



Education Commission
of the States

The Progress of Education Reform 2007

Evaluating Teacher Effectiveness

Vol. 8, No. 4, October 2007

What's Inside

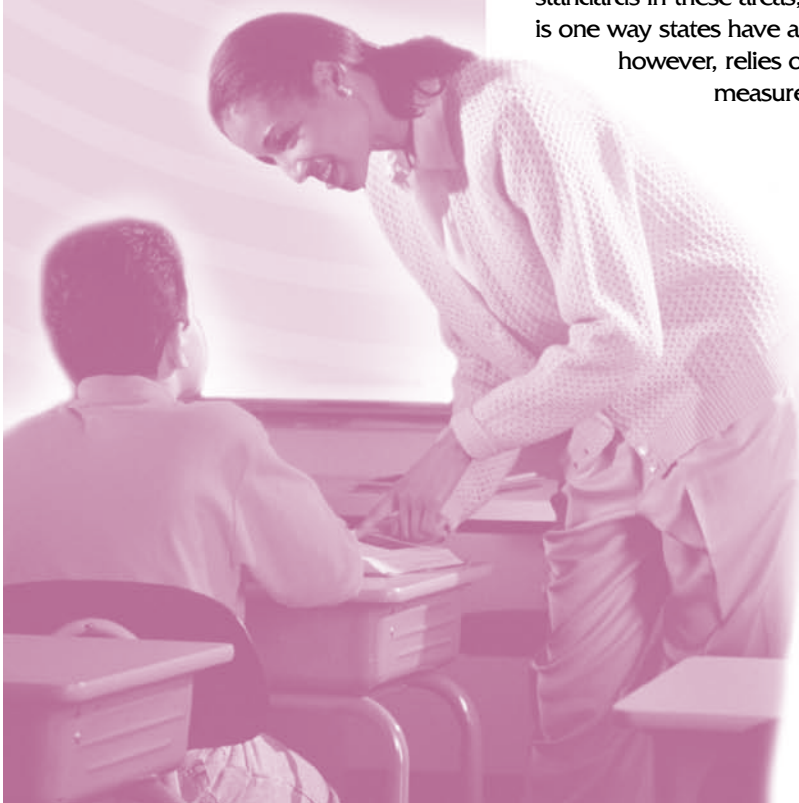
- What is the relationship between student achievement and teacher certification?
- Research on the value of teacher testing
- Research on standards-based teacher evaluation systems

Assessing teacher quality and which teachers are most likely to improve student achievement

It is widely accepted that the quality of a teacher is the most important determinant of student achievement. Attempts to improve student achievement and academic performance, therefore, largely focus on increasing the quality of individuals entering the teaching workforce. In 2001, a minimum standard for what constituted a “highly qualified teacher” was established through the No Child Left Behind Act. According to this legislation, all teachers hired had to meet the minimum standards set forth in the law: hold a bachelor’s degree, have full state certification and demonstrate knowledge of the content they would be teaching.

As demonstrated through these requirements, teacher quality has traditionally been defined through input measures such as degree, courses taken or certification status. Setting standards in these areas, such as establishing passing scores for teacher certification tests, is one way states have attempted to raise the quality of the teaching force. This system, however, relies on the assumption there is a connection between such input measures and the output measure of student performance or achievement.

Increased sophistication of data systems now allows for student achievement to be tracked and, in some states, linked to individual teachers. Further, rather than looking simply at student end-of-year achievement test scores in isolation, current statistical methods allow for analysis of student growth over time. These advances show promise for use in teacher evaluation by attempting to control for non-teacher related factors, such as a student’s level of proficiency upon entering a classroom. These data systems and statistical methods enable researchers to revisit assumptions about the predictive value of teacher input factors as a means of ensuring high quality and effectiveness. This issue of *The Progress of Education Reform* highlights recent research that attempts to explore the relationship between traditionally accepted measures of teacher quality – teacher certification and in-class performance – and teacher effectiveness as assessed through student academic performance. It also includes links to additional resources on teacher quality and teacher evaluation methods.



Other Resources

- Many comprehensive teacher evaluation methods are created as part of diversified compensation systems. ECS has gathered information on **diversified compensation systems** that include a description of the performance measures used and links to the program in a searchable online database. www.ecs.org/html/t_comp.htm.
- For information on **teacher performance evaluation** as used in diversified compensation systems, see the ECS policy brief *Teacher Evaluation in Diversified Teacher Compensation Systems*. www.ecs.org/clearinghouse/74/78/7478.pdf.
- For information on **student performance aspects of teacher evaluation** as used in diversified compensation systems, see the ECS policy brief *Student Performance Assessment in Diversified Teacher Compensation Systems*. www.ecs.org/clearinghouse/74/76/7476.pdf.

cont. on page 3

The Relationship Between Standards-Based Teacher Evaluation Scores and Student Achievement: Replication and Extensions at Three Sites

(Anthony T. Milanowski, Steven M. Kimball and Brad White, Consortium for Policy Research in Education, Working Paper Series, March 2004)
<http://www.wcer.wisc.edu/cpre/papers/Vaughn%20TE%204-02.pdf>

This working paper extends a previous study by incorporating an additional year of evaluation data to analyze the relationship between teacher evaluation scores using standards-based evaluation methods and student performance at three sites: Cincinnati Public Schools in Ohio, Vaughn Next Century Learning Center in Los Angeles and Washoe County School District in Nevada. Standards-based teacher evaluation is one strategy for evaluating teacher performance in a manner not solely based on student academic performance. This type of evaluation uses descriptions of what a teacher should know and be able to do divided into explicit standards and detailed behavior rating scales. The teacher's performance is evaluated against these scales using several methods such as in-class observation, review of portfolios, lesson plans and samples of student work. Student performance was evaluated using value-added methods and relationships between these scores and the teachers' evaluation scores were analyzed.

Results from the first study indicated a substantial relationship between student academic performance and the teacher's evaluation score. The consistency in results between the original study and this larger study indicate that the instruments and methods of analysis used are valid for researching this topic. Other key findings from this study include:

- ◉ Teacher evaluation scores tend to increase in their first three to five years then level off, which is expected as teachers become proficient in their in-class performance.
- ◉ When examining the relationship between teacher experience and student achievement the researchers found that teacher evaluation scores were a better predictor of student performance than teacher experience.

Research into how well standards-based teacher evaluation systems predict student performance is important. A quality evaluation system provides incentives and guidance for teachers to improve their practice by making clear what constitutes excellence in teaching. However, the potential for using standards-based evaluation is limited by whether there is an identified link between the standards and student achievement. While more research should be undertaken, the results reported by these researchers are promising that this link exists.

Many standards-based models of teacher evaluation use the Framework for Teaching, created by Charlotte Danielson. An example of a rating rubric is below:

Element	Level of Performance			
	Unsatisfactory	Basic	Proficient	Distinguished
Knowledge of Content	Teacher makes content errors or does not correct content errors students make	Teacher displays basic content knowledge but cannot articulate connections with other parts of the discipline or with other disciplines	Teacher displays solid content knowledge and makes connections between the content and other parts of the discipline and other disciplines	Teacher displays extensive content knowledge, with evidence of continuing pursuit of such knowledge

From: Danielson, C. *Enhancing Professional Practice: A Framework for Teaching*. Alexandria, VA: Association for Supervision and Curriculum Development. 1996.

What Does Certification Tell Us About Teacher Effectiveness? Evidence from New York City

(Thomas J. Kane, Jonah E. Rockoff and Douglas O. Staiger. National Bureau of Economic Research, Working Paper, April 2006) <http://www.nber.org/papers/w12155.pdf>

In this study, the researchers examined the relationship between student achievement and the type or status of teachers' certification in New York City. Student achievement was assessed using performance on standardized math and reading examinations given in New York City in grades three through eight. Teacher certification status was categorized as certified, uncertified and alternatively certified, including internationally recruited teachers, teaching fellows and Teach for America teachers. New York City Schools offer a unique study environment both because it is the largest and one of most diverse school districts in the country and because it is a major employer of certified, uncertified and alternatively certified teachers with each category accounting for 46%, 34% and 20%, respectively, of the 50,000 teachers hired during the six years covered by the study.

The relative impact of teachers on student achievement was estimated using test scores and controlling for students' prior-year test scores along with student, classroom, grade and school related factors, and controlling for teachers' experience level. Most importantly the researchers not only compared student achievement for teachers based on certification status grouping, but also analyzed variation in student achievement for all teachers within each certification type.

Key findings include:

- ◉ Teacher effectiveness, as assessed through student test performance, improves during the first few years of experience for both math and reading.
- ◉ No differences were found between uncertified and certified teachers in their impact on student math achievement.
- ◉ No differences were found between teaching fellows (a large alternative certification program in New York) and certified teachers in their impact on student math achievement.
- ◉ Students taught by Teach for America teachers scored slightly higher in math than students of regularly certified teachers and students of regularly certified teachers scored slightly higher in math than students of internationally recruited teachers.
- ◉ Students assigned to teaching fellows scored slightly lower in reading than students assigned to certified teachers.
- ◉ Although there were differences in test scores of students taught by different categories of teachers, they were small compared to the differences within each teacher category. In fact, the difference in value-added for the top and bottom quartiles of elementary math teachers was almost 10 times the magnitude of the difference between any category.

Finally, it is important to note the differences in students assigned to different categories of teachers. In the data used for this study, test scores of students assigned to Teach for America teachers, internationally recruited teachers and uncertified teachers were substantially below scores for students assigned to regularly certified teachers. The researchers accounted for this assignment difference by controlling for students' prior-year test scores.

These findings suggest the traditional use of academic background or certification status as an indication of future effectiveness – and basing hiring decisions on that assumption – may not be the best way to bring the most effective teachers into the classroom. According to the researchers, classroom performance during the first two years of teaching – rather than certification status – appears to be a more reliable indication of future effectiveness.

Other Resources (cont.)

- The U.S. Department of Education is investigating the use of growth models for use in **adequate yearly progress (AYP) assessment**. For more information on the states they have approved as pilots go to www.ed.gov/admins/lead/account/growthmodel/index.html.
- ECS has collected information on **Highly Qualified Teacher (HQT) definitions; High, Objective, Uniform State Standards of Evaluation (HOUSE)** options; Title I paraprofessional requirements and much more for all states, territories and the District of Columbia in an online searchable database: <http://www.ecs.org/html/hq.htm>.
- **Using Student Progress to Evaluate Teachers: A Primer on Value-Added Models**. Braun, Henry I. Educational Testing Service. Princeton, New Jersey. 2005. <http://www.ets.org/Media/Research/pdf/PICVAM.pdf>
- **Evaluating Value-Added Models for Teacher Accountability**. McCaffrey, Daniel F., J.R. Lockwood, Daniel M. Koretz, and Laura S. Hamilton. Rand Corporation. Santa Monica, California. 2003. http://www.rand.org/pubs/monographs/2004/RAND_MG158.pdf
- **Teacher Quality: Understanding the Effectiveness of Teacher Attributes**. Rice, Jennifer King. Washington DC: Economic Policy Institute. 2003.
- **Identifying Effective Teachers Using Performance on the Job**. Gordon, Robert, Thomas J Kane, and Douglas O. Staiger. The Brookings Institute. 2006. http://www3.brookings.edu/views/papers/200604hamilton_1.pdf

Everyone's Doing It, But What Does Teacher Testing Tell Us About Teaching Effectiveness?

(Dan Goldhaber, National Center for Analysis of Longitudinal Data in Education Research, April 2007)

http://www.caldercenter.org/PDF/1001072_everyones_doing.PDF

This working paper examines the relationship between teacher testing and teacher effectiveness, as measured by a teacher's value-added contribution to student learning gains. Teacher licensure or certification systems are a primary screen used by states in an attempt to guarantee a minimal level of quality. The vast majority of states include a requirement that a teacher candidate pass a state-mandated test prior to becoming licensed or certified. Each state determines the test cutoff score, below which teachers are unable to obtain licensure. The system is based on the assumption that a teacher's ability to achieve the minimum score set by the state on the state-mandated test is connected to his or her future effectiveness as a teacher. The certification system is used to raise the quality of the teaching force by excluding certain individuals from entering into it.

Student achievement for this research is assessed using a unique dataset from North Carolina that links teachers to individual students in grades 3 through 6 over a ten-year period (1994/95 – 2003/04). These data include detailed student background information and performance on end-of-grade reading and math tests explicitly designed to measure student growth. Because North Carolina changed the cutoff score in 2000 – and because teachers may teach in the state with a temporary license for one year without having passed the testing requirement – data were available for teachers who had not obtained the current required score for the teacher test allowing for comparisons between teachers who had achieved passing scores and teachers who had not achieved passing scores.

Goldhaber found a positive relationship between some teacher licensure tests and student achievement, particularly in mathematics. However, the findings did not indicate a strong relationship. Given these findings, and evidence that a teacher's effectiveness increases with experience, he points out the average teacher who fails to achieve a cutoff score may be able to produce the same level of student achievement in his or her second or third year as an individual who did achieve the cutoff score. Therefore, states may face significant tradeoffs when using these tests as a screening device because many individuals who will not be effective teachers may score well on the tests, and many who would be effective teachers are ineligible due to poor test performance. This does not mean the tests are of no value; rather it is a value judgment as to whether the tradeoffs are worthwhile for the state.

Subscribe to five issues of *The Progress of Education Reform* for \$30, plus postage and handling.

Please order from the ECS Distribution Center, 700 Broadway, Suite 1200, Denver, CO 80203-3460; 303.299.3692; fax: 303.296.8332; or ecs@ecs.org. ECS accepts prepaid orders, Visa, MasterCard and American Express. All sales are final. Pricing subject to change.

© 2007 by the Education Commission of the States (ECS). All rights reserved.

ECS encourages its readers to share our information with others. To reprint or excerpt some of our material, please contact the ECS Communications Department at 303.299.3669 or e-mail ecs@ecs.org.

The Education Commission of the States is a nationwide nonprofit organization formed in 1965 to help governors, state legislators, state education officials and others develop policies to improve the quality of education.

Postage and handling charges apply if your order totals:

Up to \$10.00 – \$3.50
\$10.01-25.00 – \$5.00
\$25.01-50.00 – \$6.50
\$50.01-75.00 – \$9.25
\$75.01-100.00 – \$10.75
Over \$100.01 – \$12.00

Single copies of this issue of *The Progress of Education Reform 2007* are available from the Education Commission of the States for \$7 plus postage and handling. Ask for publication No. SI-07-04.

Discounts are available for bulk orders of this publication. They are:

10-49 copies – 10% discount
50-99 copies – 20% discount
100+ copies – 30% discount.

***Helping State Leaders
Shape Education Policy***

This issue of *The Progress of Education Reform* was made possible by a grant from the GE Foundation. It was written by Tricia Coulter, director, ECS Teaching Quality and Leadership Institute. If you have any questions regarding this or other teaching quality issues, please contact Tricia at tcoulter@ecs.org or 303.299.3657.



GE Foundation



Education Commission
of the States