Abstract

Value-added measures of teachers’ contributions to student achievement (“value-added”) hold multiple benefits over observation-based ratings (American Statistical Association, 2014). VAM, in simple terms, offer a statistical summary of the learning gains of all students assigned to a given teacher. However, as a measure of central tendency of student learning gains, VAM do not fully describe the data available on the distribution of these individual-level student learning gains. The variability and shape (variance and skewness) of distributions of student learning gains by teacher reveal important information related to heterogeneity in student learning responses to specific teachers or instructional formats, as well as how teachers improve early in their careers. This study explores the potential for the VAM framework to measure the variability and shape of the distribution of student learning gains by teacher in addition to central tendency and tests for systematic differences in the distribution of student-level learning gains across teachers’ subject area, grade level assignment, years of experience, and quintile of VAM performance. Finding suggest notable differences in the distribution of individual student-level effects between math and English-Language Arts teachers, and further differences in how these distributions change early in teachers’ careers.