How Do Teacher Hiring, Transfer, and Attrition Relate to Access to Effective Teachers?

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Background: There is a substantial disparity in educational outcomes between students from high- and low-income families. This study, sponsored by the Institute of Education Sciences (IES) at the U.S. Department of Education, assesses whether (1) this disparity could be due to low-income students being taught by less effective teachers, and (2) the extent to which teacher career transitions are related to access to effective teachers for these students. A separate analysis address the first question and reports on the magnitude of the difference in access to effective teachers between students from high- and low-income families. This presentation focuses on the second question; we show how teacher career transitions are related to any differences in access documented in the first study. The results of this analysis can be used to inform the design of policies targeted toward improving access to effective teachers for low-income students, with the ultimate goal of narrowing the student achievement gap.

Research Questions:

1. Are there differences between high- and low-poverty schools in teacher hiring, transfer, development, and attrition?

2. If differences in these teacher career transitions exist, are they consistent with inequitable access to effective teachers for low-income students?

Setting: We examined teacher career transitions in a large number of geographically dispersed school districts over a five-year period (2008–2009 to 2012–2013). While past studies in this literature have typically focused on teachers in a single district or single state, we use data on teachers in 25 districts located in 15 states in all four Census regions.

Population: We examined teachers of English/language arts and math in 25 study districts, with grades four to eight in 12 districts and—due to data limitations—grades six to eight in the remaining 13 districts.

Program: We documented patterns in teacher career transitions in study districts that used a variety of policies rather than evaluating the effectiveness of a particular policy or intervention.

Data Collection: We collected standardized student test scores from state assessments in grades three to eight, a set of student characteristics, school enrollment data, and teacher-student-course links indicating the teacher responsible for teaching English/language arts and/or math to each student. We also obtained teacher personnel data including experience and school location.

Research Design and Analysis: We defined teachers who enter a district as new hires, those who move between schools as transfers, and those who leave a district as leavers. We measured the effectiveness of teachers in each of these categories using a value-added model, and compared their prevalence in high-poverty schools relative to medium- or low-poverty schools. For this analysis, low-poverty schools are those with less than 60 percent of students
eligible for a free or reduced-price lunch, medium-poverty schools have 60 to 90 percent of students who are eligible, and high-poverty schools have more than 90 percent of students who are eligible.

We combined observations across all districts to measure average differences between high- and low-poverty schools in the prevalence and effectiveness of new hires, transfers, and leavers. We tested for differences across school poverty categories using a regression model that included district, grade, subject, and year indicators.

We also examined the rate at which teachers change in effectiveness over time, and whether this development occurs at different rates at lower- or higher-poverty schools. Here, we used a regression model with teacher fixed effects to compare the average value added for teachers in high-, medium-, and low-poverty schools at each level of experience. Finally, we placed the magnitude of differences in hiring, transfer, attrition, and development in context with differences across high- and low-poverty schools in access to effective teachers.

Findings:

- **Teacher hiring patterns are consistent with small differences in the effectiveness of teachers of high- and low-income students.** The teachers hired into high-poverty schools are equally effective as those hired into low-poverty schools. High-poverty schools have more new hires than low-poverty schools, but this difference is likely to have only a small influence on equity because (1) the difference itself is small (11 percent of teachers in high-poverty schools are new hires compared to 5 percent in low-poverty schools), and (2) new hire performance improves quickly.

- **Teacher transfer patterns are also consistent with small differences in the effectiveness of teachers of high- and low-income students.** On average, teachers who transfer to schools in a lower poverty category within a district are nearly as effective as the average district teacher. Teachers who transfer to schools in a higher poverty category are significantly less effective than the average district teacher. These differences are likely to have a small influence on equity since just under 4 percent of all teachers transfer to a school in a higher or lower poverty category.

- **Teacher attrition patterns do not contribute to differences in the effectiveness of teachers of high- and low-income students.** The teachers who leave a district from both high- and low-poverty schools are less effective than the average district teacher. More of these teachers leave high-poverty schools than low-poverty schools (10 versus 7 percent). This attrition likely does not lead to greater inequity in access to effective teachers because the teachers leaving high- and low-poverty schools are equally effective.

- **Teachers increase in effectiveness at similar rates in high- and low-poverty schools.**

  Teacher development patterns therefore do not contribute to differences in access to effective teachers for high- and low-income students.

Conclusions: We found that differences across high- and low-poverty schools in teachers’ career transitions make only small contributions to differences in access to effective teachers for low-income students. Policies targeted towards equalizing the prevalence of new hires at, or the
prevalence of effective transfers into, high- and low-poverty schools may help reduce the achievement gap between high- and low-income students. However, the impact of such policies would likely be small for districts included in this study, given that hiring and transfer disparities did not make substantial contributions to differences in access to effective teachers.