



# POLICY BRIEF

## PRINCIPAL RETENTION AND TURNOVER DURING THE COVID-19 ERA

Do students have equitable access to stable school leadership?

### INTRODUCTION

Principals play a critical role in creating healthy, inclusive, and effective learning environments.<sup>i</sup> As instructional leaders, principals oversee teacher hiring, development, and retention, help set schoolwide expectations, and represent the school in the local community. As community leaders, principals are responsible for leveraging resources to disrupt inequities in educational opportunity.

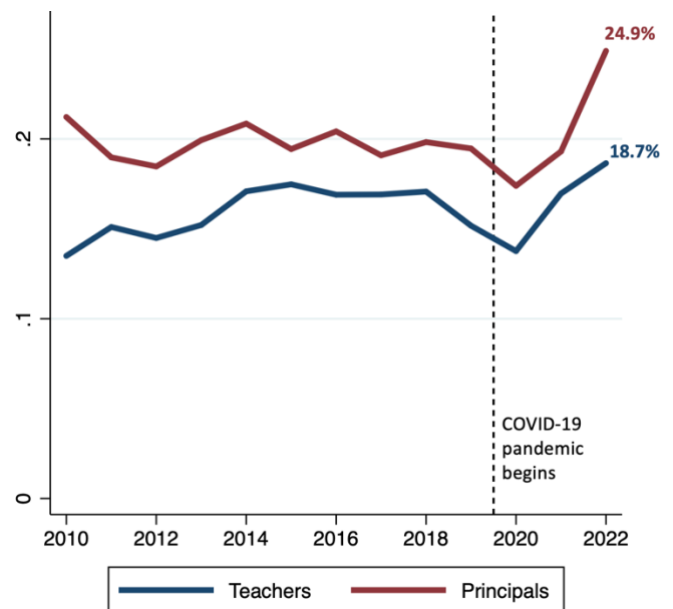
Like teachers, principals have faced unprecedented pressure during the COVID-19 period. Survey data suggest they experienced increased levels of stress and burnout.<sup>ii</sup> How that trend affects job performance and turnover will have consequences for students. While studies highlight recent increases in teacher attrition, limited research examines principal turnover during the COVID-19 era.<sup>iii</sup>

Figure 1 compares principal and teacher turnover three years into the COVID-19 pandemic for the state of Washington. Principal turnover declined in the first year of the pandemic, but increased in the subsequent two years, with the largest increase in the most recent year, turnover from 2021-22 to 2022-23. Teacher turnover is similar, but the recent increase is not as large.

In this brief, we present an analysis of principal turnover in Washington State during the COVID-19 period. We then offer recommendations for improving principal retention and equitable access to stable school leadership.

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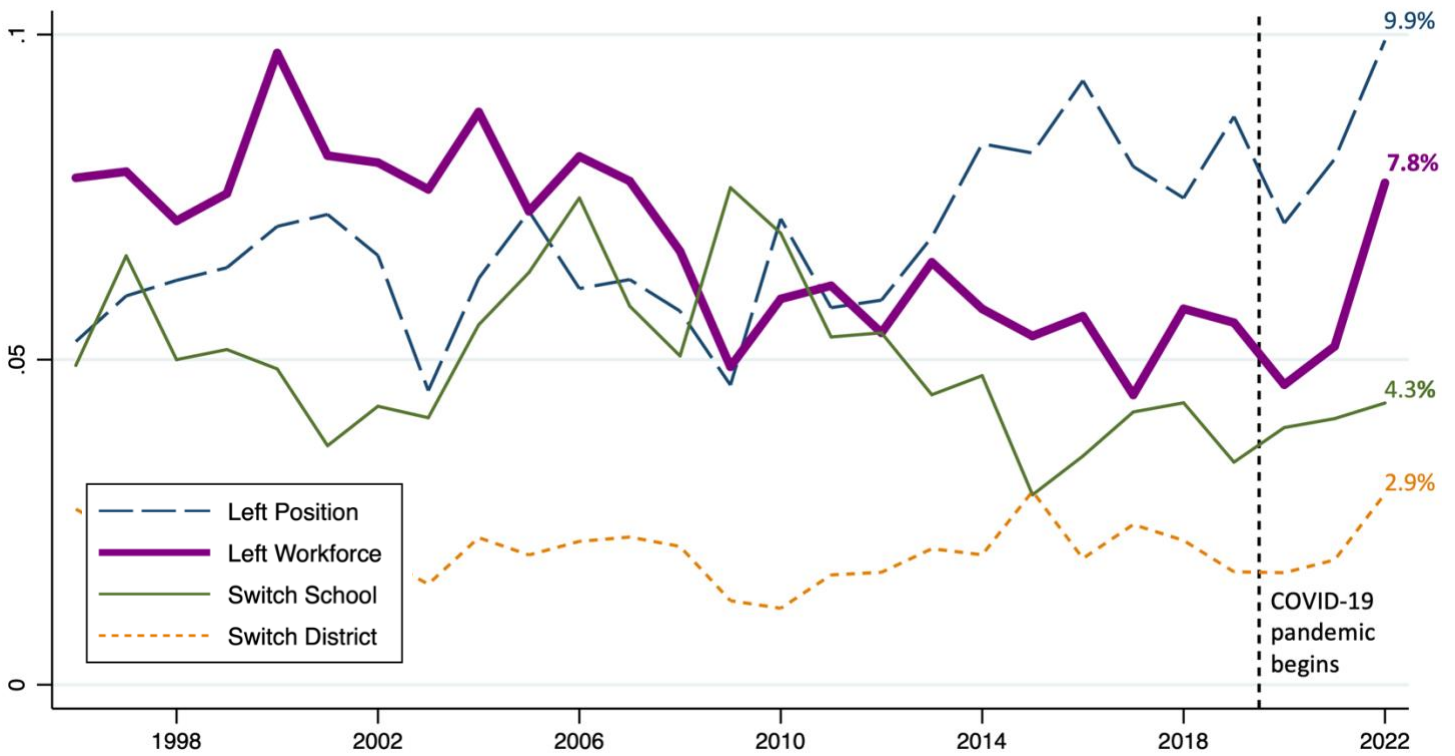


**Figure 1.** Annual turnover rate for teachers and principals in Washington State, 2009-10 to 2022-23

### BACKGROUND

While a small amount of employee turnover can improve organizational capacity, diversifying perspectives and bringing new ideas, high attrition levels can be detrimental.<sup>iv</sup> Chronic principal turnover disrupts relationships and represents a loss of continuity, school vision, and human capital. Studies show principal turnover is associated with declines in student achievement and increased teacher turnover.<sup>v</sup> Chronic principal turnover disproportionately impacts higher-poverty schools and schools enrolling higher shares of Students of Color.

On average, principals rated as less effective tend to have higher turnover rates, but some evidence suggests



**Figure 2.** Annual turnover rate for principals in Washington State by turnover type, 1995-96 to 2022-23

principals with the highest performance ratings also have higher turnover rates, perhaps seeking new positions.<sup>vi</sup> In short, prior research shows dynamics of the principal labor market create disparities in access to effective, experienced principals and stable school leadership.

The COVID-19 era exacerbated many pre-existing educational disparities, placing substantial challenges for all educators and school leaders, especially in communities most impacted by the pandemic.<sup>vii</sup> At least one quarter million U.S. children lost a caregiver during the COVID-19 pandemic, creating enduring trauma for students.<sup>viii</sup> Because educators work closely with students and interact daily, many, including principals, experience secondary trauma, which can lead to burnout and professional exhaustion. Principals face greater pressure in under-resourced schools that may lack assistant principals, counselors, or mental health specialists. Principals have also faced new challenges associated with transitions between online and in-person learning in addition to mediating curriculum disagreements about U.S. racial history and LGBTQ+ populations.<sup>ix</sup>

The principal labor market in Washington reflects a typical state in many ways, consisting of urban, suburban, and rural school districts and serving a student population with demographics similar to national averages. However,

several unique elements influence the interpretation and generalizability of our findings. First, teachers received substantial pay increases in 2018-19, reducing incentives to remain in or join the principalship. Second, Washington has more favorable state policy toward teacher unions than typical states, which could positively or negatively influence principal turnover.

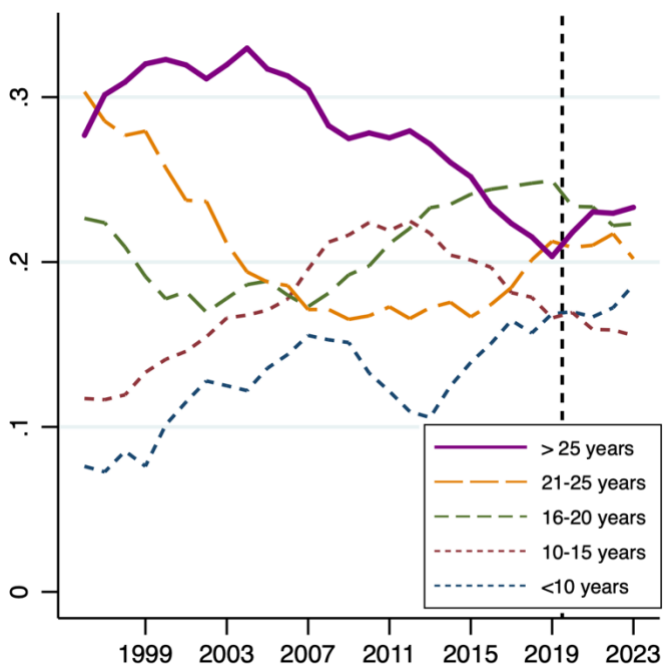
### DATA AND METHODOLOGY

We draw on data from the Education Research and Data Center, Washington's statewide longitudinal data system, which links datasets from multiple state agencies. The Office of Superintendent for Public Instruction (OSPI) provides a personnel file called the S-275 database, which links each K-12 employee to their school building location each year and includes information about their qualifications and job characteristics. We link the S-275 dataset to student enrollment data to assess variation in principal turnover across schools serving different student populations. Separate files available from OSPI include information about educator endorsements, credentials, and past teaching experiences. We use district urban locale codes from the U.S. Department of Education National Center for Education Statistics. To measure a principal's years of experience, we use a variable that indicates the total amount of experience as an educator in any role

because the variable for principal tenure is less reliable from year to year. The sample includes 7,325 unique principals and 50,198 principal-year observations across 295 districts over 28 years, about 1,800 per year, from 1995-96 to 2022-23.<sup>x</sup> Because we use 2022-23 school locations to determine turnover in 2021-22, our turnover analyses include up to 2021-22, providing three job transitions from the start of the COVID-19 pandemic.

We use summary statistics to describe the overall landscape of principal turnover leading up to and during the COVID-19 pandemic. We are especially interested in changes in turnover that vary by principal characteristics and student demographics. In some analyses, we use district effects to compare principal turnover among principals in the same district, who presumably work under similar contracts and district working conditions. We include school covariates in some models to compare principal turnover among principals working in similar school settings.

Given the disproportionate impact of the COVID-19 pandemic on employed women, younger employees, communities of color, and lower-income communities, we hypothesize that newer principals, principals who are female, principals of color, and principals working in high-poverty school settings may have experienced greater increases in turnover during the pandemic. A greater understanding of these patterns would help local, state, and federal policymakers better target policies to ameliorate the adverse effects of school leadership turnover.



**Figure 3.** Percent of principals in Washington State in each experience bin, 1995-96 to 2022-23

## FINDINGS

Results are displayed in Figure 1 (described earlier), Tables 1 and 2, and Figures 2 through 5. Figure 2 above disaggregates the overall school-level principal turnover rate into different types of principal exits, including switching to a new school in the same district, switching to a new school in another district, leaving the principal profession, but remaining employed in the K-12 system, and exiting the state's public K-12 system. A key takeaway from Figure 2 is that multiple sources of principal transitions contributed to recent increases in principal turnover. Still, the largest increasers in turnover are among principals leaving the principalship for a different position within the K-12 system or leaving the K-12 system entirely. In contrast, school and district switching for those who stay in the principal profession—moves that are perhaps associated with job fit preferences—have not increased by as much in the COVID-19 period.

Figure 2 also indicates that the nature of principal turnover in Washington has changed since 1995-96. During the late 1990s and through most of the first decade of the 2000s, when principal turnover hovered around 20 percent, the largest source of turnover, about one-third, came from principals leaving the system entirely, as indicated by the bold purple line in Figure 2 staying above other lines from 1996 to around 2010. Beginning around 2009-10, the greatest contributor to principal turnover became principals moving to a new position, as indicated by the long-dashed line. In the most recent year of data, a total of 9.9% of principals switched to a non-principal position, while 7.8% left the workforce entirely, 4.3% switched schools in the same district, and 2.9% moved to a different district, for a total school exit rate of 24.9% between 2021-22 and 2022-23 school years. Figure 3 provides some insights into what may be driving this trend. From 1996 to around 2010, over 30 percent of principals were near retirement, in their 25th or greater year as an educator, aligning with years in which exiting the workforce is most common among principal leavers. During this period of principal retirements, the state's principal workforce shifted to include a greater share of mid-career principals. The proportion of the principal workforce in their mid-career (10-15 years in education) peaked in around the 2010-11 school year. However, beginning in 2011-12 the proportion of novice principals increased, as did the proportion of principals in the later stages of their career (16-20 years and 21-25 years). Then, in the most recent three years of data, the proportion of principals near retirement (more than 25 years) finally begins increasing after a two-decade-long decline. This increase in near-retirement principals during the COVID-19 era likely contributed to the rise in the number leaving the workforce.

Table 1 shows how principal turnover disproportionately affects students of color, students who are low-income, and students who are multi-language learners or who receive special education services, and students in rural and urban settings. The first row shows the mean principal turnover rate for the average student. Each subsequent row shows mean principal turnover rates for the average student who identifies in each racial/ethnic category and the average student in each enrollment classification (low-income, multi-language learner, and special education). Row 1 shows the principal turnover rate for the average student is 22.1%, the statewide mean for the two most recent years of principal job transitions. Row 2 shows that the principal turnover rate for the typical student who identifies as Indigenous/ American Indian is 25.5%. Compared to their White peers, the average student who identifies as Indigenous/ American Indian/ Alaskan Native and those who identify as Latina/o, attended schools for which the principal was 2.7 and 2.4 percentage points more likely to leave, respectively. Students classified as low-income, on average, attend schools with a principal turnover rate that is 6.1 percentage points greater than non-low-income students. During the two years of transitions leading up to the pandemic (from 2017-18 to 2019-20) the corresponding figures were 3.7, 4.4, and 10.0 percentage points, suggesting that recent COVID-19 related influences on the principal labor market did not necessarily exacerbate pre-existing racial and economic disparities in stable school leadership.

The final four columns in Table 1 disaggregate principal turnover into the same categories shown in Figure 2. The source of disparities in principal turnover differs across subgroups. For example, for students classified as low-income, disparities in principal turnover are driven by greater school, district, and job switching, while the rate of principals exiting the K-12 workforce entirely between the average low-income and non-low-income student differs by 0.6 percentage points. In contrast, greater turnover in rural districts is driven by more exits from K-12. Rural principals switch schools less, most likely because they work in smaller districts. However, the sum of school and district switching for rural principals is roughly similar to city and suburban principals, despite a substantially higher school exit rate.

Next, we explore the principal characteristics associated with turnover and discuss how those relationships changed during the pandemic. Table 2 shows regression coefficients estimating the relationship between principal turnover and principal, school, and district characteristics, using the most recent nine years of data, from 2014-15 to 2022-23. We estimate three complementary models that use different “fixed effects” estimators that alter the comparison groups for regression coefficients. Model 1, displayed in the first column, includes variables for principal total years of

experience, principal race/ethnicity and gender, school grade level and school demographics, and district locale and size. The second model adds school fixed effects, allowing us to examine factors affecting principal turnover for principals who work in the same school at different points in time. School fixed effects models control for unobserved school factors influencing principal turnover and are helpful for examining the effects of principal characteristics such as experience, race/ethnicity, or gender because they compare principals who differ along these attributes but who work in the same school in different school years. The model includes time-varying school characteristics such as student demographics, but not time-invariant school characteristics such as grade level and geographic locale. The third model, in column 3, removes the school fixed effects and instead includes principal fixed effects. This model allows us to examine factors affecting principal turnover for individual principals at different stages in their careers. Principal fixed effects models control for unobserved principal factors influencing principal turnover and are useful for examining the effects of school or district characteristics such as student demographics, school grade level, or geographic locale.

**Table 1. Annual principal turnover rate by student and school characteristics, 2020-21 to 2022-23**

	Leave school	Leave school			
		Switch school	Switch district	Leave prof.	Exit K-12
All students/ sch.	22.1%	4.0%	2.6%	9.4%	6.2%
Am. Ind./ AK Native	25.5%	4.5%	3.5%	10.1%	7.4%
Asian	20.5%	4.1%	1.7%	8.8%	6.0%
Black	21.8%	5.1%	1.7%	9.1%	6.0%
Hispanic/ Latina/o	24.2%	4.2%	2.4%	11.9%	5.7%
Pacific Is./ Nat. HI	22.9%	5.8%	2.3%	8.8%	6.0%
More than one race	22.0%	5.5%	1.9%	8.2%	6.3%
White	22.8%	3.1%	3.3%	9.5%	6.8%
Low income	25.2%	4.5%	3.7%	11.0%	6.0%
Non low income	19.1%	3.7%	1.9%	7.5%	6.0%
Multi lang. learner	21.8%	3.8%	1.9%	10.0%	6.1%
Special Education	22.3%	4.7%	3.6%	8.0%	6.1%
City	22.9%	5.9%	1.3%	7.5%	8.2%
Suburban	20.8%	4.6%	2.0%	5.6%	8.7%
Town	22.7%	4.5%	3.9%	5.3%	9.0%
Rural	27.5%	2.2%	4.2%	9.3%	11.9%

Note. Sample includes 3,987 principal observations covering the two most recent years of principal transitions up to the 2022-23 school year.

The first set of coefficients in Model 1 in Table 2 shows that principals with 10 to 15 years of experience as an educator have similar turnover rates as those with fewer than 10 years. However, principals in their mid-career have significantly higher turnover rates, while those with over 25

years of experience have turnover rates similar to novice principals. This U-shaped relationship mirrors teacher turnover patterns, aligning with early career job search, mid-career job stability, and later career retirement.<sup>xi</sup> A somewhat different pattern emerges when we compare principal turnover rates at different principal experience levels within the same school over time (Model 2) and within a given principal's career (Model 3). In both cases, principal turnover increases as principal experience increases, and novice principals have the lowest turnover rates. This pattern may occur because while many earlier career principals leave their position, principals who remain in their job for multiple years become increasingly likely to leave over time as they enter later stages in their career, causing coefficients for higher experience levels to be positive for models with school and principal fixed effects.

The next set of coefficients in column 1 shows that after controlling for principal experience and school characteristics, there are no significant differences in principal turnover across principal race/ethnicity and gender. Results hold in the school fixed effects model (Model 2), which compares principals of different genders and race/ethnicities who work in the same school during different school years. While not shown, we find differences in principal turnover by race/ethnicity with *unadjusted* averages, where principals who identify as Asian, Black, Latina/o, and White have overall mean turnover rates of 23%, 25%, 23%, and 20%, respectively. The fact that our school covariates “account for” racial differences in principal turnover suggests that principals of Color tend to work in schools that have higher turnover rates. In other words, principals of Color have higher turnover rates than White principals on average but have similar turnover rates compared to White principals who work in the same or similar school settings.

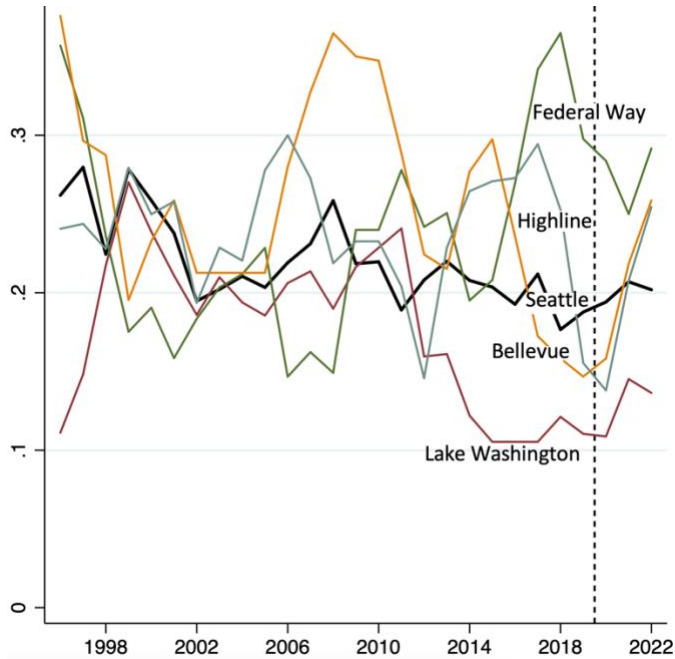
Last, we examine principal turnover across school grade levels, student demographics, and district characteristics. High schools have slightly higher annual principal turnover, about 1.7 percentage points greater than elementary schools, which have an average of about 19%. Schools that serve a higher percentage of low-income students and students of color have higher principal turnover rates, and the magnitudes of effects are relatively large. The coefficients of 0.162 and 0.153 in Model 3 suggest that a 10% increase in the percentage of low-income students and students of color is associated with a 1.6 and 1.5 percentage point increase in principal turnover, respectively. A school in the 75th percentile in terms of these student demographics is predicted to have a principal turnover rate of 23.1% and 22.8%, respectively, compared to 16.6% and 16.3% for schools at the 25th percentile.<sup>xii</sup>

**Table 2. Principal and school factors associated with principal turnover, 2014-15 to 2022-23**

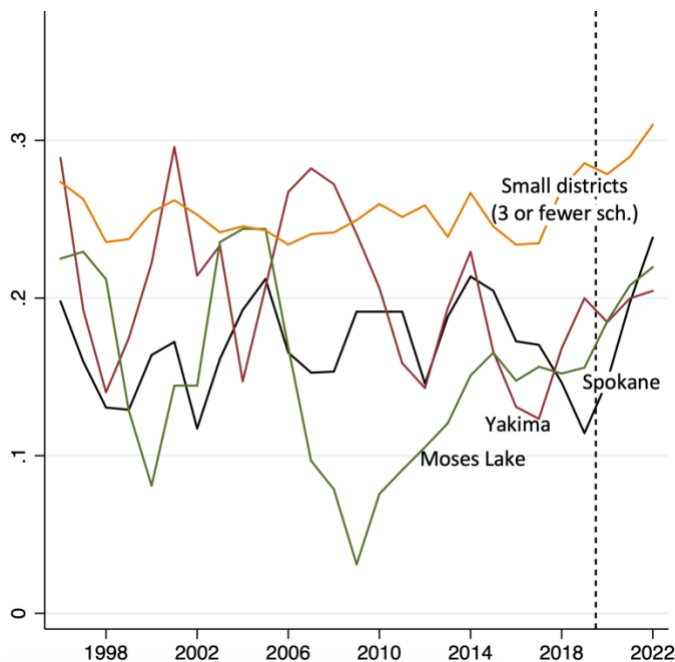
	(1)	(2)	(3)
<b>K-12 experience</b>			
10-15 years	-0.010 (0.01)	0.035** (0.01)	0.097*** (0.02)
16-20 years	-0.038*** (0.01)	0.026+ (0.01)	0.066** (0.02)
21-25 years	-0.025* (0.01)	0.076*** (0.02)	0.050+ (0.03)
>25 years (ref.= <10 yrs.)	0.006 (0.01)	0.177*** (0.02)	0.042 (0.03)
<b>Principal race/ethnicity, gender</b>			
Black	-0.011 (0.03)	0.038 (0.04)	
Latina/o	-0.046 (0.03)	-0.02 (0.04)	
Other	-0.028 (0.03)	0.022 (0.04)	
White (ref.= Asian)	-0.036 (0.02)	0.000 (0.03)	
Male (ref.= female)	-0.003 (0.01)	0.016 (0.01)	
<b>School grade level</b>			
Middle school	0.003 (0.01)		0.013 (0.03)
High school	0.017+ (0.01)		-0.014 (0.04)
P-12	0.022 (0.03)		-0.116+ (0.07)
Other (ref.= elem.)	0.012 (0.01)		-0.039 (0.04)
<b>School demographics</b>			
% Low-income	0.032+ (0.02)	-0.086 (0.07)	0.162** (0.05)
% Students of color	0.056** (0.02)	-0.08 (0.11)	0.153* (0.06)
<b>District locale and size</b>			
Suburban	-0.004 (0.01)		-0.025 (0.03)
Town	0.008 (0.01)		0.136** (0.05)
Rural (ref. urban)	0.019 (0.02)		0.245*** (0.05)
Mid-size (4-10 schools)	-0.098*** (0.02)		-0.018 (0.05)
Med. large (11-30 sch.)	-0.093*** (0.02)		-0.001 (0.05)
Large (>30 sch, ref.= < 4)	-0.099*** (0.02)		-0.024 (0.05)
R-squared	0.330	0.417	0.568
N	13,101	13,101	13,101
Year fixed effects	X	X	X
School fixed effects		X	
Principal fixed effects			X

The bottom portion of Table 2 shows that smaller school districts and rural districts tend to have higher principal turnover rates. Model 1 shows that smaller districts, those with three or fewer schools, have about one percentage point lower principal turnover compared to mid-size and larger districts, but we do not find differences in turnover across geographic locale after controlling for district size. Conversely, in Model 3, when we include principal fixed

effects, we find principals are 24.5 and 13.6 percentage points more likely to leave schools in rural and town districts, relative to urban and suburban districts, while districts size is not associated with turnover (after controlling for geographic locale).<sup>xiii</sup> In summary, several principal, school, and district characteristics are associated with turnover, and our results generally align with prior studies, and with analyses of the teacher labor market.<sup>xiv</sup>



**Figure 4a.** Principal turnover rate, 1995-96 to 2022-23, selected school districts in Western Washington



**Figure 4b.** Principal turnover rate, selected school districts in Eastern WA and all Small Districts

Finally, we examine principal turnover rates for several large districts and groups of smaller, rural districts. Figure 4a shows three-year running average principal turnover rates for five large school districts in the Seattle metropolitan area. All five districts experience COVID-19 increases in principal turnover to varying degrees. Federal Way and Highline School Districts, the two districts in Figure 4a that serve a higher-poverty and more racially diverse student population, have the highest principal turnover rates leading up to the COVID-19 pandemic.

Figure 4b shows similar results for districts west of the Cascade Mountains, and for smaller districts with three or fewer schools (most of which are in Central and Eastern Washington, 12% of principals statewide). While principal turnover fluctuates widely over time, turnover rates are consistently higher in smaller districts; however, all districts shown in Figure 4a and 4b experienced increases in principal turnover aligned with the COVID-19 pandemic.

### POLICY RECOMMENDATIONS

Our analyses yield five key findings: (a) Principal turnover has been consistently higher than teacher turnover over the past decade, ranging around 20% compared to about 16% for teachers; (b) For both teachers and principals, the COVID-19 pandemic led to initial declines in turnover and then sharp increases, especially for principals; (c) A growing share of principal turnover, including before the pandemic, stems from principals leaving their position for other positions in the state’s K-12 sector; however, changes in principal turnover over time are related in part to the changing demographics of the state’s principal workforce, which is now younger than it was two decades ago; (d) principal turnover disproportionately impacts schools that serve higher-poverty student populations and schools that enroll a greater share of students of color, as well as schools in small and rural districts. Principal turnover is greater among novice and late-career principals, as well as principals of color, but we do not find differences by gender, and patterns of differential turnover are generally consistent from before to during the COVID-19 pandemic era; and finally, (e) for individual districts, principal turnover varies significantly across time, and several large urban districts—as well as the typical smaller district in the state—have faced principal turnover rates above 30% in recent years. These findings provide several policy implications which we describe below.

**Track principal turnover data.** District, regional, and state leaders would benefit from greater access to data on principal turnover. As we document in this brief, there is substantial variation in principal turnover over time for

specific school districts and across districts in any given year. Washington makes available the S-275 personnel database available for public download. With appropriate data analysis capacity, these data can be used to explore variation in principal turnover and identify schools or districts with the greatest in need of support.<sup>xv</sup> The personnel file can be linked to publicly available student demographic files to assess the extent to which different student groups have access to stable school leadership. Most other states do not provide individual-level personnel data that can be linked to school locations over time. This unique asset of Washington's public education system should encourage greater research, analysis, and dissemination about school personnel turnover in the state.

**Address the root cause of acute and long-term school leadership instability.** The COVID-19 pandemic introduced myriad challenges to K-12 school leaders, some immediate and some that emerged several years later. Washington schools started the 2022-23 school year having just experienced the largest turnover of principals in recent years, 24.9%, and state, regional, and district educational leaders need to address these acute shocks to turnover. The largest increases were concentrated in smaller, rural districts, while schools serving higher shares of students of color and students classified as low income have sustained higher principal turnover both before and during the pandemic.

The underlying causes of the recent increases in principal turnover may be related to burnout and stress, secondary trauma, and greater political pressure related to school closures, masking and disease prevention, and curriculum. Mid-career and veteran principals who weathered the COVID-19 period could benefit from additional supports. With that said, the analysis presented in this brief is descriptive, and recent increases in principal turnover could be unrelated to changes in principal burnout reported in survey data. Teachers in Washington experienced significant salary increases over the past decade, and a recent study shows this salary boost improved teacher retention.<sup>xvi</sup> Those teacher salary increases compressed the gap between teacher and principal compensation, potentially making the job of school leader relatively less attractive. Additional research involving more "causal" research methods, or interviews with current and former school principals, would shed light on this question.

Whatever the cause, the significant increase in principals leaving their schools implies that over 500 new principals statewide now need first-year mentoring and early career professional development and support. Attrition is highest in the first few years in the principalship, and providing mentoring and support during this critical period can improve retention and longer-term effectiveness.<sup>xvii</sup> Given

the large increase in principal turnover in recent years, a greater share of state and district resources will need to be allocated to support first-year principals.

At the same time, many districts in Washington and across the country are facing budget cuts, given a cluster of issues including declining enrollment, federal ESSER stimulus funds expiring, high inflation over the past year, and a potential recession in the 2024-25 school year.<sup>xviii</sup> These factors will pose challenges for districts as they provide support for many new principals, and a workforce of mid-career and veteran principals who may be facing burnout and exhaustion. District leaders must be mindful of the unique challenges for school leadership support in the coming years.

In addition to the acute challenges of school leadership instability, many districts must address the root causes of high and sustained principal turnover. Districts that historically struggle with high principal turnover, for example, with rates consistently above 25 or 30%, may consider developing more robust, districtwide early career principal support systems that include, for example, peer mentorship, opportunities for shadowing and coaching, professional learning communities, and other targeted professional development opportunities. For smaller districts, which face disproportionately higher principal turnover, Education Service Districts may be critical partners for pooling resources across multiple districts and providing professional supports.

**Target state resources to districts with high principal turnover.** While district and regional leaders have many opportunities to support principal development and retention, state legislators must ensure districts have adequate resources to sustain those efforts. Our results highlight significant disparities in principal turnover across schools, where rural schools and students who are low income and students of color are disproportionately exposed to greater school leadership instability.

As demonstrated in recent research, the state's finance system provides roughly equal, and in some cases less, per-pupil state and local revenues to higher-poverty school districts, which enroll a greater share of students of color.<sup>xix</sup> As a result, higher-poverty school districts in Washington have fewer resources than districts serving wealthier student populations. While all districts need resources to support principal retention, state legislators should ensure that those districts with the greatest needs receive the necessary funding. State legislators must design a finance system that ensures districts with disproportionately higher principal turnover rates—those serving greater shares of low-income students and students of color, as well as smaller, rural districts—have adequate resources to provide

the necessary supports. Reforming the finance system to allocate funding progressively, with a greater amount of per-pupil state and local revenues going to higher-poverty school districts, would directly benefit districts with the highest principal turnover rates.

**Consider accountability provisions related to principal turnover.** Given research on the detrimental impacts of principal turnover on school learning environments, teacher retention, and student learning, state leaders could consider provisions to incentivize specific stakeholders to address high principal turnover. Because chronic principal turnover systematically impacts groups of districts across the state, responsibility for policy solutions is shared among multiple parties.

State education agencies play a role in ensuring districts have the necessary tools to provide timely supports, including mentoring, coaching, and professional development. Washington's state education agency, OSPI, operates the Washington School Improvement Framework, which identifies schools that would benefit from additional supports. The state has several initiatives to support school leadership but does not have a specific large-scale support program for school leader retention.<sup>xx</sup> Efforts to increase accountability around principal turnover should start with an examination of what role state education agencies can play in providing supports.

Higher education institutions also share responsibility in addressing high rates of sustained or chronic principal turnover. Institutions must ensure they are preparing principals in a way that promotes long-term success. Preparation programs should develop new principals to fill roles in urban and rural communities, which have especially high principal turnover rates. Programs can also consider admissions practices consistent with outcome goals. Studies show that a more racially diverse principal workforce is associated with both higher likelihood of hiring and retaining teachers of color and improved student outcomes.<sup>xxi</sup> Diversifying the principal workforce may also improve principal retention and fit within local school contexts.<sup>xxii</sup>

Although districts often do not have direct control over changes in principal turnover, there are steps district leaders can take to reduce chronically high turnover, as discussed earlier. Districts with especially high personnel turnover could be encouraged or required to conduct root cause analyses and develop improvement plans, similar to the federal accountability provisions included in the Every Student Succeeds Act.<sup>xxiii</sup>

In summary, school leadership stability is a critical resource for creating safe, effective learning conditions in schools

and for supporting educators and students. Educator labor markets were significantly disrupted during the COVID-19 pandemic, and much of the recent research and policy focus has emphasized teacher attrition, since teachers represent the largest labor group in schools. However, principal attrition is generally higher than teacher attrition and increased by more in Washington during the COVID-19 pandemic. The loss of a school leader has ripple effects on school staff, students, and the local community. Inclusive, equitable, and effective schools require a dynamic school leader who has deep knowledge of a school's history and connections to the local community. Ensuring all students have access to stable, high-quality school leadership is a shared responsibility of district leaders, regional service providers, and state education leaders.

This material is based upon work supported by the National Science Foundation under Grant No. 2055062 and by the William T. Grant Foundation. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of funders.



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Our results do not change substantially when we fit all three models shown in Table 2 to data from just the pre-COVID-19 school years or to data from just the COVID-19 era school years, suggesting that factors associated with principal turnover did not change significantly during the pandemic. This result differs somewhat from our analysis of teacher turnover, where we have found that teacher attrition increased by more during the COVID-19 pandemic for novice teachers, for teachers who identify as female or Asian/Asian American, and who work in high-poverty school settings.

<sup>xiii</sup> Differences in results between our baseline model and the principal fixed effects model (Model 1 and 3) are not indicative of inconsistent findings; instead, they draw on different treatment and comparison groups for principals. Principal fixed effects models examine principal turnover decisions for principals who are observed in multiple contexts, such as urban and suburban districts, or large and small districts. Limited mobility of principals across contexts will reduce the usefulness of principal fixed effects models. For example, principals who only work in urban settings for the entirety of their career, or who only work in rural settings, are not exposed to both contexts, do not have a treatment contrast, and therefore do not contribute to the estimation of principal turnover rates for urban and rural districts in principal fixed effects models (Model 3 in Table 2). At the same time, principals who work in rural and urban settings may differ in unobserved ways such that comparing their turnover rates necessarily omits important variables that contribute to turnover. For example, if principals in rural settings have a greater number of non-education commitments that pull them from the profession, then differences in turnover between rural and urban settings result in part from unobserved principal factors. The principal fixed effects model addresses this concern by examining the principal turnover rates for principals who work in both settings, comparing their turnover decisions at different points in their career, when they work in different contexts.

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