

Research Brief 2024 – 5:

Pennsylvania Teacher Attrition and Turnover from 2014 to 2024

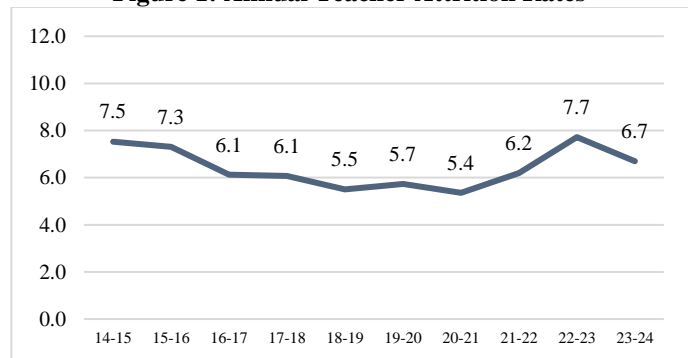
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Introduction

Last year, the Pennsylvania teacher attrition rate of 7.7% was the highest on record. A [Chalkbeat report](#) found high rates of teacher attrition were evident throughout the US. With about 9,500 teachers leaving the profession in 2023, there was concern that the high attrition rates would exacerbate the existing shortage of teachers. This was especially true since we also experienced the lowest number of initially certified teachers ever in 2023. Thus, the demand for teachers was increasing while the supply of teachers was decreasing.

Fortunately, from 2022-23 to 2023-24, fewer teachers left the teaching profession in Pennsylvania than in the prior year. Indeed, as shown in **Figure 1**, the teacher attrition rate declined from 7.7% to 6.7%. The one percentage point decline was the second greatest decline since 2014-2015. Despite the decline, the 2023-2024 teacher attrition rate is still greater than the rates for 6 of the 10 years since 2014-2015. Numerically, 8,326 teachers left the teaching profession in Pennsylvania. This was about 1,200 fewer teachers leaving the teaching profession in Pennsylvania compared to the prior year.

Figure 1: Annual Teacher Attrition Rates



As shown in the rest of this document, I find that Black and Hispanic teachers have greater attrition rates than White teachers, teachers in charter schools have greater attrition and turnover rates than teachers in school districts, attrition and turnover rates were greater for teachers in districts with high percentages of students of color than for teachers in districts with low percentages of color, and teachers in districts in low wealth areas had higher attrition rates than teachers in high-wealth areas.

Why Care About Teacher Attrition and Turnover?

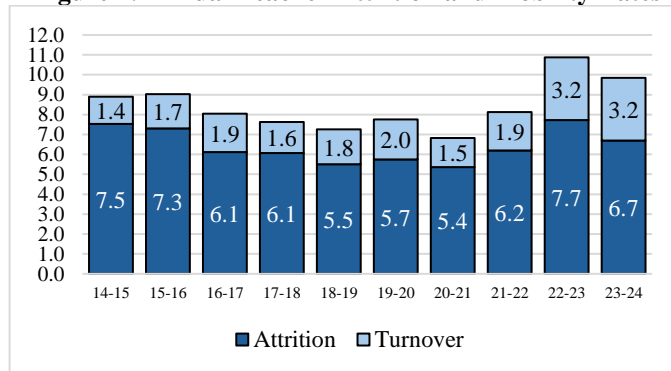
Research consistently shows that teacher attrition and turnover negatively affect [teacher quality](#) and [student outcomes](#). High rates of teacher attrition and turnover often result in inexperienced or under-qualified teachers being hired. This churn also disrupts the relationships among adults at the school and between teachers and students which are necessary for a well-functioning school. In addition, teacher attrition and turnover are [financially costly](#) to districts due to the direct costs of finding replacement teachers and the indirect costs of lower student outcomes.

Teacher Attrition and Turnover

While teacher attrition refers to teachers leaving the teaching profession, teacher turnover refers to teachers leaving their teaching positions in a particular district—either because they left the teaching profession altogether or moved to another school district to teach. The teacher mobility rate is calculated by subtracting the teacher attrition rate from the teacher turnover rate.

In **Figure 2**, I present the teacher attrition rates as well as the additional teacher mobility rates for all teachers from 2014 through 2023. The overall teacher turnover rate is the sum of the teacher attrition rate and the teacher mobility rate. For all years, the teacher attrition rates were substantially greater than the teacher mobility rates. Thus, teacher attrition—not teacher mobility—is the primary driver of teacher turnover. At 3.2%, the mobility rate was highest over the last two years. In fact, 2018-2019 was the only other instance of the mobility rate being at least 2.0%. Similarly, the overall turnover rate was greatest for the last two years.

Figure 2: Annual Teacher Attrition and Mobility Rates



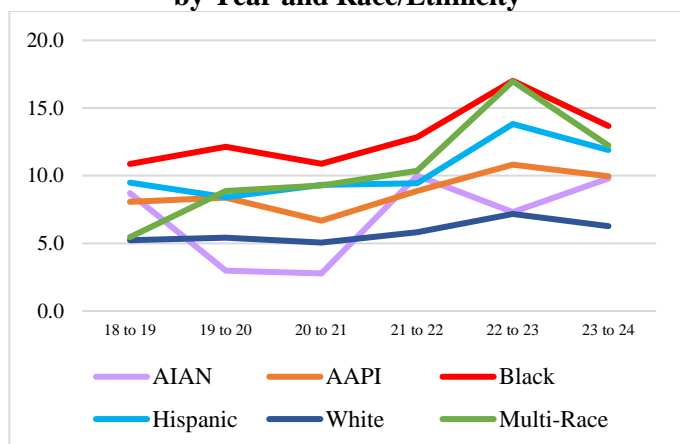
Teacher Attrition and Turnover by Race/Ethnicity

In this section, I examine teacher attrition and turnover by race and ethnicity. Because I only have race/ethnicity data starting in 2018, I include only the 2018-2019 through 2023-2024 results.

Figure 3 presents the teacher attrition rates by race and ethnicity across all years. For all groups of teachers except American Indian/Alaskan Native (AIAN) teachers, the highest attrition rates were for 2022 to 2023 and there were declines in the attrition rates from 2023 to 2024.

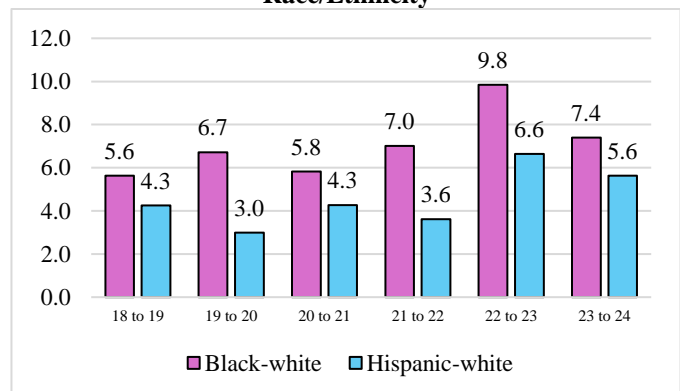
Two trends were evident: (1) White teachers had lower attrition rates than teachers of other races or ethnicities; and (2) Black teachers consistently had higher attrition rates than teachers of other races or ethnicities. Moreover, the differences in attrition rates were substantial—at least 5 percentage points for each year.

Figure 3: Annual Teacher Attrition Rate by Year and Race/Ethnicity



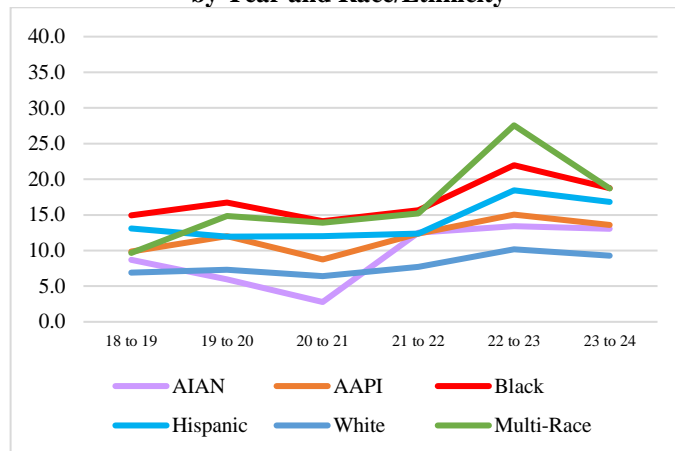
As shown in **Figure 4**, there were significant differences in teacher attrition rates between Black and White teachers, as well as between Hispanic and White teachers. The difference between Black and White teachers ranged from 5.6 to 9.8 percentage points, while the difference between Hispanic and White teachers ranged from 3.0 to 6.6 percentage points. The greatest differences were observed in the last two years.

Figure 4: Difference in Teacher Attrition Rates by Race/Ethnicity



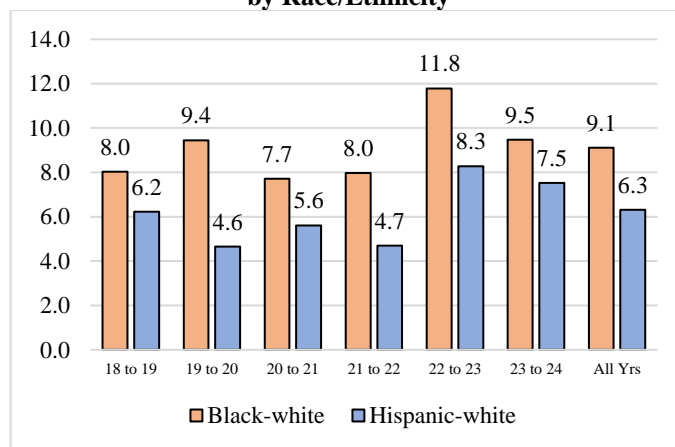
As shown in **Figure 5**, the trends in teacher turnover rates were like those for teacher attrition. However, as one would suspect, the turnover rates were higher than the attrition rates. This was especially true for Black and multi-race teachers. In most cases, White teachers had lower turnover rates than teachers of other races or ethnicities. Conversely, Black teachers generally had higher turnover rates than teachers from other races or ethnicities.

Figure 5: Annual Teacher Turnover Rate by Year and Race/Ethnicity



As shown in **Figure 6**, there were also large differences in turnover rates between Black and White teachers, as well as between Hispanic and White teachers. The Black-White turnover gap ranged from 7.7 to 11.8 percentage points. These are extraordinarily large differences, given that the turnover rates were mostly between 5% and 20%. The differences in turnover rates between Hispanic and White teachers were also quite large, ranging from 4.6 to 8.3 percentage points.

Figure 6: Difference in Teacher Turnover Rates by Race/Ethnicity



Teacher Attrition and Turnover by District Type

Figure 7 documents the teacher attrition rates by district type. The three district types are school district schools, charter schools, and career and technical centers (CTCs). The results are for all teachers in the type of district and not the average of all attrition rates for districts of that

type. When using this method, larger districts have a greater influence on the calculated rate. The teacher attrition rates for charter schools were substantially higher than those for CTCs and school districts. In fact, the attrition rates for charter schools were generally about three times as high as those for school districts. There were only three years where the charter school attrition rates were only twice as high as those for school districts.

The teacher attrition rates for school districts were all below 7% and were slightly below the overall teacher attrition rates for the Commonwealth. This is unsurprising given that almost all teachers in the Commonwealth are employed in school districts.

Figure 7: Teacher Attrition Rate by District Type

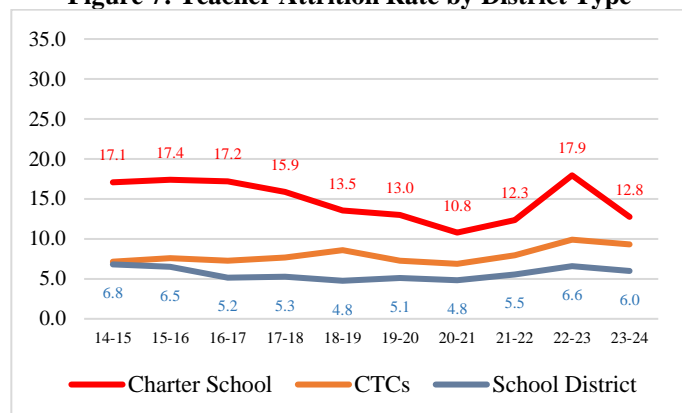


Figure 8 shows the teacher turnover rates by district type. Not surprisingly, charter schools had the highest teacher turnover rates. The results are for all teachers in the type of district and not the average of all turnover rates for districts of that type. When using this method, larger districts have a greater influence on the calculated rate. Charter schools were treated as individual districts even if the schools were in the same network of charter schools. The rates for charter schools ranged from a low of 16.8% in 2020-21 to a high of 26.7% in 2022-23. Across all years, more than one out of every four charter school teachers left their school.

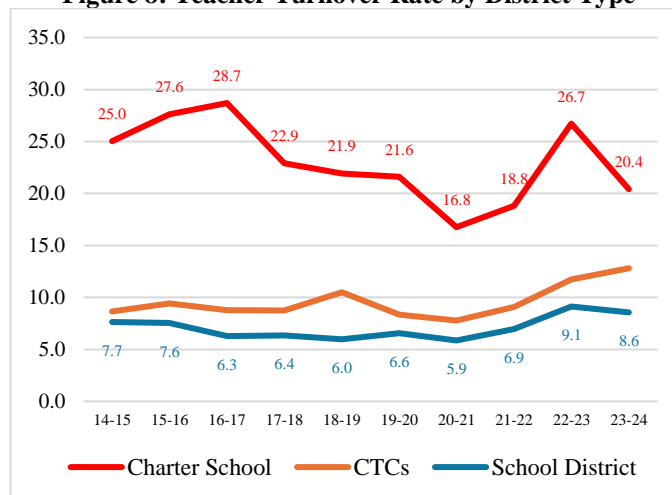
Comparing the turnover rates to the attrition rates reveals high rates of teacher mobility for charter school teachers. The mobility rates ranged from 6.0% in 2020-21 to 11.5% in 2016-17.

In contrast, the turnover rates for school districts were relatively low and not much different from the attrition rates for school district teachers. The lowest turnover rate was 5.9% in 2020-21, while the highest turnover rate was 9.1% in 2022-23. These rates were only marginally higher than the attrition rates—by 1.5 to 3.2 percentage points.

Notably, the highest school district turnover rates were significantly lower than the lowest charter school teacher attrition rates. Indeed, the greatest turnover rate

for school district teachers was 9.1% in 2022-2023 while the lowest charter school teacher turnover rate was 16.8% for 2020-2021.

Figure 8: Teacher Turnover Rate by District Type



Teacher Attrition and Turnover by District Teacher Attrition and Turnover by District Demographics

In this section, I examine teacher attrition and turnover rates by the percentage of students of color enrolled in the district. Based on data from the National Center for Education Statistics, I divided districts into three groups: districts with less than 35% students of color, districts with 35% to 65% students of color, and districts with more than 65% students of color.

As shown in **Figure 9**, the teacher attrition rates were highest for districts with more than 65% students of color and lowest for districts with less than 35% students of color. In fact, the attrition rate for districts with more than 65% of students of color was about twice the attrition rate for districts with less than 35% students of color. Districts with 35% to 65% students of color had slightly higher attrition rates than districts with less than 35% students of color.

Figure 9: Teacher Attrition Rates by the Percent of Students of Color Enrolled in the District

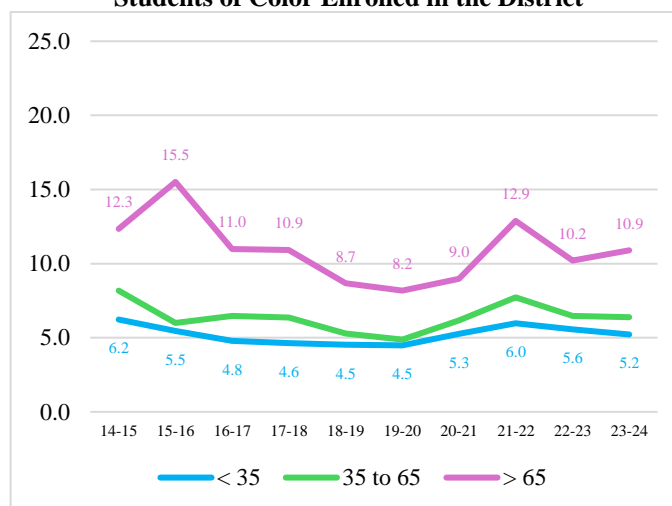
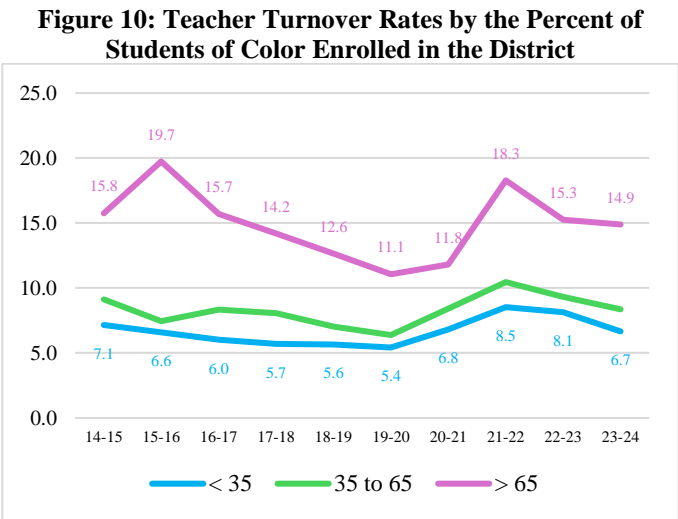


Figure 10 shows the teacher turnover rates by the percentage of students of color enrolled in the district. Not surprisingly, the trends are similar to those for the attrition rates shown in Figure 8. Again, the turnover rates were highest for districts with more than 65% students of color and lowest for districts with less than 35% students of color. The turnover rates for districts with more than 65% of students of color were between two and three times greater than those for districts with less than 35% students of color. Districts with 35% to 65% students of color had marginally higher turnover rates than districts with less than 35% students of color. Notably, the turnover rate was greater than 10% each year for districts with more than 65% of students of color. In contrast, the highest teacher turnover rate for districts with less than 35% students of color was just 8.5%.

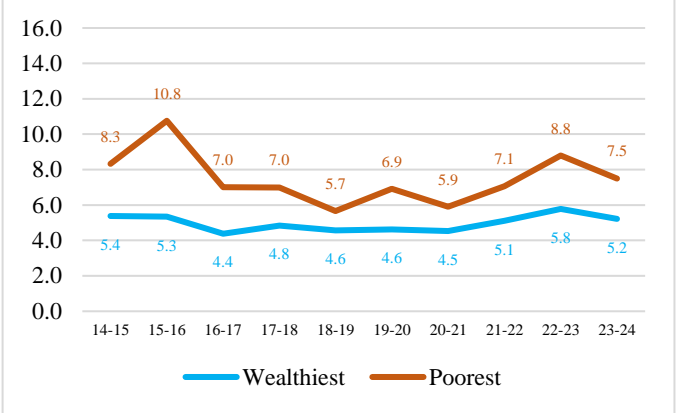


Teacher Attrition and Turnover by District Wealth

In this analysis, I compare teacher attrition rates by district wealth, which is based on the Market Value/Personal Income (MVPI) measure provided by PDE. Districts were divided into five groups with approximately equal numbers of students. The first quintile is labeled as the "Wealthiest" districts, and the fifth quintile is labeled as the "Poorest" districts. Charter schools and CTCs are not included in the analysis as there is no MVPI measure for these schools.

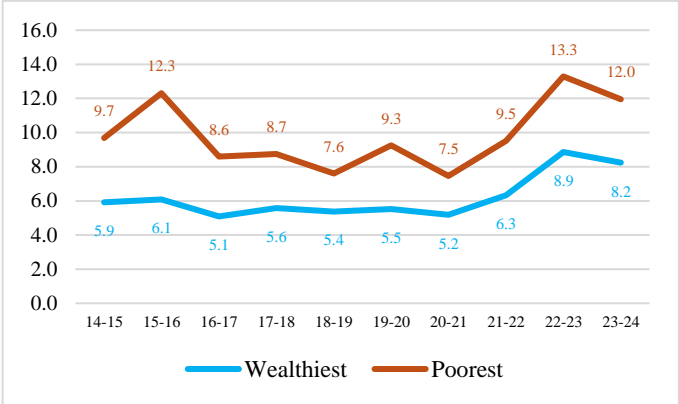
As shown in Figure 11, the teacher attrition rates were higher in the poorest districts than in the wealthiest districts. Although not shown, the attrition rates for the poorest districts were also higher than those for the districts in the second through fourth quintiles of district wealth. This difference is not surprising, given that wealthier areas can offer higher teacher salaries, which are closely linked to greater teacher retention.

Figure 11: Teacher Attrition by District Wealth



As shown in **Figure 12**, the pattern for teacher turnover rates was like that for attrition—greater in the poorest districts than in the wealthiest districts. Again, although not shown, the turnover rates for the poorest districts were also greater than those for the districts in the second through fourth quintiles of district wealth.

Figure 1: Teacher Attrition by District Wealth



Attrition by County

Due to its size, the map of teacher attrition by county (Figure 13) is placed in the appendix. As shown in the map, Philadelphia County had by far the highest attrition rate at 12.9%. This is primarily due to the very high attrition rates of the numerous charter schools in Philadelphia County and, to a lesser extent, the greater number of teachers of color employed as teachers in Philadelphia County. Another four counties had attrition rates of 7% or greater: Warren, Dauphin, Sullivan, and Delaware County.

Both Wayne and Luzerne counties had attrition rates below 4.0%, while another 13 counties had attrition rates between 4.0% and 4.9%.

In terms of patterns, county attrition rates are highest in the Philadelphia metro area, the Centre County area, and some counties in the northwestern corner of the Commonwealth. The counties with the lowest attrition rates tend to be in the western and northeastern areas of the Commonwealth.

Logistic Regression Analysis

Because many of these factors are interrelated, I also performed a logistic regression analysis. In this analysis, the outcome is binary: a “1” if the teacher remains in the teaching profession and a “0” if the teacher does not stay in the teaching profession. This analysis allows me to identify the relationship with personal characteristics or district level characteristics after accounting for the effects of other such characteristics.

My control/independent variables that help explain whether a teacher stays in the teaching profession include race/ethnicity, gender, years of education experience, district type, year of employment, percentage of students of color in the district, and a variable indicating if the teacher was employed in Philadelphia County.

I found the following results:

- Black and Hispanic teachers were more likely to quit the teaching profession than white teachers.
- Inexperienced and very experienced teachers were more likely to quit than other teachers.
- Teachers in charter schools were more likely to quit than teachers in school districts.
- Teachers in Philadelphia County were more likely to quit than teachers employed in other counties.
- Teachers in districts with less than 35% students of color were less likely to quit than teachers in districts with between 35% and 65% students of color.
- Teachers in districts with more than 65% students of color were more likely to quit than teachers in districts with between 35% and 65% students of color.
- Teachers employed in 2022 were more likely to quit before the next year than teachers employed in 2018, 2019, 2020, 2021, and 2023.

Conclusions

There was a decrease in teacher attrition and turnover in Pennsylvania from 2022 to 2023. Coupled with an increase in the number of newly certified teachers, this decrease should help slightly reduce the teacher shortage. Black and Hispanic teachers—already in short supply in Pennsylvania—had the highest attrition and turnover rates, even after controlling for other factors. Without strategies and policies to reduce the attrition of Black and Hispanic teachers, we will never be able to increase the number of teachers of color sufficiently.

Districts serving high proportions of students of color have the highest teacher attrition and turnover rates. Thus, districts serving children most in need of an experienced and stable cadre of teachers are the least likely to provide this resource. This is partially explained by charter schools enrolling high proportions of students of color.

Charter schools tend to have extraordinarily high attrition rates and account for a disproportionate percentage of teacher attrition in Pennsylvania.

Finally, teacher attrition was substantially higher in the poorest districts compared to all other districts. This means that districts with arguably the most students in need of a well-qualified and stable cadre of teachers are the least able to offer this valuable resource.

Implications

Identifying the attrition rate is only the first step. We now need to understand why more teachers are leaving the profession than before. Research suggests that teacher salaries and working conditions are two primary reasons why teachers quit.

Average teacher salaries in Pennsylvania have declined over the past 30 years. Changes in the age and experience distribution of teachers explain some, but not all, of this decline. Additionally, many beginning teacher salaries in Pennsylvania are quite low and do not provide the means for a middle-class lifestyle, unlike career paths in health care or business.

Research consistently shows that working conditions have a profound impact on teacher attrition, rivaling the impact of salaries. These conditions include school climate, teacher involvement in decision-making, and leadership behaviors. Unfortunately, we lack information on teacher working conditions in Pennsylvania.

Economic conditions also affect teacher attrition. When unemployment is low and salaries and working conditions in competing occupations are favorable, teacher attrition rates increase. Conversely, when unemployment is high and conditions in other fields are unfavorable compared to teaching, attrition rates decline.

Another factor is the respect and prestige accorded to teachers. Recent research suggests that respect and prestige for teachers have declined dramatically in recent years. In 2011, 77% of teachers reported feeling respected by community members. By 2022, this percentage had fallen to just 46%. Declining respect and prestige create unfavorable working conditions that increase the likelihood of teachers quitting the profession.

Possible State Policy Solutions

What, then, can state policymakers do to address this situation? Below are some research-based suggestions to help address teacher attrition and the shortage of teachers.

1) Increase teacher salaries

Research consistently concludes that increasing teacher salaries tends to increase the likelihood of teachers remaining in the profession. While raising all salaries

across the state resonates with the public, a more efficient and effective approach is to use a comparable wage index to help set salaries in each labor market, ensuring all districts are on a level playing field.

2) Provide Stipends for Teaching in Hard-to-Staff Schools

Teacher attrition is consistently higher in a subset of schools. This high attrition is one of several indicators identifying hard-to-staff schools. Research has shown that providing stipends to effective teachers who choose to work in these schools leads to an increase in teacher effectiveness, a decrease in teacher attrition, and an increase in student achievement.

3) Adopt and Implement a Statewide Teacher Working Conditions Survey

Several states have used statewide teacher working conditions surveys to help school and district leaders identify areas of concern and develop strategies to address the areas of need identified by teachers. The state- and district-level results could be made public while the results for individual schools should be kept confidential to ensure that teachers respond truthfully.

4) Fund and Support a Statewide Campaign to Elevate Teaching

To counteract teacher perceptions of a lack of respect and prestige, the state should fund a statewide advertising and marketing campaign to elevate teachers and teaching.

5) Require Leadership Programs to Prepare Leaders to Create Positive Teacher Working Conditions

Principal and superintendent certification programs should be required to teach aspiring leaders about the importance of teacher working conditions and strategies to improve teacher working conditions.

Data and Methods

Different researchers can arrive at different teacher attrition rates by using different groups of teachers and different methods. Thus, it is important to document the data and methods used in making the calculations in this report.

Teacher attrition is when a teacher in Year 1 is no longer employed as a teacher in Pennsylvania in Year 2.

Teacher turnover is when a teacher in Year 1 is no longer employed as a teacher in the same district in Year 2.

Teacher mobility is when a teacher in Year 1 remains a teacher in Year 2 but is employed in a different district.

In this study, the method used to calculate attrition, turnover, and mobility for a particular type of district groups together all teachers in a particular type of district. It does not average the rates across districts.

With this method, districts with a greater number of teachers have a greater influence on the overall rates than districts with smaller numbers of teachers.

In this study, I started my analysis by using all employed teachers in the employment files located on the Pennsylvania Department of Education website. For the calculation of the overall attrition rate, I removed teachers without a unique personal identifier. These teachers are employed through a sub-contract, or teachers employed as dual-enrollment or college-level instructors.

For the analyses of overall attrition and attrition by race/ethnicity, teachers could only be counted once per year. In analyses by district type and percentage of students of color enrolled in the district, I included all observations for teachers, even if they were employed in multiple districts.

I used all teachers—even those considered inactive. Excluding the inactive teachers from the analyses increases the attrition rate by about one-half of one percentage point.

All data are from either the National Center for Education Statistics (district student demographics) or the Pennsylvania Department of Education (teacher employment, attrition, turnover, district wealth).

Suggested Citation

Fuller, E.J. (2023, May). Pennsylvania Teacher Attrition and Turnover from 2014 to 2024. University Park, PA. Center for Education Evaluation and Policy Analysis.

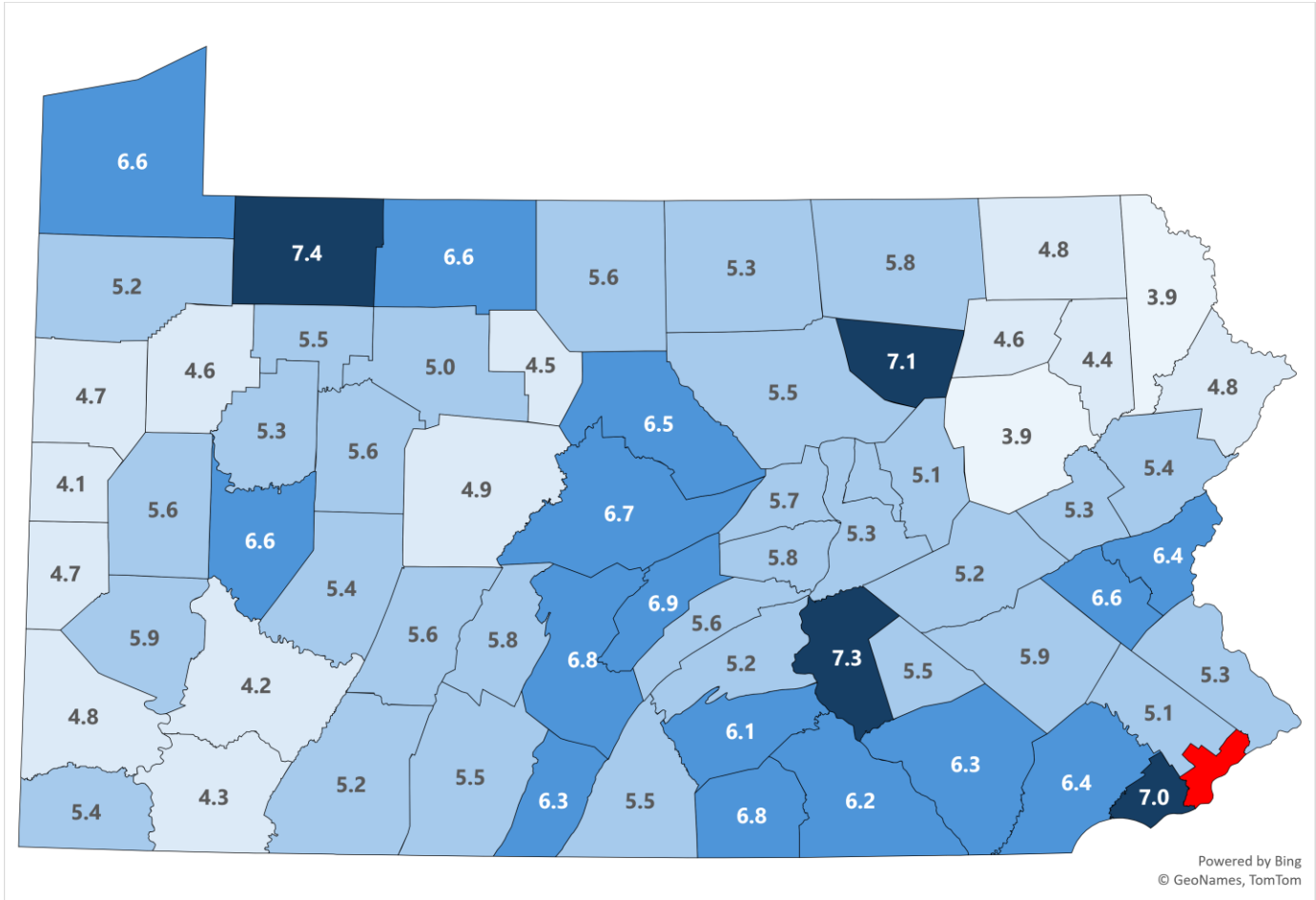
Center for Education Evaluation and Policy Analysis

This brief is part of the CEEPA Research and Policy Brief Series that provides evidenced-based, peer-reviewed analysis of important educational issues in Pennsylvania and across the US. The Executive Director is Dr. Ed Fuller. His email address is ejf20@psu.edu. He is a Professor in the Education Policy Studies Department at Penn State University. The Center is supported by Dr. Kim Lawless, the Dean of Penn State's College of Education. <https://ceepablog.wordpress.com/>

Pennsylvania Educator Diversity Consortium

The *Pennsylvania Educator Diversity Consortium* is a grassroots organization of early childhood, PK-12, higher education, non-profit, community, and government leaders striving to increase the number of teachers of color in Pennsylvania. PEDC's vision is of a future in which each learner in Pennsylvania experiences ethnically, racially, and linguistically diverse and culturally relevant and sustaining educators leading their classrooms and educational institutions. Dr. Donna-Marie Cole-Mallott and Karen Parker Thompson (MSOD) are the Co-Directors of PEDC. Their website is <https://www.paeddiversity.org/>

Figure 11: Annual Teacher Attrition by County from 2014-2015 to 2023-2024



Philadelphia County has an attrition rate of 12.9%

< 4.0%	4.0%-4.9%	5.0%-5.9%	6.0%-6.9%	7.0%-7.9%	>8%