky, A. (2023). Patterns and predictors of principal turnover. Stanford University. Dissertation. https://purl.stanford.edu/sh273cz5082

[10] California Department of Education (2025) CAASPP testing data. https://www.cde.ca.gov/ta/tg/ca/caaspp2025datasummary.asp

about four percent, experience homelessness.[11] California's public schools also educate over one million English learners, more than any other state in the nation, and second in proportion (18.9%) only to Texas (20.2%); nationally, about 10.6% of students are English learners.[12]

Beginning in 2013, with the passage of the Local Control Funding Formula and the Local Control and Accountability Act (LCAP), the creation of a new accountability system, the adoption of new student standards and educator standards (including the 2013–14 Administrative Services Credential Program Standards), California has made substantial changes to statewide resources for schools, school finance and accountability, principal credentialing requirements, and professional learning for school leaders. While teasing out the causal impact of each of these policies is beyond the scope of this paper, in this section we provide a brief overview and timeline of the key policy changes to contextualize our descriptive findings.[13]

Changes to School Finance and Accountability

Prior to LCFF, and despite the greater needs of California's students, the state's principals worked for several decades with less per-pupil funding than those in most other states. In the 2012–13 school year, California ranked 46th among states in per pupil K–12 funding, adjusted for cost of living.[14]

Under the leadership of newly elected Governor Jerry Brown, the California legislation enacted LCFF in 2013 to increase equity, adequacy, and local control of school finance and accountability. LCFF redesigned the state's system of financing schools by providing increased resources for students with greater needs and significant autonomy for local communities over the allocation of state dollars. Starting in 2014–15, per pupil funding and resources gradually increased. By the 2021–22 school year, with LCFF funding fully implemented, California ranked 28th in per pupil spending.[15] In the same year,

[11] https://www.cde.ca.gov/ds/sg/homelessyouth.asp

[12] National Center for Education Statistics. (2023). "English learners (ELs) enrolled in public elementary and secondary schools, by state or jurisdiction: Fall 2011 through fall 2021." In Digest of Education Statistics (Table 204.20). U.S. Department of Education, Institute of Education Sciences. Retrieved November 26, 2025, from https://nces.ed.gov/programs/digest/d23/tables/dt23_204.20.asp?current=yes

[13] Changes to school finance and accountability, as well as those for demonstrating readiness for an administrator role and supports upon taking an administrator position have been eased into place gradually. Further, changes to credentialing and supports apply to any administrator role, and most principals take roles as an assistant principal or another administrator prior to becoming principal. We are therefore unlikely to see a clear distinction in readiness between any two incoming cohorts of principals but rather would expect a gradual increase over a longer period.

[14] Farrie, D., & Kim, R. (2024). Making the grade 2024: How fair is school funding in your state? Education Law Center.

[15] Ibid.

the California legislature voted to increase the "concentration grants" awarded to districts serving over 55% low-income, English learner, and foster youth.

LCFF also changed the state's accountability policy. Its new approach to accountability and school improvement created important new responsibilities for California administrators, alongside the new resources they received. Instead of a single test score measure used to rank schools, the state adopted measures of eight state priorities representing multiple measures of student achievement and engagement, as well as access to key resources and a broad curriculum implementing the recently adopted Common Core standards. In 2014, California districts were required to create their first 3-year Local Control & Accountability Plan (LCAP), evaluating their progress on state and local indicators of the eight state priorities, and working with their communities to determine budget allocations that could leverage progress toward strategic goals.

In addition to creating new formulas for funding and processes for accountability, LCFF created the California Collaborative for Educational Excellence (CCEE) as a statewide capacity-building partner to help schools, districts, and county offices of education (COEs) translate LCFF policy into local practice with a focus on capacity building, rather than punitive action. A statewide system of support was created to provide technical assistance to districts making inadequate progress on their state dashboard indicators. While this new system has brought greater complexity to the roles of administrators in California, it is possible that its emphasis on support rather than sanctions has relieved some of the pressures on administrators that existed in the less supportive, underresourced system that pre-dated 2013.

Changes to Principal Credentialing

Major changes for California principal preparation also took place during this window, led by the California Commission on Teacher Credentialing (CTC). In 2013, the CTC adopted a new framework for administrator preparation and performance along with an aligned set of reforms. We highlight three major changes as part of these reforms: revised and aligned standards for administrator preparation and performance; a greater emphasis on performance assessment in preparation; and a revised induction requirement for administrators to clear (or finalize) their credentials.

Administrator Credentialing in California: Overview and Key Terms

California administrators have a multi-step credentialing process. To earn a ***preliminary credential***, administrators must demonstrate (1) five years of full-time experience as pupil-facing educators (teaching or student services), (2) demonstrate readiness for an administrative role, either through an ***approved credentialing program*** or by passing the California Preliminary Administrative Credential Examination (***CPACE***) assessment, and (3) begin a job as an administrator in a California public school.

After completing these preliminary requirements, administrators have five years to "***clear***" (that is, finalize) their credential by (1) working full-time in an administrative role for at least two years and, as of 2014, (2) completing a two-year, job-embedded induction program.

The credentialing process builds in flexibility for both candidates and districts: educators who fulfill preliminary requirements but do not hold an administrative role can apply for a "Certificate of Eligibility," which does not expire; districts may hire candidates with fewer than the required years' experience via a waiver; and candidates who have not yet completed all preliminary requirements may hold an administrative role with an intern credential while completing their credentialing program.

An independent state agency, the California Commission on Teacher Credentialing (***CTC***) oversees both the credentialing process itself and the standards and accreditation of education preparation programs—including both those providing pre-service preparation programs required for a preliminary credential and the two-year induction required for a clear credential.

California Administrator Professional Standards and Performance Expectations. As part of CTC's changes to administrator credentialing, CTC substantially revised the existing performance standards for administrators (the California Professional Standards for Education Leaders, or CPSELs) and created an aligned set of performance expectations for administrator candidates (the California Administrator Performance Expectations, or CAPEs). These standards are organized around six domains: development & implementation of a shared vision; instructional leadership; management & learning environment; family & community engagement; ethics & integrity; and external context & policy. The adoption of these new and newly revised standards facilitated alignment in the nature, content, and availability of preparation and development required of and provided to California's administrators from preservice preparation through induction and ongoing professional learning.

Performance-Based Assessments. CTC requirements also shifted to create a greater emphasis on performance-based assessments to complete the preliminary requirements, whether through a traditional preparation program or the test-only route to an administrative credential. As part of traditional preparation program requirements, CTC introduced the California Administrator Performance Assessment (CalAPA). CalAPA is designed to move traditional preparation programs from theory-heavy coursework into a more applied, performance-based preparation. CalAPA requires three "*investigate*, *plan*, *act*, and *reflect"* cycles. These cycles focus on analyzing data for school improvement, facilitating professional learning communities, and supporting teacher growth through coaching and feedback—topics aligned to the new California Administrator Performance Expectations. Beginning in 2019, CTC requires traditional preparation candidates to pass CalAPA to complete a traditional preparation program.

For principals bypassing a traditional preparation program through the test-only route to credentialing, CTC incorporated two "performance" modules, also aligned to the new California Administrator Performance Expectations. In the first module, candidates are asked to review exhibits from a teacher's classroom, including a video-recorded segment of a teacher's instruction, and provide a written analysis of the teacher's effectiveness. In the second module, the candidate reviews exhibits related to a school and then provides a written analysis regarding the school's leadership.

Two-Year Induction Requirement. In 2014, CTC also substantially revised the induction program required to clear administrator credentials. The revised induction program is two years long and includes at least 40 hours per year of job-embedded coaching along with professional development and aligned assessments to measure administrator progress. The revised induction program is designed to provide individualized support to new administrators aligned to the state's revised California Professional Standards for Education Leaders.[16] While administrators have five years to complete this induction and clear their credential, CTC expects administrators to enroll in the induction program during their first year working in an administrator position.

Changes to Principal Development

Recent years have also seen expansion to ongoing supports for administrators. In 2019, the California legislature authorized the 21st Century California School Leadership Academy (21CSLA) to provide accessible, high-quality professional learning to California's PreK–12 educational leaders, including school principals. Available supports include communities of practice, local professional learning, and individualized coaching. As with the induction requirement, 21CSLA aligns its professional learning supports to the state's revised California Professional Standards for Education Leaders.

A prior iteration of the California School Leadership Academy had previously supported administrator learning but was ended due to budget cuts in 2003. Initial 21CSLA services were funded through a Title II set-aside and are available free of charge to administrators in local education agencies (LEAs) receiving Title II funds.

This Study: Outline, Data, & Approach

In this study, we leverage statewide, restricted-use, staff-level data from the California Department of Education (CDE) to describe trends in the public-school principal workforce. Data include the principals' own demographics (gender, race/ethnicity, and age) and experience, school characteristics, and turnover patterns. We supplement these data with restricted-use data from the California Commission on Teacher Credentialing (CTC) on principals' preparation route to administrative

[16] Wechsler, M. E., Patrick, S. K., Thompson, C., & Levin, S. (2024). *On the Path to Leadership: California's Administrator Induction Programs.* Learning Policy Institute. https://learningpolicyinstitute.org/product/california-administrator-induction-programs-report

credentialing, and CDE public-use data on compensation. These analyses are intended to leverage the rich existing literature on the topic and describe the current policy landscape in California. We conclude with policy proposals to support a healthy, stable principalship for California public schools.

We ask the following research questions:

- *What are the longitudinal trends in the California principal workforce?* In this section, we provide descriptive, longitudinal analyses of principal demographics, including: age and experience; race, ethnicity, and gender; preparation; and compensation.
- *What do we know about changes in the professional learning opportunities available to California principals?* In this section, we rely on recent research that documents principals' views of their preparation and professional development opportunities as policy initiatives have unfolded over the last decade.
- *How are principals distributed across California schools?* In this section, we describe the distribution of principals' age, training, and experience across California schools. These findings provide insight into the differences in principals' characteristics by school locale, type, and student demographics.
- *What principal and school characteristics predict turnover for California principals?* We conclude by modeling the predicted probability of turnover for California principals, using key principal and school characteristics.

Samples & Terminology

- **District & School Samples:** We limit the district sample to elementary, high school, unified, and county office of education districts. Within these districts, we include: all traditional schools (including both charters and virtual schools); alternative schools of choice (such as magnet or independent study programs); and special education schools. This sample limitation excludes districts that are operated by community colleges, regional occupation centers or programs, the state board of education, or joint powers authority, as well state special schools, statewide benefit charter, non-school location, or administration-only districts. The following school types are also excluded in the sample: county community, community day, continuation, juvenile court, opportunity, youth authority, state special, special education adult transition, regional occupational, and home and hospital schools.
- **Principal Samples:** Our principal sample includes all full- or part-time school site leaders in California k–12 public schools. Our principal assignment data were captured on census day, not updated throughout the year. We allow schools to have multiple principals and principals to work across multiple schools, as reflected in the CDE staffing data. As a specification check to ensure that the results are not driven by schools or principals with multiple records in the same year, we include a secondary set of analyses in the technical appendix. This secondary set of analyses is limited to the subset of principals work in a single school and schools with a single principal in each year. When interpreting findings in the main text, we look to ensure that our interpretations are consistent across the two samples.
- **Year Samples:** Where we describe findings by year, we provide data on the maximum number of years allowed by our data. The longer time horizon provides greater context for these year-by-year findings. Where we provide a single data point, averaged across years, the sample will begin with the 2021–22 school year, to provide a robust, recent sample with minimal influence from the COVID-19 pandemic.

- **Principal turnover:** As a stand-alone term, turnover will refer to all principal movement from their existing position. As our data reflect census day staffing, turnover is measured once each year, when we compare individuals' roles in fall of one year to the fall of the following year. When we refer to turnover, we give the school year with which the following year is compared—that is, "turnover in a school following the 2022–23 school year" means that the principal was identified as principal of that school in fall 2022, but not identified as principal of that school in fall 2023. Turnover can take several forms (i.e., stepping back into another school-based role, being promoted into a district role, transferring to a principal role in another school, or exiting employment as a California public school educator).
- **Principal retention:** Represents principals who remained in the same role, at the same school as the year before.

Findings

Trends in the Principal Workforce

Longitudinal data on key demographic trends can help contextualize the current composition of the principal workforce. As such, we provide demographic trends about age; race, ethnicity, and gender; education; and compensation.

We find evidence that the California principalship is aging, with an increasing share of principals at or near retirement age. There are signs that the principalship is diversifying, especially in terms of larger shares of Latino and Asian American principals. Finally, we find that principal compensation has stalled in recent years, despite the increase in responsibility principals hold in the LCFF era.

Age

Under California's retirement benefit program for public educators (i.e., CalSTRS), educators are eligible to retire at age 55 with at least five years of service credit, or age 50 with 30 years of service

credit.[17] Educators receive a larger retirement benefit for each additional year that they remain working after 55.[18] On average, California educators who are pension members retire at 63 years old.[19]

In the 2024–25 school year, a smaller percent of California's principals were aged 54 or under (72.0%) than any time in the 13 year span, and 1.5 percentage points lower than the overall average (74.1%, across all 13 years, Figure 1). We see a consistent decrease in the percent of principals under age 55 beginning in 2020–21. We interpret this longitudinal trend with some caution: first, CDE data definitions changed after 2018–19, which means that principals may be identified in a systematically different way than in the 2012–13 through 2018–19 school years that provide a reference point. Second, as we will see below, principal turnover was lower in 2019–20 and 2021–22 so there is some chance that the age trend is driven by trends related to the pandemic, and not an underlying demographic change.

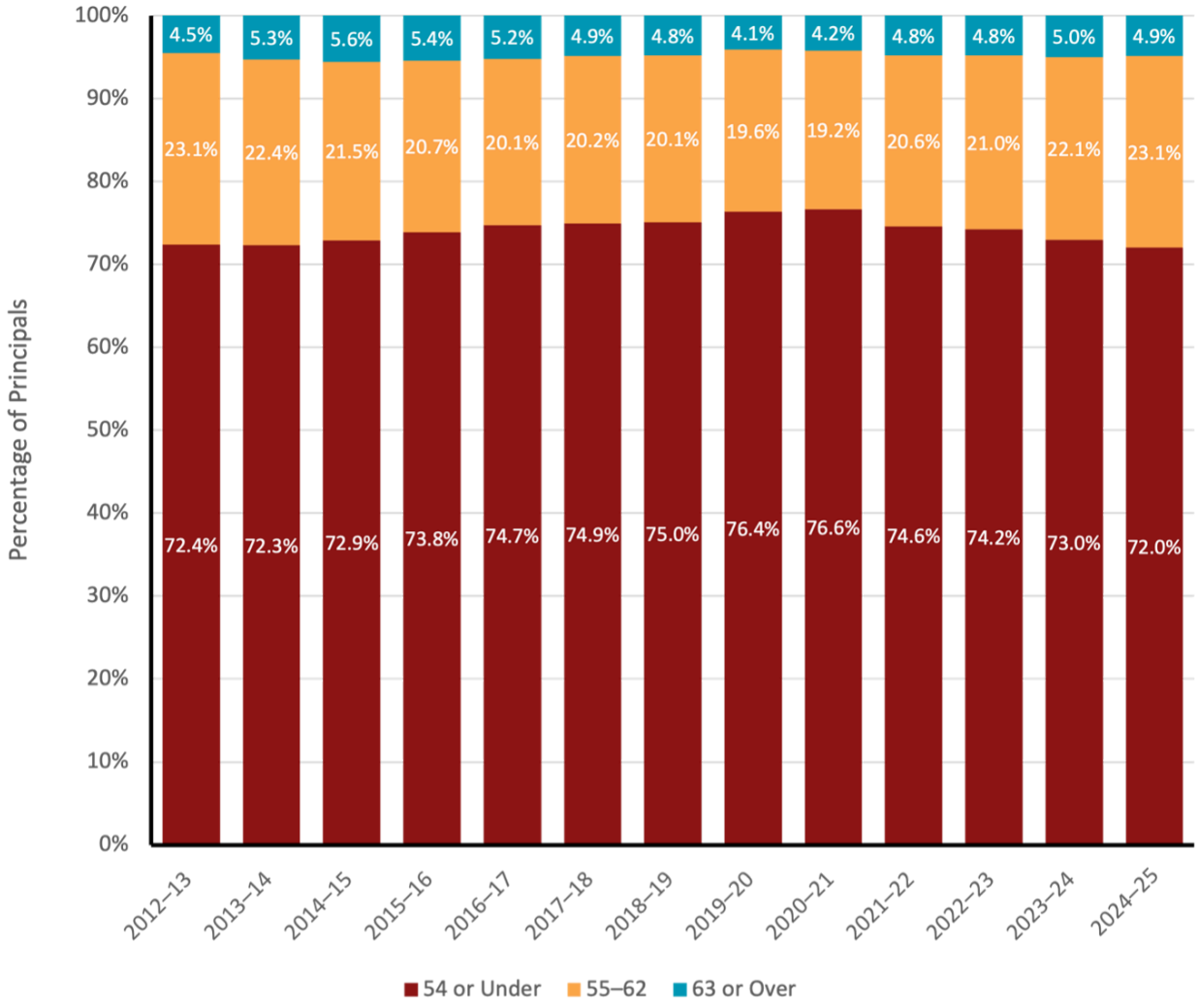
A principal workforce that is getting older could suggest that these individuals, many of whom have likely been in the system for a long time, will start to retire and exit the system, inevitably resulting in the loss of expertise and experience that could negatively impact the schools they lead. It also suggests the need to attract, prepare, retain, and support more principals in the upcoming years as the workforce faces higher retirement.

[17] California public school educators retirement plans are provided through the California State Teachers' Retirement System (CalPERS). The California Public Employees' Pension Reform Act (PEPRA) changed retirement benefits for CalPERS members, in particular impacting those joining the system after January 1, 2013. These more recent members will not have the option of retirement at age 50 with 30 years' service.

[18] CalPERS (2024, March 28) *Public Employees' Pension Reform Act (PEPRA)*. https://www.calpers.ca.gov/about/laws-legislation-regulations/public-employees-pension-reform-act

[19] Jones-Ferguson (2025, June 18) *A look at the lives of CalSTRS members (PEPRA)*. https://www.calstrs.com/a-look-at-the-lives-of-calstrs-members

Figure 1. Principal Age, 2012–13 through 2024–25



Note: N = 116,707.
Source: Learning Policy Institute analysis of California Department of Education restricted-use data.

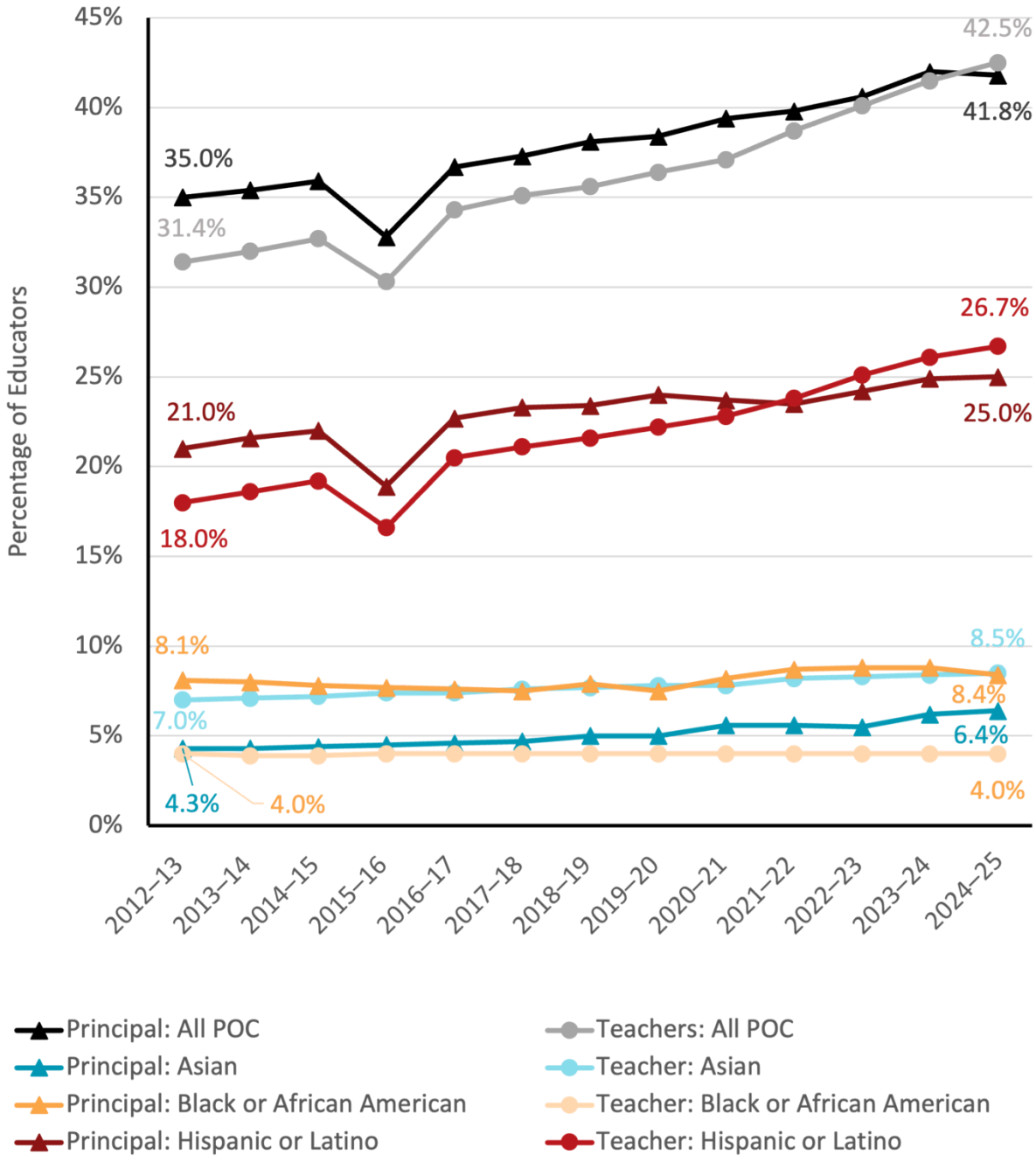
Principal Race & Ethnicity

Examining the racial and ethnic composition of California's principal workforce, we find that the principalship has diversified over time, with the proportion of principals of color growing by 6.8 percentage points between the 2012–13 and 2024–25 school years (Figure 2). As teachers represent the largest source of the principal pipeline, we also compare the racial and ethnic composition of the two workforces to contextualize this change. By 2024–25, over 2 of every 5 principal and teacher identified as an educator of color. The diversification of the principalship over this time is disproportionately driven by an increase in the proportion of principals who identify as Latino/Hispanic

and Asian American: this growth together accounts for a 6.1 percentage point increase, accounting for 90% of the growth in principals of color during this period. We see no increase in the proportion of principals who identify as Black or African American across the years of our data. Notably, a larger share of principals than teachers identify as Black or African American (8.4% of principals compared to 4.0% of teachers). These findings align closely with other recent reporting on diversity in the California principalship.[20]

[20] Yagi, E., Kim, G. H. E., Johnson Jr., S. L., Bishop, J. P. (2026). *Who leads California's schools? New insights from statewide administrator data*. Center for the Transformation of Schools, School of Education & Information Studies, University of California, Los Angeles. https://transformschools.ucla.edu/research/who-leads-californias-schools-new-insights-from-statewide-administrator-data/

Figure 2. Percentage of California Public School Principals and Teachers Who Are Educators of Color, Overall and by Race/Ethnicity, 2012–13 through 2024–25

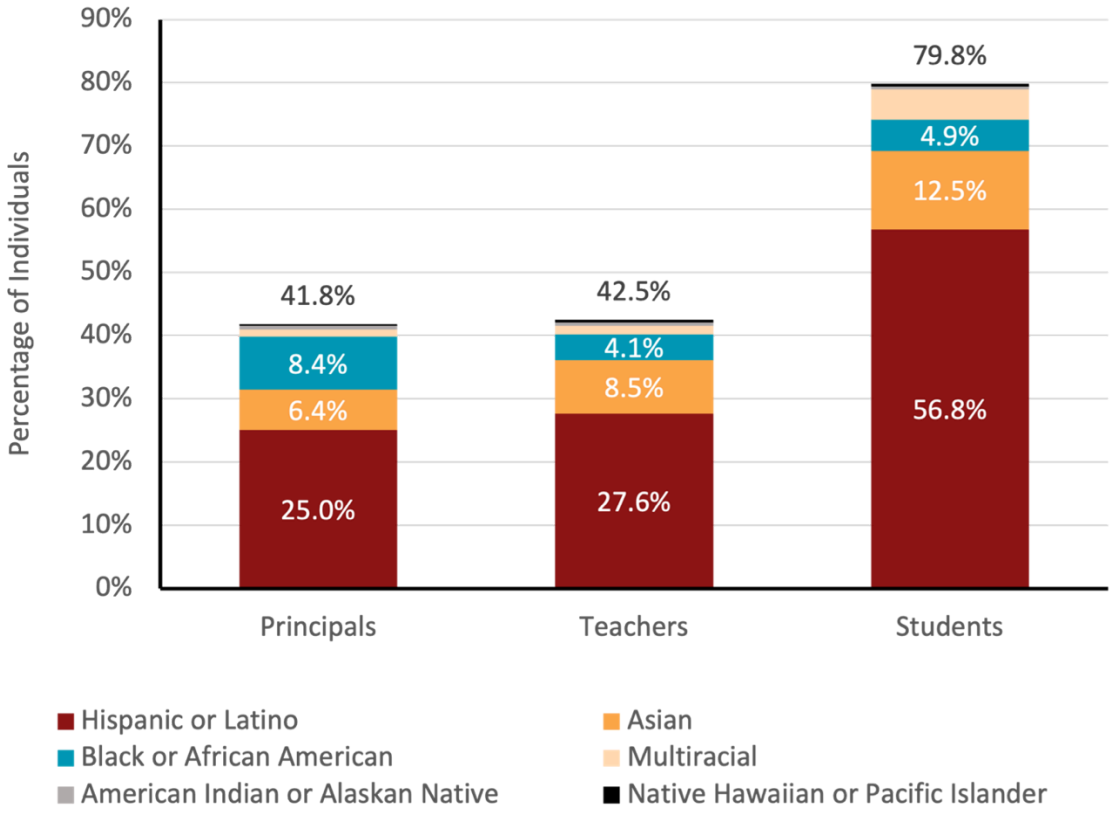


Note: Shares of principals and teachers who identify as American Indian or Alaskan Native, Native Hawaiian/Pacific Islander, and Multiracial are around or below 1% and are not shown in this graph; see Technical Appendix for these numbers. We calculate principal and teacher demographic data using restricted-use data and the same sample restriction rules as our overall sample. $N_{Principal}$=115,965; $N_{Teacher}$ = 4,130,790

Source: Learning Policy Institute analysis of California Department of Education restricted-use data.

Despite increases in diversity in the principalship in California, both the principalship and teaching force demonstrate a substantial representation gap with the students they educate: nearly twice as many students as teachers or principals identity as people of color (Figure 3). Prior research has shown that a diverse teacher workforce can have a range of benefits for students, and all students benefit from having diverse role models who enrich the whole school environment.[21]

Figure 3. Percentage of California Public School Principals, Teachers, and Students of Color by Race/Ethnicity, 2024–25



Note: Students who identify as "Asian" and "Filipino" are combined into the "Asian American" category. We calculate principal and teacher demographic data using restricted-use data and the same sample restriction rules as our overall sample. Student demographics are from publicly available sources and represent all students, statewide. $N_{Principal}$ = 9,707; $N_{Teacher}$ = 339,301

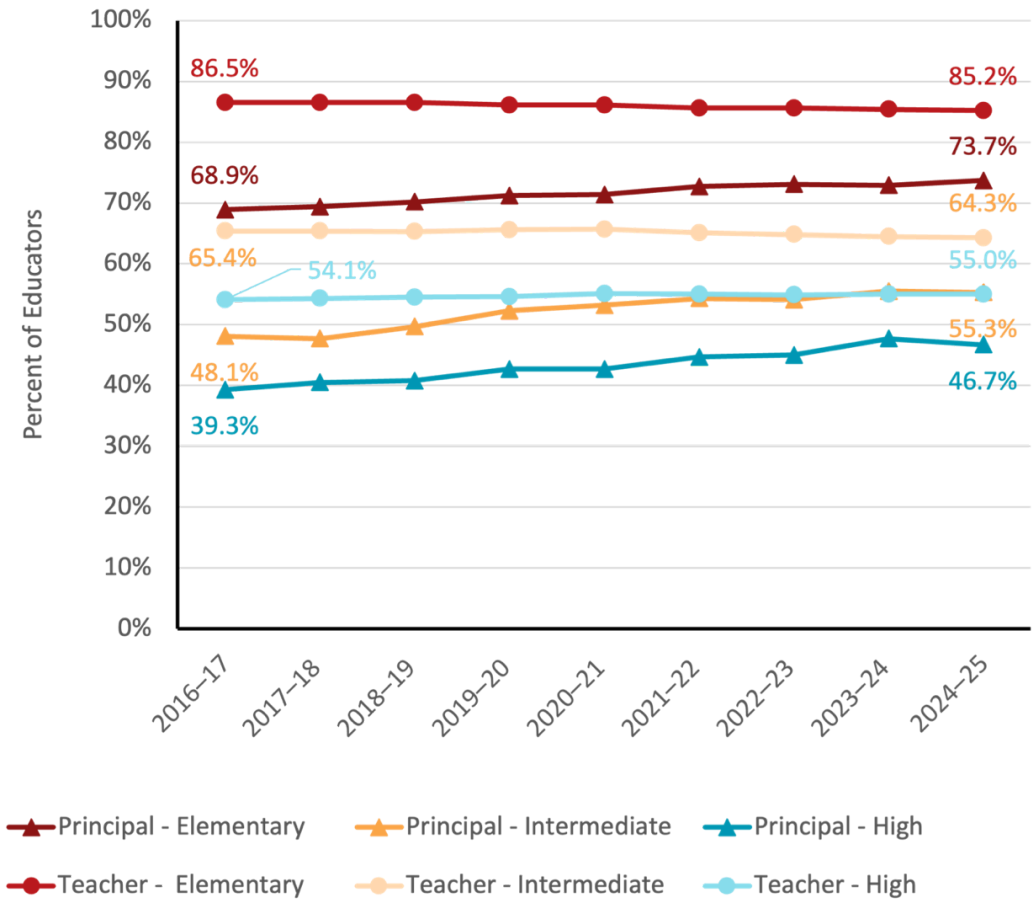
Source: Learning Policy Institute analysis of California Department of Education restricted-use data; California Department of Education. (2025). Fingertip Facts on Education in California. https://www.cde.ca.gov/ds/ad/ceffingertipfacts.asp

[21] Carver-Thomas, D., Leung-Gagné, M., & García, E. (2025). Supporting and Sustaining a Diverse Teacher Workforce. Learning Policy Institute. https://www.researchgate.net/profile/Emma-Garcia-20/publication/398302183_Supporting_and_Sustaining_a_Diverse_Teacher_Workforce/links/69308b897e61d05b530b9a32/Supporting-and-Sustaining-a-Diverse-Teacher-Workforce.pdf

Principal Gender

In examining the gender composition of the California principalship, we find that the proportion of principals who are women has increased over time, while the gender composition among teachers has remained steady. We see this growth in the share of women principals at all levels–elementary (4.8 percentage point increase), middle school (7.2 percentage points), and high school (7.4 percentage points; Figure 4). Substantial gaps remain between the gender of the teacher and principal workforce, however: while nearly three-quarters of the teacher workforce in California are women (73.1%), fewer than two-thirds of the principal workforce are women (63.1%).

Figure 4. Percent of California Public School Principals and Teachers Who Are Women, by School Level, 2016–17 through 2024–25



Note: Data from 2012–13 to 2015–16 are omitted because data on an educator's school level were only available beginning the 2016–17 school year. Other school level categories, including combined schools and preschools are also not shown. N = 84,385.
Source: Learning Policy Institute analysis of California Department of Education restricted-use data.

Experience

Principals with more experience as school leaders, and as the leaders of their schools specifically, are associated with improved student outcomes.[22] While turnover is destabilizing in any instance, the negative impacts of principal turnover on student achievement seem to largely operate through the replacement of an experienced or highly rated principal with a less experienced or highly rated principal.[23]

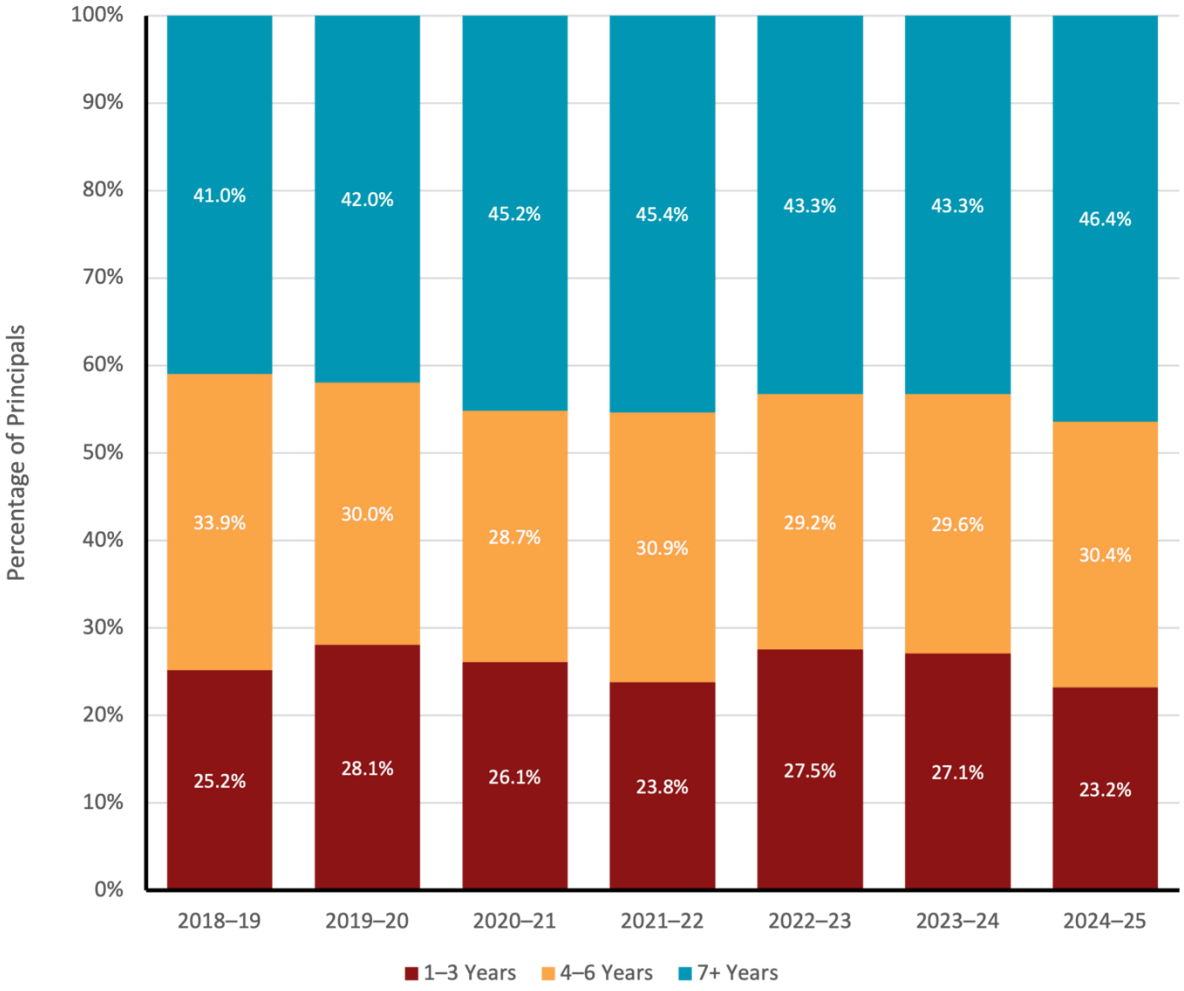
In Figure 5, we see that California principals are fairly inexperienced in the role: on average across the seven years reported, 25.8% of all principals have been in their first three years in the role at any school. The share of experienced principals (those with seven or more years' experience) has increased slowly over the last 8 years, from 41.0% to 46.4%, suggesting some greater holding power of the principalship. Nonetheless, in each year of our data, fewer than half the principals have six or more years' experience. Further, the most recent data show that California principals are, on average, somewhat less experienced than the national average, with 6.6 years' experience as principal to the national average of 6.9.[24] Given the importance of experience to principals' job performance, these data suggest that principal retention rates may still be a concern.

[22] Grissom, J. A., Egalite, A. J., & Lindsay, C. A. (2021). *How principals affect students and schools: A systematic synthesis of two decades of research*. Wallace Foundation. http://www.wallacefoundation.org/principalsynthesis%60

[23] Bartanen, B., Grissom, J. A., & Rogers, L. K. (2019). *The impacts of principal turnover. Educational Evaluation and Policy Analysis, 41*(3), 350-374. https://journals.sagepub.com/doi/abs/10.3102/0162373719855044

[24] U.S. Department of Education, National Center for Education Statistics. (2021). *Principals' years of experience: Average total years of experience as a public K–12 school principal, average years as a principal at current school, and percentage distribution of public school principals, by reported years of experience as a principal at current school and state: 2020–21.* National Teacher and Principal Survey (NTPS), Public School Principal Data File. https://nces.ed.gov/surveys/ntps/estable/table/ntps/ntps2021_sflt06_a1s

Figure 5. Principal Experience, 2018–19 through 2024–25



Notes: N = 67,070.
Source: Learning Policy Institute analysis of California Department of Education restricted-use data.

Salary

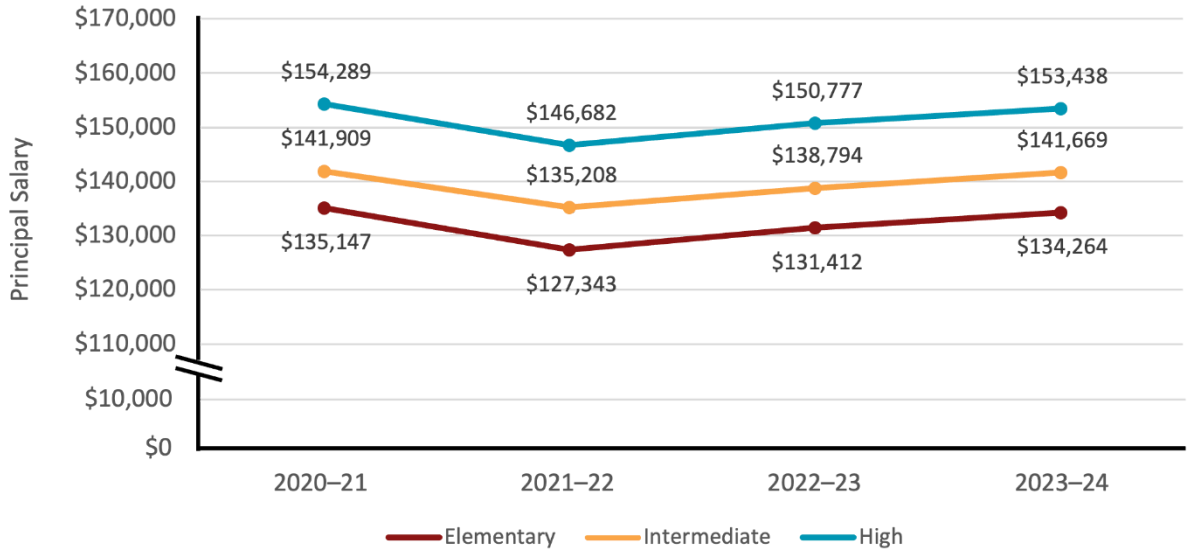
A prior analysis of educator salaries in California between the 2012–13 and 2018–19 school years found that—once accounting for inflation and local cost of living—teacher salaries rose by about 9%. However, during the same seven-year period and using the same adjustments, principal salaries dropped by 4% after having briefly increased when LCFF dollars began to flow into the system in 2014-15.[25]

[25] Podolsky, A. (2023). *Patterns and Predictors of Principal Turnover.* Stanford University. https://www.proquest.com/openview/7e1501293986740c0e4f6745ccf74010/1?pq-origsite=gscholar&cbl=18750&diss=y

In our data, we see that, adjusting for inflation, average principal salaries dropped between the 2020–21 through 2024–25 period (Figure 6) despite the increase in the share of more experienced principals during that time. Salaries dropped most dramatically during the 2021–22 school year, a period coinciding with a dramatic spike in inflation, peaking at 9.1% 12-month percentage change in the consumer price index in June 2022.[26] As inflation began to abate, inflation-adjusted salaries began to rise slightly in each of the 2022–23 and 2023–24 school years, reaching near parity with 2020–21 salaries by 2023–24. This suggests that California principals have seen a small decline in their salaries since the 2012–13 school year, despite the relatively higher levels of responsibility for principals in the LCFF era.

[26] U.S. Bureau of Labor Statistics. (2024). *12-month percentage change, Consumer Price Index, selected categories, not seasonally adjusted* [Chart]. https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm

Figure 6. California Public School Principal Salaries by School Level and in 2024 Dollars for Reporting Districts, 2020–21 through 2023–24



Note: Data on principal salaries are provided from 2020–21 through 2023–24 from the J-90 file. The J-90 provides district-average principal salaries by school level; schools will frequently adjust salaries for the size and complexity of the school being led, meaning that high schools tend to have systematically higher salaries than elementary schools. Salaries have been adjusted into 2024 dollars. District reporting of salary data to J-90 is optional, but in practice most LCFF-funded districts comply with requests for data. In 2023–24, for example, the J-90 data included data from 80.1% of school districts and county offices of education, accounting for 96.8% of the state's non-charter average daily attendance. California Department of Education, School Fiscal Services Division (2024, November 25). Selected certificated salaries and related statistics 2023–24. A Compilation of Selected Salary Statistics from 2023–24 Salary and Benefits Schedule for the Certificated Bargaining Unit (Form J-90)" https://www.cde.ca.gov/ds/fd/cs/. Locally funded (or "basic aid") districts are less likely to comply with requests for J-90 data. N = 32,439.
Source: Learning Policy Institute analysis of Bruno, P. (2025). Adjusted J-90 public-use salary data (inflation-adjusted to 2024 dollars) [Unpublished dataset]. Provided by personal communication.

Principal Preparation and Professional Learning

A principal's preparation and professional development experiences contribute to their effectiveness as well as the likelihood of them remaining in their school, and in the profession more generally.[27] Quality learning opportunities include principals' preparation before entering the role as well as on-the-job training and support to help them continue to improve after becoming a school leader.

[27] Darling-Hammond, L., Wechsler, M. E., Levin, S., Leung-Gagné, M., & Tozer, S. (2022). *Developing effective principals: What kind of learning matters?* [Report]. Learning Policy Institute. https://doi.org/10.54300/641.201.

Preparation and Professional Development

A 2017 survey of California principals' pre- and in-service learning experiences found that, as the reforms in preparation described above began to take hold, entrants to the profession reported more learning opportunities across nearly all of the areas integrated into the new standards relative to earlier entrants. The largest changes were related to instructional leadership; the ability to lead school improvement, especially for whole child approaches such as social and emotional learning and restorative practices; and the ability to meet the needs of diverse learners (Table 1). Newly graduated principals were also more likely to have experienced problem-based learning approaches and field-based projects, which were part of the new program expectations, suggesting that the reforms did indeed affect program designs.[28] In addition, in comparison to a national sample of principals, California principals felt better prepared in every domain than principals nationally. [29]

[28] Sutcher, L., Podolsky, A., Kini, T., & Shields, P.M. (2018). *Learning to Lead: Understanding California's Learning System for School and District Leaders* (research brief). Palo Alto, CA: Learning Policy Institute.
[29] Darling-Hammond, L. et al. (2022).

Table 1. 2017 Survey of California Principals' Pre- and In-service Learning Experiences

Characteristics of Preparation	CA Veterans Completers (Before 2013)	CA Recent Completers (2013 or later)
Program Characteristics		
Problem-based learning approaches, such as action research or inquiry projects	69%~	78%
Field-based projects in which you applied ideas from your coursework to your experience in the field	76%*	85%
A student cohort—a defined group of individuals who began the program together and stayed together throughout their courses	73%	80%
Instructional Leadership		
Develop students' higher-order thinking skills	54%**	73%
Raise schoolwide achievement on standardized tests	56%**	74%
Select effective curriculum strategies and materials	49%	58%
Lead instruction that supports implementation of new state standards	47%**	64%
Leading and Managing School Improvement		
Use student and school data to inform continuous school improvement	64%**	80%
Lead a schoolwide change process to improve student achievement	69%**	85%
Engage in self-improvement and your own continuous learning	71%**	87%
Create collegial and collaborative work environments	71%*	83%
Work with the school community, parents, educators, and other stakeholders	73%*	86%
Redesign a school's organization and structure to support deeper learning for teachers and students	63%	72%
Creating a Positive School Climate		
Lead schools that support students from diverse ethnic, racial, linguistic, and cultural backgrounds	70%*	82%
Lead schools that support students' social-emotional development	53%**	69%
Develop systems that meet children's needs and support their development in terms of physical and mental health	47%*	61%
Create a school environment that develops personally and socially responsible young people and uses discipline for restorative purposes	48%**	70%
Developing People		
Design professional learning opportunities for teachers and other staff	57%	65%
Help teachers improve through a cycle of observation and feedback	64%**	78%
Recruit and retain teachers and other staff	38%	40%

Characteristics of Preparation	CA Veterans Completers (Before 2013)	CA Recent Completers (2013 or later)
Manage school operations efficiently	63%	60%
Invest resources to support improvements in school performance	51%	60%
Meeting the Needs of All Learners		
Meet the needs of English learners	54%*	68%
Meet the needs of students with disabilities	53%**	75%
Equitably serve all children	62%**	79%

Notes: Principals were asked, "To what extent did your leadership preparation program emphasize [topic area]?" Principals could select "not at all," "to a minimal extent," "somewhat," "to a moderate extent," or "to a great extent." The table shows the percentage of principals who selected "to a moderate extent" or "to a great extent." ~p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001.
Source: Darling-Hammond, L., Wechsler, M. E., Levin, S., Leung-Gagné, M., & Tozer, S. (2022). Developing effective principals: What kind of learning *matters?* [Report]. Learning Policy Institute. https://doi.org/10.54300/641.201, pg. 69.

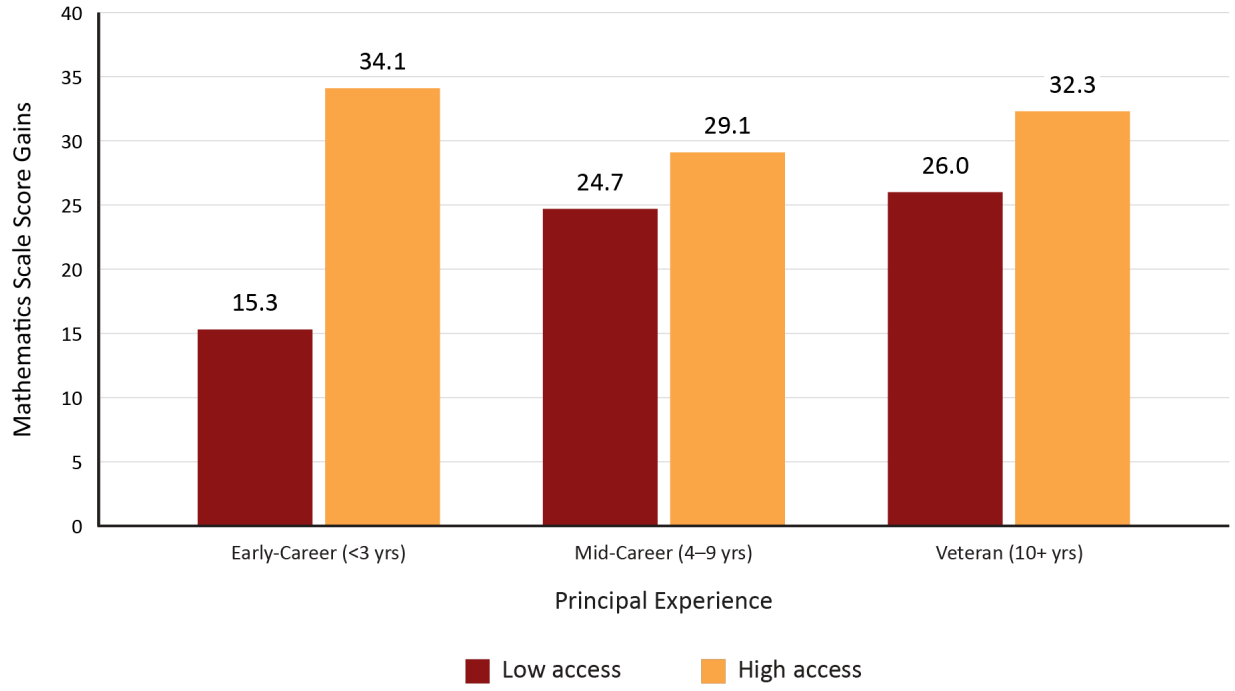
A study linking these data about California principals' preparation and professional development experiences to school outcomes, controlling for student, teacher, and school characteristics, found strong associations between these experiences and both teacher retention and student achievement gains (Figure 7). [30]

Principals' overall preparation quality[31] and each of the components of preparation considered in the analyses were positively related to teacher retention. In addition, principals' participation in higher-quality internships during their preparation was associated with significantly greater student learning gains in English language arts. The associations between principal professional development access[32] and student achievement in both English language arts and mathematics were strong and consistent. These relationships were strongest for historically underserved students of color and were particularly large for students in the schools of novice principals, suggesting that principal professional

[30] Campoli, A. K., & Darling-Hammond, L. (2022). *Principal Learning Opportunities and School Outcomes: Evidence from California*. Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED626543.pdf.
[31] The quality preparation index included measures of the extent to which the preparation experience offered: a quality internship; opportunities for applied learning; learning about leading instruction; learning about shaping a positive school climate; learning about developing people; and learning about meeting the needs of diverse learners.
[32] The index of access to principal professional development included measures of the extent to which principals have experienced p*rofessional development frequency*; *learning about managing change*; *learning about leading instruction*; *learning about shaping a positive school climate*; *learning about developing people*; and *learning about meeting the needs of diverse learners*.

development can help early-career principals more quickly reach the effectiveness levels of their more experienced peers.

Figure 7. Student Gains in Mathematics, by Principal Experience, for Principals With Differential Access to Professional Development



Source: Campoli, A. K., & Darling-Hammond, L. (2022). *Principal Learning Opportunities and School Outcomes: Evidence from California.* Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED626543.pdf, p. 15.

Induction Experiences

In addition to changes in preparation, the state began to implement an induction program for principals during these years. The state's 2-year induction model focuses on job-embedded, individualized support that includes: (1) coaching with a trained coach for at least 40 hours per year, (2) personalized professional development for at least 20 hours per year, and (3) multiple assessments that capture competency toward the practices outlined in the state's professional standards for administrators. These assessments include an initial assessment to inform a participant's individual induction plan, benchmark assessments to measure progress over the course of the program, and a summative assessment to demonstrate that participants have completed program requirements and to support programs in recommending participants for the clear credential. Programs are offered by

employers, institutions of higher education, county offices of education, and the Association of California Superintendents and Administrators (ACSA).

A recent analysis of these programs and principals' responses to them was quite positive.[33] Over 90% of California administrators who experienced induction between 2017–18 and 2020–21 rated their induction program as effective or very effective at developing the knowledge and skills needed to become an education leader. At least 85% of survey respondents reported being well or very well prepared for each of the leadership skills aligned with the California Professional Standards for Education Leaders (CPSEL). That said, the study found noticeable variability in the type and intensity of supports, including coaching, that shaped administrators' learning experiences in important ways. Given the evidence that induction supports can also make a difference in principals' effectiveness, this suggests an area to continue to monitor.

21CSLA

Finally, studies of the work of 21CSLA in organizing useful professional development for California principals have been salutary.[34] 21CSLA is one of several lead agencies that compose the California Statewide System of Support. The statewide program is administered by the 21CSLA State Center, housed at the University of California, Berkeley School of Education, in partnership with the University of California, Los Angeles (UCLA) School of Education and the California Subject Matter Project. The professional learning is delivered through seven regional academies that offer three primary types of learning opportunities: communities of practice (i.e., cohorts of leaders in similar roles collaboratively working on problems of practice), localized professional learning (i.e., learning opportunities developed in response to regional need), and individualized coaching by trained coaches – forms of professional development found to be highly valued by principals and that can contribute to

[33] Wechsler, M. E., Patrick, S. K., Thompson, C., & Levin, S. (2024). *On the path to leadership: California's administrator induction programs*. Learning Policy Institute. https://doi.org/10.54300/636.224

[34] 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. See also RTI International. (2021). 21st Century School Leadership Academy external evaluation brief, 2020–2021. RTI International; SRM Evaluation and Assessment Group. (2022). 21CSLA Year 1 & 2 formative evaluation report. University of California, Los Angeles; 21CSLA. (2021). Guidance for communities of practice (area 6), localized professional learning (area 7) and leadership coaching (area 8).

their effectiveness, and forms that have not been widely available to California principals. For example, only 37% of the principals surveyed in 2017 reported having had an on-the-job mentor or coach.

21CSLA appears to be increasing access to professional learning for school and district leaders, including school administrators, teacher leaders, and district administrators. Over the course of the first 3-year grant cycle, and despite disruptions related to the COVID-19 pandemic, 21CSLA served approximately 8,300 unique California leaders with no-cost professional learning opportunities. (While there is not a one-to-one correspondence, there are approximately 10,000 schools in California.) Regional academies provided a total of 333 communities of practice and localized professional learning offerings and facilitated coaching for hundreds of leaders.

Early evidence suggests that leaders value the opportunity to engage in 21CSLA professional learning and that doing so impacts their leadership practices. Findings from the several evaluations show that regional academy offerings influenced participants' knowledge, skills, and practices related to evidence-based practices, continuous improvement, and equity, and they influenced positive changes for schools, teachers, and students. Regional academy leaders also reported evidence that leaders are changing how they think about their work, their students, and their communities, particularly as these understandings relate to equity. Many participants repeatedly attend 21CSLA offerings and participate in multiple types of offerings, another indication that they value the learning opportunities provided by 21CSLA.

Test-Only Routes to the Principalship

As we have noted, many studies have found that principals who attend high-quality preparation programs tend to have lower turnover from the principal role,[35] as well as larger student achievement gains,[36] and lower teacher turnover in their schools.[37]

Given the value of high-quality learning experiences, the continuation of a test-only route to the principalship is a source of concern. As described earlier, California principals may bypass preparation with a passing CPACE score. Although CPACE itself has been revised in recent years to require principal candidates to demonstrate more applied knowledge for the job, it still does not provide the theoretical and practical experience provided by a traditional prep program.

This route into the principalship was widely available until the test was revised in 2015 to include greater expectations for candidates' ability to apply knowledge about teaching and school improvement to simulated situations on the test. During the 3-year period between 2011 and 2014, 3349 candidates took the CPACE, with a 40% cumulative pass rate. During the 3-year period between 2015 and 2017, after the test was revised, 1,846 candidates took the CPACE, with a 43% pass rate.[38] In the most recent reported year of data, 2023–24, the number of candidates attempting the CPACE grew to 2190, but only 15.3% passed. Noting the large discrepancy in pass rates on the multiple-choice and performance components, in 2025, the Commission recommended replacing the CPACE with "a new

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[35] Gates, S. M., Hamilton, L. S., Martorell, P., Burkhauser, S., Heaton, P., Pierson, A., Baird, M., Vuollo, M., Li, J. J., Catherine Lavery, D., Harvey, M., & Gu, K. (2014). *Preparing Principals to Raise Student Achievement: Implementation and Effects of the New Leaders Program in Ten Districts.* RAND Corporation. https://www.rand.org/pubs/research_reports/RR507.html

[36] Braun, D., Billups, F. D., & Gable, R. K. (2013). Transforming equity-oriented leaders: Principal residency network program evaluation. *NCPEA Education Leadership Review, 14(*1), 161–181. https://www.ncpeapublications.org/attachments/article/561/Braun.pdf; Campoli, A. K., & Darling-Hammond, L. (2022). *Principal learning opportunities and school outcomes: Evidence from California.* Learning Policy Institute. https://learningpolicyinstitute.org/media/3862/download?inline&file=Principal_Learning_Opportunities_School_Outcomes_REPORT.pdf; Cosner, S., Tozer, S., Zavitkovsky, P., & Whalen, S. P. (2015). Cultivating exemplary school leadership preparation at a research intensive university. *Journal of Research on Leadership Education, 10(*1), 11–38. http://dx.doi.org/10.1177/1942775115569575; Gates, S. M., Hamilton, L. S., Martorell, P., Burkhauser, S., Heaton, P., Pierson, A., Baird, M., Vuollo, M., Li, J. J., Catherine Lavery, D., Harvey, M., & Gu, K. (2014). *Preparing Principals to Raise Student Achievement: Implementation and Effects of the New Leaders Program in Ten Districts.* RAND Corporation. https://www.rand.org/pubs/research_reports/RR507.html

[37] Campoli, A. K., & Darling-Hammond, L. (2022). *Principal learning opportunities and school outcomes: Evidence from California.* Learning Policy Institute. https://learningpolicyinstitute.org/media/3862/download?inline&file=Principal_Learning_Opportunities_School_Outcomes_REPORT.pdf

[38] California Commission on Teacher Credentialing. Annual Report on Passing Rates of Commission-Approved Examinations from 2012-2013 to 2016-2017 https://docs.ctc.ca.gov/document/download/30090

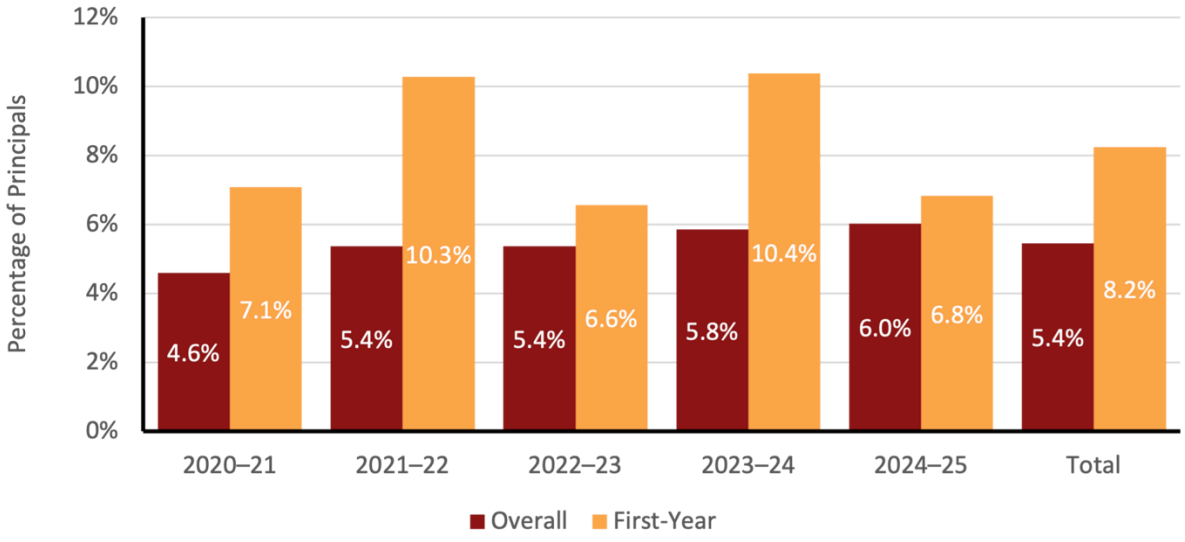
assessment that reflects updated Administrator Performance Expectations, set to be revised in 2026, and ensures a commensurate demonstration of leadership competencies." [39]

Using individual-level licensure data from the CTC, we find that principals prepared through this test-only route have accounted for a small but increasing fraction of school leaders in California in recent years (Figure 8). Across the 5 years in our dataset, an average of 5.4% percent of school leaders were prepared by a test-only route annually, growing from 4.6% in 2020–21 to 6.0% in 2024–25, about a 30% increase in the proportion of principals bypassing traditional preparation programs over five years. To better understand the rate at which these increases may reflect recent changes in the proportion of principals entering through a test-only route, we also provide the proportion of first-year principals prepared through the test-only route in each year. When looking only at first-year principals, the numbers are somewhat higher: an average of 8.2% of first-year principals were prepared through the test-only route to the principalship during the same period.[40]

[39] CTC (2025). Ongoing and planned improvements for Commission-approved examinations, p. 3G-5. https://file-us.clickdimensions.com/csbaorg-akcvg/files/2025-08-3g.pdf?m=8/29/2025%208:29:34%20PM&_cldee=GQ5InK7ccl31HjuafMiIFKssOXrr8YBvyyAjQMiwZOzdKhZe-sNlhr9PNzXFDplV&recipientid=contact-35f747df0a10e71180f1005056b02a09-c8ee50bced8b4ba1befe9fa84de21109&esid=59add0de-1585-f011-8164-005056b02a09

[40] A recently published report relying on publicly available aggregate data indicated that, annually during the 2012–13 through 2024–25 school years, between 35.9 and 52.8 percent of administrative credentials were awarded through the test-only route. Our analysis, which draws on restricted-use, individual level records and examines a sample of educators employed as principals, yields substantially different estimates. We cannot determine at this time which differences in data sources or analytic approaches account for the divergence. For example, we observe that some principals complete both the CPACE and a traditional preparation program—information that cannot be captured in aggregate data. In addition, our sample includes only those who enter the principalship, whereas individuals who pass the CPACE but do not become principals are excluded. Other differences in approach may also contribute to the discrepancy. [Mattson, H., Makkonen, R., Cheung, R., & Young, M. (2025). *Diverging paths to the principalship: The growth of waiver and test-only credentials in California.* WestEd. https://www.wested.org/resource/diverging-paths-to-the-principalship/, Table A3]

Figure 8. Percent of California Public School Principals Prepared Through a Test-Only Route to Administrator Certification Overall and for First-Year Principals, 2020–21 through 2024–25

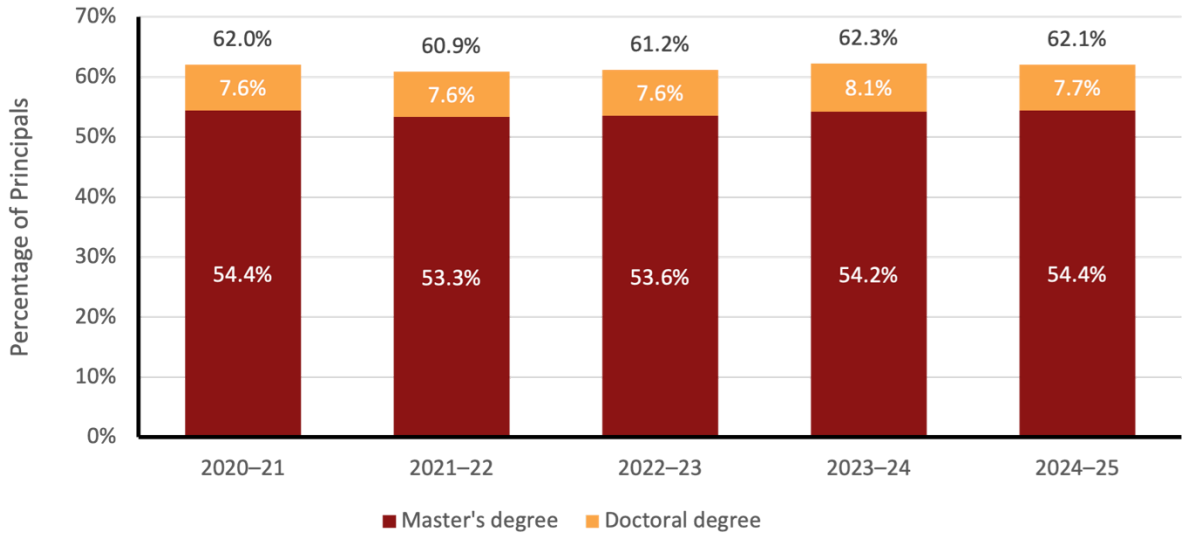


Notes: $N_{Overall}$ = 48,474; $N_{First\text{-}Year}$ = 6,324
Source: Learning Policy Institute analysis of California Commission on Teacher Credentialing restricted-use data.

Graduate Degrees

The other education data available for California principals is their highest degree. Among principals in California, about 62% hold a master's or doctoral degree, noticeably fewer than the national average (Figure 9). The most recent national data on public school principal higher education from 2020–21 indicates that, nationwide, 73.0% of principals held a master's degree or higher, with 11.0% holding a doctorate.

Figure 9. Percentage of California Public School Principals with Advanced Degrees, 2020–21 through 2024–25



Note: N = 47,344

Source: Learning Policy Institute analysis of California Department of Education restricted-use data.

Distribution of Principals

Research on principal turnover—including prior research in California—has uncovered a common pattern of inequitable distribution of principals across schools based on the student populations served.[41] However, much principal turnover research either narrows the sample of principals to traditional schools or ignores the variation present in school types, relying primarily on student populations to describe the variation in principal distribution. Given the diversity in schools' structures, governance, purpose, and labor markets, however, leaders need to better understand the extent to which some types of schools may disproportionately experience principal turnover. In the 2024–25 school year, 12.5% of California public school students were enrolled in charter schools[42]

[41] Béteille, T., Kalogrides, D., & Loeb, S. (2012). *Stepping stones: Principal career paths and school outcomes. Social Science Research, 41(*4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003; Grissom, J. A., & Bartanen, B. (2018). *Assessing Equity in School Leadership in California. Technical Report.* Getting Down to Facts II. Policy Analysis for California Education, PACE. https://eric.ed.gov/?id=ED594654; Podolsky, A. (2023). *Patterns and Predictors of Principal Turnover.* Stanford University. https://www.proquest.com/openview/7e1501293986740c0e4f6745ccf74010/1?pq-origsite=gscholar&cbl=18750&diss=y

[42] California Department of Education. (2025). *2024–25 enrollment by subgroup for charter and non-charter schools.* DataQuest. https://dq.cde.ca.gov/dataquest/

which, nationwide, tend to experience greater principal turnover.[43] During the same year, California schools included 468 alternative and special education schools—approximately 5% of all schools in the state.[44] Given that each of those schools needs qualified, stable leadership, the staffing needs of these schools cannot be ignored. Of key importance is staffing all schools is stability in school leadership—given the time it takes to implement new initiatives, repeated turnover of principals in a school undermines the chances any meaningful change can take effect.[45]

To better understand the distribution of principals across different California schools, we therefore examine the percent of principals who are prepared through test-only routes to certification, nearing or at retirement age (that is, age sixty or above), in their first three years as principal at any school, or in their first three years of their current school.[46] These facets of principal preparation and longevity speak to both the quality of preparation and the stability of principals at these schools. We examine the differences between schools with structural differences in either school governance, population, or labor market. Given research that indicates that schools serving low-income and students of color experience disproportionate principal churn, we also look at schools at the top and bottom decile by student populations.

These principal characteristics will tend to be related. For example, because a larger proportion of principals have been prepared through test-only routes within the past few years, schools with less experienced principals will also tend to have principals prepared through test-only routes.

In Table 2, we see that rural schools, charter schools, alternative schools of choice, special education schools, and virtual schools stand out as experiencing particularly inequitable distributions of principals relative to mainstream and non-rural schools.

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[43] Dallavis, J. W., & Berends, M. (2023). Charter Schools after Three Decades: Reviewing the Research on School Organizational and Instructional Conditions. *Education Policy Analysis Archives, 31(*1), n1. DOI: 10.14507/epaa.31.7634

[44] California Department of Education. (2025, December 17). *Fingertip facts on education in California.* https://www.cde.ca.gov/ds/ad/ceffingertipfacts.asp

[45] Snodgrass Rangel, V. (2018). A review of the literature on principal turnover. *Review of Educational Research, 88(*1), 87-124. DOI: 10.3102/0034654317743197

[46] To enable direct comparisons with publicly available, nationally representative data, we defined principal experience using a two-year category in the prior section of this report. For the remainder of our analysis, we shift to a 1–3-year category because a visual review of our dataset indicated that this range better reflects the underlying patterns of principal turnover in our sample.

Table 2. Distribution of Principal Characteristics by School Type, 2021–22 through 2024–25

School Type	% Test-Only	% Age 60+	% 3 or Fewer Years as Principal	% 3 or Fewer Years as Principal at this School	N
Urban	5.0	11.4	36.2	40.6	22,072
Suburban	5.5	8.6	36.1	40.4	19,870
Rural	6.7	9.9	42.1	46.4	6,050
Charter School	8.1	6.5	46.4	46.0	8,460
Alternative School of Choice	3.9	14.9	32.1	47.1	1,313
Special Education School	8.0	19.3	43.7	45.3	689
Virtual School	9.0	6.9	54.5	56.3	1,575
Mainstream, Non-Charter School	4.8	10.4	34.7	39.8	37,398
Unduplicated Pupil Count					
Top Decile	3.9	9.5	37.4	40.2	11,967
Bottom Decile	6.4	10.2	34.2	40.4	12,023
Students Receiving English Learner Services					
Top Decile	4.3	11.5	37.7	41.9	11,994
Bottom Decile	6.7	9.7	36.9	41.7	11,974
Students of Color					
Top Decile	3.8	8.1	36.2	39.9	11,926
Bottom Decile	6.6	11.6	34.4	40.7	11,974
Socioeconomically Disadvantaged					
Top Decile	3.9	8.7	37.1	39.9	11,956
Bottom Decile	6.4	10.2	34.5	40.5	12,009
Overall	**5.4**	**10.0**	**36.9**	**41.2**	**47,992**

Notes: Students of Color = students who identify as Black or African American, Latino, Native American, or Pacific Islander. We conducted case-wise deletion within this sample to provide a consistent N across rows and for ease of reading, resulting in the loss of 746 observations, or 1.5% of the sample.

Source: Learning Policy Institute analysis of California Department of Education restricted-use data and California Commission on Teacher Credentialing restricted-use data.

Relative to the state average, rural, charter, and virtual schools all show a pattern of relatively inexperienced principals, with short tenure in their schools, working with relatively low rates of traditional preparation.

Relative to the state average, alternative schools of choice tend to have relatively older principals who are new to their schools.

Special education schools are the most likely to staff principals in the first three years of the role who are already at or nearing retirement age. Given that these schools are widely dispersed

throughout the state—both in terms of the district or country offices that oversee them and their physical location—they may share some common staffing barriers with rural schools. A thoughtful approach to pipeline development and recruitment of younger staff dedicated to leading schools for students with disabilities may help to disrupt this inequitable pattern.

Within our analyses, student characteristics are less clearly related to the equitable distribution of principals than might be expected, given studies outside the state[47] as well as prior research in California.[48] Several factors likely contribute to this unexpected finding. First, as discussed above, California has higher proportions of students receiving English learner services, students of color, and socio-economically disadvantaged students than most states. Most schools therefore serve substantial proportions of disadvantaged students, reducing the distinction in student populations between schools, save in extreme circumstances (e.g., wealthy, suburban, locally-funded districts). In addition, schools with structural differences that impact their ability to recruit and retain principals (i.e., rural, charter, alternative schools of choice, special education schools, and virtual schools) tend to serve representative or slightly smaller proportions of traditionally disadvantaged student populations. There are a few exceptions to these patterns: on average, rural schools and alternative schools of choice serve more low-income students; charter schools serve more minoritized students; and virtual schools serve smaller proportions of high-need students in every population (Table 3). All of these school types serve meaningfully lower proportions of students receiving English learner services (7.9%–19.4%, relative to the state average of 20.6%).

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[47] Béteille, T., Kalogrides, D., & Loeb, S. (2012). *Stepping stones: Principal career paths and school outcomes. Social Science Research, 41(*4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003

[48] Grissom, J. A., & Bartanen, B. (2018). *Assessing Equity in School Leadership in California. Technical Report.* Getting Down to Facts II. Policy Analysis for California Education, PACE. https://eric.ed.gov/?id=ED594654; Podolsky, A. (2023). *Patterns and Predictors of Principal Turnover.* Stanford University. https://www.proquest.com/openview/7e1501293986740c0e4f6745ccf74010/1?pq-origsite=gscholar&cbl=18750&diss=y

Table 3. Distribution of Student Populations Across School Types, 2021–22 through 2024–25

School Type	% UPC	% EL	% Students of Color	% Low SES	N
Urban	68.5	23.3	64.0	66.1	22,072
Suburban	63.3	19.1	59.2	62.1	19,870
Rural	66.1	15.3	50.4	65.6	6,050
Charter School	64.0	15.7	60.7	62.8	8,460
Alternative School of Choice	66.4	12.0	60.2	65.4	1,313
Special Education School	66.8	19.4	59.2	64.3	689
Virtual School	61.1	7.9	53.7	60.7	1,575
Mainstream, Non-Charter School	66.5	22.0	60.4	64.7	37,398
Overall	**66.0**	**20.6**	**60.3**	**64.4**	**47,992**

Notes: UPC = Unduplicated Pupil Count, EL = students receiving English learner services; Students of Color = students who identify as Black or African American, Latino, Native American, or Pacific Islander.; Low SES = the percent of the school's students identified as socioeconomically disadvantaged. This table uses the sample from Table 2.
Source: LPI analysis of California Department of Education restricted-use data.

Principal Retention and Turnover in California

Studies have documented that schools that lose their principal, on average, suffer from decreased student achievement after their principal leaves.[49] While the effects of this turnover may vary, depending on the effectiveness of the departing versus replacement principal, any turnover is

[49] Bartanen, B., Grissom, J. A., & Rogers, L. K. (2019). The impacts of principal turnover. Educational Evaluation and Policy Analysis, 41(3), 350-374. https://journals.sagepub.com/doi/abs/10.3102/0162373719855044; Béteille, T., Kalogrides, D., & Loeb, S. (2012). *Stepping stones: Principal career paths and school outcomes. Social Science Research, 41(*4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003; Branch, G., Hanushek, E., & Rivkin, S. (2012). *Estimating the effect of leaders on public sector productivity: The case of school principals.* In National Bureau of Economic Research (17803; NBER Working Paper Series). https://doi.org/10.3386/w17803; Burkhauser, S., Gates, S. M., Hamilton, L. S., & Ikemoto, G. S. (2012). *First-Year Principals in Urban School Districts: How Actions and Working Conditions Relate to Outcomes. Technical Report.* Rand Corporation. https://eric.ed.gov/?id=ED529932; Carpenter, D., DeHerrera, M., Oleson, M., & Taylor, J. (2022). Effects of Principal Turnover on School Performance. *NASSP Bulletin, 106(*1), 55–70. https://doi.org/10.1177/01926365211070488; Henry, G. T., & Harbatkin, E. (2019). Turnover at the Top: Estimating the Effects of Principal Turnover on Student, Teacher, and School Outcomes. EdWorkingPaper No. 19-95. *Annenberg Institute for School Reform at Brown University*. https://edworkingpapers.com/sites/default/files/ai19-95.pdf; Kearney, W. S., Valadez, A., & Garcia, L. (2012). Leadership for the long-haul: The impact of administrator longevity on student achievement. *School Leadership Review, 7(*2), 5. https://scholarworks.sfasu.edu/slr/vol7/iss2/5; Miller, A. (2013). Principal turnover and student achievement. Economics of Education Review, 36, 60–72. https://doi.org/10.1016/j.econedurev.2013.05.004; Walsh, E., & Dotter, D. (2020). The impact on student achievement of replacing principals in District of Columbia public schools. *Education Finance and Policy, 15(*3), 518–542. https://doi.org/10.1162/edfp_a_00279; Winters, M. A., Kisida, B., & Cho, I. (2023). The Impact of Principal Attrition and Replacement on Indicators of School Quality. *Education Finance and Policy, 18(*2), 302–318.

destabilizing and, as discussed above, a constant churn undermines the ability of new reforms and initiatives to stabilize.

In this section we examine principal retention and turnover in California. We begin by contextualizing turnover in California relative to the national average. We then provide a longitudinal, descriptive look at California retention and turnover beginning in the 2012–13 school year. We then describe what principal and school characteristics are associated with school turnover, beginning in the 2021–22 school year. When calculating data within this study, we track principals into their positions in the following year to determine their turnover status. That is, we will discuss "turnover following the 2021–22 school year," indicating that the principal was not in the same role, at the same school in the beginning of the 2022–23 school year. Retention following the 2021–22 school year would refer to a principal being both at the same school and remaining in the principal role in the 2022–23 school year.

Principal Retention in California, 2012–13 through 2024–25

Principals in California are more likely to leave their schools than principals nationally, with 78.1% of principals remaining in their schools in 2020–21 as compared to 79.6% of public school principals nationally (Figure 10).[50]

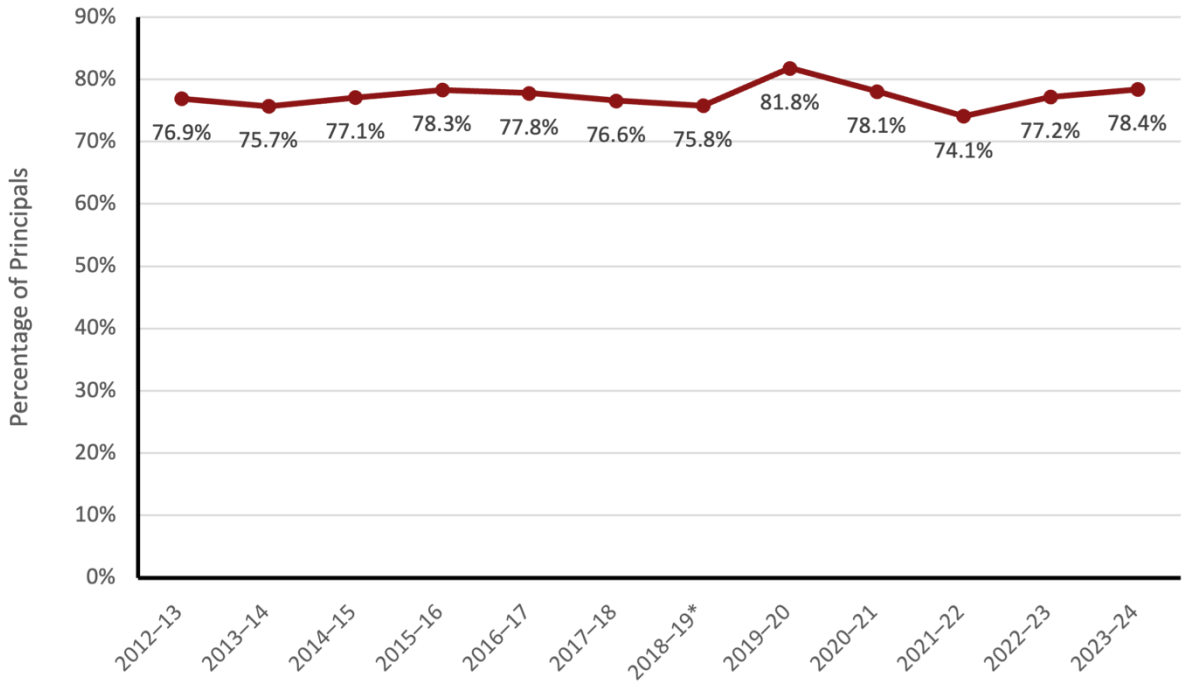
As shown in Figure 10, 78.4% of California public school principals in 2023–24 remained a principal in their same school in the 2024–25 school year. We see somewhat anomalous patterns following the school years since the COVID-19 pandemic began. Principal retention was highest following the 2019–20 school year (81.8%) and remained somewhat elevated following the 2020–21 school year (78.1%). Retention dropped to its lowest point (74.1%) following the 2021–22 school year—potentially due to transitions that principals delayed during the height of the pandemic. For the final two years in our data, retention was slightly higher than most pre-pandemic years.

Nationwide, many principals delayed transitions until just after the pandemic, when schools across the country experienced the stressors of students returning from that traumatic period. In a nation-wide survey of principals in 2022, 63% of principals said they were likely to leave their current

[50] Note that national data are taken from the Principal Follow-Up Survey, which reports whether principals are returning to their same school and role in 2021–22. To align to our reporting, which details whether principals are retained into the following year, we report these national data as 2020–21. National Center for Education Statistics (2023*) Principal attrition and mobility over time: Percentage distribution of public and private school principals, by status, school type, and school classification: 2008–09, 2012–13, 2016–17, and 2021–22* [Data Table]. US Department of Education. https://nces.ed.gov/surveys/ntps/estable/table/ntps/pfs2122_fl01_a12n

role within the next five years. When asked to name the change that would be most likely to keep them in their profession, 28% cited better work-life balance and 21% cited higher pay. As an indicator of the working conditions principals face: 70% of principals said they had been verbally or physically threatened or attacked during the prior school year.[51]

Figure 10. Share of California Public School Principals Retained in School and Role, 2012–13 through 2024–25



Notes: *California data from 2012–13 to 2018–19 are not directly comparable to data from 2019–20 to 2023–24 due to changes in data collection systems between the 2018–19 and 2019–20 school years. Turnover outcomes for principals in the 2018–19 school followed into the 2019–20 school should be interpreted with caution. N = 117,681.
Sources: Learning Policy Institute analysis of California Department of Education restricted-use data.

Types of Principal Turnover

From the principals' perspective, Farley Ripple et. al. describe the process of turnover as a combination of "choice and opportunity."[52] Principals have some agency to find another job (with, e.g.,

[51] National Association of Secondary School Principals. (2022). *Survey of America's school leaders and high school students.* NASSP. https://www.nassp.org
[52] Farley-Ripple, E. N., Solano, P. L., & McDuffie, M. J. (2012). Conceptual and methodological issues in research on school administrator career behavior. *Educational Researcher, 41*(6), 220-229. https://doi.org/10.3102/0013189X12451774

better pay or a shorter commute) with those choices constrained by the available opportunities (e.g., job openings, availability of retirement benefits). Principal turnover can take multiple forms, including:

- Transferring: a lateral move to a principal role at another school. Principals may move for lateral roles to improve their working conditions (e.g., shorter commutes, better resources, higher pay, improved school culture).
- Stepping up: leaving for a district leadership role.
- Stepping back: moving into a school-based role other than principal
- Leaving: leaving CDE employment, either to take another job or to retire. Since CDE does not collect data on charter management offices, we note that some principals leaving charter schools will be classified in our data as "leaving," despite their exit being more accurately described as stepping up.

Prior research has identified that the specific type of turnover is related to a principal's effectiveness. Lower performing principals are more likely to step back into another school-based role, either by their choice or involuntarily. Higher performers are more likely to step up into a district role. Both higher and lower performers are more likely to exit the system.[53] This variation in exit patterns by performance suggests that effective policy and practice to reduce turnover must target the variation for reasons principals leave the role: effective principal development (e.g., coaching) will support principals who may step back or exit due to lower initial readiness for the role; higher compensation would target retention of high achievers who seek remuneration in line with their responsibility.

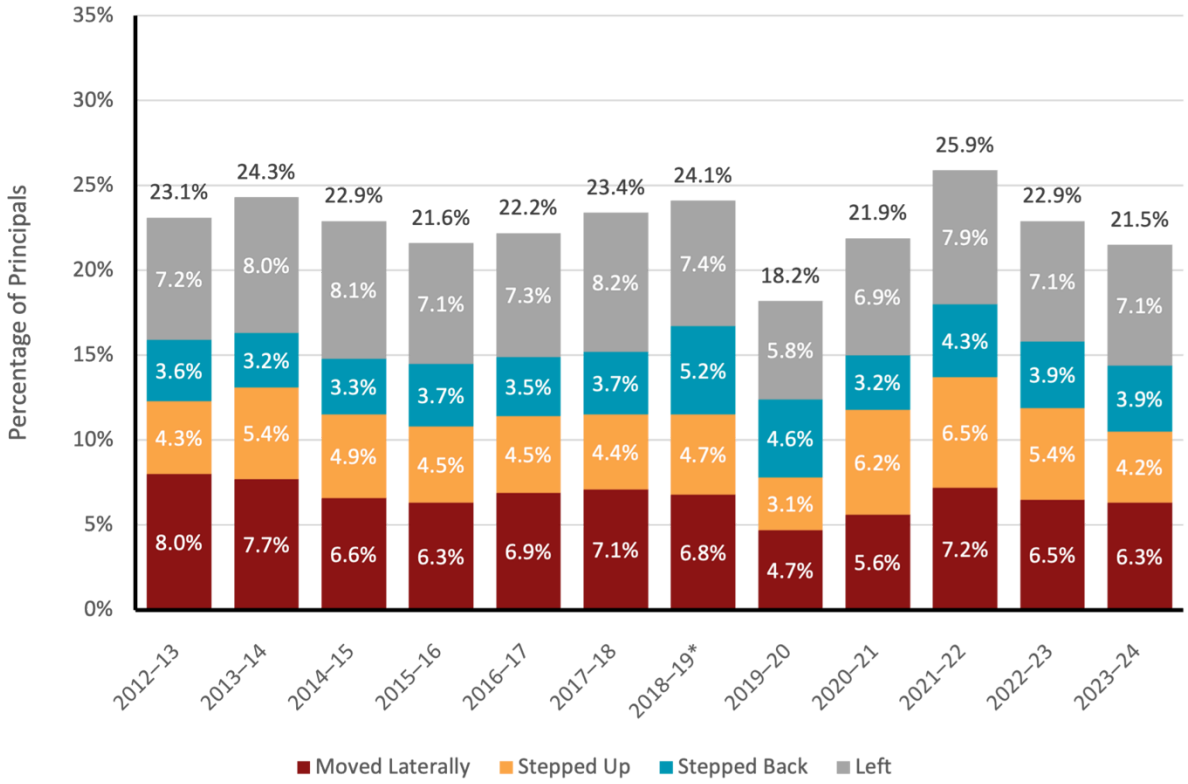
In Figure 11, we break down types of turnover among principals who leave their roles following the 2012–13 through 2024–25 school years. As in the retention table, above, we see somewhat anomalous patterns following the school years since the COVID-19 pandemic began, with reduced turnover following the 2019–20 and 2020–21 school years, elevated turnover following the 2021–22 school year and a return to slightly more stable rates in the subsequent years. In these most recent years of data, we see that most types of turnover are at or near 12-year lows in the 2022–23 and 2023–24 school years.

Among the different types of turnover, we note increased rates of principals stepping back into another school-based role. Prior to 2018–19, there were no years where more than 3.7% of principals

[53] Grissom, J. A., & Bartanen, B. (2019). Principal effectiveness and principal turnover. *Education Finance and Policy, 14*(3), 355-382.

stepped back. However, in 5 of the 6 subsequent years, at least 3.9% of principals exited the position by stepping back.

Figure 11. Principal Turnover by Type of Turnover, 2012–23 through 2023–24



Note: *Data from 2012–13 to 2018–19 are not directly comparable to data from 2019–20 to 2023–24 due to changes in data collection systems between the 2018–19 and 2019–20 school years. Turnover outcomes for principals in the 2018–19 school followed into the 2019–20 school should be interpreted with caution. N = 117,681.
Source: LPI analysis of California Department of Education restricted-use data.

School and Principal Characteristics Associated with Principal Turnover

Prior research into principal turnover identified the most common reasons principals choose to leave their jobs, including: inadequate preparation for the role or professional development while in the role; difficult working conditions; insufficient salaries; lack of autonomy; and ineffective accountability policies.[54] As described above, we are also mindful of structural differences between

[54] Levin, S., Scott, C., Yang, M., Leung, M., & Bradley, K. (2020). *Supporting a Strong, Stable Principal Workforce: What Matters and What Can Be Done. Research Report.* Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED606481.pdf

school types, variation by urbanicity, and student populations served by schools. As described above, we also anticipate that most principals will exit the system due to retirement around age 63.

To better understand the relationship between principal and school characteristics and principal turnover in California, we provide regression models predicting the probability of principal turnover following the school year. Our outcome is principal turnover, which is equal to 1 if a principal does not remain in the principal role in the same school in the following year. To eliminate the years most impacted by the COVID-19 pandemic, we limit our sample to turnover following the 2021–21 through 2023–24 school years. All covariates estimated are provided in Table 4, with more detail on the model and all variables in the technical appendix.

How We Contextualize and Interpret Findings

In interpreting these findings, we contextualize in several ways. First, we acknowledge that the relationship between our hypothesized predictors may vary by school type or level. For example, elementary schools and high schools may have very different relationships between changes in suspensions and turnover. To better understand variation in these relationships, we also estimate subgroups impacts for schools of different types, including a subgroup of principals under the age of 60 and schools by level and type. We note that some of these subgroups are substantially smaller. Smaller sample sizes for these subgroups mean that relationships may be harder to detect as statistically significant. We are therefore careful not to overinterpret the lack of relationship between predictors and turnover, especially in the smaller subgroups. Conversely, in our full sample we note that the large sample size means that relationships may be statistically significant, but of small enough size as to be of little practical importance. Accordingly, we contextualize the size of all statistically significant findings to understand the extent to which the findings are meaningful.

Overall Findings

Overall, we see principal characteristics as some of the strongest predictors of turnover, with age, experience as principal, and preparation route accounting for the three of the most substantive predictors of turnover in our model (Table 4).[55] As might be expected, older and more experienced principals are more likely to leave. Those who enter through the test-only route also have significantly higher turnover rates. Our models also show that policy relevant factors such as higher teacher turnover, higher suspension rates, higher ratios of students to teachers, and lower principal pay predict principal turnover. Other school-based factors demonstrate modest to no relationship with turnover.

[55] While there is some correlation between age and years of experience as a principal, the variation in age at initial promotion to the role substantially mitigates this relationship. The average age for a first-year principal between 2012–13 through 2024–25 was 46, with a standard deviation of 8.4. The middle 75% of first-year principals therefore ranged from 40 to 52. See the technical appendix for the Variance Inflation Factors for all model covariates.

Table 4. Regression Models Predicting Principal Turnover Following 2021–22 through 2023–24, Overall and by School Type

Variable	Sample					
	Overall	Under Sixty	Urban	Suburban	Rural	Middle School
Age 60+	0.143 **		0.147 **	0.135 **	0.165 **	0.182 **
1–3 Years Experience as Principal	-0.039 **	-0.039 **	-0.022 *	-0.067 **	-0.011	-0.064 **
4–7 Years Experience as Principal	0.000	0.005	-0.005	-0.001	0.023	-0.017
Test-Only	0.037 **	0.040 **	0.055 **	-0.004	0.103 **	0.009
District Principal Salary (In $1000s)	-0.001 **	-0.001 **	-0.001 **	-0.001 **	-0.000	-0.001 **
Missing Salary Data	0.023 **	0.027 **	0.050 **	-0.005	0.006	0.021
Urban	-0.024 **	-0.021 *				-0.015
Suburban	-0.011	-0.006				0.016
Charter School	-0.014	-0.012	-0.020	-0.008	-0.016	-0.058
Alternative School	-0.021	-0.024	-0.036	-0.041	0.065	-0.200 *
Special Education School	-0.031	-0.030	-0.002	-0.044	0.161	
Virtual School	-0.043 **	-0.044 **	-0.011	-0.029	-0.097 **	0.052
School Per Pupil Spending (in $1000s)	0.000	-0.000	-0.000	0.003 **	0.000	0.002
Missing Sch. Per Pupil Spending Data	-0.013	-0.012	-0.020	-0.021	-0.003	-0.018
Student-to-Admin/PPS Ratio	-0.000 *	-0.000 **	-0.000 *	-0.000	-0.000	-0.000
Student-to-Teacher Ratio	0.001 **	0.001 **	0.005 **	0.001	0.003	0.004 *
% Teacher Turnover	0.005 **	0.005 **	0.005 **	0.005 **	0.004 **	0.005 **
Suspension Rate	0.005 **	0.005 **	0.006 **	0.004 **	0.002	0.007 **
Chronic Absenteeism Rate	-0.000	0.000	-0.000	-0.000	0.000	-0.001
% Students of Color	-0.000	-0.000 *	-0.000	-0.000	0.000	0.000
% EL	0.000 *	0.001 **	0.001 *	0.000	-0.000	-0.000
Middle School	-0.001	-0.003	-0.026 *	0.019	0.011	
High School	0.019 *	0.019 *	0.014	0.009	0.032	
Other Grade Combination	0.023	0.030 *	0.005	0.037	0.045	
Year 2 Fixed Effect	-0.023 **	-0.024 **	-0.035 **	-0.009	-0.025	-0.041 *
Year 3 Fixed Effect	-0.041 **	-0.039 **	-0.043 **	-0.037 **	-0.054 **	-0.075 **
Intercept	0.217 **	0.254 **	0.178 **	0.227 **	0.086	0.221 **
N	28,610	25,795	13,177	11,829	3,604	3,835
Adjusted R-squared	0.04	0.03	0.04	0.04	0.04	0.06
F statistic	45.30	35.03	23.08	22.14	7.28	11.68

Table 4. Regression Models Predicting Principal Turnover Following 2021–22 through 2023–24, Overall and by School Type (Cont.)

Variable	Sample				
	High School	Mainstream, Non-Chart Sch.	Charter	Alternative School	Special Education Sch.
Age 60+	0.165 **	0.149 **	0.093 **	0.173 **	0.104
1–3 Years Experience as Principal	-0.040 *	-0.051 **	0.005	0.002	0.051
4–7 Years Experience as Principal	0.009	-0.004	0.025	0.038	0.052
Test-Only	0.008	0.037 **	0.044 *	0.060	0.039
District Principal Salary (In $1000s)	-0.001 **	-0.001 **	-0.000	-0.000	0.002
Missing Salary Data	0.097 **	0.038 **	-0.004	0.080	-0.091
Urban	-0.021	-0.017	-0.044 *	-0.120 *	-0.255 *
Suburban	-0.016	-0.006	-0.027	-0.105 *	-0.244 *
Charter School	-0.035				
Alternative School	-0.034				
Special Education School	-0.037				
Virtual School	-0.010		-0.061 **	-0.029	
School Per Pupil Spending (in $1000s)	0.000	-0.000	0.003	-0.003	0.004
Missing Sch. Per Pupil Spending Data	0.005	-0.051	-0.055 **	-0.016	0.105
Student-to-Admin/PPS Ratio	-0.000	-0.000 *	-0.000	0.000	-0.000
Student-to-Teacher Ratio	0.000	0.001 **	0.005 **	-0.001	0.014
% Teacher Turnover	0.005 **	0.004 **	0.005 **	0.004 **	0.006 **
Suspension Rate	0.004 *	0.006 **	0.005 *	0.009 *	0.001
Chronic Absenteeism Rate	-0.000	-0.001 *	0.000	0.001	-0.004 *
% Students of Color	-0.001	0.000	-0.001	-0.001	0.000
% EL	0.001	0.000	0.001 *	0.002	0.002
Middle School		-0.005	-0.046	-0.126	
High School		0.010	0.017	0.011	-0.126
Other Grade Combination		0.047	0.024	0.022	-0.140
Year 2 Fixed Effect	-0.057 **	-0.032 **	-0.016	0.100 **	-0.046
Year 3 Fixed Effect	-0.040 *	-0.052 **	-0.075 **	0.140 **	-0.045
Intercept	0.371 **	0.258 **	0.051	0.289 *	0.091
Number of observations	4,504	22,225	5,094	825	411
Adjusted R-squared	0.05	0.04	0.05	0.08	0.05
F statistic	11.10	39.88	13.22	4.21	1.93

Notes: UPC = Unduplicated Pupil Count, EL = students receiving English learner services; Students of Color = students who identify as Black or African American, Latino, Native American, or Pacific Islander.; Low SES = the percent of the school's students identified as socioeconomically disadvantaged.
Source: LPI analysis of California Department of Education restricted use and California Commission on Teacher Credentialing restricted-use data.

Principal Characteristics

Principals age 60 and above are 14.3 percentage points more likely to leave their positions than their younger peers, making proximity to retirement age the most salient predictor of principal turnover. We also see that age does not substantially change the relationship between other principal and school characteristics and turnover: When limiting the sample to principals under the age of 60, the relationships between other covariates and turnover follow a similar pattern to our overall model (Column 2, Under 60). Understanding the strong relationship between age and retirement can help state policy makers to monitor the health of the principal pipeline.

Prior research has described principals as using a "stepping stone" approach to their first placement, where they leverage the experience they gain in their initial role to subsequently move into a more desirable placement.[56] In our data, principals are 3.9 percentage points less likely to leave in their first 1–3 years in the role than they are later in their career. This suggests that principals will typically remain in their initial role for at least 3 years before moving to a more desirable placement or leaving the role. However, this relationship does not hold in many of the school types that we saw to have less equitable distribution of principals in the section above: rural schools, charter schools, and alternative schools of choice (discussed in more detail below), suggesting that—in these schools—principals are equally likely to leave after the first year as after the fourth.

Principals prepared through a test-only to administrative certification are 3.7 percentage points more likely to turn over than those prepared through a traditional route to certification. Given the increased proportion of principals being prepared through test-only routes in recent years, this finding suggests the need for better understanding as to who is choosing test-only routes and why. It could be that principals opt for a test-only route because they do not plan to stay in the role for long. For example, it may be that educators respond to a local need for principals by stepping into the role despite their own disinterest or lack of willingness to invest in the role. To the extent that this pattern explains the increased number of test-only prepared entrants to the role, the most effective policy solution may be to increase the desirability of the role itself, to create incentives for educators to invest the time, effort, and cost of a traditional prep program. Further, it could be that neither the leaders nor

[56] Béteille, T., Kalogrides, D., & Loeb, S. (2012). *Stepping stones: Principal career paths and school outcomes. Social Science Research, 41(*4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003

the districts see the value in the financial and time investment necessary for traditional prep programs. To that extent, both incentives to complete the programs, policies to address accessibility and barriers (through, e.g., strong online learning options and generous loan forgiveness for principals who remain in the profession), and some education around the value of the programs may be worthwhile investments by policymakers.

Teacher Turnover and Suspensions

Adjusting for all the controls in this model—including school resources and student populations--higher rates of teacher turnover and suspensions are the two school-based factors that most strongly predict principal turnover. Moving a school from the 50th to 75th percentile on teacher turnover (a difference of 7.1 percentage points in teacher turnover) predicts a 3.3 percentage point increase in the probability of a principal turning over. Similarly, increasing the rate of suspensions within a school from the 50th to 75th percentile (an increase of 2.4 percentage points) increases the predicted probability of principal turnover by 1.2 percentage points.

Both of these factors are strongly linked to issues of school culture and climate.[57] Evidence suggests that strong school culture seems to both decrease the chances of principal turnover and teacher turnover, which are related to each other, and to lessen negative impacts of principal turnover, should it happen.[58] Principals often inherit schools where climate challenges are already entrenched, rooted in social and economic forces outside of their direct control. This negative climate can create headwinds that undermine the schools' stability and principals' ability to affect change in other aspects of school leadership.[59] Policies that support strong school culture therefore hold substantial promise to retain both principals and teachers. Policymakers may therefore look to high-quality professional

[57] Darling-Hammond, L. (2020). *Culture, learning, and policy. In Handbook of the cultural foundations of learning* (pp. 404-426). Routledge; 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

[58] Burkhauser, S., Gates, S. M., Hamilton, L. S., & Ikemoto, G. S. (2012). *First-Year Principals in Urban School Districts: How Actions and Working Conditions Relate to Outcomes. Technical Report.* Rand Corporation. https://eric.ed.gov/?id=ED529932; Mascall, B., & Leithwood, K. (2010). Investing in leadership: The district's role in managing principal turnover. *Leadership and Policy in Schools, 9(*4), 367-383; Snodgrass Rangel, V. (2018). A review of the literature on principal turnover. *Review of Educational Research, 88(*1), 87-124. DOI: 10.3102/0034654317743197

[59] Levin, S., Scott, C., Yang, M., Leung, M., & Bradley, K. (2020). *Supporting a Strong, Stable Principal Workforce: What Matters and What Can Be Done. Research Report.* Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED606481.pdf

learning that enables principals to learn to build such a culture, even in the face of very real external pressures beyond the school walls.

Principal Salaries

Increasing principals' salaries may hold some promise for reducing principal turnover in California: as described above, principal salaries have been relatively flat since the 2012–13 school year, once adjusting for inflation. We observe that, holding all other principal and school-based factors constant, that a $1,000 increase in districts' average principal salary is associated with a .1 percentage point increase in principal retention. Moving principals from the 50th to the 75th percentile in average district salary (an increase of about $10,900) predicts a .7 percentage point decrease in the probability of principal turnover. While this is a modest decrease, the associated cost is also modest relative to many other policy solutions (e.g., hiring more teachers) and can be strategically targeted (through, e.g., retention bonuses in hard-to-staff schools; compensation for commute costs, etc.). We also note that the nature of our data—district averages, instead of individual data—will tend to attenuate the estimated size of the relationship between salary and turnover.

Other Factors

In a prior study, LPI researchers conducted nationwide principal focus groups to uncover what stressors impacted school leaders' willingness to remain on the job. Nationally, about 42% of principals were considering leaving their school with working conditions—including a heavy workload and lack of student services personnel—frequently cited by principals as a reason for their desire to leave. One of the major themes were better resources, including funding and administrative support.[60]

In our data, we find only modest relationships between school resources and principal turnover. And, where these relationships exist, they are not of substantive size. A larger number of students per teacher does predict higher principal turnover—however, moving schools from the 50th to the 75th percentile of student to teacher ratio (that is, from 19 to 21 students per teacher) would only predict a 0.3 percentage point increase in the probability of principal turnover. However, California schools see extremes in these staffing ratios. Moving a school from the 90th to the 99th percentile on student

[60] Levin, S., Scott, C., Yang, M., Leung, M., & Bradley, K. (2020). *Supporting a Strong, Stable Principal Workforce: What Matters and What Can Be Done. Research Report.* Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED606481.pdf

teacher ratio (from 23.5 to 29.6 students per teacher) is associated with a .9 percentage point increase in the probability of principal turnover. Policies targeting the most understaffed schools may therefore be a meaningful support to retain principals in these schools. In contrast, a larger number of students per administrators and pupil services staff predicts a decrease in the predicted probability of principal turnover. This relationship is modest in size: Moving a school from the 50th to the 75th percentile on this measure (that is, moving from 178 students to 249 students per administrator) only decreases the predicted probability of principal turnover by .2 percentage points. While this finding may seem counterintuitive, low student to administer ratios may be disproportionately small schools, where the low ratio of students to administrators and pupil personnel services staff may be driven by a single person and a small student enrollment.

The only other variable—other than school type or level—to predict the probability of principal is the percent of English learners in the school, though these results are also modest. Moving from the 50th to the 75th percentile in percent of English learners in a school (from 16.3% to 30.6%—nearly doubling the rate) only increases the predicted probability of principal turnover by .7 percentage points. We note that a robust literature shows that principals tend to leave—in particular, transfer away from—schools with majority high-poverty students and students of color and schools with larger percentages of students receiving special education services—though these transfers seem to be driven by factors other than the students themselves, especially working conditions.[61] That is: Principals seem to leave schools' conditions, not students.

Adequate funding—and some principal agency over how it is spent—is an implicit, underlying theme in many of these predictors of turnover. In a recent survey, principals planning on leaving their schools were 2.5 times as likely to cite adequacy of funding as a potential cause for turnover as those not planning to leave.[62] We do not, in our data, see a strong relationship between school funding and principal turnover—potentially because of the substantial gains in equitable school funding made during the LCFF era.

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[61] Béteille, T., Kalogrides, D., & Loeb, S. (2012). *Stepping stones: Principal career paths and school outcomes. Social Science Research, 41(*4), 904–919. https://doi.org/10.1016/j.ssresearch.2012.03.003; Clotfelter, C., Ladd, H. F., Vigdor, J., & Wheeler, J. (2006). High-poverty schools and the distribution of teachers and principals. *NCL Rev., 85*, 1345.; Snodgrass Rangel, V. (2018). A review of the literature on principal turnover. *Review of Educational Research, 88(*1), 87-124. DOI: 10.3102/0034654317743197

[62] Levin, S., Scott, C., Yang, M., Leung, M., & Bradley, K. (2020). *Supporting a Strong, Stable Principal Workforce: What Matters and What Can Be Done. Research Report.* Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED606481.pdf

Variation by School Type

We find that variation in principal turnover between types of schools disappears once accounting for other principal and school characteristics. Adjusting for salary, urbanicity, school per pupil spending, resources, school level, and student populations, there is no predicted difference in the probability of principal turnover between mainstream schools, charter schools, alternative schools of choice, and special education schools. While we do see in our main models that principals at virtual schools are less likely to turn over, these differences disappear when we exclude principals working across multiple schools (see technical appendix). This pattern does not mitigate or undermine the observations made above in section two: the inequitable distribution of principals in non-mainstream schools remains a concern for the students served by these schools.

We interpret subgroup estimates of non-mainstream schools with some caution due to their small sample size. Overall, it appears our overall predictors of principal turnover have similar relationships with principal turnover in these non-mainstream school settings. The one exception is the relationship between principal experience and turnover in charter, special education, and alternative school settings. Above, we noted that, overall, principals were 3.9 percentage points less likely to leave their position in their first 3 years in the role relative to more experienced principals. In these non-mainstream school types, we see that the size of the coefficient for experience in models examining charter and alternative schools of choice shrinks to nearly zero and loses statistical significance. In special education schools, the estimated relationship changes direction, though the relationship remains non-significant—potentially due to the small sample size. This pattern should be interpreted with caution, but we encourage future research to investigate this anomaly.

Variation by Location

Even after adjusting for all other principal and school characteristics, rural schools still see a 2.4 percentage point greater probability of turnover than urban schools—though there is no statistically significant difference between rural and suburban schools.

Rural principals face differences in working conditions (e.g., due to a lack of economies of scale, they do not have the same in-house resources for specialists) and have historically seen higher rates of

turnover.[63] There is strong evidence that longer commute times and a so-called "preference for home" increase turnover for both teachers and principals. This preference for home is likely to drive higher principal turnover (1) in areas where principals are less likely to live—including lower-income neighborhoods or rural communities, and (2) in secondary schools, given the relatively smaller number of schools and, therefore, jobs to choose from.[64] In a principal survey in Miami-Date County, both principals and APs prioritized "close proximity to home" very similarly to "collegial school culture".[65] Any policy solution targeting principal turnover must therefore take into account the needs of rural communities.

Policy Considerations

The literature on principal effectiveness and retention points to the importance of (1) high-quality principal preparation and development opportunities, (2) supportive working conditions, (3) adequate compensation, and (4) productive accountability systems for keeping principals and enabling their success.[66] While this study could not examine all of these factors deeply as they impact California principals, several considerations emerge from our findings.

Principal Preparation and Professional Development

Quality principal preparation and on-the job training can develop more effective school leaders and improve principal retention. Quality preparation programs share a common set of features, including close collaboration with their local school districts, targeted recruitment of individuals with leadership potential, attention to core skills such as instructional leadership and change management,

[63] Pendola, A., & Fuller, E.J. (2018). Principal stability and the rural divide. In E. McHenry Sorber & D. Hall (Eds.), The diversity of rural educational leadership [Special issue]. *Journal of Research in Rural Education, 34(*1), 1-20. https://jrre.psu.edu/sites/default/files/2019-06/34-1.pdf

[64] Loeb, S., Kalogrides, D., & Horng, E. L. (2010). Principal preferences and the uneven distribution of principals across schools. Educational Evaluation and Policy Analysis, 32(2), 205-229. https://www.jstor.org/stable/40732418; Santelli, F. A., & Grissom, J. A. (2024). A bad commute: Travel time to work predicts teacher turnover and other workplace outcomes. AERA Open, 10, 23328584241287792.

[65] Loeb, S., Kalogrides, D., & Horng, E. L. (2010). Principal preferences and the uneven distribution of principals across schools. Educational Evaluation and Policy Analysis, 32(2), 205-229. https://www.jstor.org/stable/40732418

[66] Levin, S., Scott, C., Yang, M., Leung, M., & Bradley, K. (2020). *Supporting a Strong, Stable Principal Workforce: What Matters and What Can Be Done*. Research Report. Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED606481.pdf

problem-based learning opportunities that connect coursework and practice, and year-long field-based internships where principal candidates learn alongside an expert principal.[67]

California has made substantial changes to incorporate these features in principals' learning opportunities in recent years by strengthening leadership standards and requirements for preparation programs, requiring induction supports, and by implementing the 21st Century California School Leadership Academies that are charged with providing high-quality professional learning opportunities for principals. In surveys, California principals report perceived improvements in preservice programs, high levels of satisfaction from the state's new induction programs, and high levels of perceived value from the applied learning opportunities offered by 21CSLA, which has reached more than 8000 unique school leaders with professional learning communities and coaching in the last few years.

At the same time, there is little financial support for candidates to pursue pre-service learning opportunities except in a few districts such as Long Beach that have created structured pipelines that recruit promising candidates to programs that partner with the district and offer subsidies to support quality preparation with strong internships and aligned induction. The recent growth in entry to the profession by the state's test-only route is a signal that affording the time and resources to complete a preparation program is an issue for many candidates. Many candidates have to pay for their induction support, and ongoing support for the free professional learning opportunities provided by 21CSLA is not guaranteed. To address this concern and to support strong practices that leverage greater principal effectiveness, California could consider:

- Providing funding to cover the cost of high-quality preparation programs, as North Carolina does with its Principal Fellows program that supports a master's degree and yearlong internship under the wing of a veteran principal. Mississippi's sabbatical leave program offers another model, underwriting teachers' salaries for a year while they complete an administrative credential, repaid with five years of service. Programs like Delta State University work with partner districts who recruit candidates, provide mentors, open their schools to candidates for a full-year internship, and enthusiastically hire program graduates. Other models create paid

[67] Darling-Hammond, L., Wechsler, M. E., Levin, S., Leung-Gagné, M., & Tozer, S. (2022*). Developing Effective Principals: What Kind of Learning Matters?* Learning Policy Institute

internships in the context of an assistant principalship or other clinical opportunity, often offered in exchange for a commitment to serve in a high-poverty urban or rural school.[68]

- Supporting pipeline programs[69] in school districts that create coherent pathways into the principalship using state standards as the basis for preparation, hiring, evaluation, and support; partnering with preparation programs to deliver quality preservice preparation to high-potential candidates; and aligning on-the-job evaluation and support for novice principals with ongoing principal learning communities and coaching.
- Ensuring ongoing funding for the work of 21 CSLA, which has been funded from the federal Title II 3 percent set aside and expanding funding to support training and coaching in schools with higher levels of inexperienced and untrained principals, such as special education and alternative schools, as well as rural schools.

Working Conditions

Principals' numerous responsibilities—from leading instruction, to managing people, to dealing with a wide range of operations—frequently lead to both stress and long hours. Nationally, principals report spending approximately 60 hours per week at work in their role as principal.[70] In fact, principals appear to be spending more time on the job in recent years based on a longitudinal study finding that principals spent approximately five more hours each week working in 2018 compared to 2008.[71] One California principal described some of the drivers of these increases in a 2018 study:

> Students are coming to us now with many more challenges than they did before. … There used to be the old adage of … "You bus them in the morning, you feed them breakfast, you educate them, [you] feed them lunch." We're now also feeding them dinner. Now, we also have school programs … an extended school year, this, that, and the other. … It just keeps adding more as things go by … because there are deficiencies in our society that the schools are expected to

[68] Darling-Hammond, L., Meyerson, D. et al., (2007). *Preparing principals for a changing world.* Jossey-Bass.

[69] Gates, S. M., Baird, M. D., Master, B. K., & Chavez-Herrerias, E. R. (2019). Principal pipelines: A feasible, affordable, and effective way for districts to improve schools. RAND Corporation.

[70] Lavigne, H. J., Shakman, K., Zweig, J., & Greller, S. L. (2016). Principals' time, tasks, and professional development: An analysis of Schools and Staffing Survey data. https://files.eric.ed.gov/fulltext/ED569168.pdf; Sebastian, J., Camburn, E. M., & Spillane, J. P. (2018). Portraits of Principal Practice: Time Allocation and School Principal Work. Educational Administration Quarterly, 54(1), 47–84. https://doi.org/10.1177/0013161X17720978

[71] Fuller, E. J., Young, M. D., Richardson, M. S., Pendola, A., & Winn, K. M. (2018). The Pre-K-8 School Leader in 2018. www.naesp.org

somehow pick up then miraculously change. And over the past 20 years, I just keep seeing that it just keeps adding more and more .[72]

Since 2018, the expectations for managing a wide range of federal and state programs with complex spending, reporting, and auditing requirements have only increased with the pandemic and its aftermath.[73] Interviews with California administrators conducted for Getting Down to Facts found that they reported on average the equivalent of more than a full day a week (26% of their time) on managing compliance activities associated with these programs.[74] To address this source of administrator overload, California could do one or both of the following:

- Explicitly paring back unnecessary and redundant reporting requirements to reduce compliance tasks that do not contribute to effective school management and leadership.
- Relaxing the 5% cap on administrative spending enforced by proposition 223 and/or the restrictions on specific program oversight funding to 1% of revenues which prevent the addition of funded staff to assist with these tasks.

Obviously, reducing unnecessary administrative burdens is an important efficiency so that principals can focus on creating strong educational environments, rather than filling in forms. In addition, in order to support principals in what is often described as an impossible job, states and districts can improve working conditions in part by providing sufficient resources to principals so they can accomplish their educational objectives.[75] Districts can do this by ensuring that principals have support staff, such as assistant principals, counselors, and teacher leaders to address student and school needs.[76] Investing in distributed leadership through strong administrative staffing and support for teacher leadership can buffer schools against principal leadership challenges in two ways. First, it helps prevent turnover by

[72] Sutcher, L., Podolsky, A., Kini, T., & Shields, P. M. l. (2018*). Learning to lead: Understanding California's learning system for school and district leaders.* In Getting Down to Facts II (Issue September). https://learningpolicyinstitute.org/sites/default/files/product-files/GDTF_LearningToLead_BRIEF.pdf

[73] Willis, J. (2026). The Weight of Good Intentions: Initial Measurement on the Rise in Compliance Activities a Decade After California's Funding and Accountability Reforms. WestEd.

[74]

[75] Burkhauser, S., Gates, S. M., Hamilton, L. S., & Ikemoto, G. S. (2012). First-Year Principals in Urban School Districts: How Actions and Working Conditions Relate to Outcomes. Technical Report. Rand Corporation. https://eric.ed.gov/?id=ED529932;

[76] Snodgrass Rangel, V. (2018). A review of the literature on principal turnover. Review of Educational Research, 88(1), 87-124. DOI: 10.3102/0034654317743197; Tekleselassi, A. A., & Choi, J. (2019). Understanding school principal attrition and mobility through hierarchical generalized linear modeling. *Educational Policy, 0*(0), 1–47. https://doi.org/10.1177/0895904819857825

allowing principals to delegate responsibilities that otherwise contribute to their especially long hours and stress. It also serves the dual purpose of buffering against the harmful effects of turnover in the event of retirement, promotion, or demotion.

Other working conditions that emerge from this study include aspects of school climate, such as school suspension rates and teacher turnover, that can be addressed by targeted learning supports. In schools led by highly-rated principals, teachers report more positive school climates and stay at higher rates.[77] Principals enable a positive school climate that supports teacher retention, student attendance, reduced suspension rates, and student achievement by adopting policies and practices that undergird positive teacher-student relationships characterized by warmth, acceptance, and support; building a welcoming, inclusive, communicative school culture that builds trust between students, teachers, and families;[78] and creating structures and expectations for engaging families regularly and teachers in decision making.[79] Principal training in how to create a supportive school climate can make a difference in both suspension rates and teacher turnover. The state can facilitate this learning by:

- Offering targeted training, professional learning communities, and coaching around how to create a positive school climate that enhances engagement and belonging for both students and teachers. This is already happening as part of California's large investment in technical assistance for its community schools (about ¼ of the state's schools) and could be expanded via 21CSLA or other support.

Compensation

Increasing principals' compensation holds promise for reducing principal turnover. We find that California teachers' salaries, though nominally better than in many other states, still lag those of other

[77] Grissom, J. A., Blissett, R.S.L., & Mitani, H. (2018). Evaluating school principals: Supervisor ratings of principal practice and principal job performance. *Educational Evaluation and Policy Analysis 40*(3), 446–472; Grissom, J. A., & Bartanen, B. (2019). Strategic retention: Principal effectiveness and teacher turnover in multiple-measure teacher evaluation systems. *American Educational Research Journal, 56*(2), 514-555, p. 517.

[78] Louis, K.S., & Murphy, J. (2017). Trust, caring, and organizational learning: The leader's role. *Journal of Educational Administration, 55*(1), 103-126.; Sebastian, J., & Allensworth, E. (2012). The influence of principal leadership on classroom instruction and student learning: A study of mediated pathways to learning. *Educational Administration Quarterly, 48*(4), 626–663; Bartanen, B., Husain, A. N., Liebowitz, D. D., & Rogers, L. K. (2024). The returns to experience for school principals. *American Educational Research Journal, 61*(5), pp. 12-13: Jacobson, S. L., Brooks, S., Giles, C., Johnson, L., & Ylimaki, R. (2007). Successful leadership in three high-poverty urban elementary schools. *Leadership and Policy in Schools*, *6*(4), 291-317.

[79] Epstein, J. L., & Sheldon, S. B. (2002). Present and accounted for: Improving student attendance through family and community involvement. The Journal of Educational Research, 95(5), 308-318.

college-educated workers by about 20% and principals' salaries appear even more stalled. In California, the average teacher's salary increased over the last decade when accounting for inflation, while the average principal's salary has not. Principal salaries increased for a few years as LCFF dollars began to come into the system but have declined since in real dollar terms when inflation and variations in the cost of living across the state are considered.

The trend in lower salaries is concerning due to the relationship between compensation and retention. Specifically, studies generally find that higher principal salaries are frequently associated with increased principal stability when controlling for school and principal factors.[80] In particular, increased salaries are most consistently associated with principal stability when the salary is higher relative to individuals in the same labor market.[81] Furthermore, principal salaries need to be sufficiently higher than teacher salaries to account for the increased hours and demands of the leadership role.[82] Consequently, districts might review their principals' salaries to confirm they are competitive with neighboring districts and are sufficiently greater than teachers' salaries so that promising teachers who are interested in the principalship are not financially disincentivized to pursue school leadership, given the greater demands of school leaders. While salary decisions are local in California, the state can contribute to retaining educators by:

- Strengthening compensation through vehicles such as loan forgiveness, housing supports, or tax credits for educators, potentially focused on those working in particular kinds of schools.

[80] Baker, B. D., Punswick, E., & Belt, C. (2010). School leadership stability, principal moves, and departures: Evidence from Missouri. Educational Administration Quarterly, 46(4), 523–557. https://doi.org/10.1177/0013161X10383832; Boyce, J., & Bowers, A. J. (2016). Principal turnover: Are there different types of principals who move from or leave their schools? A latent class analysis of the 2007–2008 schools and staffing survey and the 2008–2009 principal follow-up survey. Leadership and Policy in Schools, 15(3), 237–272. https://doi.org/10.1080/15700763.2015.1047033; Papa, F. C. (2007). Why do principals change schools? A multivariate analysis of principal retention. Leadership and Policy in Schools, 6, 267–290.; Pendola, A. (2021). Your pay or someone else's? Exploring salary dispersion, position, and principal turnover. Education Finance and Policy.; Solano, P. L., McDuffie, M. J., Farley-Ripple, E. N., & Bruton, J. (2010). Principal retention in the state of Delaware.; Snodgrass Rangel, V. (2018). A review of the literature on principal turnover. Review of Educational Research, 88(1), 87-124. DOI: 10.3102/0034654317743197

[81] Baker, B. D., Punswick, E., & Belt, C. (2010). School leadership stability, principal moves, and departures: Evidence from Missouri. Educational Administration Quarterly, 46(4), 523–557. https://doi.org/10.1177/0013161X10383832; Pendola, A. (2021). Your pay or someone else's? Exploring salary dispersion, position, and principal turnover. Education Finance and Policy;

[82] Pijanowski, J. C., & Brady, K. P. (2009). The influence of salary in attracting and retaining school leaders. Education and urban society, 42(1), 25-41.; Tran, H. (2016). The impact of pay satisfaction and school achievement on high school principals' turnover intentions. Educational Management Administration & Leadership, 45(4), 621-638. https://doi.org/10.1177/1741143216636115;

Accountability Systems

Ensuring accountability systems incentivize the stability of talented principals can reduce principal turnover. Policies that threaten, publicly humiliate, and punish schools that fail to meet targeted benchmarks have been associated with increased principal mobility.[83] These policies tend to disincentivize principals from leading in schools with the greatest challenges (i.e., schools with low performance and greater student needs) due to concerns that principals will be punished or their schools will be closed.

Moreover, anecdotal research suggests that some districts promote policies that consistently move principals amongst schools every few years. A steady churn of principals is generally associated with decreased student outcomes.[84] Consequently, districts can be informed about the benefits of stable school leadership and consider whether the perceived benefits to frequently moving principals amongst schools outweighs the costs on students, teachers, and school communities.

[83] Hochbein, C., & Cunningham, B. C. (2013). An Exploratory Analysis of the Longitudinal Impact of Principal Change on Elementary School Achievement. Journal of School Leadership, 23(1), 64–90. https://doi.org/10.1177/105268461302300103

[84] 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; Carpenter, D., DeHerrera, M., Oleson, M., & Taylor, J. (2022). Effects of Principal Turnover on School Performance. NASSP Bulletin, 106(1), 55–70. https://doi.org/10.1177/01926365211070488; Walsh, E., & Dotter, D. (2020). The impact on student achievement of replacing principals in District of Columbia public schools. Education Finance and Policy, 15(3), 518–542. https://doi.org/10.1162/edfp_a_00279; Winters, M. A., Kisida, B., & Cho, I. (2023). The Impact of Principal Attrition and Replacement on Indicators of School Quality. Education Finance and Policy, 18(2), 302–318.

Conclusion

We identify several promising trends amongst California's principals, in spite of California's principals turning over at higher rates than principals in the rest of the country. First, California does not suffer from large gaps in average principal turnover rates between different student groups (by student poverty and student race/ethnicity) unlike many other states in the United States. However, rural schools are the exception: rural students and schools suffer from the highest rates of principal turnover and lowest access to principal quality compared to non-rural students and schools by almost every metric of principal turnover and principal quality. Second, the implementation of the Local Control Funding Formula appears to have contributed to some promising trends in principal quality and retention: lower rates of principal turnover and increases in principals' average years of experience and their levels of satisfaction. Finally, turnover and other school factors related to school climate strongly predict principal turnover. Districts that have been able to avoid the effects of widespread teacher shortages by recruiting and retaining more experienced and fully prepared teachers appear to be the same places where principals are supported to remain in their schools and in the profession.

Technical Appendix

This technical appendix provides supporting detail for *California Principal Trends in Supply, Preparation, Distribution, Retention, and Turnover*. We begin by expanding upon the detail provided in the main text on data and sample. We also provide the following additional detail:

- Definitions, sources, and years available for all variables used
- Tables with the data used to create all graphs
- Specification checks for all graphs and tables, run using the subsample of principals who only work at one school as the sole principal
- Detail on the report's regression model, including the Variance Inflation Factor results

Data

In this study, we leverage statewide, restricted-use, staff-level data from the California Department of Education (CDE) to describe trends in the public-school principal workforce. Data include the principals' own demographics (gender, race/ethnicity, and age) and experience, school characteristics, and turnover patterns.

We supplement these data with restricted-use data from the California Commission on Teacher Credentialing (CTC) on principals' preparation route to administrative credentialing, and CDE public-use data on compensation.

Sample Definitions

District & School Samples. We start with 125,598 principals across all years in our data (2012–13 through 2024–25). We limit the district sample to elementary, high school, unified, and county office of education districts (778 observations dropped, N = 124,280). Within these districts, we include: all traditional schools (including both charters and virtual schools); alternative schools of choice (such as magnet or independent study programs); and special education schools (7,139 observations dropped, N = 117,681). This sample limitation excludes districts that are operated by community colleges, regional occupation centers or programs, the state board of education, or joint powers authority, as well state special schools, statewide benefit charter, non-school location, or administration-only districts. The following school types are also excluded in the sample: county community, community day, continuation, juvenile court, opportunity, youth authority, state special, special education adult transition, regional occupational, and home and hospital schools.

Principal Samples. Our principal sample includes all full- or part-time school site leaders in California k–12 public schools. Our principal assignment data were captured on census day, not updated throughout the year. We allow schools to have multiple principals and principals to work across multiple schools, as reflected in the CDE staffing data. As a specification check to ensure that the results are not driven by schools or principals with multiple records in the same year, we include a secondary set of analyses in this technical appendix. This secondary set of analyses is limited to the subset of principals who work in a single school and schools with a single principal in each year. When interpreting findings in the main text, we look to ensure that our interpretations are consistent across the two samples.

We identified principals who were coded in the California Longitudinal Pupil Achievement Data System (CALPADS) with a job assignment code value of 301 (“Principal”). We do not classify individuals working at the district level to be a principal, even if they had a been labeled with a 301 code. Additionally, while the principal role is standard in common traditional public schools, charter schools may be led by a charter school administrator or director in lieu of a principal, who are coded in CALPADS with a value of 160 (“Charter School Administrator or Director”). Within a charter school, we label charter school administrators or directors as principals if there is not already a principal (value of 301) in the school in that year.

CDE data collection systems and definitions for job assignment codes changed between the 2018–2019 and 2019–20 school years, so staffing and turnover data from 2012–13 through 2018–19 are not directly comparable to data from 2019–20 through 2023–24.

Year Samples. Where we describe findings by year, we provide data on the maximum number of years allowed by our data. The longer time horizon provides greater context for these year-by-year findings. Where we provide a single data point, averaged across years, the sample will begin with the 2021–22 school year, to provide a robust, recent sample with minimal influence from the COVID-19 pandemic.

Regression Model

Our regression model was run as an ordinary least squares regression. In this model, a principal's role in a school (*i*)'s turnover (*Y*) in year *t* was modeled as:

$$Y_{it} = \beta_0 + \beta_1 Covariates_{it} + \beta_2 Covariates_i + \alpha_t + \mu_i.$$

In this model, Y_{it} is equal to 0 if the principal is still in the same role in the same school in year $t + 1$. It is equal to 1 if the principal is no longer principal in the same school in year $t + 1$. $Covariates_{it}$ is a vector of covariates that vary over time:

- An indicator set to 1 if the principal is age 60 or older in year t,
- Indicators equal to 1 if the principal has 1–3 or 4–7 years of experience as a principal in year t
- The district's average principal salary in year t (in thousands of 2024 dollars)
- An indicator set to 1 if the district's principal salary data was missing in year t
- School per pupil spending, in thousands of dollars, in year t
- An indicator set to 1 if the school's per pupil spending is missing in year t
- The school's ratio of students to teachers in year t
- The % of the school's teachers to leave at the end of year t, weighted by each teachers' full time equivalency within the school
- The school's suspension rate in year t
- The school's chronic student absence rate in year t

- The percent of the school's students who are Black/African American, Latino, Native American, or Pacific Islander in year t
- The percent of the school's students who receive English learner services in year t

$Covariates_i$ is a vector of covariates that are fixed for either the individual or school:

- An indicator equal to one of the principal was prepared through a test-only route.
- Mutually exclusive indicators equal to 1 if the school is urban or suburban. All schools are classified to one of these three categories, using the modal NCES locale code: urban (locale codes 11–13), suburban (locale codes 21–23, 31), and rural (local codes 32–33, 41–43), with rural being the reference group. This approach groups towns located near urban centers with suburban communities, and places distant and remote towns with rural communities.
- An indicator equal to 1 if the school is a charter school.
- Mutually exclusive school type indicators, which are equal to 1 if the school is an alternative school of choice or a special education school.
- An indicator equal to 1 if the school is exclusively or primarily virtual.
- Mutually exclusive indicators equal to 1 if the school is a middle school, high school, or a non-traditional combination of grades, with the reference group being elementary schools.

We also include year fixed-effects α_t. A person-by-school level error term is represented by μ_i.

Variables

Table A1. Variable Definitions, Sources, and Years Available for Principal Characteristics

Variable	Level of Variation	Definition	Source	Years Collected / Used
Principal Age	Person by year	Individuals age in years. Used both as a categorical variable (ages 54 and under, 55–62, and 63 and over) and an indicator, equal to 1 if the person is aged 60 or above in that year.	California Department of Education restricted-used data	2012–13 through 2024–25
Years Experience as a Principal	Person by year	Number of years the person has been in a principal role, including the current year. Can only be observed from the first year of our data (2012–13). Used both as a categorical variable (1st–2nd year, 3rd–5th year, and 6th year or more) and as an indicator variables (equal to 1 if the person was in their 1st–3rd year as a principal; equal to 1 if the person was in their 4th–7th year as a principal).	California Department of Education restricted-used data	2017–18 through 2024–25
Principal and Teacher Race/Ethnicity	Person	Created as a series of indicator variables: ● Equal to 1 if the person self identified as a person of color (i.e., chose a race/ethnicity other than white) ● Equal to 1 if the person self-identified as Asian American (including ● Equal to 1 if the person self-identified as Black or African American ● Equal to 1 if the person 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.	California Department of Education restricted-used data	2012–13 through 2024–25
Principal and Teacher Gender	Person-by-year	An indicator equal to 1 if person self-identified as female. For missing annual values of gender, we imputed using the most recently reported gender.	California Department of Education restricted-used data	2012–13 through 2024–25

School level	School	Created as a series of indicator variables, equal to 1 if the school is defined as elementary, middle, high school, or a combination of grades, and 0 if it is not.	California Department of Education restricted-used data	2012–13 through 2024–25
Test-Only Route to Administrator Certification	Person	Indicator variable equal to 1 if the principal received a passing CPACE score and did not complete a traditional preparatory program. The indicator equaled zero if there was evidence of a traditional administrator preparatory program or the preparation route was unknown (typically because the principal was prepared out-of-state).	California Commission on Teacher Credentialing restricted-use data	2020–21 through 2024–25
Graduate Degree	Person-by-Year	Two indicators, equal to 1 of the person holds a master's/doctoral degree, equal to zero if not	California Department of Education restricted-used data	2020–21 through 2024–25
Salary	District-by-school level-by-year District-by-year	Average principal salaries by grade level (elementary, middle, and high school) for each district. Data were taken from the CDE's J-90 data set and adjusted into 2024 dollars to account for inflation by Paul Bruno, who graciously shared the data with our team. For the regression model, the study team averaged the salary data overall in the district, weighting by the number of principals in each school level within the district.	Bruno, P. (2025). Adjusted J-90 public-use salary data (inflation-adjusted to 2024 dollars) [Unpublished dataset]. Provided by personal communication.	2020–21 through 2024–25
Missing Salary Data Indicator	District-by-year	Indicator variable, equal to 1 if the district did not report J-90 salary data.	Bruno, P. (2025). Adjusted J-90 public-use salary data (inflation-adjusted to 2024 dollars) [Unpublished dataset]. Provided by personal communication.	2021–22 through 2023–24
Urbanicity	School	Created using the modal NCES local code for a school within the study period. Created as a series of indicators: urban (locale codes 11–13), suburban (locale codes 21–23, 31), and rural (local codes 32–33, 41–43). This approach groups towns located near urban centers with	National Center for Education Statistics, Common Core of Data.	2021–22 through 2024–25

		suburban communities, and places distant and remote towns with rural communities. Our coding aligns with how the U.S. Department of Education structures rural priorities and reflects the idea that proximity to urban centers meaningfully shapes schools' access to resources and labor markets.		
School type	School		California Department of Education Public Use Data	
School percent unduplicated pupil count (UPC)	School by year	The percent of the school's students identified as receiving English learner services, eligible for free or reduced price lunch, or in foster care.	California Department of Education Public Use Data	2021–22 through 2024–25
School percent students receiving English learner services (EL)		The percent of the school's students identified as receiving English learner services.	California Department of Education Public Use Data	2021–22 through 2024–25
School % students Black or African American, Latino, Native American, or Pacific Islander (Students of Color)		The percent of the school's students identified as Black or African American, Latino, Native American, or Pacific Islander.	California Department of Education Public Use Data	2021–22 through 2024–25
School % socioeconomically disadvantaged students (SES)		The percent of the school's students identified as socioeconomically disadvantaged.	California Department of Education Public Use Data	2021–22 through 2024–25
Principal retention	Person-by-school-by-year	An indicator variable equal to 1 if the person remained a principal in the same school in the following year, and equal to zero if they did not.	California Department of Education restricted-used data	2012–13 through 2023–24
Type of principal turnover	Person-by-school-by-year	A categorical variable indicating—when the principal did not remain in the same school in the same year—what we observed in the next year. We classified principals as: ● Transferring if we observed them to have a principal role at a different school in the following year. ● Stepping up if we observed them in a district leadership role in the following year.	California Department of Education restricted-used data	2012–13 through 2023–24

		• Stepping back if we observed them in a school-based role other than principal in the following year. • Leaving if we did not observe them in the CDE staffing data in the following year. Note that our data do account for individuals on leave (e.g., family leave). Since CDE does not collect data on charter management offices, principals who leave charter schools to work at a CMO office will be classified as leaving. This variable is set to missing if the principal was retained in the school in the following year. Because our data allow principals to work in multiple schools in the same year, principals may be coded into a type of turnover for one school, even if they are retained in another school in the same year. This variable is set to missing if the principal was retained in the school in the following year. Because our data allow principals to work in multiple schools in the same year, principals may be coded as a 1 for turnover even if they are retained in another school in the same year.		
Principal turnover	Person-by-school-by-year	An indicator variable equal to 1 if the person remained a principal in the same school in the following year, and equal to zero if they did not.	California Department of Education restricted-used data	2021–22 through 2023–24
School per pupil spending	School-by-year	Current expenditures representing the ongoing, day-to-day operations of schools and LEAs for public elementary and secondary education. Includes both school-level costs and district costs prorated to the schools but excludes one-time capital outlays. Averaged to the student level within school. Missing values have	CDE ESSA Per-Pupil Expenditure (PPE) Reporting Data National Center for Education Statistics (NCES) 2022 district-level Comparable Wage Index for Teachers (CWIFT)	2021–22 through 2023–24

		been replaced with the average value for missing dummy imputation. Our team used 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.	US Bureau of Labor Statistics (BLS) Consumer Price Index (CPI-U)	
Missing school per pupil spending	School-by-year	An indicator set to one if we are missing data on the schools per pupil spending.	CDE ESSA Per-Pupil Expenditure (PPE) Reporting Data	2021–22 through 2023–24
Ratio of students to administrators and PPS	School-by-year	The student enrollment divided by the number of administrators and pupil personnel services. The denominator is weighted by FTE.	California Department of Education restricted-used data California Department of Education Public Data (student enrollment)	2021–22 through 2023–24
Ratio of students to teachers	School-by-year	The student enrollment divided by the number of teachers. The denominator is weighted by FTE.	California Department of Education restricted-used data California Department of Education Public Data (student enrollment)	2021–22 through 2023–24
% of teachers to leave in next year	School-by-year	The number of teachers to not remain in the school in the following year divided by the number of teachers staffing the school in the year. Both the numerator and denominator are weighted by FTE.	California Department of Education restricted-used data	2021–22 through 2023–24
Suspension Rate	School-by-year	The number of suspensions in the school divided by the school enrollment.	California Department of Education restricted-used data California Department of Education Public Data (student enrollment)	2021–22 through 2023–24

Chronic Absence Rate	School-by-year	The school's chronic absence rate.	California Department of Education Public Data	2021–22 through 2023–24
Year	School-by-year	Indicators for year, centered within the analytic sample and used as year-fixed effects.	California Department of Education restricted use data	2021–22 through 2023–24

Supporting Tables

Specification Check Data for Figures

Table A2. Specification Check for Principal Age, 2012–13 through 2024–25

Year		Total N	Under 55	55-62	Over 63
2012-13	N	6,932	5,011	1,620	301
	%		72.3%	23.4%	4.3%
2013-14	N	7,169	5,168	1,632	369
	%		72.1%	22.8%	5.1%
2014-15	N	7,300	5,321	1,581	398
	%		72.9%	21.7%	5.5%
2015-16	N	7,398	5,439	1,582	377
	%		73.5%	21.4%	5.1%
2016-17	N	7,444	5,536	1,536	372
	%		74.4%	20.6%	5.0%
2017-18	N	7,534	5,619	1,558	357
	%		74.6%	20.7%	4.7%
2018-19	N	7,591	5,702	1,547	342
	%		75.1%	20.4%	4.5%
2019-20	N	7,843	5,964	1,579	300
	%		76.0%	20.1%	3.8%
2020-21	N	7,821	5,940	1,598	283
	%		75.9%	20.4%	3.6%
2021-22	N	7,744	5,869	1,611	264
	%		75.8%	20.8%	3.4%
2022-23	N	7,718	5,785	1,675	258
	%		75.0%	21.7%	3.3%
2023-24	N	7,709	5,649	1,770	290
	%		73.3%	23.0%	3.8%
2024-25	N	7,729	5,533	1,927	269
	%		71.6%	24.9%	3.5%
Overall	**N**	**97,932**	**72,536**	**21,216**	**4,180**
	%		**74.1%**	**21.7%**	**4.3%**

Table A3. Specification Check for Figure 2, Percentage of California Public School Principals and Teachers Who Are Educators of Color, Overall and by Race/Ethnicity, 2012–13 through 2024–25

Year		Total N	American Indian or Alaska Native	Asian	Native Hawaiian or Pacific Islander	Black or African American	White	Hispanic or Latino	Multiracial	Missing
2012-13	N	7,136	36	305	10	552	4,441	1,487	67	238
	%		0.5%	4.3%	0.1%	7.7%	62.2%	20.8%	0.9%	3.3%
2013-14	N	7,346	35	314	13	574	4,553	1,582	64	211
	%		0.5%	4.3%	0.2%	7.8%	62.0%	21.5%	0.9%	2.9%
2014-15	N	7,456	36	329	18	570	4,613	1,633	68	189
	%		0.5%	4.4%	0.2%	7.6%	61.9%	21.9%	0.9%	2.5%
2015-16	N	7,525	35	327	20	575	4,944	1,400	66	158
	%		0.5%	4.3%	0.3%	7.6%	65.7%	18.6%	0.9%	2.1%
2016-17	N	7,544	35	343	20	556	4,644	1,740	81	125
	%		0.5%	4.5%	0.3%	7.4%	61.6%	23.1%	1.1%	1.7%
2017-18	N	7,600	31	357	21	550	4,639	1,814	90	98
	%		0.4%	4.7%	0.3%	7.2%	61.0%	23.9%	1.2%	1.3%
2018-19	N	7,620	31	381	25	586	4,591	1,851	88	67
	%		0.4%	5.0%	0.3%	7.7%	60.2%	24.3%	1.2%	0.9%
2019-20	N	7,845	38	394	29	587	4,697	1,973	84	43
	%		0.5%	5.0%	0.4%	7.5%	59.9%	25.1%	1.1%	0.5%
2020-21	N	7,823	42	398	31	572	4,664	2,003	80	33
	%		0.5%	5.1%	0.4%	7.3%	59.6%	25.6%	1.0%	0.4%
2021-22	N	7,746	42	425	27	595	4,540	1,998	85	34
	%		0.5%	5.5%	0.3%	7.7%	58.6%	25.8%	1.1%	0.4%
2022-23	N	7,718	50	437	25	620	4,420	2,040	88	38
	%		0.6%	5.7%	0.3%	8.0%	57.3%	26.4%	1.1%	0.5%
2023-24	N	7,709	47	468	25	615	4,330	2,091	86	47
	%		0.6%	6.1%	0.3%	8.0%	56.2%	27.1%	1.1%	0.6%
2024-25	N	7,729	41	488	26	616	4,307	2,116	86	49
	%		0.5%	6.3%	0.3%	8.0%	55.7%	27.4%	1.1%	0.6%
Overall	**N**	**98,797**	**499**	**4,966**	**290**	**7,568**	**59,383**	**23,728**	**1,033**	**1,330**

	%		0.5%	5.0%	0.3%	7.7%	60.1%	24.0%	1.0%	1.3%

Table A4. Specification Check for Figure 4, Percent of California Public School Principals and Teachers by Gender, 2016–17 through 2024–25, Elementary Schools Only

Year		Total N	Female	Male	Missing
2016-17	N	5,067	3,419	1,578	70
	%		67.5%	31.1%	1.4%
2017-18	N	5,097	3,489	1,563	45
	%		68.5%	30.7%	0.9%
2018-19	N	5,057	3,521	1,517	19
	%		69.6%	30.0%	0.4%
2019-20	N	5,228	3,725	1,502	1
	%		71.3%	28.7%	0.0%
2020-21	N	5,184	3,704	1,479	1
	%		71.5%	28.5%	0.0%
2021-22	N	5,180	3,720	1,460	0
	%		71.8%	28.2%	0.0%
2022-23	N	5,155	3,749	1,406	0
	%		72.7%	27.3%	0.0%
2023-24	N	5,132	3,742	1,390	0
	%		72.9%	27.1%	0.0%
2024-25	N	5,158	3,797	1,361	0
	%		73.6%	26.4%	0.0%
Overall	**N**	**46,258**	**32,866**	**13,256**	**136**
	%		**71.0%**	**28.7%**	**0.3%**

Table A5. Specification Check for Figure 4, Percent of California Public School Principals and Teachers by Gender, 2016–17 through 2024–25, Middle Schools Only

Year		Total N	Female	Male	Missing
2016-17	N	1,167	551	604	12
	%		47.2%	51.8%	1.0%
2017-18	N	1,161	546	604	11
	%		47.0%	52.0%	0.9%
2018-19	N	1,168	574	589	5
	%		49.1%	50.4%	0.4%
2019-20	N	1,176	604	572	0
	%		51.4%	48.6%	0.0%
2020-21	N	1,182	619	563	0
	%		52.4%	47.6%	0.0%
2021-22	N	1,145	615	530	0
	%		53.7%	46.3%	0.0%
2022-23	N	1,128	612	516	0
	%		54.3%	45.7%	0.0%
2023-24	N	1,145	633	512	0
	%		55.3%	44.7%	0.0%
2024-25	N	1,153	641	512	0
	%		55.6%	44.4%	0.0%
Overall	**N**	**10,425**	**5,395**	**5,002**	**28**
	%		**51.8%**	**48.0%**	**0.3%**

Table A6. Specification Check for Figure 4, Percent of California Public School Principals and Teachers by Gender, 2016–17 through 2024–25, High Schools Only

Year		Total N	Female	Male	Missing
2016-17	N	1,077	404	663	10
	%		37.5%	61.6%	0.9%
2017-18	N	1,104	428	671	5
	%		38.8%	60.8%	0.5%
2018-19	N	1,126	440	685	1
	%		39.1%	60.8%	0.1%
2019-20	N	1,159	464	695	0
	%		40.0%	60.0%	0.0%
2020-21	N	1,154	464	690	0
	%		40.2%	59.8%	0.0%
2021-22	N	1,132	475	656	1
	%		42.0%	58.0%	0.1%
2022-23	N	1,143	485	658	0
	%		42.4%	57.6%	0.0%
2023-24	N	1,164	520	644	0
	%		44.7%	55.3%	0.0%
2024-25	N	1,167	517	650	0
	%		44.3%	55.7%	0.0%
Overall	**N**	**10,226**	**4,197**	**6,012**	**17**
	%		**41.0%**	**58.8%**	**0.2%**

Table A7. Specification Check for Figure 5, Principal Experience, 2017–18 through 2024–25

Year		Total N	1-2 Years	3-5 Years	6+ Years
2018-19	N	7,620	1,778	2,550	3,292
	%		23.3%	33.5%	43.2%
2019-20	N	7,845	1,969	2,409	3,467
	%		25.1%	30.7%	44.2%
2020-21	N	7,823	1,708	2,331	3,784
	%		21.8%	29.8%	48.4%
2021-22	N	7,746	1,591	2,381	3,774
	%		20.5%	30.7%	48.7%
2022-23	N	7,718	2,028	2,117	3,573
	%		26.3%	27.4%	46.3%
2023-24	N	7,709	1,998	2,129	3,582
	%		25.9%	27.6%	46.5%
2024-25	N	7,729	1,701	2,277	3,751
	%		22.0%	29.5%	48.5%
Overall	**N**	**54,190**	**12,773**	**16,194**	**25,223**
	%		**23.6%**	**29.9%**	**46.5%**

Table A8. Specification Check for Figure 6, California Public School Principal Salaries by School Level and in 2024 Dollars for Reporting Districts, 2020–21 through 2023–24

Year		Elementary	Middle	High
2020-21	N	4,790	1,096	1,073
	$	$ 136,308	$ 142,429	$ 155,223
2021-22	N	4,810	1,074	1,055
	$	$ 129,111	$ 135,664	$ 147,651
2022-23	N	4,785	1,057	1,070
	$	$ 132,934	$ 139,380	$ 151,443
2023-24	N	4,773	1,078	1,091
	$	$ 135,631	$ 141,871	$ 154,976
Overall	**N**	**19,158**	**4,305**	**4,289**
	$	**$ 133,490**	**$ 139,853**	**$ 152,355**

Table A9. Specification Check for Figure 8, Percent of California Public school Principals Prepared Through a Test-Only Route to Administrator Certification, 2020–21 through 2024–25

Year		First-Year	Overall
2020-21	N	76	430
	%	7.1%	4.6%
2021-22	N	135	520
	%	10.3%	5.4%
2022-23	N	101	523
	%	6.6%	5.4%
2023-24	N	133	578
	%	10.4%	5.8%
2024-25	N	76	588
	%	6.8%	6.0%
Overall	**N**	**521**	**2,639**
	%	**8.2%**	**5.4%**

Table A10. Specification Check for Figure 9, Percentage of California Public School Principals with Advanced Degrees, 2020–21 through 2024–25

Year	Master's degree	Doctoral degree	N
2020-21	55.7%	7.7%	7,517
2021-22	55.3%	7.7%	7,474
2022-23	55.9%	7.5%	7,534
2023-24	55.2%	8.0%	7,525
2024-25	55.8%	8.0%	7,729
Overall	**55.6%**	**7.8%**	**37,778**

Table A11. Specification Check for Figures 10, Share of California Public School Principals Retained in School and Role, 2012–13 through 2024–25 and Figure 11, Principal Turnover by Type of Turnover, 2012–23 through 2023–24

Year		Total N	Retained	Moved Laterally	Stepped Up	Stepped Back	Left
2012-13	N	7,136	5,613	528	309	190	496
	%		78.7%	7.4%	4.3%	2.7%	7.0%
2013-14	N	7,346	5,705	504	403	191	543
	%		77.7%	6.9%	5.5%	2.6%	7.4%
2014-15	N	7,456	5,882	463	362	195	554
	%		78.9%	6.2%	4.9%	2.6%	7.4%
2015-16	N	7,525	6,009	443	333	238	502
	%		79.9%	5.9%	4.4%	3.2%	6.7%
2016-17	N	7,544	6,029	452	337	216	510
	%		79.9%	6.0%	4.5%	2.9%	6.8%
2017-18	N	7,600	5,942	508	334	262	554
	%		78.2%	6.7%	4.4%	3.4%	7.3%
2018-19	N	7,620	6,018	463	371	253	515
	%		79.0%	6.1%	4.9%	3.3%	6.8%
2019-20	N	7,845	6,657	313	242	234	399
	%		84.9%	4.0%	3.1%	3.0%	5.1%
2020-21	N	7,823	6,259	398	453	192	521
	%		80.0%	5.1%	5.8%	2.5%	6.7%
2021-22	N	7,746	5,875	527	496	246	602
	%		75.8%	6.8%	6.4%	3.2%	7.8%
2022-23	N	7,718	6,061	489	448	238	482
	%		78.5%	6.3%	5.8%	3.1%	6.2%
2023-24	N	7,709	6,202	436	342	246	483
	%		80.5%	5.7%	4.4%	3.2%	6.3%
Overall	**N**	**98,797**	**72,252**	**5,524**	**4,430**	**2,701**	**6,161**
	%		**79.3%**	**6.1%**	**4.9%**	**3.0%**	**6.8%**

Methodological and Specification Checks for Tables

Table A12. Specification Check for Table 2, Distribution of Principals, Using Sample of Principals Staffed at a Single School and Schools with a Single Principal

School Type	% Test-Only	% Age 60+	% 3 or Fewer Years as Principal	% 3 or Fewer Years as Principal at this School	N
Urban	4.6	8.9	32.9	36.7	17438
Suburban	5.3	8.8	34.4	37.8	16684
Rural	5.9	10.8	39.1	42.9	4134
Charter School	7.2	7.8	39.9	38.6	3525
Alternative School of Choice	3.9	15.8	31.6	45.1	1034
Special Education School	9.2	14.8	41.3	41.3	271
Virtual School	6.6	9.1	43.5	53.7	471
Mainstream, Non-Charter School	4.8	8.9	33.6	37.5	33393
UPC					
Top Decile	3.6	8.5	36.1	37.9	10381
Bottom Decile	6.2	9.5	31.6	37.5	9719
Students Receiving English Learner Services					
Top Decile	4.2	8.6	35.9	38.5	9957
Bottom Decile	6.0	9.9	33.2	37.7	8873
Students of Color					
Top Decile	3.5	7.6	34.4	37.7	10380
Bottom Decile	6.3	10.1	31.9	37.0	9631
Socioeconomically Disadvantaged					
Top Decile	3.7	8.4	35.8	37.8	10495
Bottom Decile	6.1	9.5	31.7	37.3	9654
Overall	**5.0**	**9.0**	**34.2**	**37.9**	**38256**

Table A13. Specification Check for Table 3, Distribution of Student Populations Across School Types, 2021–22 through 2024–25, , Using Sample of Principals Staffed at a Single School and Schools with a Single Principal

School Type	% UPC	% EL	% BIPOC	% Low SES	N
Urban	68.8	23.0	64.8	66.7	17,438
Suburban	63.7	20.0	59.8	62.5	16,684
Rural	67.3	17.6	51.7	67.3	4,134
Charter	65.4	18.1	61.8	64.6	3,525
Alternative School of Choice	67.9	11.8	63.1	67.2	1,034
Special Education School	70.5	18.0	55.9	68.9	271
Virtual School	64.6	10.2	57.7	64.9	471

Mainstream, Non-Charter School	66.5	21.7	61.1	64.8	33,393
Overall	**66.4**	**21.1**	**61.2**	**64.9**	**38,256**

Table A14. Descriptive Statistics for Variables Used in Regression Model, Full Sample

Variable	Mean	SD	Unit	N
Turnover	0.232		Binary (0/1)	28610
Age 60+	0.098		Binary (0/1)	28610
1–3 Years Experience as Principal	0.371		Binary (0/1)	28610
4–7 Years Experience as Principal	0.323		Binary (0/1)	28610
Test-Only	0.055		Binary (0/1)	28610
District Principal Salary (In $1000s)	135.899	17.282	(in 1000s of 2024 dollars)	28610
Missing Salary Data	0.114		Binary (0/1)	28610
Urban	0.461		Binary (0/1)	28610
Suburban	0.413		Binary (0/1)	28610
Charter School	0.178		Binary (0/1)	28610
Alternative School	0.029		Binary (0/1)	28610
Special Education School	0.014		Binary (0/1)	28610
Virtual School	0.034		Binary (0/1)	28610
School Per Pupil Spending (in $1000s)	16.573	4.746	(in 1000s of 2024 dollars)	28610
Missing Sch. Per Pupil Spending Data	0.108		Binary (0/1)	28610
Student-to-Admin/PPS Ratio	207.166	187.538	Ratio	28610
Student-to-Teacher Ratio	19.005	6.428	Ratio	28610
% Teacher Turnover	17.085	12.820	Percentage (0 to 100)	28610
Suspension Rate	2.647	3.800	Percentage (0 to 100)	28610
Chronic Absenteeism Rate	26.340	15.446	Percentage (0 to 100)	28610
% Students of Color	60.500	28.350	Percentage (0 to 100)	28610
% EL	20.871	16.765	Percentage (0 to 100)	28610
Middle School	0.134		Binary (0/1)	28610
High School	0.157		Binary (0/1)	28610
Other Grade Combination	0.090		Binary (0/1)	28610
Year 2 Fixed Effect	0.000		Binary Centered	28610
Year 3 Fixed Effect	0.000		Binary Centered	28610

Table A15. Descriptive Statistics for Variables in Regression Model, Using Sample of Principals Staffed at a Single School and Schools with a Single Principal

Variable	Mean	SD	Unit	N
Turnover	0.216		Binary (0/1)	22728
Age 60+	0.090		Binary (0/1)	22728
1–3 Years Experience as Principal	0.345		Binary (0/1)	22728
4–7 Years Experience as Principal	0.325		Binary (0/1)	22728
Test-Only	0.051		Binary (0/1)	22728
District Principal Salary (In $1000s)	136.639	16.775	(in 1000s of 2024 dollars)	22728
Missing Salary Data	0.086		Binary (0/1)	22728
Urban	0.458		Binary (0/1)	22728
Suburban	0.434		Binary (0/1)	22728
Charter School	0.093		Binary (0/1)	22728
Alternative School	0.028		Binary (0/1)	22728
Special Education School	0.007		Binary (0/1)	22728
Virtual School	0.014		Binary (0/1)	22728
School Per Pupil Spending (in $1000s)	16.682	4.720	(in 1000s of 2024 dollars)	22728
Missing Sch. Per Pupil Spending Data	0.049		Binary (0/1)	22728
Student-to-Admin/PPS Ratio	222.501	190.617	Ratio	22728
Student-to-Teacher Ratio	19.202	6.529	Ratio	22728
% Teacher Turnover	16.523	12.176	Percentage (0 to 100)	22728
Suspension Rate	2.726	3.833	Percentage (0 to 100)	22728
Chronic Absenteeism Rate	26.266	14.225	Percentage (0 to 100)	22728
% Students of Color	61.273	28.840	Percentage (0 to 100)	22728
% EL	21.502	16.637	Percentage (0 to 100)	22728
Middle School	0.147		Binary (0/1)	22728
High School	0.148		Binary (0/1)	22728
Other Grade Combination	0.032		Binary (0/1)	22728
Year 2 Fixed Effect	0.000		Binary Centered	22728
Year 3 Fixed Effect	-0.004		Binary Centered	22728

Table A16. Specification Check, Table 4, Linear Regression Models Predicting Principal Turnover Following 2021–22 through 2023–24, Overall and by School Type, Using Sample of Principals Staffed at a Single School and Schools with a Single Principal

Variable	Sample					
	Overall	Under Sixty	Urban	Suburban	Rural	Middle School
Age 60+	0.166 **		0.194 **	0.139 **	0.161 **	0.201 **
1–3 Years Experience as Principal	-0.056 **	-0.054 **	-0.056 **	-0.069 **	-0.008	-0.051 **
4–7 Years Experience as Principal	0.005	0.010	-0.001	0.008	0.022	-0.010
Test-Only	0.020	0.024	0.039 *	-0.008	0.074 *	-0.002
District Principal Salary (In $1000s)	-0.001 **	-0.001 **	-0.001 **	-0.001 **	0.000	-0.001 **
Missing Salary Data	0.011	0.014	0.035 *	-0.020	0.016	-0.010
Urban	-0.032 **	-0.034 **				-0.033
Suburban	-0.015	-0.013				0.001
Charter School	-0.015	-0.015	-0.018	-0.023	0.011	-0.052
Alternative School	-0.042 *	-0.042 *	-0.057 *	-0.054	0.067	-0.207 *
Special Education School	-0.009	-0.021	0.022	-0.046	0.159	
Virtual School	0.030	0.018	0.037	0.052	-0.063	0.670 *
School Per Pupil Spending (in $1000s)	0.000	0.000	0.001	0.003 **	0.000	0.002
Missing Sch. Per Pupil Spending Data	-0.012	-0.002	-0.026	0.017	-0.014	-0.026
Student-to-Admin/PPS Ratio	0.000	0.000	0.000	0.000	0.000	0.000
Student-to-Teacher Ratio	0.001 **	0.001 **	0.006 **	0.000	0.001	0.004 **
% Teacher Turnover	0.005 **	0.005 **	0.005 **	0.005 **	0.005 **	0.005 **
Suspension Rate	0.005 **	0.005 **	0.006 **	0.003 *	0.001	0.006 **
Chronic Absenteeism Rate	-0.001 *	-0.001 *	-0.001 *	-0.001 *	0.001	-0.002
% Students of Color	0.000	0.000	0.000	0.000	0.001 **	0.001
% EL	0.000	0.000	0.000	0.000	0.000	0.000
Middle School	0.002	-0.004	-0.029 *	0.023	0.019	
High School	0.008	0.006	-0.008	0.009	0.026	
Other Grade Combination	0.007	0.026	-0.017	0.007	0.053	
Year 2 Fixed Effect	-0.021 **	-0.018 **	-0.028 **	-0.005	-0.056 **	-0.031
Year 3 Fixed Effect	-0.045 **	-0.045 **	-0.039 **	-0.051 **	-0.063 **	-0.080 **
Intercept	0.213 **	0.209 **	0.173 **	0.215 **	0.053	0.233 **
Number of observations	22728	20690	10414	9865	2449	3348
Adjusted R-squared	0.04	0.03	0.05	0.04	0.05	0.05

F statistic	39.43	28.31	21.53	18.34	5.97	9.55

Table A16. Specification Check, Table 4, Linear Regression Models Predicting Principal Turnover Following 2021–22 through 2023–24, Overall and by School Type, Using Sample of Principals Staffed at a Single School and Schools with a Single Principal (Con't)

Variable	Sample				
	High School	Mainstream, Non-Charter School	Charter	Alternative School	Special Education School
Age 60+	0.168 **	0.172 **	0.100 **	0.169 **	0.220 *
1–3 Years Experience as Principal	-0.053 **	-0.066 **	0.004	0.021	0.157
4–7 Years Experience as Principal	0.013	0.001	0.041	0.030	0.089
Test-Only	0.016	0.017	0.052	0.107	-0.215
District Principal Salary (In $1000s)	-0.001 **	-0.001 **	-0.001	-0.001	0.002
Missing Salary Data	0.076 **	0.011	-0.005	-0.004	0.232 *
Urban	-0.046	-0.026 *	-0.064	-0.158 **	-0.203
Suburban	-0.022	-0.011	-0.034	-0.125 *	-0.145
Charter School	-0.039				
Alternative School	-0.026				
Special Education School	0.020				
Virtual School	0.077		0.019	-0.004	
School Per Pupil Spending (in $1000s)	-0.001	0.000	0.005	-0.005	0.003
Missing Sch. Per Pupil Spending Data	0.025	-0.009	-0.033		-0.117
Student-to-Admin/PPS Ratio	0.000	0.000	0.000	0.000	0.000
Student-to-Teacher Ratio	-0.001	0.001 **	0.004 *	-0.001	0.006
% Teacher Turnover	0.004 **	0.004 **	0.005 **	0.005 **	0.006 **
Suspension Rate	0.003	0.005 **	0.005	0.008 *	0.003
Chronic Absenteeism Rate	0.000	-0.001 **	0.001	0.001	-0.004
% Students of Color	0.000	0.000	0.001	-0.001	0.000
% EL	0.000	0.000	0.001	0.001	-0.001
Middle School		-0.002	-0.051	-0.060	
High School		0.000	-0.017	0.055	-0.031
Other Grade Combination		0.056	0.010	-0.002	-0.070
Year 2 Fixed Effect	-0.056 **	-0.030 **	-0.011	0.110 **	0.049
Year 3 Fixed Effect	-0.037 *	-0.056 **	-0.049	0.114 **	-0.022
Intercept	0.360 **	0.236 **	0.023	0.428 **	0.007

Number of observations	3371	19777	2125	646	158
Adjusted R-squared	0.04	0.04	0.05	0.09	0.17
F statistic	7.10	39.98	5.78	3.86	2.53

Table A17. Variance Inflation Factors, Primary Regression Model

Variable	VIF	1/VIF
Urban	3.10	0.32
Suburban	3.06	0.33
Charter School	2.38	0.42
Missing Sch. Per Pupil Spending Data	2.25	0.44
Other Grade Combination	1.98	0.51
% Students of Color	1.90	0.53
% EL	1.81	0.55
Chronic Absenteeism Rate	1.72	0.58
Year 3 Fixed Effect	1.71	0.59
Suspension Rate	1.49	0.67
1–3 Years Experience as Principal	1.49	0.67
Special Education School	1.45	0.69
Middle School	1.44	0.70
4–7 Years Experience as Principal	1.43	0.70
Virtual School	1.41	0.71
Year 2 Fixed Effect	1.40	0.71
High School	1.37	0.73
School Per Pupil Spending (in $1000s)	1.24	0.80
Student-to-Teacher Ratio	1.21	0.83
Alternative School	1.20	0.83
Missing Salary Data	1.19	0.84
District Principal Salary (In $1000s)	1.17	0.85
Student-to-Admin/PPS Ratio	1.14	0.88
% Teacher Turnover	1.12	0.89
Age 60+	1.05	0.95
Test-Only	1.02	0.98
Mean VIF	**1.60**	

Table A18. Distribution of Independent Continuous Variables in Regression Models

Variable	Mean	1st Percentile	5th Percentile	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile	95th Percentile	99th Percentile	N
District Principal Salary (in $1000s)	135.9	95.7	106.0	116.2	122.5	135.6	146.4	157.0	164.5	181.5	28610
School Per Pupil Spending (in $1000s)	16.6	8.3	10.6	11.8	13.8	16.4	18.2	21.6	24.2	34.1	28610
Student-to-Admin/PPS Ratio	207.2	29.6	62.5	85.8	125.8	177.8	249.0	359.5	439.3	627.0	28610
Student-to-Teacher Ratio	19.0	6.5	11.3	13.8	16.7	19.2	21.5	23.5	24.7	29.6	28610
% Teacher Turnover	17.1	0	2.8	5.2	9.2	14.6	21.6	31.3	38.5	66.7	28610
Suspension Rate	2.6	0	0	0	0.2	1.2	3.6	7.2	10.1	16.4	28610
Chronic Absenteeism Rate	26.3	0.8	5.6	8.6	14.9	24.3	35.0	46.6	54.9	74.8	28610
% Students of Color	60.5	3.9	12.7	18.8	36.5	64.5	86.9	95.0	97.1	98.9	28610
% EL	20.9	0	1.9	3.3	7.6	16.3	30.6	45.5	55.0	70.3	28610