

# VALUE-ADDED MEASUREMENT Services

at American Institutes for Research ■

## Summary of

### Combining Multiple Performance Measures

### Do Common Approaches Undermine Districts' Personnel Evaluation Systems?

By Michael Hansen, Ph.D., Mariann Lemke, and  
Nicholas Sorensen, Ph.D.

## Background

Teacher and principal evaluation systems now emerging in response to federal, state, or local policy initiatives typically require that a component of teacher evaluation be based on multiple performance measures. These measures must be combined to produce summative ratings of teacher effectiveness. The process of combining these metrics alone can influence the usefulness of the evaluation system overall, regardless of the accuracy of the measures themselves.

## Overview

Early-reforming states and districts typically have used three common approaches—the numeric approach, the hybrid approach, and the profile approach—to combine these multiple performance measures in their evaluation systems. Yet each of these approaches introduces additional prediction error and, in some cases, bias that was not present in the performance measures originally. This paper compares the performance of these approaches to a statistically optimal approach that cannot be implemented in practice. The authors investigate whether the error and bias introduced by the three common approaches erode the ability of evaluation systems to reliably identify high- and low-performing teachers. Simulated data for the analysis was based on performance measures in the Bill & Melinda Gates Foundation's Measures of Effective Teaching project.

## Key Points

Based on the results of a simulation exercise, the authors conclude the following:

- Accurate measures of teacher quality are critical for improving the educator workforce. Understanding the measurement properties inherent in the three common approaches to performance evaluation will help education leaders more accurately identify high- and low-performing teachers.
- The numeric approach is the overall preferred approach among the three common approaches and is not significantly different from the optimal approach to combining performance measures.
- The hybrid and profile approaches to combining performance measures can add significant enough error to reduce the accuracy of an evaluation system and ultimately undermine that system's ability to provide credible results.

## For More Information

The full paper is available online:

[www.air.org/files/VAMS/Combining\\_Multiple\\_Performance\\_Measures.pdf](http://www.air.org/files/VAMS/Combining_Multiple_Performance_Measures.pdf)

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

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## Education Program

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

[www.air.org](http://www.air.org)