

POLICY BRIEF

May 2010

Recognizing and Developing Effective Teaching: What Policy Makers Should Know and Do

Linda Darling-Hammond
Charles E. Ducommun Professor of Education
Stanford University

Executive Summary

With the demands for sophisticated teaching growing each year, there is a growing call to develop means for recognizing and supporting teacher effectiveness. Policy makers have undertaken a wide range of reforms to improve schools, ranging from new standards and tests to redesigned schools, new curricula, and new instructional strategies. Every aspect of school reform—the creation of more challenging curricula, the use of ambitious assessments, the implementation of decentralized management, the invention of new model schools and programs—depends on highly skilled teachers. Teachers need even more sophisticated abilities to teach the growing number of public school students who have fewer educational resources at home, those who are new English language learners, and those who have distinctive learning needs. This requires the means and collaboratively developed methods to evaluate, develop, and recognize teacher effectiveness throughout the teaching career, for the purposes of preparation, licensing, hiring, and granting tenure; for providing needed professional development; and for identifying expert teachers who can become mentors, coaches, and teacher leaders. This brief outlines the issues associated with various approaches to ascertaining teacher effectiveness and suggests a framework for policy systems that could both identify and *develop* more effective teachers and teaching.

Recommendations

Create a Steady Supply of Effective New Teachers

- Develop systems to recruit, prepare, rigorously license, and retain effective teachers.
- Leverage more effective teacher education.

Use Teacher Performance Assessments to Measure and Develop Effectiveness

- License beginning teachers based on teaching performance.
- Advance National Board Certification.

About This Series

This policy brief is part of a series commissioned by the Partnership for Teacher Quality to help inform and improve teacher quality policies at the state, local, and national level. The briefs address issues related to teacher licensure, teacher effectiveness, clinical preparation, and data systems, and each includes an overview of the research, promising practices, and recommendations related to their specific topic.

About the Partnership for Teacher Quality

In September 2008, the National Education Association (NEA) and the American Association of Colleges for Teacher Education (AACTE) formed the Partnership for Teacher Quality to promote awareness, understanding, and collaboration about teacher quality issues at the state level. Shared commitment to strong teacher preparation and licensure standards is the foundation for the policy proposals and meetings that have occurred between NEA affiliates and AACTE state chapters. These alliances are crucial for both organizations in the era of licensure deregulation and the undermining of teacher quality. This policy paper and others in the series are a product of the partnership.

Develop Integrated Measures of Teaching Practice and Student Learning to Inform Judgments About Teacher Effectiveness

- Develop thoughtful and rigorous tools for on-the-job evaluation of teachers to guide employment decisions, such as tenure and renewal decisions, as well as goal-setting and determination of professional development needs.
- Review multiple models that incorporate evidence of student learning in annual evaluations of teachers.

Introduction

In recent years, policy makers have undertaken a wide range of reforms to improve schools, ranging from new standards and tests to redesigned schools, new curricula, and new instructional strategies. One important lesson from these efforts has been the recurrent finding that teachers are the fulcrum that determines whether any school initiative tips toward success or failure. Every aspect of school reform—the creation of more challenging curricula, the use of ambitious assessments, the implementation of decentralized management, the invention of new model schools and programs—depends on highly skilled teachers.

Reformers are learning that in the final analysis, there are no policies that can improve schools if the people in them are not equipped with the knowledge and skills they need.

Teachers need even more sophisticated abilities to teach the growing number of public school students who have fewer educational resources at home, those who are new English language learners, and those who have distinctive learning needs. Clearly, meeting the expectation that all students will learn to high standards will require a transformation in the ways in which our education system attracts, prepares, supports, and develops expert teachers who can teach in more transformative ways. This requires collaboratively developed methods to evaluate, develop, and recognize teacher effectiveness throughout the teaching career, for the purposes of preparation, licensing, hiring, and granting tenure; for providing needed professional development; and for identifying expert teachers who can become mentors, coaches, and teacher leaders.

This brief outlines the issues associated with various approaches to ascertaining teacher effectiveness and suggests a framework for policy systems that could both identify and develop more effective teachers and teaching.

Effective Teachers and Teaching

To build a useful policy system that encourages excellent instruction and strong student learning, it is important to consider both *teacher* quality—so that the system recruits the right people and prepares them effectively—and *teaching* quality—so that the most effective practices are encouraged and the most supportive conditions are provided.

Effective Teachers

Teacher quality might be thought of as the bundle of personal traits, skills, and understandings an individual brings to teaching, including dispositions to behave in certain ways. The traits desired of a teacher may vary depending on conceptions of and goals for education; thus, it might be more productive to think of teacher *qualities* that seem associated with what teachers are expected to be and do.

Research has found that more effective teachers generally possess the following qualities:

- Strong general intelligence and verbal ability that help them organize and explain ideas, as well as observe and think diagnostically
- Strong content knowledge in the areas they teach
- Knowledge of how to teach others in that area (content pedagogy), in particular how to develop higher-order thinking skills
- An understanding of learners and their learning and development—including how to assess and scaffold learning, how to support students who have learning differences or difficulties, and how to support the learning of language and content for those who are not already proficient in the language of instruction
- Adaptive expertise that allows them to make judgments about what is likely to work in a given context in response to students' needs.¹

Most would also include in this list a willingness to support learning for all students, to continue to learn and improve, and to collaborate with other professionals and parents in the service of individual students and the school as a whole.

All of these qualities are embodied in the standards adopted by the National Board for Professional Teaching Standards and, at the beginning teacher level, by the states involved in the Interstate New Teacher Assessment and Support Consortium (INTASC). As these qualities have been built into licensing and preparation requirements over the last decade, they have provided a means to develop a stronger foundation for effective teaching, making teacher qualifications a stronger predictor of teacher effectiveness.

Teacher qualifications and effectiveness. The importance of teacher qualifications is reflected in a recent large-scale study in North Carolina, which found that teachers

were more effective if they had completed *preparation prior to entry* (rather than entering without training through the state’s “lateral entry” route), were *licensed* (or as it is commonly called, *certified*) in the specific field taught, had higher scores on the teacher *licensing test*, had more than 2 years of *teaching experience*, had graduated from a *competitive college*, and had successfully become *National Board certified*.²

While each of these variables was significant in its own right, the combined influence on student achievement of a teacher with most of these qualifications, compared to one having few of them, was larger than the effects of race and parent education combined.

These very large effects suggest the importance of focusing on what teachers have had the opportunity to learn through their general education, subject matter training, and preparation for teaching, as well as their experience and their professional learning opportunities such as National Board Certification.

A similar study of teachers in New York City also found that teachers’ *certification status*, *pathway into teaching*, *teaching experience*, graduation from a *competitive college*, and math *SAT scores* were significant predictors of teacher effectiveness in elementary and middle grades mathematics.³ Fully certified teachers who graduated from university preservice programs and who had attended a competitive college were the most effective as beginners. Additional experience also had strong positive effects. In combination, improvements in these qualifications reduced the gap in achievement between the schools in deciles serving the poorest and most affluent students by 25%. Equalizing access to well-prepared, experienced, and accomplished teachers could make a major difference in closing the academic achievement gap.

Many studies have found that the mix of qualifications reflected in *state certification*—usually passage of basic skills and subject matter tests, specific content preparation, as well as course work and clinical work focused on teaching—makes a difference for teacher effectiveness. For example, a national study of 4,400 early elementary children found that young children with certified teachers for most of their early school experience gained significantly more in reading achievement than students who had alternatively certified or uncertified teachers. Teacher certification was particularly influential in predicting growth for African American students; having fully certified teachers helped to narrow the academic gap between African American and European

American students across early elementary grades.⁴

Large-scale studies of elementary teachers in Houston, Texas, and in New York City also found that certified beginning teachers and those from university preservice programs produced stronger student achievement gains in reading and mathematics than beginners who were uncertified or alternatively certified, including those from the Teach for America program. Although alternative-route teachers who stayed in teaching caught up in effectiveness after they completed their preparation, most had left teaching by their fourth year, after having been assigned primarily to teach African American and Latino students, thus exacerbating the achievement gap.⁵

Preservice preparation and certification also matter in special education, where researchers have found “statistically significant and quantitatively substantial effects on the ability of educators to promote gains in achievement for students with disabilities” in both mainstreamed regular education settings and in special education courses.⁶ In special education as in other fields, uncertified teachers are less likely to stay in their positions, leaving at twice the rates of prepared beginners.⁷ Given the additional effects of experience on effectiveness, this also reduces the overall effectiveness of the teaching force for special education students.

Equalizing access to well-prepared, experienced, and accomplished teachers could make a major difference in closing the academic achievement gap.

At the secondary level, teachers with standard certification and more pedagogical as well as content course work in mathematics and science have been found to produce larger student achievement gains.⁸ One study documenting these effects also found that newly hired beginning teachers from states with more rigorous licensure examinations had greater positive effects on student achievement than beginners from other states, suggesting the value of recent reforms to strengthen teacher licensure.⁹

Effective Teaching

While strengthening preparation and licensing expectations for teachers can help educators enter the classroom with greater knowledge and skills, it is only one part of creating more effective teaching. *Teaching quality* refers to strong instruction that enables a wide range of students to learn. Such instruction meets the demands of the discipline, the goals of instruction, and the needs of students in a particular context.

Teaching quality is in part a function of teacher quality—teachers’ knowledge, skills, and dispositions—but it

is also strongly influenced by the context of instruction, including teaching conditions and “fit.” A high-quality teacher may not be able to offer high-quality instruction in a context where there is a mismatch between the demands of the situation and his or her knowledge and skills. For example, an able teacher asked to teach subject matter for which he or she is not prepared may teach poorly; a teacher who is prepared and effective at the high school level may be unable to teach young children; and a teacher who is able to teach high-ability students or affluent students well may be unable to teach students who struggle to learn or who do not have the resources at home that support their learning. Thus, a high-quality teacher in one circumstance may not be a high-quality teacher in another.

Furthermore, if teachers lack useful curriculum materials, necessary supplies and equipment, reasonable class sizes, and the opportunity to plan with other teachers to create a coherent curriculum, the quality of teaching that students experience may be suboptimal, even if the quality of teachers is high. Substantial evidence points to the importance of class sizes, specific curriculum supports, the availability of instructional supports such as tutoring, and the use of time as strong predictors of student achievement, along with factors like student attendance.¹⁰

Many conditions of teaching depend on the systems in which teachers work. In addition to the material resources for teaching, which can differ dramatically across schools and districts, these include access to skilled colleagues and other resources for learning. Research on professional development frequently underscores the importance of teachers working together to improve their collective practice,¹¹ and over 90% of the nation’s teachers report that their colleagues contribute to their teaching effectiveness.¹²

In one recent study, economists were able to quantify the student learning gains generated by the collective expertise of teams of teachers. They found that most value-added gains are attributable to teachers who are more experienced and better-qualified, and who stay together as teams within their schools. The researchers found that peer learning among small groups of teachers seems to be the most powerful predictor of improved student achievement over time.¹³ Another recent study found that students achieve more in mathematics and reading when they attend schools charac-

terized by higher levels of teacher collaboration for school improvement.¹⁴ These are all conditions that are constructed by school leaders and can be aided or undermined by policies that encourage or discourage useful learning supports, shared planning time, and coaching or mentoring opportunities. As summarized by Barnett Berry:

Successful efforts to raise teaching quality and student achievement, especially in high-needs schools, require an intensive focus on working conditions: making sure teachers teach in the fields in which they are prepared; have adequate time to work with colleagues on matters of instruction; have ready access to information, materials, and technology; and receive helpful feedback about their teaching.¹⁵

While individual teacher qualifications heighten the probability of effective teaching, they cannot guarantee it.

Initiatives to develop teaching quality must consider not only how to identify, reward, and use teachers’ skills and abilities, but also how to develop teaching contexts that enable good practice on the part of teachers. Hiring knowledgeable teachers but asking them to teach

out of field, without high-quality curriculum or materials, and in isolation from their colleagues diminishes teaching quality and student learning. Thus, the policies that construct the teaching context must be addressed along with the qualities and roles of individual teachers.

A high-quality teacher may not be able to offer high-quality instruction in a context where there is a mismatch between the demands of the situation and his or her knowledge and skills.

Recommendations for Identifying and Developing Effective Teaching

There is growing interest in moving beyond traditional measures of teacher qualifications to evaluate teachers’ actual performance and effectiveness as the basis for making decisions about hiring, tenure, licensing, compensation, and selection for leadership roles. The recent report of the No Child Left Behind Commission called for moving beyond the designation of teachers as “highly qualified” to an assessment of whether teachers are “highly effective,” based in part on their students’ gains on tests. Other measures of effectiveness have included National Board Certification and other performance-based evaluations, indicators of knowledge and skills, and various measures of student learning.

As these options are evaluated, it is equally important to develop measures of teacher and teaching effectiveness that

support improvement in individual and collective teaching expertise as well as accurate pictures of teachers' abilities. Ultimately, the goal of measuring teacher effectiveness should be to improve teachers' capacities and their opportunities to enhance the effectiveness of the educational enterprise. Furthermore, focusing only on evaluating poor teachers out of the profession is unlikely to produce a highly effective teaching force if there are not strong efforts to develop a steady supply of highly effective teachers entering and staying in the profession, and becoming more effective over the course of their careers. Hence, these recommendations focus on such strategies.

Create a Steady Supply of Effective New Teachers

As noted earlier, there is consistent evidence that specific teacher qualifications are associated with greater teacher effectiveness as measured by student achievement gains. These include strong academic preparation, teacher preparation prior to entry, certification within the field taught (especially from states that have increased their certification standards), and teaching experience (especially at the threshold above 3 years).

Develop systems to recruit, prepare, rigorously license, and retain effective teachers. Based on these findings, smart policy systems would take the following steps:

- Provide incentives to recruit high-ability students into teaching
- Ensure that they complete high-quality preparation before entry
- Support rigorous licensing standards
- Invest in supports for retaining beginners, including quality preparation and mentoring

Such incentives could take the form of service scholarships and forgivable loans, such as the North Carolina Teaching Fellows program that underwrites the costs of college and teacher preparation for high-ability students who commit to teaching for 4 years; incentives and supports for strong preparation and mentoring programs that are engaging and effective in preparing teachers; and investments in rigorous certification standards that are closely related to the knowledge and skills needed to teach effectively.

Preservice teacher preparation and mentoring are actually related to teacher effectiveness in two ways: First, they are important in their own right, as means for transmitting important knowledge and skills for teaching, and second,

they enable teachers to be sufficiently successful that they are more likely to stay in the profession and become more effective with experience.

Retaining teachers is a far greater problem in the United States than recruiting new ones—and also is a key to solving teacher “shortages” and improving teacher effectiveness. The 30% of new teachers who leave in the first few years (50% in some urban areas) create a revolving door that destabilizes schools, especially in high-need communities, reducing their overall effectiveness and costing the nation more than \$2 billion annually.¹⁶

Research finds that teachers leave the profession much faster if they have less preparation before they enter and less mentoring support when they arrive. For example, teachers who have not received student teaching, and those who lacked course work in child development and learning, leave at twice the rates of those with more complete preparation.¹⁷ Among recent college graduates who enter teaching with full preparation, only 14% leave within 5 years, whereas 49% of uncertified entrants have left within that period of time.¹⁸

Providing expert mentors to coach beginners also reduces beginning teacher attrition, with rates of leaving reduced from more than 30% of beginning teachers to as low as 5% in some districts that have introduced high-quality programs. A number of studies have found that well-designed mentoring programs improve retention rates for new teachers along with their attitudes, feelings of efficacy, and range of instructional strategies.¹⁹ Federal and state incentives should leverage local efforts to create strong mentoring in every school, reducing attrition and increasing competence.

Leverage more effective teacher education. There are, of course, substantial differences in the relative effectiveness of teacher education programs. Consequently, policies to develop stronger teacher effectiveness should leverage programs to adopt the features of the most successful programs and to continually improve.

A study identifying teacher education programs whose graduates produced the strongest gains in student achievement in elementary reading and mathematics in New York City found that the most effective programs

- Had well-supervised student teaching experiences that were also well-matched to the subjects, grade levels, and students they would later teach
- Had more course work in reading and mathematics content and teaching methods
- Focused their courses on helping candidates acquire specific practices and tools that

The goal of measuring teacher effectiveness should be to improve teachers' capacities and their opportunities to enhance the effectiveness of the educational enterprise.

they then applied in their student teaching or practicum experiences

- Enabled candidates to study the specific curriculum materials they would teach
- Required a capstone project that was usually a performance assessment or portfolio of their work done in classrooms with students²⁰

These reforms depend centrally on creating new models of clinical practice that reflect state-of-the-art practice and are tightly integrated with course work. Many successful schools of education have done this by creating professional development school relationships with local schools, working with these sites to develop state-of-the-art practice and to train novices in the classrooms of expert teachers. Highly developed models have been found to increase teacher effectiveness and retention, to foster instructional improvement, and to raise student achievement.²¹ Just as the federal government has played a major role in underwriting teaching hospitals that strengthen medical training, so a strategic initiative could take this successful innovation from the margins to the mainstream.

Teacher residencies, such as those designed in Chicago, Boston, and Denver, use a similar model. Midcareer recruits are placed as apprentices in the classrooms of highly expert mentor teachers for a year while they complete tightly linked education course work in partnership with a local university. They receive a stipend during this year and a master's degree and credential at the end of the year. They continue to receive mentoring in the next 2 years and pledge to spend at least 3 to 4 years in city schools. The model has already shown retention rates of over 90% in the first 5 years of teaching and strong performance by graduates. Such programs can create a pipeline of committed, effective teachers who stay in teaching in high-need schools, raising their effectiveness as well.

Policies that could support the creation of these more effective models of preparation would include challenge grants, like the federal Teacher Quality Partnership grants, to launch and expand such programs, especially in high-need communities. In addition, federal and state policies should create expectations for states to evaluate and expand effective preparation models while eliminating those that are poor performing. States should evaluate *all* their programs—both traditional and alternative—in terms of teacher retention, evidence of later effectiveness in the classroom on value-added measures of student learning, and the performance

of their graduates on valid teacher performance assessments. States should incorporate these data into program approval and accreditation decisions. Also, they should study the features of the most effective programs and incorporate these features into program accreditation guidelines and challenge grants designed to produce stronger program models.

Use Teacher Performance Assessments to Measure and Develop Effectiveness

License beginning teachers based on teaching performance. To leverage stronger preparation and teacher quality, it is important to be able to make licensing decisions based on greater evidence of teacher competence than merely completing a set of courses or surviving a certain length of time in the classroom. Since the 1980s, the desire for greater confidence in licensing decisions has led to the introduction of teacher licensing tests in nearly all states. However, these tests—generally multiple-choice tests of basic skills

and subject matter—are not strongly predictive of teachers' abilities to effectively teach children. Furthermore, in many cases these tests evaluate teachers' knowledge *before* they enter or complete teacher education—and hence are an inadequate tool for teacher education

Teacher residency programs can create a pipeline of committed, effective teachers who stay in teaching in high-need schools, raising their effectiveness as well.

accountability.

Moving the field forward, several states, including California, Connecticut, North Carolina, and Oregon, have incorporated performance assessments in the licensing process. These measures of performance—which can provide data to inform the accreditation process—have been found to be strong levers for improving preparation and mentoring, as well as for determining teachers' competence. The Performance Assessment for California Teachers, for example, requires teachers to document their plans and teaching for a unit of instruction, adapt them for special education students and English language learners, videotape and critique lessons, and collect and evaluate evidence of student learning. Like the National Board assessments, beginning teachers' ratings on these kinds of assessments have been found to predict their students' value-added achievement on state tests.²²

Currently, 20 states have joined together under the auspices of AACTE and the Council of Chief State School Officers to create a common version of an initial licensing assessment, based on the work done in these states, that could be used nationwide to make preparation and licens-

ing performance-based and predictive of teacher effectiveness in supporting student learning. A more advanced version of the assessment could also be used at the point of the professional license (after the 3-year probationary period) and used to guide the mentoring process during the induction period.

In states that have already used them, performance assessments of beginning teachers have been found not only to measure features of teaching associated with effectiveness, but actually to help develop effectiveness at the same time—both for the participants and for programs that prepare them.

University and school faculty score these assessments using standardized rubrics in moderated sessions following training, with an audit procedure to calibrate standards and ensure reliability. Programs receive detailed, aggregated data on all of their candidates by program area and dimensions of teaching, and then use the data to improve their curriculum and program designs. Using these aggregated data for accreditation will ultimately provide a solid basis for deciding which programs should be encouraged and expanded and which should be closed if they are unable to improve candidate performance.

Federal support for the development of nationally available performance assessments for Tier 1 (initial) and Tier 2 (professional) licensing would not only provide a useful tool for accountability and improvement, but also facilitate teacher mobility across states by creating a portable license. High scorers on this performance assessment could be granted a national license that would allow them mobility across states, which would facilitate states' ability to attract effective teachers to high-need schools. With the addition of incentives for National Board Certification, these assessments would provide a continuum of measures that both identify and help stimulate increasing effectiveness across the career.

Advance National Board Certification. A standards-based approach to assessing teachers was initially developed through the work of the National Board for Professional Teaching Standards, which developed standards for accomplished teaching in more than 30 teaching areas defined by subject matter and developmental level of students. Teachers assemble evidence of their practice that is scored by trained raters who are expert in the same teaching field, using rubrics that define critical dimensions of teaching. Designed to identify experienced accomplished teachers, a number of

states and districts use National Board Certification as the basis for salary bonuses and other forms of teacher recognition, such as selection as a mentor or lead teacher.

A number of studies have found that the National Board Certification assessment process identifies teachers who are more effective in raising student achievement than others who have not achieved certification.²³ Equally important, many studies have

found that teachers' participation in the National Board process supports their professional learning and stimulates changes in their practice. Teachers note that the process of analyzing their own and their students' work in light of standards enhances their abilities to assess student learning and to evaluate the effects of their own actions, while causing them to adopt new practices that are called for in the standards and assessments.²⁴ Teachers report significant improvements in their performance in each area assessed—planning, designing, and delivering instruction; managing the classroom; diagnosing and evaluating student learning; using subject matter knowledge; and participating in a learning community—and observational studies have documented that these changes do indeed occur.²⁵

Policies that encourage teacher participation in National Board Certification can help identify and help build effectiveness, both at the individual and school level. For example, the turnaround strategy at once-failing and now-successful Mitchell Elementary School in Phoenix aimed at growing teacher expertise through an intensive commitment to the National Board Certification process. In this low-income Latino community, where most students are English language learners, more than 60% of the teachers—most of whom are from the community and reflect their student population—are either National Board Certified or in the process of earning certification. Mitchell teachers claim the National Board process transformed the school, as they have worked collectively to better understand their teaching as it directly impacts student achievement, focusing in on teaching students with special needs, among other critical areas. Not only has the school's achievement dramatically improved, teacher turnover has decreased. As the district's associate superintendent Suzanne Zentner noted, "We believe in the National Board Certification process as an approach to ... closing the achievement gap."²⁶

To further strengthen the connection between teachers' performance on these assessments and their classroom effectiveness, the National Board has recently appointed a

Performance assessments of beginning teachers have been found not only to measure effectiveness, but actually to help develop effectiveness.

committee to recommend additional ways to integrate student learning evidence into the assessment process. When assessments both predict teacher effectiveness and support individual and institutional learning, they can help to create an engine for stimulating greater teacher effectiveness in the system as a whole.

Develop Integrated Measures of Teaching Practice and Student Learning to Inform Judgments About Teacher Effectiveness

Once a steady supply of well-prepared teachers is established, districts still need thoughtful and rigorous on-the-job evaluation of teachers to guide employment decisions such as tenure and renewal decisions, as well as goal-setting and determination of professional development needs. Interest in including evidence of student learning in annual evaluations of teachers has been growing. After all, if student learning is the primary goal of teaching, it appears straightforward that it ought to be taken into account in determining a teachers' competence. A prominent proposal is to use *value-added student achievement test scores* from state or district standardized tests as a key measure of teachers' effectiveness.

The value-added concept is important, as it reflects a desire to acknowledge teachers' contributions to students' progress, taking into account where students begin. Furthermore, as we have seen, value-added methods are proving valuable for research on the effectiveness of specific groups of teachers (for example, those who are National Board Certified or who have had particular preparation or professional development experiences) and on the outcomes of various curriculum and teaching interventions.

At the same time, researchers have offered many cautions about the problems of basing *individual teacher evaluations* on annual student test scores. Some issues are technical and may ultimately be addressed by changes in testing systems. For example, "vertically scaled," curriculum-specific tests that would allow gain score analyses are not typically available in most states and teaching areas. Furthermore, the narrowness of current tests raises concerns about teaching to tests at the expense of other kinds of learning. And indeed, studies have found that teachers' measured effectiveness differs depending on the tests that are used.²⁷

Other concerns are more fundamental to the realities of

teaching and schooling. There are difficulties in attributing student gains to specific teachers, challenges of disentangling teacher effects from those of school and home conditions, as well as student factors. Among these influences on learning are multiple teachers, parents, tutors and out-of-school learning supports, specific curricula, and the availability of useful learning materials as well as school resources such as time, class sizes, and instructional specialists.²⁸

Because of the range of influences on student learning, many studies have found that ratings of teacher effectiveness are highly unstable. One study of five districts, for example, found that among top-ranked teachers in one year, only 25% to 35% were similarly ranked a year later, while a comparable proportion had moved to the bottom rankings. A similar share of teachers moved from the bottom to the top rankings over the course of a year.²⁹

Research has found that test score gains associated with teachers are affected by differences in the students who are assigned to them, even if those differences are controlled statistically. The same teacher appears more effective when he is teaching more advantaged students than when he is teaching students who experience educational challenges of various kinds: those who are further behind, who are homeless or hungry, who have severe problems at home, and whose scores on traditional tests are problematic to interpret (e.g., those who have special education needs or who are English language learners).³⁰ On spring-to-spring measures of achievement such as those offered by most state tests, the summer learning loss that affects the scores of lower-income students also reduces the measured learning gains of the teachers who teach them. These issues raise concerns about both mismeasures of teachers' effectiveness and disincentives for them to want to teach the students who have the greatest needs. Such disincentives could inadvertently reinforce current practices in which inexperienced teachers are disproportionately assigned to the neediest students or schools push out high-need students.

Thus, to understand how teachers influence student learning, more data about teachers' practices and context are needed. Student learning evidence needs to be multifaceted and accompanied by an analysis of the teachers' students and teaching context, integrated into an evaluation of the teachers' practices that can both provide evidence about effectiveness and can focus attention on ways

When assessments both predict teacher effectiveness and support learning, they can help to create an engine for stimulating greater teacher effectiveness in the system as a whole.

to improve effectiveness.

Evidence About Teaching Practice. Great progress has been made over the last two decades in developing standards-based evaluations of teaching practice, and research has found that the use of such evaluations by some districts has not only provided more useful evidence about teaching practice, but has also been associated with student achievement gains for teachers and has helped teachers improve their practice and effectiveness.³¹ Like the teacher performance assessments described above, these systems for observing teachers' classroom practice are based on professional teaching standards grounded in research on teaching and learning. They use systematic observation protocols with well-developed, research-based rubrics to examine teaching along a number of dimensions including observations of teaching along with teacher interviews and artifacts such as lesson plans, assignments, and samples of student work.

The Teacher Advancement Program (TAP) offers one well-developed example of a highly structured teacher evaluation system that was developed based on the standards of the National Board and INTASC and the assessment rubrics developed in Connecticut and Rochester (NY), among others.³² In the TAP system of "instructionally focused accountability," each teacher is evaluated four to six times a year by master/mentor teachers or principals who are trained and certified evaluators using a system that examines designing and planning instruction, the learning environment, classroom instruction, and teacher responsibilities. The indicators of good teaching are practices that have been found to be associated with desired student outcomes. Like other well-developed career ladder systems, TAP provides ongoing professional development, mentoring, and classroom support to help teachers meet these standards. Teachers in TAP schools report that this system, along with the intensive professional development offered, is substantially responsible for improvements in their practice and the gains in student achievement that have occurred in many TAP schools.³³

The set of studies on standards-based teacher evaluation suggest that the more teachers' classroom activities and behaviors are enabled to reflect professional standards of practice, the more effective they are in supporting student learning—a finding that would appear to suggest the desirability of focusing on such professional standards in the preparation, professional development, and evaluation of teachers.

Evidence About Student Learning. Along with evaluations of performance, teachers can assemble a portfolio of evidence that includes measures of their practice and of student learning, as part of the overall judgment of effectiveness. In addition to analysis of standardized tests, where appropriate, such evidence can be drawn from classroom assessments and documentation, including pre- and posttest measures of student learning in specific courses or curriculum areas, evidence of student accomplishments in relation to teaching activities. The evidence can be used to demonstrate and explain the progress of students on a wide range of learning outcomes in ways that take students' starting points and characteristics into account.

In some schools, teachers use their own fall and spring classroom assessments (or pre- and postunit assessments) as a way of gauging student progress. These measures can also be tailored for the learning goals of specific students (for example, students with special needs or English language learners.) Measures of student learning in specific subject areas may be scored writing or reading samples, mathematics assessments, assessments of science or history knowledge, or even musical performances. These curriculum-specific measures of student learning can help capture the effects of a particular teacher's instruction and be available for most or all students. A teacher might also document the Westinghouse science competition awards she helped students win, or specific breakthroughs achieved by her students with special needs, with evidence of her role in supporting these accomplishments.

In addition to observations of classroom practice and evidence of tested learning gains, effectiveness can be documented by evaluating teaching practices that are associated with desired student outcomes and the achievement of school goals and performance. For example, a teacher might document how she increased student attendance or homework completion through regular parent conferences and calls home and show evidence of changes in these student outcomes, as well as other outcomes associated with them, such as improved grades.

One study of Arizona's career ladder program, which requires the use of various methods of student assessment to complement evaluations of teachers' practice, found that, over time, participating teachers demonstrated an increased ability to create locally developed assessment tools to assess student learning gains in

Studies suggest that the more teachers are enabled to enact professional standards of practice in their classrooms, the more effective they are in supporting student learning.

their classrooms; to develop and evaluate pre- and post-tests; to define measurable outcomes in hard-to-quantify areas such as art, music, and physical education; and to monitor student learning growth in their action plans. They also showed a greater awareness of the importance of sound curriculum development, more alignment of curriculum with district objectives, and increased focus on higher quality content, skills, and instructional strategies.³⁴ Thus, the development and use of student learning evidence, in combination with examination of teaching performance, can stimulate improvements in practice.

Given the importance of teachers' collective efforts to improve overall student achievement in a school, one component of documenting practice and outcomes should be focused on the work conducted by teacher teams and the contributions teachers make to school-wide improvements in practice, through their work in curriculum development, sharing practices and materials, peer

coaching and reciprocal observation, and collegial work with students.

Conclusion

Initiatives to measure and recognize teacher effectiveness have emerged as the press for improved student achievement has been joined to an awareness of the importance of teachers in contributing to student learning. Such initiatives will

Initiatives to measure teacher effectiveness will have the greatest payoff if they are embedded in systems that also develop greater teacher competence.

have the greatest payoff if they reflect and stimulate the practices known to support student learning and are embedded in systems that also *develop* greater teacher competence through coaching around the standards and opportunities for teachers to help their colleagues and their schools improve. Policies that create increasingly valid measures of teacher effectiveness and develop innovative systems for

recognizing, developing, and using expert teachers, while providing incentives for them to work with the neediest students, can ultimately help create a more effective teaching profession.

Endnotes

- 1 For a summary of studies, see Darling-Hammond, L., & Bransford, J. (2000). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco: Jossey-Bass; Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Educational Policy Analysis Archives*, 8(1), <http://epaa.asu.edu/epaa/v8n1>; Wilson, S. M., Floden, R., & Ferrini-Mundy, J. (2001). *Teacher preparation research: Current knowledge, gaps, and recommendations*. A research report prepared for the U.S. Department of Education. Seattle: University of Washington, Center for the Study of Teaching and Policy.
- 2 Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). *Teacher credentials and student achievement in high school: A cross subject analysis with student fixed effects*. Working paper series (No. 13617). Cambridge, MA: National Bureau of Economic Research.
- 3 Boyd, D., Lankford, H., Loeb, S., Rockoff, J., & Wyckoff, J. (2007). *The narrowing gap in New York City teacher qualifications and its implications for student achievement in high-poverty schools*. CALDER Working Paper 10.
- 4 Easton-Brooks, D., & Davis, A. (2009). Teacher qualification and the achievement gap in early primary grades. *Education Policy Analysis Archives*, 17(15), <http://epaa.asu.edu/epaa/v17n15/>.
- 5 Darling-Hammond, L., Holtzman, D., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives*, 13(42), <http://epaa.asu.edu/epaa/v13n42/>; Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy*, 1(2), 176-216.
- 6 Feng, L., & Sass, T. R. (2009). *Special education teacher quality and student achievement*. Working paper. Cambridge, MA: National Bureau of Economic Research.
- 7 Boe, E. E., Cook, L. H., & Sunderland, R. J. (2006). *Attrition of beginning teachers: Does teacher preparation matter?* (Report No. 2006-TSDQ2). Philadelphia: University of Pennsylvania, Center for Research and Evaluation in Social Policy.
- 8 Goldhaber, D., & Brewer, D. (2000). Does teacher certification matter? High school certification status and student achievement. *Educational Evaluation and Policy Analysis*, 22, 129-145; Monk, D. H. (1994). Subject matter preparation of secondary mathematics and science teachers and student achievement. *Economics of Education Review*, 13(2), 125-145.
- 9 Goldhaber & Brewer, 2000.
- 10 See, for example, Oakes, J. (2003). *Education inadequacy, inequality, and failed state policy: A synthesis of expert reports prepared for Williams v. State of California*. Retrieved May 6, 2010, from http://www.decentschools.org/expert_reports/oakes_report.pdf.
- 11 Berry, B., Daughtrey, A., & Wieder, A. (2010, February). *A better system for schools: Developing, supporting, and retaining effective teachers*. New York and Hillsborough, NC: Teachers Network and the Center for Teaching Quality; Bryk, A., Nagaoka, J., & Newmann, F. (2000). *Chicago classroom demands for authentic intellectual work: Trends from 1997-1999*. Consortium on Chicago School Research; Ingersoll, R., & Perda, D. (2009). *The mathematics and science teacher shortage: Fact and myth*. Philadelphia: University of Pennsylvania, Consortium for Policy Research in Education; Wei, R., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the U.S. and abroad*. Dallas: National Staff Development Council.
- 12 MetLife Foundation. (2009). *The MetLife survey of the American teacher: Collaborating for student success*. New York: Author.
- 13 Jackson, C. K., & Bruegmann, E. (2009, August). *Teaching students and teaching each other: The importance of peer learning for teachers*. Washington, DC: National Bureau of Economic Research.
- 14 Goddard, Y., & Goddard, R. D. (2007). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record*, 109(4), 877-896.
- 15 Berry, B. (2010). *The conditions that matter most and a look to the future*. Raleigh, NC: Center for Teaching Quality.
- 16 A 2000 study in Texas estimated the costs of turnover at between least \$8,000 and \$48,000 per recruit who leaves, depending on the cost model used (Texas Center for Educational Research, 2000). The organizational costs include those for termination, substitutes, searching, managing the selection process, new training, and lost skills. The study found that only 17% of this attrition was due to retirement. More recent estimates from personnel administrators put the range of costs between \$12,000 and \$20,000, with most around \$15,000. National turnover rates are about 6-8% annually, with about 20% of that due to retirements. This amounts to about 150,000 nonretirees leaving a year, at a cost of about \$2.25 billion.
- 17 National Commission on Teaching and America's Future. (2003). *No dream denied: A pledge to America's children*. Washington, DC: Author; Henke, R., Chen, X., & Geis, S. (2000). *Progress through the teacher pipeline: 1992-93 college graduates and elementary/secondary school teaching as of 1997*. Washington, DC: National Center for Education Statistics.
- 18 Henke et al., 2000.
- 19 For a review, see Darling-Hammond, L., & Sykes, G. (2003). Wanted: A national teacher supply policy for education: The right way to meet the 'highly qualified teacher' challenge. *Educational Policy Analysis Archives*, 11(33), <http://epaa.asu.edu/epaa/v11n33/>.
- 20 For a review of research on these states' efforts and outcomes, see Darling-Hammond, L. (2010). *The flat world and education: How America's commitment to equity will determine our future*. New York: Teachers College Press.
- 21 Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. H. (2008, September). *Teacher preparation and student achievement*. Working Paper No. W14314. Cambridge, MA: National Bureau of Economic Research. Retrieved May 5, 2010, from <http://ssrn.com/abstract=1264576>.
- 22 Wilson, M., & Hallum, P. J. (2006). *Using student achievement test scores as evidence of external validity for indicators of teacher quality: Connecticut's Beginning Educator Support and Training program*. University of California at Berkeley.
- 23 See, for example, Bond, L., Smith, T., Baker, W., & Hattie, J. (2000). *The certification system of the National Board for Professional Teaching Standards: A construct and consequential validity study*. Greensboro, NC: Center for Educational Research and Evaluation; Cavaluzzo, L. (2004). *Is National Board Certification an effective signal of teacher quality?* National Science Foundation No. REC-0107014. Alexandria, VA: The CNA Corporation; Goldhaber, D., & Anthony, E. (2005). *Can teacher quality be effectively assessed?* Seattle, WA: University of Washington and the Urban Institute; Smith, T., Gordon, B., Colby, S., & Wang, J. (2005). *An examination of the relationship of the depth of student learning and National Board certification status*. Boone, NC: Appalachian State University, Office for Research on Teaching; Vandevoort, L. G., Amrein-Beardsley, A., & Berliner, D. C. (2004). National Board

certified teachers and their students' achievement. *Education Policy Analysis Archives*, 12(46), 117.

- 24 Athanases, S. (1994). Teachers' reports of the effects of preparing portfolios of literacy instruction. *Elementary School Journal*, 94(4), 421-439.
- 25 Sato, M., Wei, R. C., & Darling-Hammond, L. (2008). Improving teachers' assessment practices through professional development: The case of National Board Certification. *American Educational Research Journal*, 45, 669-700; Tracz, S. M., Sienty, S., & Mata, S. (1994, February). *The self-reflection of teachers compiling portfolios for National Certification: Work in progress*. Paper presented at the annual meeting of the American Association of Colleges for Teacher Education, Chicago; Tracz, S. M., Sienty, S., Todorov, K., Snyder, J., Takashima, B., Pensabene, R., Olsen, B., Pauls, L., & Sork, J. (1995, April). *Improvement in teaching skills: Perspectives from National Board for Professional Teaching Standards field test network candidates*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- 26 Berry, B. (2009, in press). *Keeping the promise: Recruiting, retaining, and growing effective teachers for high-needs schools*. Raleigh, NC: Center for Teaching Quality.
- 27 Lockwood, J. R., McCaffrey, D. F., Hamilton, L. S., Stetcher, B., Le, V. N., & Martinez, J. F. (2007). The sensitivity of value-added teacher effect estimates to different mathematics achievement measures. *Journal of Educational Measurement*, 44(1), 47-67.
- 28 For reviews, see Braun, H. (2005). *Using student progress to evaluate teachers: A primer on value-added models*. ETS Policy Information Center; and McCaffrey, D., Lockwood, J., Koretz, D., & Hamilton, L. (2005). *Evaluating value-added models for teacher accountability*. Santa Monica, CA: RAND Corporation.
- 29 Sass, T. (2008). *The stability of value-added measures of teacher quality and implications for teacher compensation policy*. Washington, DC: CALDER. See also Newton et al. for similar findings.
- 30 Newton, X., Darling-Hammond, L., Haertel, E., & Thomas, E. (forthcoming). *Value-added modeling of teacher effectiveness: An exploration of stability across models and contexts*.
- 31 Milanowski, A. T., Kimball, S. M., & White, B. (2004). *The relationship between standards-based teacher evaluation scores and student achievement*. University of Wisconsin-Madison, Consortium for Policy Research in Education.
- 32 The teacher responsibility rubrics were designed based on several teacher accountability systems currently in use, including the Rochester (New York) Career in Teaching Program, Douglas County (Colorado) Teacher's Performance Pay Plan, Vaughn Next Century Charter School (Los Angeles, CA) Performance Pay Plan, and Rolla (Missouri) School District Professional Based Teacher Evaluation.
- 33 Solomon, L., White, J. T., Cohen, D., & Woo, D. (2007). *The effectiveness of the Teacher Advancement Program*. National Institute for Excellence in Teaching.
- 34 Packard, R., & Dereshiwsky, M. (1991). *Final quantitative assessment of the Arizona career ladder pilot-test project*. Flagstaff: Northern Arizona University.

About AACTE

The American Association of Colleges for Teacher Education (AACTE) is a national alliance of educator preparation programs dedicated to the highest quality professional development of teachers and school leaders in order to enhance PK-12 student learning. The 800 institutions holding AACTE membership represent public and private colleges and universities in every state, the District of Columbia, the Virgin Islands, Puerto Rico, and Guam. AACTE's reach and influence fuel its mission of serving learners by providing all school personnel with superior training and continuing education.

About the NEA

The National Education Association (NEA) is the nation's largest professional organization, representing 3.2 million elementary and secondary teachers, higher education faculty, education support professionals, school administrators, retired educators, and students preparing to become teachers.

About the Author

Linda Darling-Hammond is Charles E. Ducommun Professor of Education at Stanford University, where she has launched the Stanford Educational Leadership Institute and the School Redesign Network. She has also served as faculty sponsor for the Stanford Teacher Education Program. Darling-Hammond is a former president of the American Educational Research Association and member of the National Academy of Education and AACTE's Board of Directors. Her research, teaching, and policy work focus on issues of school restructuring, teacher quality, and educational equity. From 1994 to 2001, she served as executive director of the National Commission on Teaching and America's Future, a blue-ribbon panel whose 1996 report, *What Matters Most: Teaching for America's Future*, led to sweeping policy changes affecting teaching and teacher education. In 2006, this report was named one of the most influential in affecting U.S. education, and Darling-Hammond was named one of the nation's 10 most influential people on educational policy over the last decade. Among Darling-Hammond's more than 300 publications are *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do* (with John Bransford, for the National Academy of Education) and *Teaching as the Learning Profession: A Handbook of Policy and Practice* (coedited with Gary Sykes).



1307 New York Avenue, NW, Suite 300
Washington, DC 20005-4701
Tel: 202.293.2450
Fax: 202.457.8095
www.aacte.org



Great Public Schools for Every Student

1201 16th Street, NW
Washington, DC 20036-3290
Tel: 202.833.4000
Fax: 202.822.7974
www.nea.org