

VALUE-ADDED MEASUREMENT Services

at American Institutes for Research ■

Summary of

Estimating Teacher Contributions to Student Learning The Role of the School Component

By Zeyu Xu, Ph.D., and Andrew Swanlund

Background

Research demonstrates that most variation in student test scores is among students within the same school rather than between schools. For student score gains, an even higher percentage of the variation is within school than between schools. It is not surprising that overall, teacher value-added scores change very little regardless of how the school effect is accounted for in the model. However, individual teacher value-added rankings, particularly among the top and the bottom teachers, may be quite sensitive to how the school effect is modeled. Therefore, the issue of whether and how to account for school contributions to student learning in estimating teacher performance remains a key policy issue for states and districts to consider.

Overview

Teachers' individual contributions to student learning and schools' contributions are typically intertwined, for several reasons. First, students and teachers are not randomly sorted into schools. Better schools often attract better teachers and better students. Second, factors that make a school better also may improve the performance of teachers already in the school; at the same time, strong individual teacher performance contributes to overall school quality. How to create a value-added model to account for school and teacher contributions to student learning is a decision that can affect teachers' level of efforts as well as how teachers work with one another and, therefore, has important consequences.

Key Points

The authors make the following conclusions:

- Differences in teacher value-added scores between schools are generally small in comparison to within-school differences.
- Ignoring between-school differences (estimating a model without this component) attributes whatever between-school differences do exist to individual teachers.
- A different solution is to estimate between-school differences and then consider what part of those differences should be attributed to teachers. As noted, teachers both are made better by the schools they are in and contribute to the betterment of their schools.
- A decision about how much of between-school differences (school component) to include in a teacher score has an important effect on the rankings of the teachers.
- Whether and how between-school differences are attributed to teachers depends on the intended use of value-added scores and the comparisons among teachers that policymakers wish to make.

For More Information

The full paper is available online:

www.air.org/files/VAMS/Estimating_Teacher_Contributions_to_Student_Learning.pdf

Additional papers are available at AIR's [Value-Added Measures in Education](http://www.air.org/VAMS/) webpage:

www.air.org/VAMS/

About American Institutes for Research (AIR)

Founded in 1946, AIR applies science to address real-world issues. AIR is a national leader in teaching and learning improvement, providing the research, assessment, evaluation, and technical assistance to ensure that all students—particularly those facing historical disadvantages—have access to a high-quality effective education.

Value-Added Measurement Services

part of AIR's Educator Talent Management services and resources, can assist states and districts in finding the right approach to measuring how educators contribute to growth in student achievement.

Visit AIR's Educator Talent Management website at www.educator talent.org.



Education Program

1000 Thomas Jefferson Street NW
Washington, DC 20007-3835
202.403.5000

www.air.org