ERS

SCHOOL SYSTEM 20/20 | Data Decisions

Matching Teaching Talent to Student Need

School System 20/20 *Data Decisions* highlights common opportunities ERS sees in districts across the country. The series explores how current resource choices can yield big results for students and teachers, getting districts closer to the School System 20/20 vision.

The Challenge:

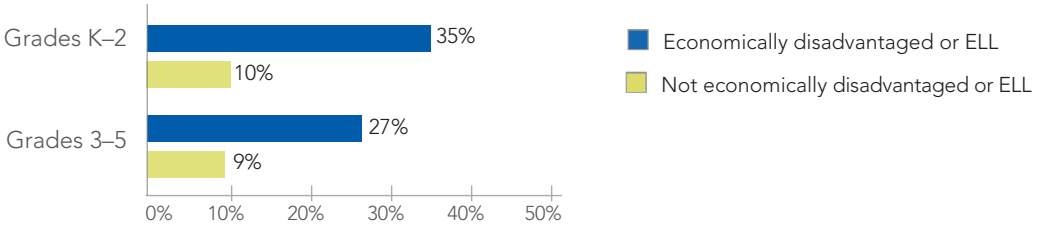
We know that students assigned to effective teachers dramatically outperform students assigned to ineffective teachers.[1] However, ERS has found that in many districts, students who are struggling are less likely to be assigned to an effective teacher than their high-performing peers.

Why is this happening? The reasons are twofold: First, in many districts, teachers who have a choice will often elect to work in or transfer to schools with a history of high performance and relatively fewer students who are struggling. Second, within many schools, teachers often earn, via seniority, the right to select the grades and courses they want to teach. At the elementary school level, novice teachers are often placed into grade-level teams based simply on available openings, without any attempt to balance the strengths and weaknesses across teams. At the high school level, seniority preference typically results in more experienced teachers teaching small, advanced electives like AP English, leaving novice teachers to teach large, basic foundation courses like 9th grade English. As a result, students who struggle the most often end up in large classes with less experienced teachers who may or may not have developed the skills to adequately support their needs across a large, diverse class setting. **How can districts be more strategic in their teacher placements, across schools and assignments within schools, to help all students succeed?**

The Data:

Consider District B, a district in the South Central U.S. with more than 86,000 students. ERS found that elementary school students in this district who were economically disadvantaged or English Language Learners were over three times more likely to have a teacher rated in the bottom quartile.[2]

PERCENT OF STUDENTS TAUGHT BY LOWEST-QUARTILE-RATED TEACHER District B (South Central, 86K+ Students)



Similarly, at the high school level most effective or experienced teachers tend to teach upper grades as opposed to 9th graders. In District A (East Coast, more than 145,000 students) 12th graders were almost twice as likely as 9th graders to have a highly rated teacher for their core classes.

PERCENT OF CORE CLASSES TAUGHT BY HIGHLY RATED TEACHERS	
District A (East Coast, 145K+ Students)	
Grade 9	18%
Grade 10	22%
Grade 11	27%
Grade 12	29%

If your district does not have teaching effectiveness scores available, teacher experience—novice (0–3 years) versus not novice—can be used as a proxy. It's important to note that teacher experience does not necessarily correlate with teaching effectiveness; however, analyzing the distribution of teacher experience across grades, subjects, and student needs can help illustrate concerns in current staffing policies and practices and promote conversations around strategic assignment. For example, in District A, 9th grade core classes were taught by novice teachers twice as often as 12th grade core classes.

PERCENT OF CORE CLASSES TAUGHT BY NOVICE TEACHERS	
District A (East Coast, 145K+ Students)	
Grade 9	29%
Grade 10	26%
Grade 11	21%
Grade 12	15%

While the trend in District A shows that 9th graders are twice as likely as 12th graders to get a novice teacher, we find even more pronounced differences when looking at individual schools. Within District A at School X, Y, or Z, 9th grade students are seven times or more as likely to have a novice math or English Language Arts (ELA) teacher as 12th grade students are. However, we do occasionally see schools that are more deliberate in assignment, even with a limited supply of experienced teachers—like School W.

DISTRICT A (EAST COAST, 145K+ STUDENTS)				
	School X – % of math teachers who are novice	**School Y** – % of math teachers who are novice	**School Z** – % of ELA teachers who are novice	**School W** – % of ELA teachers who are novice
Grade 9	84%	95%	98%	5%
Grade 10	74%	16%	1%	97%
Grade 11	25%	0%	0%	95%
Grade 12	12%	0%	0%	73%

The Solution:

Thinking about teacher assignment as a critical part of a school's improvement strategy can be a relatively quick, easy, and inexpensive way to improve student performance. Using teaching effectiveness data, school leaders can work with teachers to identify opportunities to pair teachers with courses and students based on student need and teacher skills, performance, and experience. This strategy both gives teachers the opportunity to make the most difference for students, and gives all students the best chances at succeeding.

Furthermore, diversifying experience and expertise across grade-level and subject-level teams enables novice and less effective teachers to have more successful peers to learn from. If teaching teams with high concentrations of novices and less effective teachers are unavoidable, then the school should also invest in providing those teams with substantial amounts of collaborative planning time, with push-in expert support in the form of an instructional coach or expert teacher to help them improve.

Analyzing Teacher Assignment:

Schools and districts can start by analyzing current assignment practices. At the elementary and middle school levels, focus on grade-level assignments to ensure access to effective teaching at the grade levels most needing support. Ideally, all grade levels would have access to quality teachers to ensure student success.

Below, we have detailed how schools can review teacher assignment trends at the high school level.

Step 1: Match students to teachers

1. Using course schedule data, identify the teachers teaching each student. At the secondary school level, you can conduct this analysis separately by subject and grade. For example, the sample table below shows math teacher and student pairings.
2. Identify each teacher's incoming teacher effectiveness rating. If that is not available, you can use teacher experience as a proxy.

STUDENTS	MATH COURSE	MATH TEACHERS	INCOMING TEACHER EFFECTIVENESS RATING (MAX=10)
Student 1	Foundations of Algebra	Teacher A	2
Student 2	Foundations of Algebra	Teacher B	3
Student 3	Foundations of Algebra	Teacher C	7
Student 4	Foundations of Algebra	Teacher D	4
Student 5	Algebra II	Teacher E	6
Student 6	Algebra II	Teacher F	7
Student 7	Algebra II	Teacher G	4
Student 8	AP Calculus AB	Teacher H	8
Student 9	AP Calculus AB	Teacher I	7
Student 10	AP Calculus AB	Teacher J	9

Step 2: Calculate the average teacher effectiveness rating

3. Calculate the average teacher effectiveness rating for students grouped by prior-year performance. In this example, you can see that the average teacher effectiveness rating for the AP course (8.0) is higher than the average teacher effectiveness rating (4.0) for the Foundations of Algebra course.

MATH COURSE	AVERAGE INCOMING TEACHER EFFECTIVENESS RATING (MAX=10%)
Foundations of Algebra	4.0
Algebra II	5.7
AP Calculus AB	8.0

Step 3: Calculate the percentage of students with a highly effective teacher

4. An alternate way to look at this data is to calculate the likelihood, by course, of having a highly effective teacher. In the table above, you can see that 25% of Foundations of Algebra students have a math teacher rated 7 or higher, compared to 100% of AP students.

MATH COURSE	% OF STUDENTS WHO HAVE A MATH TEACHER RATED 7 OR HIGHER
Foundations of Algebra	25%
Algebra II	33%
AP Calculus AB	100%

Endnotes

1. Rivkin, S.; Hanushek, E.; and Kavin, J. "Teachers, Schools, and Academic Achievement." Working Paper No. 6691. National Bureau of Economic Research. http://www.nber.org/papers/w6691.pdf.
2. Economically disadvantaged and ELL (English Language Learners) are two groups of students that suffer from the achievement gap—a disparity in academic performance between these groups and non-economically disadvantaged and white peers. Source: Education Week, "Achievement Gap," July 2011, http://www.edweek.org/ew/issues/achievement-gap/.

School System 20/20 includes both a vision for transformative change as well as a methodology for charting a path and measuring progress toward that change across the seven areas of transformation. Using a data-driven approach, it enables districts to see exactly how resources— *people*, *time*, and *money*—are deployed, and identify where they can better meet student and teacher needs.

School System 20/20 assessment tools help district leaders measure and track the conditions for change and their resource use. Based on our experience working with districts, on our extensive district database, and on published research, the tools use qualitative and quantitative metrics to evaluate progress.

Education Resource Strategies (ERS) is a non-profit organization dedicated to transforming how urban school systems organize resources—people, time, and money—so that every school succeeds for every student.

ERStrategies.org/system2020