Building Smarter Accountability

The path to value-added as a measure of school and educator effectiveness

Bradley Carl and Jennifer Winter

For at least the past decade, No Child Left Behind (NCLB)-style accountability has been a dominant force in American education. Educators and schools took a snapshot of student performance on standardized assessments every year and were held responsible for how many of their students were proficient — a threshold that varied considerably by state.

These assessments didn't take into account how much students knew before entering the school, how much their performance improved, and how much other factors beyond the control of the school and its educators may have influenced student learning.

Several years into NCLB-style accountability, however, it had become abundantly clear that these types of "point in time" attainment measures were far better-suited for determining how much students know, and how far they remained from reaching proficiency, than they were for making fair comparisons for accountability purposes between schools that often serve very different student populations.

More recently, the issue of which measures to use for determining educator and school effectiveness has become increasingly important due to an array of policy initiatives including the federal Race to the Top competitions, state Elementary and Second Education Act (ESEA) waivers, and state legislation. Each of these initiatives emphasizes the need for performance measures that accurately and fairly capture the impact of schools, classrooms, and individual educators on student learning; value-added has become an increasingly popular tool for this purpose.

Measuring Growth in Student Achievement

At a basic level, "value-added" refers to a type of statistical model that estimates the contribution that schools, classrooms, or teachers make toward growth in student achievement after controlling for factors outside their control, such as students' prior knowledge and student and family characteristics.

Using these models, we can tell if a school helped its students to grow faster or slower than the average school in a district or state. Another way to think about value-added is to ask whether a school "beat the average"—did it perform better or worse than the average district school with observationally similar students?

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Systems

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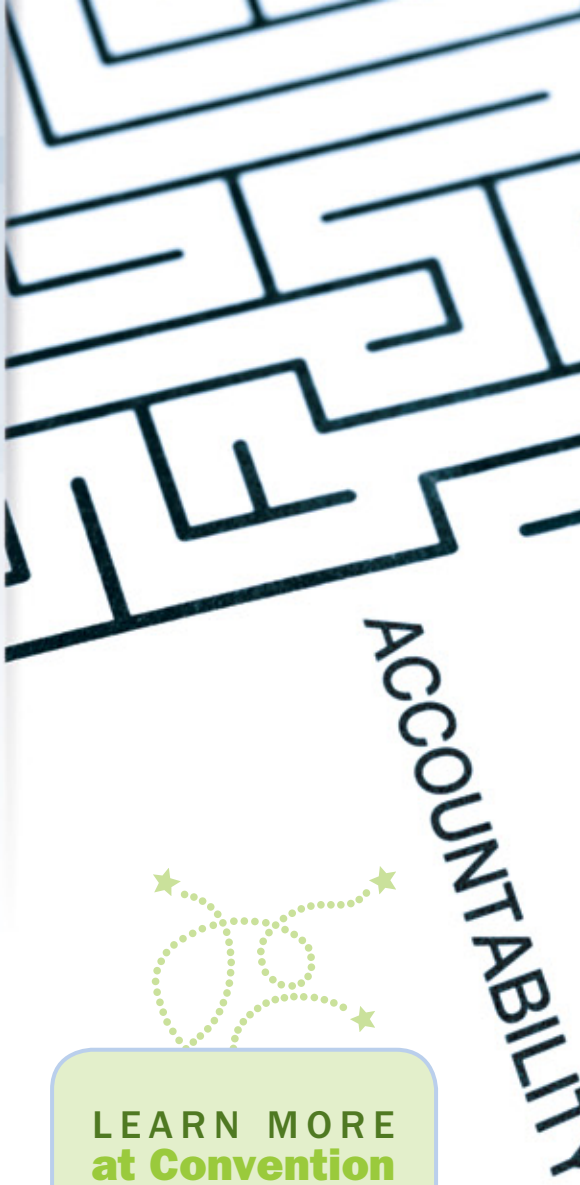

and Milwaukee in the late 1990s, VARC now works with many of the largest urban school districts in the country, as well as with an increasing number of states and national organizations. Not just around value-added analyses, but also with the design and implementation of human capital management systems and other analytics.

Key Principles

With respect to key features of VARC's value-added models, we operate under two key principles. The first is a "model co-build" approach, in which we work with our research partners to identify purpose (e.g., school-level accountability vs. public information) and advise our partners accordingly of different technical options and their policy implications.

A second key principle is "simpler is better…unless it's wrong," which is our way of balancing the inherent trade-off between model complexity and the need to derive the most accurate estimates of productivity possible, especially where high stakes are involved.

For example, we generally apply a statistical correction for test measurement error and make adjustments to the estimates of schools and classrooms that serve small numbers of students because value-added based on small sample size is often skewed toward very high and very low scores.

VARC also believes that applying statistical controls for student and family characteristics, where high-quality data are available, adds to the precision and accuracy of value-added estimates and is an important component of fairness. Although we also believe strongly that holding high expectations for the learning of all students is critical. To that end, we generally advocate for showing value-added and attainment data together wherever possible, so as to simultaneously convey the importance of both growth for accountability

LEARN MORE at Convention

Researcher Bradley Carl (see "Meet the Presenter" on page 17) will be presenting a special session, "Value-Added Data from Assessment" on **Thursday, Jan. 24, 2013**, at the State Education Convention. His session is geared towards school leaders and will provide a brief, non-technical overview of value-added methods, along with a discussion of important issues and considerations for their use in educator evaluation systems.

purposes (via value-added) as well as high expectations (via attainment).

Research-Backed

In terms of recent research which validates the use of value-added as one measure of school and educator performance, researchers at Harvard and Columbia universities found that having a high-quality teacher for even a single year can have a measurable long-term impact on students' outcomes.

Researchers followed a million children from a large urban school district from fourth grade to adulthood. The researchers gauged the effectiveness of their teachers in grades four through eight through value-added analysis. They found that students who were assigned teachers with higher value-added ratings ended up with more positive outcomes on a number of variables, including college graduation rates, earnings, and savings. The Measures of Effective Teaching project has further found that value-added is correlated with other measures of educator productivity, such as observational rubrics and student surveys.

Limitations

Despite the many advantages of value-added, VARC recognizes that these measures are not perfect, and have not always been used in a responsible manner that emphasizes improved learning for all students. We cannot, for example, collect all the data that we would like to know about students' environments outside of school, standardized assessments are not perfect measures of student knowledge, and a certain level of imprecision is inherent in all statistical measures.

For these reasons, VARC believes that value-added estimates should always be part of a "multiple measures" system when used for high stakes purposes, and we often work with districts as they think through how to do this.

We also believe that the amount of evidence needed to make decisions should be commensurate with the stakes associated with these decisions, so a multi-year value-added indicator is often appropriate. Finally, we believe strongly that public disclosure at the individual educator level of value-added (or any other aspect of a summative or formative performance rating) is inappropriate and unlikely to contribute to meaningful improvement.

Building Smarter Accountability Systems

In summary, value-added analysis has emerged as one tool for states,

districts, and schools to use as they build smart accountability systems and work toward better student outcomes.

Value-added data at the school level are currently available from the Wisconsin Department of Public Instruction (DPI), and will comprise a portion of educator effectiveness scores under the state's new principal and educator evaluation systems, which will be rolled out beginning in 2014-15.

Thinking critically about how different performance measures, including value-added, are used as part of current and emerging accountability systems will help ensure that all stakeholders receive the most accurate and well-rounded picture of performance that drives student learning to new heights. ■

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MEET THE PRESENTER: Dr. Bradley Carl

"Value-Added Data from Assessment"

Thursday, Jan. 24, 2013 | State Education Convention

Bradley Carl serves as the VARC Embedded Researcher for the Milwaukee Public Schools (MPS). In this capacity, he splits time between WCER and the MPS Division of Research & Assessment to conduct program evaluations and research involving key MPS initiatives and district improvement efforts. Examples of completed work conducted to date include evaluations of MPS high schools, charter schools, and summer school programs; a single-gender classroom initiative at an MPS middle school; and the MPS/Milwaukee Recreation Arts Partnership program. His ongoing work includes evaluations of programs to improve transitions to high school, a postsecondary tracking system for MPS graduates, and an "early warning" system to identify students at high risk of failing to graduate from high school and graduating with low levels of college and workforce readiness. Dr. Carl holds a B.A. in international studies and history from Hamline University and a Ph.D. in sociology-urban studies from Michigan State University. ●