Do Retention Patterns Differ Between the Most- and Least-Effective Novice Teachers?

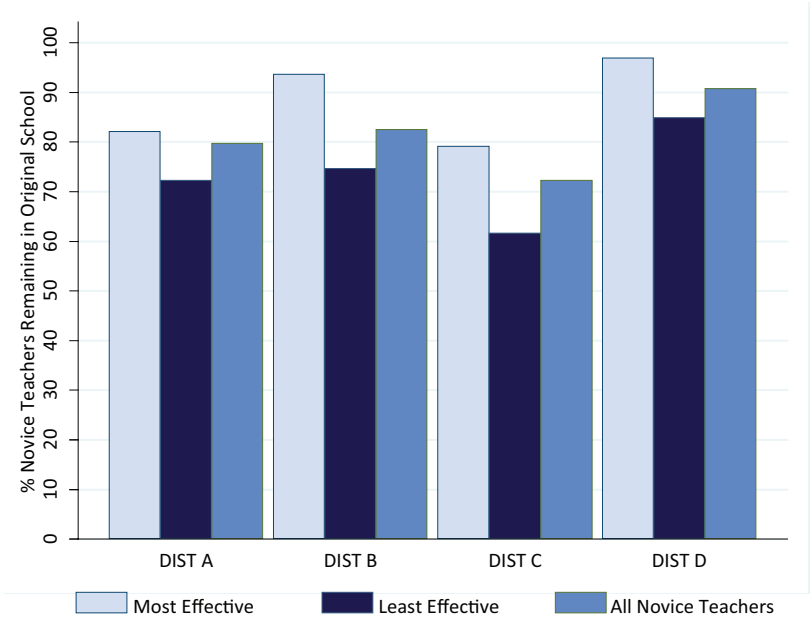
SUMMARY OF FINDINGS

Schools and districts are finding ways to retain the most valuable novice teachers and release the less successful ones, yet districts can still make strategic decisions about teacher retention that could improve student achievement. An examination of retention patterns by level of teacher effectiveness reveals that after their first year of teaching, the most-effective novice teachers are retained both in the same school and in the district overall at a higher rate than the least-effective ones. This difference in same-school and overall district retention rates narrows, however, by year three. These results indicate that there may be opportunities to systematically employ strategies that selectively improve retention rates for the most-effective teachers.

STRATEGIC PERFORMANCE INDICATORS

Strategic Performance Indicators (SPIs) are measures that reveal policy and management levers that have the potential to improve student outcomes. SPIs are derived from a set of rigorous analyses that the Strategic Data Project (SDP) performs on a common set of issues using existing data from partnering education agencies. Housed at the Center for Education Policy Research at Harvard University, SDP's mission is to transform the use of data in education to improve student achievement. The results of all of the SPIs are available at: www.gse.harvard.edu/sdp

FIGURE 1: SAME-SCHOOL RETENTION RATES FOR NOVICE TEACHERS BY EFFECTIVENESS IN THE 2ND YEAR



Teacher turnover has been identified as an important cost driver for school districts, prompting wide-spread calls to reduce turnover rates across the board. But what if school districts were able to systematically retain their most-effective teachers and let go of their least-effective teachers? Teacher effectiveness is among the most important determinants of students' academic success, but it is difficult to predict which teachers will be effective in the classroom based on current hiring selection factors (certification chief among them). Selectively retaining those early-career teachers who prove to be most effective could improve student achievement over time by changing the composition of the

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teacher workforce. Recent research from a handful of states and school districts does, in fact, suggest that teachers staying in their original schools and districts tend to be more effective on average than their peers who leave.[1]

This brief focuses on the retention rates of districts' most- and least-effective early-career teachers within the schools in which they start their careers and within the district as a whole. It provides findings from four SDP partner districts, drawing on data from the 2004–2005 school year through the 2009–2010 school year.[2]

In particular, this brief reports these districts' retention of math teachers across their first three years of teaching, both in the teachers' original schools and in the district as a whole. First, we identify teachers in their first year of teaching (novices) and track them for the next two years in the district. Then, to determine the districts' most- and least-effective novice math teachers, we calculate value-added estimates of the teachers' contribution to student achievement gains and divide the teachers into thirds based on those estimates.[3]

Examining retention patterns by relative teacher effectiveness reveals that these school districts retain most-effective (top-third) math teachers at higher rates than least-effective (bottom-third) math teachers after the first year of teaching. Despite this encouraging finding, however, the overall retention rates of the most-effective teachers are lower than may be desired. The gaps in retention rates between most- and least-effective teachers also vary substantially across districts, suggesting that some districts may have developed ways of identifying their most-effective teachers and selectively retaining them.

STRATEGIC PERFORMANCE INDICATOR

How well are schools and districts retaining effective teachers?

We present this Strategic Performance Indicator in two parts. First, we examine the gaps in retaining most-effective novice math teachers compared to least-effective novice teachers at the school level. The results from the first to the second year are presented in Figure 1.

Second, we examine the gap at the district level (looking only at those who remain as teachers; we do not consider teachers who move into non-classroom jobs). For both, we examine the results into the second year and into the third year of teaching. By definition, retention rates can only stay the same or decline with each additional year; they cannot increase. Similarly, because some teachers may transfer each year within a district's schools, the rate at which teachers remain in their initial school is always lower than or equal to the rate at which they remain in the district as a whole.

Figure 2 examines same-school retention rates of new teachers in the top third and bottom third of effectiveness for each district into the second and third year of teaching. The orange squares represent the retention rates of the most-effective teachers, and the red squares represent the retention rates of the least-effective. The number between each pair of squares presents the gap in same- school retention rates between most-effective and least-effective teachers for each district. We look at retention rates into the second year and, separately, into the third year to see how gaps persist or change and how retention rates for both groups of teachers decline over time.

Examining retention patterns by relative teacher effectiveness reveals that all four districts presented in this brief retain higher proportions of their most-effective than least-effective math teachers.

To illustrate, consider the findings for District C. In District C, about 80 percent of top-third teachers returned to the same school for a second year of teaching, compared to just over 60 percent of bottom-third teachers. This district is retaining 17.5 percentage points more of its most-effective teachers compared to its least-effective teachers; this gap persists in the third year, though it narrows to 10.3 percentage points. As Figure 2 reveals, the gaps between retention rates of most- and least-effective teachers vary across districts.

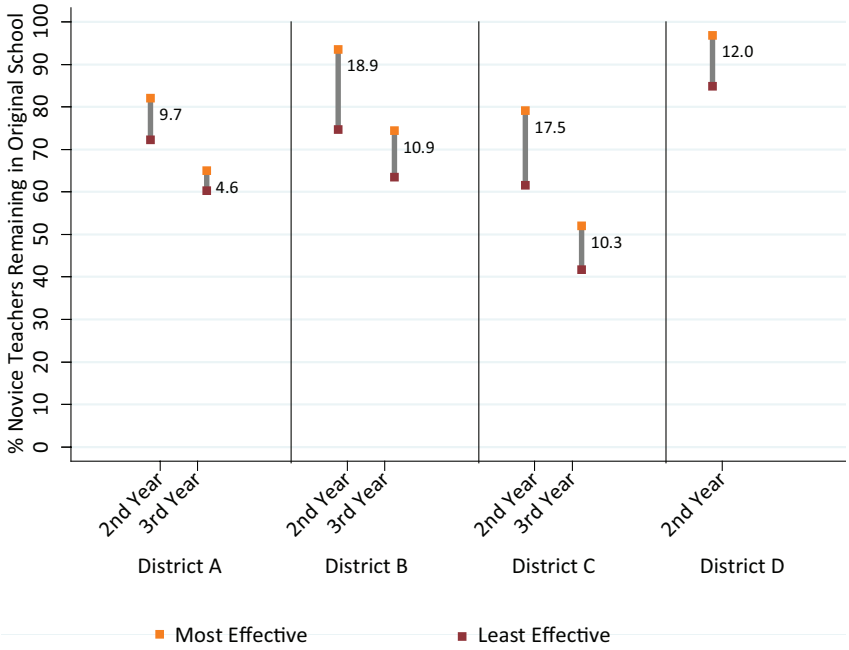
In all districts, most-effective early-career teachers are retained in their original schools at higher rates than their less-effective peers in year two. The same-school retention rates range from 79 to 97 percent in the second year of teaching and from 52 to 74 percent in the third year of teaching. In contrast, same-school retention rates for bottom-third teachers range from 62 to 85 percent in the second year and from 42 to 63 percent in the third year of teaching.

The second part of this SPI examines the extent to which novice teachers remain as teachers in any school in the district into their second and third years of teaching. As shown

in Figure 3, all districts retain top-third teachers at higher rates than their bottom-third peers into the second year. In the three districts for which third-year data is available, more top-third teachers are retained into the third year. The gap in district retention rates between top-third and bottom-third teachers is smaller in the third year than in the second in all districts. This is interesting because, as we see in Figure 2, gaps in same-school retention rates remain relatively large into the third year of teaching.

The fact that the "high-low" gap decreases more quickly at the district level means other schools in the district are absorbing lower-performing teachers. While many schools are successful at weeding out poor performers and retaining those who excel, the bottom-third of teachers do not necessarily exit the profession, but end up teaching in other schools in the district.

FIGURE 2: SAME-SCHOOL NOVICE TEACHER RETENTION BY EFFECTIVENESS



Note: The sample size in Year 3 in District D was too small to provide reliable results.

IMPLICATIONS FROM FINDINGS

The same-school and overall-district retention rates, together, tell an interesting story. Within all partner districts, individual schools retain their most-effective teachers at higher rates than their least-effective teachers into the second year and third years Into the third year, the gap between retaining the most-effective and least-effective teachers shrinks rather significantly. Even when large gaps remain in same-school retention in the third year, the same gaps in overall-district retention rates are far smaller. In other words, although schools tend to lose or release their least-effective teachers at higher rates, districts often do not. While this could reflect teachers seeking out environments in which they are more likely to be effective, it may also reflect a placement pattern in which relatively ineffective teachers are passed around the district rather than being dismissed altogether.

To benefit from selective retention, districts would need to retain more highly-effective teachers and to improve or counsel out lower performers, widening the gaps displayed by this Strategic Performance Indicator. The pattern of schools retaining their most-effective teachers at greater rates indicates there may be at least implicit knowledge about who the effective teachers are, and that people are taking action on that knowledge. It may be the teachers themselves recognizing a poor fit and opting out. It may be active counseling by principals and other school leaders. Likely, it is a combination.

Certainly, in some districts there may also be explicit knowledge—a clear set of evaluation criteria and processes for early-career teachers—that points to a decision about retention. The evidence presented in this brief indicates that such clearly defined systems are generally not in place in SDP districts, or, if they are, that they are not uniformly followed.

These findings were obtained through the data analysis and research diagnostics performed by the Strategic Data Project between 2009-2012 with four partner districts: Charlotte-Mecklenburg Schools (North Carolina), Fort Worth Independent School District (Texas), Fulton County Schools (Georgia), and Gwinnett County Public Schools (Georgia). For more information about the SDP Human Capital Diagnostic and for more extensive analytic results for each of the districts covered in this SPI brief, please visit our website: www. gse.harvard.edu/sdp

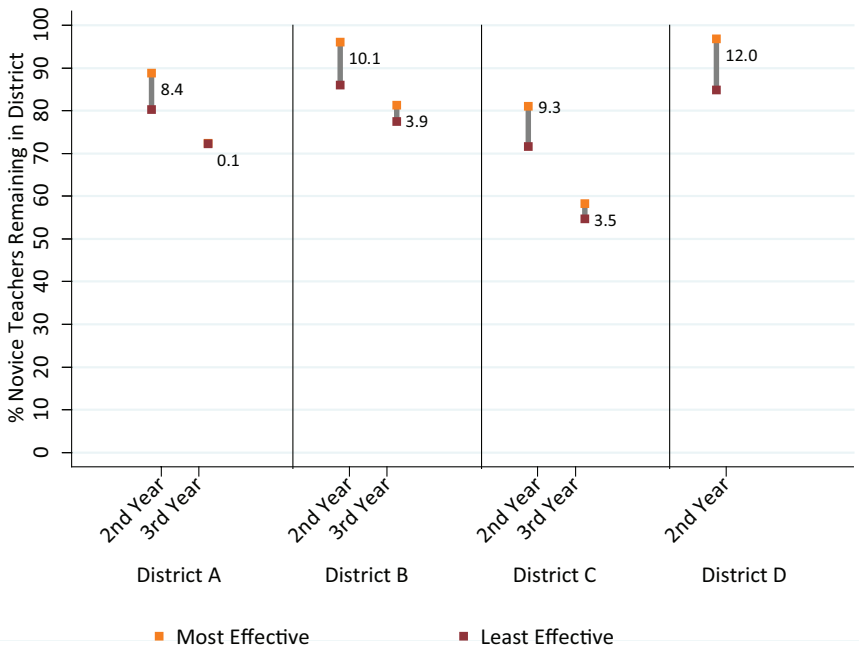
1 The specific dates vary by district based on data quality and availability.

2 Goldhaber, D., Gross, B., and Player, D. (2011, November 2). Teacher career paths, teacher quality, and persistence in the classroom: Are public schools keeping their best? Journal of Policy Analysis and Management, 30(1), 57–87; and West, M. R. and Chingos, M. (2009). Teacher effectiveness, mobility, and attrition in Florida. In Spinger, M. G. (Ed.), Performance incentives: Their growing impact on American K–12 education (pp. 251–271). Washington, DC: Brookings Institution Press.

3 Value-added measures estimate the effect a teacher has on student learning by using a statistical model that captures prior student performance and other student and class characteristics. More specifically, we use the model to estimate a prediction of student growth and then attribute the differences from the students' real growth and the predicted scores to the teacher. Importantly, value-added measures are relative to the district examined; that is, teachers are estimated to be more or less effective relative to other teachers in the same subject in the district. In addition, the teacher-effectiveness estimates used in this brief are calculated from the value-added in the first two years of teaching, when available. Otherwise, only the first year is used. Teachers are then placed into effectiveness thirds based on this estimate for the group of novice teachers that are included in this analysis. For more information, please see SDP's Value-Added Measures memo at: http://bit.ly/SDP-VA

4 For more information about the SDP Human Capital Diagnostic and for more extensive analytic results for each of the districts covered in this SPI brief, please visit our website: www.gse.harvard.edu/sdp

FIGURE 3: OVERALL DISTRICT TEACHER RETENTION BY EFFECTIVENESS



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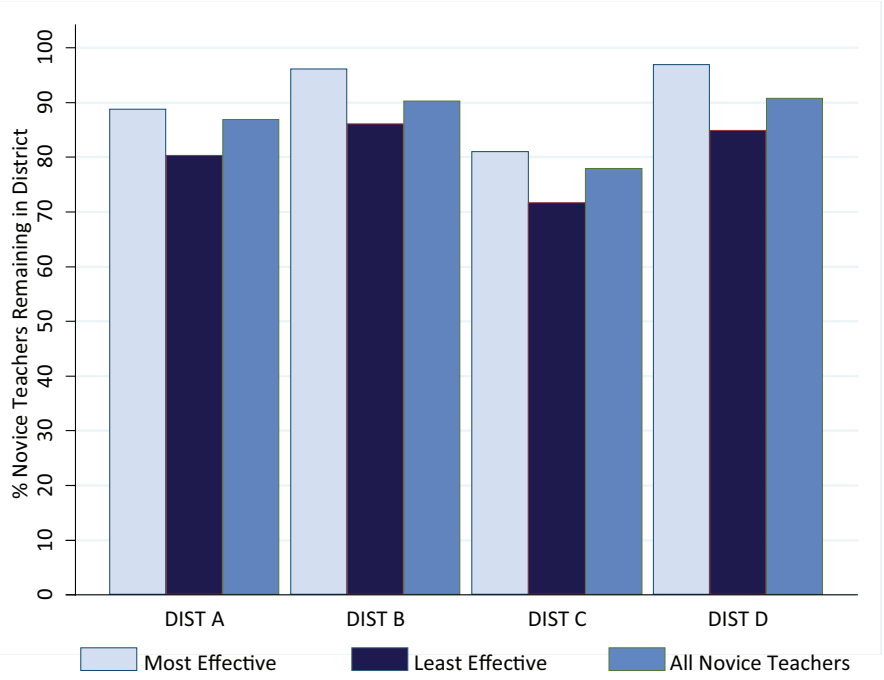
APPENDIX: OVERALL DISTRICT RETENTION RATES BY EFFECTIVENESS IN THE 2ND YEAR



Ask Yourself, Take Action

Why do these teacher retention patterns exist? The SPIs on their own are not designed to determine the causes for these findings. Rather, they prompt a series of questions that will help leaders uncover causes and be positioned to make informed changes in management and policy. Asking and answering these questions should lead to a better understanding of the differences in outcomes across education systems, and to explore the underlying trends and causes of these differences. Ultimately, this should lead to proposed solutions.

ASK YOURSELF:

What systems and procedures are used to evaluate novice teachers? Are these standard across the district? How are evaluation results used in teacher development and retention decisions? Do other principals have access to this data to inform hiring decisions?

When high-performing teachers leave teaching in the district, where do they go and why? What approaches could encourage retention? What approaches do districts with high retention rates of highly effective teachers use? Is the district recruiting high-performing teachers out of the classroom to other jobs?

Do principals feel empowered and know how to counsel out low-performing teachers? What information would principals need to act more intentionally on counseling out lower-performing teachers? Are principals held accountable for assembling and maintaining high-performing staffs?

TAKE ACTION:

Provide targeted career counseling for novice teachers and support for principals when it is in the district's—and the teacher's—interest to carefully determine retention decisions.

- Coach principals on identifying their most- and least-effective teachers
- Provide principals the support they need to retain high performers and counsel out lower performers
- Provide targeted career counseling to early-career teachers, to help both high performers and low performers pursue appropriate paths

Figure out why the most-effective teachers are leaving—and address the need.

- Explore financial or other incentives to retain the most-effective teachers that leave for non-teaching positions or for other districts
- Examine work–life balance programs or career-growth opportunities to increase available pathways that do not involve leaving teaching entirely.

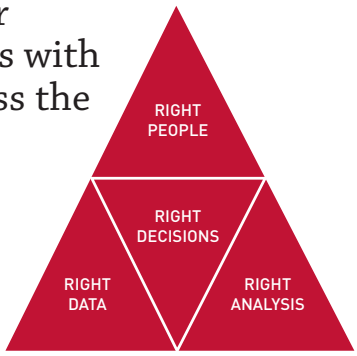
Implement a system to identify effective teachers. This will also support both targeted recruiting and teacher candidate self-selection.

- Develop methods to define and measure teacher effectiveness to systemically identify the most-effective teachers early in their careers. Ideally, base system on multiple indicators including teaching practice, student learning, and student perceptions.

The Strategic Data Project

OVERVIEW

The Strategic Data Project (SDP), housed at the Center for Education Policy Research at Harvard University, partners with school districts, school networks, and state agencies across the US. **Our mission is to transform the use of data in education to improve student achievement.** We believe that with the right people, the right data, and the right analyses, we can significantly improve the quality of strategic policy and management decisions.



SDP AT A GLANCE

23 AGENCY PARTNERS
14 SCHOOL DISTRICTS
7 STATE EDUCATION DEPARTMENTS
2 CHARTER SCHOOL ORGANIZATIONS

79 FELLOWS
55 CURRENT
24 ALUMNI

CORE STRATEGIES

1. Placing and supporting top-notch analytic leaders as "Fellows" for two years with our partner agencies

2. Conducting rigorous diagnostic analyses of teacher effectiveness and college-going success using existing agency data

3. Disseminating our tools, methods, and lessons learned to education leaders broadly

WHERE DO THE SPIS COME FROM?

SDP's second core strategy, conducting rigorous diagnostic analyses using existing agency data, focuses on two core areas: (1) college-going success and attainment for students and (2) human capital (primarily examining teacher effectiveness). The diagnostics are a set of analyses that frame actionable questions for education leaders. By asking questions such as, "How well do students transition to postsecondary education?" or "How successfully is an agency recruiting effective teachers?" we support education leaders to develop a deep understanding of student achievement in their agency.

The Strategic Performance Indicators (SPIs) are a small subset of SDP's research diagnostic analyses. The Human Capital SPIs are derived from the Human Capital Diagnostic. We conduct these analyses because teacher effectiveness matters more for student learning than any other factor under the control of school systems, making robust analyses of these issues vital for improving student achievement.

SDP conducts the Human Capital Diagnostics using each partner agency's own data to examine several stages in teachers' career paths, from how they are recruited and assigned to schools, to how their performance changes over time, to whether they remain in the agency or leave. We intend for the analyses to identify opportunities for policy changes that could leverage information about the movement and allocation of teachers to improve student achievement. To do so, the diagnostic examines teacher effectiveness patterns and compares these patterns across a combination of teacher, school, and student characteristics.

For more information on the SDP diagnostics, including a Toolkit that provides guidance for conducting SDP's other diagnostic on college-going patterns, please visit our website at: http://www.gse.harvard.edu/sdp

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