CALDER Policymakers Council

Flash Brief

Examining the Dimensions of Teacher Turnover

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"Sometimes a Simple Analysis Tells the Story"

Over the last few months, media outlets including [Axios](), [CNN](), [The New York Times](), and [The Wall Street Journal]() have raised the specter that we may be about to witness a rise in teachers exiting the profession. The concern is that a post-pandemic private sector boom, combined with relatively low teacher pay and burnout from online teaching, are a combustible mix that will lead to sharply higher teacher attrition. This in turn could leave schools scrambling to address a teacher "shortage" at the very time they are trying to help students recover from the COVID pandemic. But, so far at least, data from a number of states and large cities [suggest]() that fewer teachers left the profession in 2020 than in normal years.

Using 35 years of data, [a recent CALDER brief]() showed a cyclical relationship between the private sector labor market and teacher attrition: when unemployment rates are low, teachers are more likely to leave the profession, and vice versa. If history is any guide and the broader economy continues to recover this spring, we would therefore expect teacher attrition across Washington schools to rise by about 1 percentage point.

How concerned should we be about a one (or even two) percentage point increase in attrition? That's in the eye of the beholder. But here we want to point to a different, more persistent teacher turnover problem that gets far less attention. Namely, while teacher turnover rates at the state level fluctuate only slightly from year to year, some [schools and districts]() face staffing challenges year after year.

This brief uses data from more than three decades of administrative data on the entire teaching workforce in Washington state[1] to analyze the degree to which we observe variation in teacher turnover for individual schools and school types relative to variation over time that may be connected to economic conditions.

We examine two reasons that teachers leave their (public) school teaching positions: 1) "mobility," which tracks teachers who leave one public school, but end up employed in a teaching position in another (Washington) public school; and 2) "attrition," which tracks teachers who leave public school teaching in Washington entirely.[2] We focus on both of these types of turnover because both are connected to the ability of individual schools and districts to staff their classrooms, and [prior work]() has connected both attrition and mobility to the characteristics of schools and districts.

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[1] We use the [public-use versions]() of the state's S275 dataset, which includes annual employment information for every certificated employee of public schools in Washington State. To avoid extreme fluctuations from small schools (statistical noise) and schools closures, we excluded the smallest 10% of schools (those that employ fewer than 16 teachers) and schools that close the following year.

[2] Individuals who are seen to leave teaching entirely may include those who move to other types of employment, either inside or outside of public schools, or who leave the Washington labor market entirely (possibly to continue teaching in a different state).

To get a sense of how much variation there is in turnover rates across schools in the state, we focus on two school years: 2014-15, which is a representative pre-pandemic year when the economy was strong; and 2019-20, when pandemic-related disruptions led to all districts in the state closing their school buildings and shifting to online instruction in mid-March.

To get a baseline perspective on teacher turnover, Figure 1 breaks down the proportion of teachers who left teaching altogether (blue bars) or left for a teaching position in a different school (red bars). Each column represents one school, first for 2014-15 (Figure 1A) and then for 2019-20 (Figure 1B). After the 2014-15 school year, 9.8% of teachers in Washington left the workforce (red line) and an additional 7.6% switched schools. In total, 17.4% of teachers left their specific teaching jobs in 2014-15 (the blue line). In 2019-20, the comparable rates were 8.4% for attrition and 6.1% for mobility, for a total turnover rate of 14.5%.[3]

A striking aspect of the figure is that there is considerably more variation in turnover rates across schools than across years. Combined, statewide turnover rates have varied by less than five percentage points over the course of 35 years, but as the figure shows, the variation in rates of attrition and mobility at individual schools is many times larger. Indeed, when we more formally decompose the variance in turnover across both time and schools, we find the variation in teacher turnover explained by individual schools is about 12 times larger than the variation in teacher turnover explained by different school years.

What characterizes schools with differing rates of teacher turnover?[4] When we extend the variance decomposition described above to consider the *characteristics* of these individual schools, we find that 15% of the variation in teacher turnover rates across schools can be explained by just three variables: the urbanicity of the school, the percent of students in the school receiving free or reduced priced lunch (FRL), and the percent of underrepresented minority (URM) students.[5]

Figure 2 illustrates the differences in attrition (blue bars), mobility (red bars), and overall turnover rates (total height of bars) across different kinds of schools. Turnover rates tend to be lowest in schools designated as being in a "town" (i.e., "un urban cluster more than 10 miles from an urbanized area") and, consistent with previous findings, highest in schools that serve a large percentage of underrepresented minority (URM) students or students eligible for free or reduced priced lunch (FRL).

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[3] Trends in 2014-15 are broadly representative of trends in other pre-pandemic years as well.
[4] The correlation of individual school attrition levels from one year to the next is about 0.21 and is highly significant.
[5] We define URM as American Indian, Black, and Hispanic students.

A large portion of the differences in turnover across schools is driven by mobility within the profession. For example, teachers in high-poverty schools are more than two percentage points more likely to leave for a teaching position in another school than teachers in low-poverty schools. In comparison, the differences in teacher attrition from the workforce are smaller; e.g., the average differential between high and low poverty schools in teacher attrition is a little over a percentage point, or about a quarter of the entire range in statewide teacher attrition we see over 35 years.

While the differences between attrition and mobility matter both for the public's perception of teacher turnover and the responses available to policymakers, principals have to care about both (i.e., the overall heights of the bars in Figure 2). In other words, regardless of whether a teacher leaves the profession or merely switches schools, that still has an effect on a principal's ability to staff their classrooms. For example, the 3.5 percentage point difference in overall teacher turnover rates between high-poverty schools and low-poverty schools implies that high-poverty schools in the state need to replace over 400 more teachers every school year than low-poverty schools in the state. Given trends in teacher preferences and student teaching placements that already disadvantage high-poverty schools, this clearly contributes to the well-documented staffing difficulties in these schools.

So, what do we make of this exercise? To the degree that year-to-year bumps in teacher attrition merit attention by the media and policymakers, there is at least an as good (if not better) case to focus on the persistent differences in teacher turnover across schools that serve different populations of students.

Figure 1. Proportion Teachers Leaving Workforce by School, 2014-15 and 2019-20
Figure 1A. 2014-15   School Year   Figure 1B. 2019-20 School Year
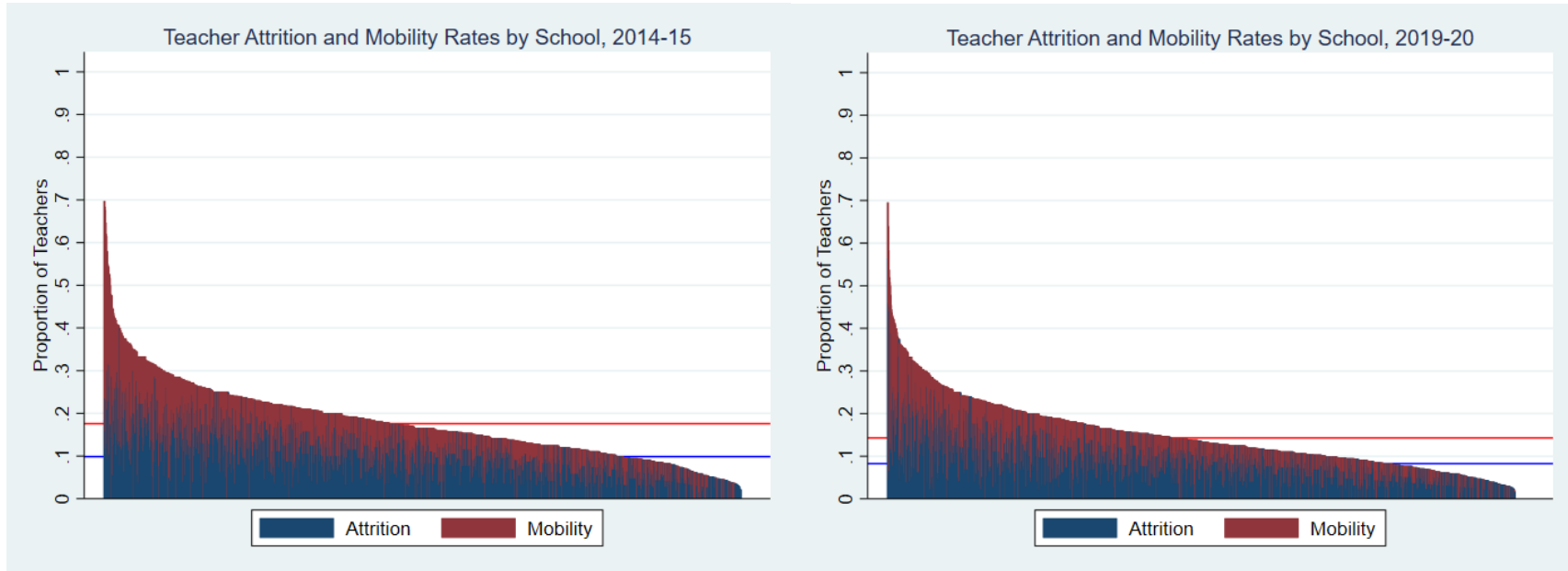
Figure 2. Teacher Attrition and Mobility Rates by Urbanicity and Quartiles of School %FRL and %URM Students