

Teacher Turnover as a Metric for Equity in Maryland Public Schools

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Teachers play an integral role in public schools. Among these is their role as the primary provider of curriculum and instruction. When a teacher leaves a school, their departure disrupts the students' instructional experience and impacts school climate. Darling-Hammond (2003) notes that "keeping good teachers should be one of the most important agendas for any school leader" (p. 7), since teacher turnover has a direct relationship with the quality of education a student receives as well as the way other teachers experience their role in a particular school (Ronfeldt, Loeb & Wyckoff, 2013). In a qualitative study on teacher turnover in elementary schools, Guin (2004) observed that "all the teachers believed that the longer they stayed in a school the better they got at working with a particular population" (p. 15). Although Hanushek and Rivkin (2007) argue that the departure of low-quality teachers might be beneficial for students, others have found that the overall effect of teacher turnover on the school as a whole outweighs the benefits associated with the departure of teachers who were ineffective at raising student's test scores on standardized assessments (Guin, 2004; Ronfeldt, Loeb & Wyckoff, 2013).

Research on the effects of teacher turnover on student performance on standardized assessments suggests "that teacher turnover has a significant and negative impact on student achievement in both math and ELA" (Ronfeldt, Loeb & Wyckoff, 2013, p. 30). The relationship between teacher turnover and achievement levels on standardized test was "larger in schools with higher proportions of low achieving and Black students" (Ronfeldt, Loeb & Wyckoff, 2013, p. 25). When students perform poorly on standardized assessments, state, district, and school leaders often work together to implement innovative instructional programs in the hopes of increasing the quality of a student's instructional experience. Unfortunately teacher turnover often slows the implementation of programs geared to increasing instructional quality (Guin, 2004). As a result, teacher turnover contributes to the ability of teachers to engage as an instructional unit in curricular and instructional planning that could improve students' experience in the classroom and possibly scores on standardized assessments (Guin, 2004). Ronfeldt, Loeb & Wyckoff (2013) found that even teachers who continued at a specific school where there were traditionally high levels of teacher turnover had lower levels of student achievement than teachers at schools with lower rates of teacher turnover. The organization wide disruption caused by high rates of teacher turnover affects standardized assessment scores of students across the school. Darling-Hammond (2003) argues that while "recruiting strong teachers is critically important, it is equally important to keep strong teachers" (p. 2).

The disruption from high rates of teacher turnover decreases school functioning, especially for students from low income backgrounds and students who identify as a person of color (Guin, 2004). When a school experiences high rates of teacher turnover, teachers at the school are less likely to participate in collaborative efforts to improve instruction, build trust with colleagues, rate professional development experiences as effective, and less likely to experience a hospitable school climate (Guin, 2004; Ronfeldt, Loeb & Wyckoff, 2013). School climate and teacher turnover is often related in part to the working conditions teachers face at a specific school. “The high attrition of teachers from schools servicing lower-income or lower-achieving students appears to be substantially influenced by the poor working conditions typically found in schools serving less advantaged students” (Darling-Hammond, 2003, p. 6). The relationship between teacher turnover at the school level and the quality of the teaching that students experience indicates that access to high-quality teaching and learning is an indicator of educational equity.

Research Question

Given the relationship between rates of teacher turnover and school level factors such as student achievement levels, the organizational function of the school, rates of teacher collaboration and school climate, understanding which students in Maryland are more likely to experience high rates of teacher turnover relates to student’s access to an equitable education. The research question that guides this analysis is:

Do different groups of students attending public schools in Maryland experience higher rates of teacher turnover than others?

Methodology

To examine whether different groups of students experience higher teacher turnover, we used school level staffing data from the 2017-2018 Maryland State Department of Education (MSDE) Report Card. These data included the total number of teachers at each school, the number of teachers who left a specific school each year, and the number of years of experience for each school’s principal. We also used district level data from MSDE on average teacher’s salary and district enrollment as measures of school- and district-level characteristics. For data on the racial/ethnic and socioeconomic composition of schools, we used the Common Core of Data (CCD) downloaded from the National Center on Education Statistics (NCES). Since we were interested in whether schools serving minority and low-income students had higher rates of teacher turnover, we used the percentage of the school population that identified as a person color (Black, Asian, Latinx, Native American, and Biracial) as our measure of school composition and the percentage of students at each school that were eligible for free and reduced meals (FARMS) as our measure of school level poverty.

The sample for this analysis included 23 of the 24 school districts in Maryland and 1405 schools. Somerset County Public School District was not included because their data from the CCD was not available. To limit the influence of variables that may skew the analysis, we included only traditional public schools (alternative, special service, and charter schools were excluded).

To examine whether different groups of students in Maryland's public schools were more likely to experience teacher turnover in the 2017-2018 school year, we used a regression model. Before running the regression model, we checked that the data met all of the assumptions required for a regression analysis. All assumptions were met. The teacher turnover variable was constructed by calculating the percentage of teachers at each school in Maryland that left a particular school in the 2017-2018 school year and then mean-centering the variable. This variable indicates what percentage of a school's teaching staff separated from the school at the end of the 2017-2018 school year compared to all schools in Maryland. For each school, the model includes a mean-centered calculation of the percentage of students at a school that are eligible for free and reduced meals (FARMs) and identify as a person of color. Finally, the model also includes a mean-centered variable for the number of years of principal experience for each school. To account for differences based on the district in which a school is located two control variables were included: teacher salary and number of students in the district. Both control variables were mean centered. We used SPSS, a statistical software program, to run the regression model and report our findings as unstandardized beta coefficients, which denotes the size of the relationship among variables. That is, for variables that are significant, a one percent increase in the enrollment of students of color correlates with an increase in teacher turnover.

Findings

Figure 1 presents the results of the regression analysis. Three variables were found to have a statistically significant relationship with the likelihood of higher rates of teacher turnover at a school: the percentage of the student population who identify as a person of color, average district-level teacher's salary, and the number of students in the district. For each one percent increase in the percentage of the student population that identifies as a person of color, teacher turnover increased by 4.6%. In addition, schools with high teacher turnover were more likely to have lower average teacher salaries and be located in large districts. We found no significant relationship between principal experience and teacher turnover. The percentage of low-income students enrolled in a school was also not significant.

The relationship between the percentage of students who identify as a person of color and higher rates of teacher turnover raises questions regarding the educational experience of students of color if teachers are more likely to separate from their school. As mentioned earlier, high rates of teacher turnover at the school level is often indicative of a school

climate that does not experience high levels of collaboration or trust among teachers. School with high levels of teacher turnover are also often less successful at implementing interventions aimed at increasing students' academic success (where the definition of success aligns with the schools' decision to implement a specific intervention). If students of color are more likely to experience higher levels of teacher turnover in their school, it may be the case that they are also more likely to experience the negative externalities related to high rates of teacher turnover such as lower student achievement and a poorer school climate.

Recommendations & Conclusion

Teacher turnover is more than simply an employment issue. Given the relationship between student academic achievement, implementation of instructional programs, school climate, and rates of teacher turnover this investigation indicates that equity-minded state, district, and school level leaders should pay careful attention to reducing teacher turnover, especially at schools serving a high number of students who identify as a person of color (Guin, 2004; Ronfeldt, Loeb & Wyckoff, 2013). Ongoing data collection and analysis of teacher turnover that is shared with district and school administrators is a first step in reducing teacher turnover. Guin (2004) notes that many districts are not positioned to track and address issues of teacher turnover at the school level since “there is no data collection at the school level” (p. 20). Maryland is uniquely positioned to track and address teacher turnover given that MSDE already tracks the number of teacher separations from each school by year. Using an equity lens, the MSDE data on teacher separations can serve as an indicator outside of test scores and teacher experience to understand factors related to student achievement and school climate.

Limitations

This study is a correlational analysis and does not imply causality. We cannot say, for example, that the composition of a school causes high or low teacher turnover. Rather, our analysis provides information for understanding the relationship between school level variables and teacher turnover. Identifying the causes of that relationship will require additional data and more complex, sophisticated analyses. In addition, our measure of teacher turnover included one year of data. Using teacher turnover data across multiple years would strengthen the analysis and provide information about which schools experience high rates of turnover from year to year.

Figure 1: School characteristics related to teacher turnover, Maryland 2017-2018

	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
Mean Centered - Percentage of students at a school that qualify for FARMs	-.002	.009	-.205	.838
Mean Centered- Percentage of students at a school that identify as a person of color	.046	.008	5.865	.000***
Mean Center- Number of years of experience for each principal	.000	.000	-1.831	.067
Mean Centered - Average Teacher Salary by District	-1.280E-6	.000	-3.008	.003**
Mean Centered - Number of students in each school district	1.626E-7	.000	2.912	.004**

*** Statistically significant at $p > .001$; ** at $p > .01$; * at $p > .05$

Resources

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About the Maryland Equity Project

The Maryland Equity Project seeks to improve education through research that supports an informed public policy debate on the quality and distribution of educational opportunities. It conducts, synthesizes, and distributes research on key educational issues in Maryland and facilitates collaboration between researchers and policymakers. The Maryland Equity Project is a program in the Department of Teaching and Learning, Policy and Leadership in the College of Education at The University of Maryland.

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