

## **SCHOOL REFORM PROPOSALS: THE RESEARCH EVIDENCE**

### **VALUE-ADDED ASSESSMENT OF TEACHERS: THE EMPIRICAL EVIDENCE**

**BY HAGGAI KUPERMINTZ**  
UNIVERSITY OF COLORADO AT BOULDER

#### ***Research Quality***

The Tennessee Value-Added Assessment System (TVAAS) employs a statistical methodology to estimate the aggregated yearly growth in student learning. TVAAS research on teacher effectiveness have been discussed in only three peer-reviewed journal articles, two book chapters, and three unpublished reports, all by TVAAS staff. Only one journal article and two unpublished reports present findings from original empirical studies. The only independent investigations of TVAAS claims and supporting evidence come from two external evaluations of the system. Two unpublished dissertation studies provide additional analyses.

#### ***Research Findings***

**Understanding the TVAAS:** The Tennessee Value-Added Assessment System assumes that changes in test scores from one year to the next accurately reflect student progress in learning. It evaluates teachers by tracking progress and linking it to schools and teachers. Estimates of aggregated gains are used as indicators of teachers' and schools' effectiveness.

**Examining TVAAS Claims:** TVAAS advocates claim that, by analyzing previous test scores alone, the system can control for all other outside influences without measuring them. Claims for TVAAS have undergone varying degrees of scrutiny.

**Claim No. 1:** *Teachers are by far the most important factor determining the outcomes of the learning process, and TVAAS teacher effects provide accurate estimates of teacher effectiveness.* Students who were taught by more effective teachers over a period of several years performed better than those taught by less effective teachers.

**Claim No. 2:** *TVAAS teacher effects measure the independent and unique contribution a particular teacher makes to his or her students' growth, regardless of student socioeconomic or ethnic background.* No source or details support this assertion, made in summaries of

research findings by the University of Tennessee Value-Added Research and Assessment Center. Some data from the center appear to contradict this claim.

**Claim No. 3:** *TVAAS teacher effects are independent of student prior ability; therefore teacher effectiveness does not depend on students' aptitude for learning.* Independent analyses of TVAAS data found correlations between teacher effectiveness and student prior ability, complicating claims attributing student progress solely to the teacher.

**Issues in Methodology and Interpretation:** TVAAS studies do convincingly demonstrate that students of certain teachers show substantially greater or lower gains on average than the students of other certain teachers. The analyses, however, fail to explain such differences conclusively. While gains may be due to teacher effectiveness, other untested hypotheses remain equally plausible. No studies credibly isolate teacher effects from other factors.

**Circular Argument:** Asserting that “differences in teacher effectiveness were found to be the dominant factor affecting student academic gain” is misleading, because teacher effectiveness is *defined* by student academic gain. The TVAAS model’s implication that teachers, not students, are responsible for learning for producing measurable progress in learning outcomes contradicts the widespread emphasis on student accountability.

### ***Remaining Research Questions***

Much more research is needed to adequately judge TVAAS’s strengths and weaknesses.

### ***Recommendations***

- Develop and implement a program evaluation plan to define and monitor value-added assessment program outcomes. Program evaluation oversight should be maintained by the state and developed and implemented by an independent contractor.
- In order to support and provide guidance for the development and implementation of the program evaluation plan, the state should establish an independent technical panel of experts in measurement, statistics, and educational research methodology.
- The TVAAS database should be made available, along with all technical documentation pertaining to the operations of the TVAAS model, to interested researchers.
- National standards and mechanisms should be developed for the approval of statistical procedures and models to be used in high-stakes accountability systems. Such standards should have the force of a professional code. The task of developing them should be led by the American Education Research Association (AERA).

The foregoing is a summary of a chapter in the book *School Reform Proposals: The Research Evidence* (Information Age Publishing, 2002), edited by Alex Molnar. The full chapter can be viewed at:

<http://www.asu.edu/educ/eps/EPRU/documents/EPRU 2002-101/Chapter 11-Kupermintz-Final.pdf>