NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

America's Challenge: Effective Teachers for At-Risk Schools and Students

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America's Challenge: Effective Teachers for At-Risk Schools and Students

Editor
Carol A. Dwyer, Ph.D.

Contributing Authors
Michael Allen, Ph.D.
Tricia Coulter, Ph.D.
Carol A. Dwyer, Ph.D.
Laura Goe, Ph.D.
John Immerwahr, Ph.D.
Amy Jackson
Jean Johnson
Regina M. Oliver
Amber Ott
Daniel J. Reschly, Ph.D.
Jonathan Rochkind
Cortney Rowland
Susan M. Smartt, Ph.D.

1100 17th Street NW, Suite 500
Washington, DC 20036-4632
877-322-8700 • 202-223-6690
www.ncctq.org

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To help ensure its relevance to current policy concerns, regional and state data, and technical assistance needs, NCCTQ's work is guided by three groups of advisors: the Advisory Board, the Communication and Coordination Council, and the Higher Education Council.

Their expertise is vital to the success of NCCTQ's mission.

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- Angela Penfold, Center on Instruction, RMC Research Corporation
- Kristin Myers Reedy, Northeast Regional Resource Center, Learning Innovations at WestEd
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- Carol Smith, Vice President, Professional Issues, American Association of Colleges for Teacher Education
- Bradley Scott, South Central Collaborative for Equity, Intercultural Development Research Association
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- Mary Kay Kickels, National Association of Community College Teacher Education Programs
- Herbert Rieth, University of Texas at Austin
- Carol Smith, American Association of Colleges for Teacher Education
- Jon Snyder, Bank Street College of Education
- Mona Wineburg, American Association of State Colleges and Universities
- Jeff Wetzler, Teach for America

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Introduction

Carol A. Dwyer, Ph.D., ETS

The National Comprehensive Center for Teacher Quality (NCCTQ) was launched in 2005 as part of a comprehensive system of content-based technical assistance to support states in implementing the priorities of the No Child Left Behind (NCLB) Act. NCCTQ's mission is to support Regional Comprehensive Centers (RCCs), states, and other education stakeholders, such as institutions of higher education that prepare teachers, in strengthening the quality of teaching—especially in high-poverty, low-performing, and hard-to-staff schools. NCCTQ also provides guidance in addressing issues related to highly qualified teachers (HQTs) effectively serving students with special needs. This report provides the opportunity to update and report on what is currently known about successful teaching in at-risk schools—especially as it relates to the availability, recruitment, and retention of HQTs, as well as the opportunity to report on areas in which more research or changes in policy or practices remain to be accomplished. The main body of this report consists of six chapters related to the main streams of activity engaged in by NCCTQ during the past two years:

- A research analysis of the links between good teaching and student learning. What do we know about the strength of these links? How can we harness this knowledge for the benefit of all students?
- An action-oriented review and analysis of gaps in the preparation of effective teachers for at-risk students, including those with disabilities. Why is effective preparation critical for both general education and special education teachers?
- An analysis of the complexity of the issues involved in improving teaching for special education students and a demonstration that this knowledge is put to use in classrooms and that it ultimately turns out to be effective for students.
- A review of state policies and strategies that currently address the challenge of equitable distribution of effective teachers. Two distinctive state approaches are highlighted.
- Promising new and emerging teacher recruitment and retention strategies and practices that states and districts are using to improve teacher quality in at-risk and hard-to-staff subject areas. A selective review.
- Results from a nationally representative survey of first-year teachers. A look at the issues that most relate to their willingness, preparation, and ability to work in high-needs schools.

The report also contains an additional chapter, which describes the nature of NCCTQ's mission to improve the equitable distribution of teachers through a collaborative, systemic approach.

The Issues

It is clear that there is much room for improvement in American education in terms of reducing the achievement gaps that characterize high-risk schools and that recruiting and retaining motivated, caring, and effective teachers is key to addressing these large and long-standing gaps. NCLB was created to address gaps such as those illustrated by the following facts:

- According to the National Assessment of Educational Progress (NAEP), white 12th-grade students are more than twice as likely as Hispanic students, and almost three times as likely as black students, to demonstrate proficient or advanced reading skills. In mathematics, the disparities are even more disturbing—only 6 percent of black 12th-grade students and 8 percent of Hispanic 12th-grade students score at or above the proficient level, compared with 29 percent of white students (Grigg, Donahue, & Dion, 2007).

- Among high school graduates, black and Hispanic students have lower grade point averages than white or Asian-American students and are less likely to have completed a rigorous high school curriculum (Shettle et al., 2007).
- The high schools attended by white or Asian-American students are more likely to offer high-level mathematics courses, such as trigonometry or calculus, than are high schools with students who are of low socioeconomic status or who are black or Hispanic (Adelman, 2006). Intensity of high school coursework is, in turn, the factor most closely associated with completion of a bachelor's degree.
- Although state accountability assessments show shrinking achievement gaps and increased achievement levels for all, stagnant NAEP scores suggest that state-administered test scores are inflated, especially for poor, black, and Hispanic students (Lee, 2006).
- Students who do not have the advantage of effective teachers will not only remain behind others academically, but the gaps between them and other students will continue to widen. Most vulnerable are the students in schools plagued by chronic low achievement. Not only do these schools often lack adequate physical facilities and instructional materials, they also are often served by teachers who do not have levels of experience or qualifications comparable to teachers in higher performing schools.

Students who do not have the advantage of effective teachers will not only remain behind others academically, but the gaps between them and other students will continue to widen.

- In North Carolina, students in the highest poverty quartile had teachers who were consistently less qualified than those of their better-off peers (Clotfelter, Ladd, Vigdor, & Wheeler, 2006). Specifically, teachers in the highest poverty quartile high schools were more likely than teachers in the lowest poverty quartile high schools to be inexperienced (17.3 percent vs. 14.6 percent); less likely to have attended a selective undergraduate institution (27.4 percent vs. 14.2 percent); and less likely to hold a full, regular teaching license (20.5 percent vs. 13.3 percent).
- High-poverty urban and rural schools were 4.4 percent to 6.5 percent more likely to have difficulty hiring special education teachers and 4.5 percent to 9.6 percent more likely to have difficulty hiring mathematics teachers (Strizek, Pittsonberger, Riordan, Lyter, & Orlofsky, 2006).
- Teachers in high-poverty schools are 7 percent more likely to move to another school or leave the teaching profession than those in low-poverty schools, concentrating the adverse impact of teacher turnover in these at-risk schools (Ingersoll, 2003).

Even when teachers in these schools have the experience, credentials, and content expertise comparable to that of their counterparts in more successful schools, they often have not had the preparation or the ongoing support that is needed to handle the enormous instructional challenges and learning environments presented by at-risk schools. These challenges directly affect states' and districts' abilities to recruit and retain teachers to staff the nation's neediest schools and students.

NCLB's mandate is clear: All students should have access to HQTs. For NCLB purposes, HQTs must possess the following paper qualifications: full state certification, bachelor's degree, and demonstrated subject matter competency in each of the academic subjects he or she teaches.

In addition, the law requires that states ensure an equitable distribution of HQTs. In the first two years of its operation, NCCTQ has focused on challenges related to ensuring that HQTs serve students with special needs—

students who are at risk of poor educational outcomes and students with disabilities. This means that there should not be a disproportionate number of students in high-poverty urban and rural school districts who are taught by teachers who are not highly qualified. These are the complex challenges addressed in this report.

Highly Qualified Teachers and Highly Effective Teachers

There are approximately 3 million K–12 teachers in the United States, and their salaries and benefits are by far the largest share of any school's budget. Given this investment of resources in teachers, it is critical to attend to the qualities, characteristics, and abilities teachers bring to the classroom. The standards by which teacher qualifications, or inputs, are measured, however, vary widely from state to state and from district to district and do not address the issue of whether teachers with the required qualifications actually improve students' academic achievement. Additional study is needed to identify teachers who are producing student-learning gains and determine how and under what conditions these gains occur.

Recruiting and retaining the highest quality teachers is important for many reasons. With a growing population of ethnic minority students and children living in poverty in the United States, helping all students achieve at high levels presents an immense challenge to our educational system. Although there is some evidence indicating that achievement gaps are narrowing, the increasing numbers of students in K–12 public schools who historically perform poorly on tests is grounds for renewed efforts to increase the academic achievement of this population of learners and thus further narrow achievement gaps.

Perhaps the most important means of facilitating high achievement is ensuring that all students have access to highly effective teaching. Research using value-added models and other means of assessing students' academic growth has been useful in gathering substantive evidence on whether students have access to highly effective teaching. Research has clearly revealed that teacher effectiveness is not only key to student achievement, but its impact on student learning is cumulative. Having a teacher who produces student-learning gains (perhaps even more than one-year's growth) each year for several years in a row adds significantly to student achievement (Sanders & Rivers, 1996). Value-added measures can suggest that students in some teachers' classrooms learn more than students in other classrooms; however, they are not designed to explain the unique qualities of these teachers of high-scoring students.

Perhaps the most important means of facilitating high achievement is ensuring that all students have access to highly effective teaching.

A substantial amount of research conducted during the past several years has examined various teacher characteristics and attributes believed to be related to student performance. These studies have been limited to a certain extent by the data available. In general, the teacher characteristics that have been examined have been those for which data could be readily obtained, such as experience; college degrees; subject majors; certifications; and sometimes, teachers' test scores on a variety of state and national teacher licensure tests. The same is true for students—standardized test scores have usually been used as the outcome measure for determining teachers' contribution to student learning. It has always been difficult, however, to obtain teacher characteristics data that are reliably linked to student test scores. With the advent of NCLB, states that previously did not have data systems for tracking individual students and teachers are putting such systems into place, which will make more analyses possible in the future.

Solutions and Promising Practices

Nothing will go as far toward improving the educational attainment of all students—and especially those in the most troubled schools—as ensuring that there is an HQT in every classroom in every state. Research has shown convincingly that students who lack effective teachers are destined to fall behind their peers (e.g., Jordan, Mendro, & Weerasinghe, 1997; Sanders & Rivers, 1996).

Efforts to address the disparities between the quality of teachers in high-poverty, low-performing schools and those in more affluent schools with high student achievement generally have been insufficiently focused and have lacked intensity. States or districts may tackle the general problem of teacher supply, for instance, and assume that increasing the overall number of teachers will benefit all schools, including those that are hardest to staff. The positive effects of such efforts, however, rarely trickle down to the most vulnerable schools. Furthermore, schools and districts typically attempt to devise piecemeal solutions that have minimal, short-term impact. Developing policies and practices capable of adequately addressing staffing problems in at-risk schools requires sustained work on both the state and district levels. This, in turn, requires the ongoing commitment of key stakeholders and adequate resources. It also requires a solid understanding of the issues and strategies to address them. An example of a specific solution contributed by NCCTQ is the work that the Vanderbilt University team has contributed to increasing the availability of highly qualified and effective teachers. This work has focused on establishing evidence-based practices that are especially important to producing improved achievement among students with disabilities and at-risk characteristics. Innovation configurations defining these practices and varying levels of implementation have been developed for RCCs and states to use to improve teacher preparation, national association teacher preparation standards, and licensure procedures.

State and local policymakers, educators, and technical assistance providers face a variety of challenges and require assistance. Policymakers need help identifying proven academic programs and practices, using technology, gaining access to rigorous research and evaluations, and maintaining and analyzing data. Teachers and school leaders need access to professional development—including training, developing, and sharing strategies for effective teaching. We hope that this report will contribute to achieving these complex and challenging goals.

References

Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college.* Washington, DC: U.S. Department of Education. Retrieved September 11, 2007, from http://www.ed.gov/rschstat/research/pubs/toolboxrevisit/toolbox.pdf

Clotfelter, C., Ladd, H. F., Vigdor, J., & Wheeler, J. (2006). *High-poverty schools and the distribution of teachers and principals.* Washington, DC: National Center for the Analysis of Longitudinal Data in Education Research (CALDER). Retrieved September 11, 2007, from http://www.caldercenter.org/PDF/1001057_High_Poverty.pdf

Grigg, W., Donahue, P., & Dion, G. (2007). *The nation's report card: 12th-grade reading and mathematics 2005* (NCES 2007.468).Washington, DC: National Center for Education Statistics.

Ingersoll, R. (2003). *Is there really a teacher shortage?* (Document R-03-4). Philadelphia: Center for the Study of Teaching and Policy. Retrieved September 11, 2007, from http://www.ecs.org/html/offsite.asp?document=http%3A%2F%2Fdepts%2Ewashington%2Eedu%2Fctpmail%2FPDFs%2FShortage%2DRI%2D09%2D2003%2E.pdf

Jordan, H., Mendro, R., & Weerasinghe, D. (1997, July). *Teacher effects on longitudinal student achievement.* Paper presented at the CREATE annual meeting, Indianapolis, IN.

Lee, J. (2006). *Tracking achievement gaps and assessing the impact of NCLB on the gaps: An in-depth look into national and state reading and math outcome trends.* Cambridge, MA: The Civil Rights Project at Harvard University. Retrieved September 11, 2007, from http://www.civilrightsproject.ucla.edu/research/esea/nclb_naep_lee.pdf

Sanders, W., & Rivers, J. (1996). *Cumulative and residual effects of teachers on future student academic achievement.* Knoxville: University of Tennessee, Value-Added Research and Assessment Center. Retrieved September 11, 2007, from http://downloads.heartland.org/21803a.pdf

Shettle, C., Roey, S., Mordica, J., Perkins, R., Nord, C., Teodorovic, J., et al. (2007). *The nation's report card: America's high school graduates* (NCES 2007-467). Washington, DC: National Center for Education Statistics. Retrieved September 11, 2007, from http://nces.ed.gov/nationsreportcard/pdf/studies/2007467.pdf

Strizek, G. A., Pittsonberger, J. L., Riordan, K. E., Lyter, D. M., & Orlofsky, G. F. (2006). *Characteristics of schools, districts, teachers, principals, and school libraries in the United States: 2003-04 schools and staffing survey* (NCES 2006-313). Washington, DC: National Center for Education Statistics. Retrieved September 11, 2007, from http://nces.ed.gov/pubs2006/2006313_1.pdf

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CHAPTER 1

Linking Teacher Quality and Student Outcomes

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Laura Goe, Ph.D., ETS

Although it is almost universally accepted that teacher quality is the most important school-based factor affecting student learning, there is no clear consensus in the education community on what dimensions of teacher quality matter most. The ability to recognize teacher quality is important for the following reasons:

- Hiring the highest quality teachers available is a primary goal of schools and districts.
- Determining teacher quality among teachers already in classrooms is important for understanding the distribution of teacher quality, particularly in relation to student poverty, minority students, and students with disabilities, as well as for determining teacher effectiveness.
- Evaluating the effects of policies and programs (such as alternative certification and National Board for Professional Teaching Standards [National Board] certification) is important in terms of establishing their links with teacher quality.
- It is crucial to learn more about how specific professional development programs (which may include learning about new practices, techniques, and strategies) impact teacher quality.

Teacher effectiveness, here defined as the contribution a teacher makes to his or her students' achievement, is perhaps the most important dimension of teacher quality because schools and school systems are increasingly being held accountable for student achievement. Parents, policymakers, and taxpayers want to know about the ways in which teachers contribute to student learning, no matter how qualified teachers may appear to be on paper and regardless of their personal characteristics and their classroom practices.

Now that the 2005–06 No Child Left Behind (NCLB) deadline for all states to fill their classrooms with highly qualified teachers (HQTs) has passed, the focus is shifting as states and others try to figure out whether they have teachers in every classroom who will contribute appreciably to students' learning. As research on the link between teacher qualities and student outcomes has shown, identifying effective teachers is an arduous endeavor.

In recent years, as the emphasis on measuring student learning has increased, the focus has shifted from holding *schools* accountable for student achievement to holding *teachers* accountable for student learning. Teachers have been studied and evaluated for years, usually in their classrooms; however, more accurate and easily available teacher information—along with advances in statistical software and computing power—has led to an emphasis on evaluating teachers by focusing on specific qualifications and characteristics rather than on their classroom behavior. The most common approach is trying to measure teachers' contributions to student achievement using growth models or value-added models.

In recent years, as the emphasis on measuring student learning has increased, the focus has shifted from holding *schools* accountable for student achievement to holding *teachers* accountable for student learning.

As recently as 1978, using student achievement data to establish teacher effectiveness was still a somewhat unfamiliar idea. For example, eight ways of measuring teacher "effectiveness" were described at the Conference of the International Association for Educational Assessment, and only *one* of them focused on measuring teacher

effectiveness through the analysis of students' achievement scores (Schlusmans, 1978). At that time, student achievement was used to evaluate teacher effectiveness in only "some exceptional cases" (Schlusmans, 1978, pp. 19–20). The other seven methods focused on examining teacher characteristics using "existing educational, psychological or sociological theories"; pupil evaluations; and the opinions of experienced professionals, such as principals.

Times have changed; now the push toward establishing teacher quality by measuring teachers' contributions to student achievement is seen as legitimate and is often even preferred over other methods. The rapid expansion of policies using value-added models at the district and state level is testimony to the increased interest in this way of measuring teacher quality. In addition, the policy expansion has been facilitated by increasingly sophisticated data systems that permit student achievement scores to be linked to teachers.

In the past, most teacher quality studies focused primarily on *inputs*, such as a teacher's education, certification, or experience, rather than on what teachers actually do in the classroom (see Ferguson & Womack, 1993; Goldhaber & Brewer, 1999; Milanowski, 2004; Mullens, Murnane, & Willett, 1996; Sanders, Skonie-Hardin, Phelps, & Minnis, 1994). Some research has defined teacher quality by *outcomes*—that is, by how much students actually learn in the classroom. Student learning is typically measured by standardized tests, and teacher quality is thus defined empirically by students' test scores (see Fetler, 1999; Monk, 1994; Rockoff, 2004; Vandevoort, Amrein-Beardsley, & Berliner, 2004). This outcomes approach includes using value-added models, such as the model developed by William Sanders, which has been used for many years to evaluate teachers in Tennessee (Sanders, Saxton, & Horn, 1997).

To help organize thought and discussion around the various dimensions of teacher quality, Goe (2007) developed a framework for analyzing the categories of teacher quality, as represented in Table 1. There are four dimensions (teacher qualifications, characteristics, practices, and effectiveness) associated with three broad categories (inputs, processes, and outcomes) that can be used to analyze teacher quality.

Both teacher qualifications and teacher characteristics are considered *inputs* because they are what go into the making of a teacher. Teacher practices are considered *processes* because they are what teachers can be observed doing in classrooms in the process of teaching. Teacher effectiveness is considered an *outcome* because it involves student learning, the end result of teaching.

There is a natural division among the four categories: teacher *effectiveness* is determined by student test scores, while teacher *qualifications*, *characteristics*, and *practices* can all be used as determinants of teacher quality, independently of student achievement.

Table 1. Categories and Dimensions of Teacher Quality

Dimensions	Categories		
	Inputs	Processes	Outcomes
Teacher Qualifications	X		
Teacher Characteristics	X		
Teacher Practices		X	
Teacher Effectiveness			X

In other words, a teacher has certain qualifications and characteristics and exhibits certain practices, whether or not these categories are ever linked to student achievement. Teacher effectiveness, however, is determined wholly by measuring student achievement: teacher effectiveness cannot be determined in the absence of outcome measures, such as standardized test scores. Qualifications, characteristics, and practices can be theoretically connected to student learning and measured by standardized test scores, but these categories exist whether or not student learning is measured. In contrast, effectiveness (as defined by student achievement) does not exist without linked student-teacher data.

Many policies in force today, such as those intended to ensure that poor and minority students have access to highly qualified, experienced teachers, use some combination of inputs and processes to define teacher quality. There is, however, no large-scale policy that uses teacher effectiveness—as determined by teachers' contribution to student learning—to define teacher quality for policy purposes, such as the equitable distribution of effective teachers.

Teacher Qualifications. Commonly called teacher inputs, teachers' qualifications are part of the resources they bring with them to the classroom. Inputs are generally thought to be important in establishing who should be allowed to teach. The strong reliance on paper qualifications to determine teacher quality is probably practical: These qualifications are easily measured. For example, how many courses a teacher candidate took in his or her subject area or what score was obtained on a licensing test are not difficult to determine.

Inputs can also include teachers' coursework and grades, subject matter studied, degrees, test scores, experience, certification, and credentials, as well as evidence of participation in continued learning such as internships, induction, supplemental training, and professional development. Experience can also be considered an input because it is counted as a qualification for many reasons, including determining the equitable distribution of teachers for NCLB purposes.

NCLB has used input qualifications to define *highly qualified* relative to a specific teacher assignment, and *teacher quality* has often been conflated with the idea of an HQT. For NCLB purposes, HQTs must possess the following inputs (paper qualifications): full state certification, bachelor's degree, and demonstrated subject matter competency in each of the academic subjects taught. It is obvious, of course, that simply meeting the NCLB requirements is, in itself, no guarantee that teachers will be "high quality," in the sense of being effective in their classrooms, even when they have been classified as having highly qualified status for their teaching assignment. The advantage of using qualifications is that they allow educational decision makers to use documentation *alone* in an attempt to predict a teacher's potential effectiveness for licensing and hiring purposes, prior to any determination of a teacher's suitability for a specific teaching position or demonstrated effectiveness in the classroom. The major disadvantage of using qualifications as the definition of teacher quality is that a teacher can be deemed to be of high quality on paper and yet perform poorly in the classroom. By the same token, teachers who do not appear to be high quality on paper may actually be desirable teachers for specific contexts.

There is no large-scale policy that uses teacher effectiveness—as determined by teachers' contribution to student learning—to define teacher quality for policy purposes, such as the equitable distribution of effective teachers.

Teacher Characteristics. A second category for defining teacher quality focuses on teachers' characteristics, which include changeable attributes and attitudes of teachers, as well as immutable (or assigned) characteristics such as race and gender. Research linking such characteristics to student outcomes is still relatively scarce. The advantage of this view is that it expands the scope of teacher quality and thus creates an opportunity for greater precision in our definition. The main drawback to defining teacher quality in this way is that it focuses on characteristics that are often logically, ethically, or practically beyond the teacher's (or school's) ability to change.

Teacher Practices. A third category of teacher quality focuses on teachers' actual classroom practices and on correlating those practices with student learning outcomes. The following examples are ways of examining teacher practices: evaluating teachers' questioning strategies and linking them to student learning, documenting their classroom management strategies, determining how they interact with students, looking at lesson plans, and recording lesson delivery. By this definition, teacher quality is ascertained not by what qualifications teachers have on paper but by what they actually do in the classroom with their students.

Higher correlations with what are considered "better" practices thus define good teaching. The focus is not on assessing the connection between what individual teachers do and what their students learn but rather on the correlation between certain practices recommended for all teachers and student-learning outcomes.

The advantage of assessing teacher practices is that this method focuses on the classroom—where the teacher and student interact and where learning actually takes place. The chief disadvantage of this approach is that evaluating teachers in their classrooms is difficult to do with acceptable validity and reliability. It is also time-consuming, expensive, and subject to the complications of context (e.g., differences among urban and rural schools, high-poverty and wealthy schools, schools serving large numbers of English language learners [ELLs], or a classroom that includes students with severe behavioral problems).

Another disadvantage of this approach is that although researchers may focus on looking only at whether teachers are using a small number of specific "best" practices, it is likely that teachers using these best practices are also using other best practices at the same time. For example, a teacher who uses a particular questioning strategy, like "wait time," may be more likely to use other good questioning strategies (e.g., asking higher order thinking skills questions or calling on students by a random method rather than calling on only those who raise their hands). Thus, linking student learning outcomes to one best practice (and excluding all others) is virtually impossible.

Similarly, another limitation of measuring teacher quality by examining teacher practices is that it is difficult to control for other contributions to student learning (e.g., a classroom climate that is conducive to learning) or distractions that prevent students from learning (e.g., a disruptive classmate).

Teacher Effectiveness. The fourth category of the framework for defining teacher quality is analyzing teacher effectiveness—by looking at their students' learning gains. This is typically measured by using standardized achievement tests. This category most closely approximates a comprehensive measure of *teaching* quality, rather than *teacher* quality. Teachers might be considered HQTs if their students learn significantly more than would have been predicted, given those students' prior achievement.

A major disadvantage of the effectiveness definition is that it provides no mechanism for *predicting* who will be HQTs *prior* to their actual teaching. In other words, if teacher quality is to be determined solely by effectiveness, how will we decide who should

be allowed to teach in the first place—before any student gains can be assessed? How can we best ensure that students are protected from exposure to ineffective teachers?

The difficulty in measuring teacher effectiveness is that there are many things that contribute to student learning, making it difficult to sort out "teacher effects" from "classroom effects" or even "school effects." For example, two Grade 4 teachers with similar qualifications and experience teaching in two different schools may have different results, even if they are both competent teachers. This is because there are other contributors to (and detractors from) student learning besides teacher quality that may impact learning conditions and thus affect student performance. Although the following list is not exhaustive, it includes many of the variables often correlated with differences in student achievement:

- School climate
- Students' peers
- Absenteeism
- Students' fluency in English
- Community support for schooling
- Parental "press" for schooling
- Availability of resources (textbooks, supplementary materials to support learning, laboratories, computers, Internet connectivity, libraries)
- Appropriate facilities (orderly, safe, and comfortable, with adequate space to conduct a range of learning activities)
- Instructional offerings appropriate to the grade level
- Time on task without intrusions (from announcements, disturbances in the halls, disruptive classmates, other adults or students entering and exiting the classroom)
- Alignment of curriculum with books and materials
- Alignment of books and curriculum with the standardized test
- Appropriate support for teachers (induction, mentoring, and high-quality professional development opportunities)
- Teachers' sense of community and collegiality
- Release time during regular school hours for teachers to engage in professional development (observing colleagues' classrooms, engaging in collaboration, and attending professional development)

Thus, substantial differences among these context variables may impact how similarly qualified and experienced teachers actually perform when student achievement is used to define teacher quality. This is an important cause for concern when using value-added models to compare teachers to one another.

Some researchers, particularly Sanders who designed and implemented value-added models for ranking Tennessee teachers, have argued that because students' prior test scores are used as controls in the calculations, there is no need to take into account other variables such as those listed above (Sanders & Horn, 1998). The theory behind this belief is that demographic variables (e.g., race, poverty, and parental education) and context variables (e.g., school climate, peers, and access to appropriate curriculum and materials for learning) change little over time. These variables affect student test scores, so they are assumed to be included in the test scores. This theory only holds if the context variables actually do not change. Given the myriad variables that go into the making of a school or a classroom within a school, it is difficult to ensure that, after controlling for students' prior achievement, teachers alone are the sole contributors to students' test scores.

Not everyone agrees that the current generation of value-added models has sufficient validity and reliability to be used for teacher evaluation (Braun, 2005; Kupermintz, 2003; Lockwood, Louis, & McCaffrey, 2002), and using them to measure teacher effectiveness and determine teacher quality remains highly controversial.

Another practical issue with using value-added models to measure teacher effectiveness is that the score tells us virtually nothing about what happened within a particular classroom. What did the teacher do, and what occurred in the classroom that impacted student achievement and thus yielded a particular value-added score for the teacher? Although a score for each teacher may be useful in identifying classrooms in which more or less learning than expected is taking place, education professionals, administrators, and policy makers learn nothing about how to improve teaching from such analyses.

In addition, using value-added models to measure teacher effectiveness is not well suited to evaluating teachers of students with disabilities or ELLs because these students' performance on standardized achievement tests may reflect different rates of growth in language ability or in other abilities for which they require special curriculum and instruction. Thus, predicting future achievement for students with disabilities or ELLs is problematic, making the evaluation of their teachers based on those scores uncertain at best.

More research needs to be conducted before rewards are given or remediation efforts are undertaken based solely on students' gain scores on standardized tests.

Findings

Goe (2007) presented summaries of more than 50 recent studies that measured some aspect of teacher quality, including teacher qualifications, characteristics, and practices. Other studies used value-added models to suggest that certain scores reflected teacher quality, although these studies do not identify what these teachers are doing in their classrooms or which particular qualifications and characteristics they possess. In that sense, using value-added models to identify teacher quality is a measure that holds promise but provides little information without conducting additional research into the backgrounds of teachers and their classroom practices.

The end result of synthesizing these studies was to find some evidence that suggests that particular qualifications matter, but in most cases, the evidence is either weak (i.e., there does not appear to be a significant effect on student achievement) or mixed (i.e., some studies suggest that a particular qualification, characteristic, or behavior was significantly related to teacher quality, while other studies found that it was not). There are, however, some findings that are both consistent and strong. These findings are described in the following section.

Interpreting the Findings

Caveats. It is important to note that measuring teacher quality by student achievement is problematic. In some studies, factors that would logically and theoretically be related to student achievement may appear to be only weakly related or not related at all. This might be a sample size issue (smaller sample sizes make it difficult to determine effects), or it could be that the theory is wrong or that student mobility or data quality is the culprit. In addition, the measurement tools and statistical analyses might not be sensitive or precise enough to capture effects that are actually present.

State standardized student achievement tests are not ideal for measuring the effects of changes in instructional practice because they were designed to measure student learning, not to identify differences in teachers based on student gains. The achievement tests commonly used throughout the United States have not been designed or validated for purposes of sorting teachers. This makes the results of such efforts difficult to interpret. More research needs to be conducted before rewards are given or remediation efforts are undertaken based solely on students' gain scores on standardized tests.

Another concern is that in many of the studies reviewed, the measurement instruments used may not be appropriate for detecting subtle

differences in teacher practices. For example, most of the scales used for teacher evaluation or for survey research are simple Likert scales. Likert scales indicate a level of agreement with a particular statement, usually on a 4- or 5-point scale from "strongly agree" to "strongly disagree." Problems with the use of these scales include the tendency that respondents have to avoid the "extreme" answers and to choose only the middle answers and an unwillingness to answer in ways that might be considered "wrong" by others. When evaluating a teacher with a 4-point scale, it is unlikely that a teacher will score an average of 1 or 4. Instead, he or she will probably score a few 1s, mostly 2s and 3s, and a few 4s. The average score will thus probably fall between 2.5 and 3.5. When the spread of the teachers' scores on this instrument is so constrained, it is very difficult to correlate the scores with student achievement and find meaningful, statistically significant effects. Thus, improving instruments to increase the range and precision of scores from surveys and evaluations may produce more useful results.

Finally, doing teacher observations in an attempt to link particular strategies or practices with student achievement gains is a complex endeavor. As noted above, teachers who are found to use one promising strategy for improving student learning may be using others as well, but if observation instruments are only noting the specific strategies of interest and ignoring others that may also contribute to improved achievement, this could create a false impression that the strategy of interest to the evaluator is causing the improved student achievement when, in truth, a constellation of good strategies might be operating simultaneously. Similarly, a teacher who is using a good strategy may be working in a classroom or school context that is not optimal for student learning. In such a case, it may appear that the strategy of interest is not effective; therefore, it is important to consider the repertoire of teaching strategies as well as teaching context when determining the impact of a particular teacher practice on student achievement.

There Are Subject Matter and Grade Level Differences in What Matters

A teacher's certification to teach mathematics and a teacher's degree in mathematics are positively correlated with students' mathematics achievement in all grades but particularly so in secondary school. This is not to say that certification does not matter for social studies, science, and other important school subjects, but the evidence is inconsistent on whether there are significant gains in student achievement based on teachers' certification status in these areas. It remains to be demonstrated that subject-specific coursework, degrees, and certifications in these other areas are essential for high levels of student learning.

It may seem puzzling that mathematics is apparently more sensitive to instruction than, say, reading. There is, however, an interesting theory that may explain why teachers who take more mathematics courses and are certified to teach mathematics have a stronger impact on student learning. Nye, Konstantopoulos, and Hedges (2004) have theorized that "mathematics is mostly learned in school and thus may be more directly influenced by teachers [while reading] is more likely to be learned (in part) outside of school" (p. 247). Thus, if students are exposed to mathematics concepts and are given opportunities to explore and practice mathematics in only one place—the classroom—it is very important that the teachers be fully competent to guide their students' learning. The evidence is not clear on how important it is for teachers in other subjects to have focused competence and adequate courses in their subjects.

Does this mean that requirements for mathematics teachers should be stricter than for other teachers? At this time, there is no evidence that suggests tightening requirements for mathematics teachers would improve educational outcomes for students.

Even if it were evident, the practical issue of supply and demand must be resolved before attempting to tighten requirements for

mathematics teachers. Mathematics teachers are in short supply (National Commission on Mathematics and Science Teaching for the 21st Century, 2000; The Urban Teacher Collaborative, 2000; U.S. Department of Education & Office of Postsecondary Education, 2005). The supply of mathematics teachers is unlikely to increase as long as there are few salary incentives to become mathematics teachers and many salary incentives to go into other careers in which mathematics skills are highly valued.

For years, differential pay has been considered to attract more mathematics teachers, but there is no convincing evidence that such a strategy has actually increased the number of highly qualified mathematics teachers, particularly in at-risk schools.

It should be noted that the same supply-and-demand considerations apply to special education teachers. Appropriate training and certification are particularly important for this group because of the highly specialized nature of instruction involved in working with students with disabilities, yet in some areas, appropriately certified special education teachers are in short supply.

For years, differential pay has been considered to attract more mathematics teachers, but there is no convincing evidence that such a strategy has actually increased the number of highly qualified mathematics teachers, particularly in at-risk schools.

Teacher Experience Matters, but Only in the First Few Years of Teaching

The research summarized in Goe (2007) suggests that teachers reach their peak performance by increments within the first four or five years of teaching. After that, student learning is affected little by additional years of teaching.

This suggests that we need to continue efforts to ensure that the most *inexperienced* teachers, particularly teachers in their first year or two of teaching, are not routinely assigned to schools where the challenges are greatest, such as schools with large percentages of students living in poverty, minority students, ELLs, students with disabilities, and low-achieving students.

As part of NCLB's HQT requirements, states are under increasing pressure to ensure that highly qualified, *experienced* teachers are equitably distributed among schools. Few states appear to have effective policies in place to ensure that beginning teachers are *not* placed in hard-to-staff schools. States, however, will need to develop, implement, and evaluate targeted strategies to address the problem because of the pressure to demonstrate improvements in teacher distribution.

Teacher turnover patterns suggest that poor and minority students are more likely to be taught by inexperienced teachers (Clotfelter, Ladd, & Vigdor, 2005), and as teachers gain more experience, they move to schools with higher achievement, fewer minority students, and fewer poor students (Lankford, Loeb, & Wyckoff, 2002; Useem & Farley, 2004).

Keeping teachers in at-risk schools long enough for the students to have the benefit of their teachers' increased experience may require new policies and incentives. For example, North Carolina began paying mathematics teachers a bonus of $1,800 per year for teaching in certain at-risk schools. The bonus appeared to have an impact on teachers' retention in these schools, and the teachers most likely to stay were those with more experience (Clotfelter, Glennie, Ladd, & Vigdor, 2006). Other similar efforts to provide incentives for teachers to remain in at-risk schools are under way. These efforts are hampered because it is not known how much money is enough to keep teachers in at-risk schools, especially because the amount may differ among schools—teachers may want more money to stay in some particularly challenging schools.

Furthermore, it is impossible to predict with certainty which teachers are likely to transfer, so the incentive money may be given to all teachers meeting a similar requirement (e.g., teaching mathematics), even if many of them have no intention of transferring. Thus, it is not simply a matter of paying $1,800 to each teacher who intends to transfer but $1,800 to each teacher in a particular category, regardless of his or her intentions. This is one of the serious limitations of "blanket incentives."

Targeted incentives are far more cost-effective; they apply funds only to certain individuals. Putting such policies into place is often difficult, however, because of collective bargaining agreements and policies that discourage differential pay.

Recommendations

Toward a New Definition of Teacher Quality

The definition of teacher quality is currently in flux, but there are some factors that seem likely to contribute to a more progressive definition. Such a definition of teacher quality (and perhaps teacher certification) might encompass two stages: (1) an initial set of qualifications tied to the subject matter and grade level being taught that must be met before a teacher is allowed to take charge of a classroom and (2) mechanisms for evaluating a teacher's effectiveness in producing student learning—with the caveat that teaching experience must be taken into consideration as part of this evaluation, given that teachers appear to incrementally gain increasing ability to impact student learning in the first five years or so of teaching. In this two-stage process for determining teacher quality, teachers would be evaluated initially on their *paper qualifications* and later on their *effectiveness* once they have begun instructing students in the classroom. The effectiveness component may involve some combination of expert and/or peer evaluation, teacher portfolios, and value-added scores.

The expert and/or peer evaluation component will ensure that a teacher is meeting expectations as judged by another education professional. The teacher portfolio component will ensure that teachers also have a way of documenting what they know and can do. The value-added scores provide additional documentation of teachers' effectiveness from the standpoint of student achievement scores.

As part of NCLB's HQT requirements, states are under increasing pressure to ensure that highly qualified, experienced teachers are equitably distributed among schools.

Using any of these measures as the *sole* means of determining teacher quality would be problematic, but combining such measures may result in the identification of HQTs, which makes sense empirically as well as practically.

Bringing Quality Online

The National Comprehensive Center for Teacher Quality's *Teaching Quality (TQ) Source* website (www.tqsource.org) is the premier source for information on teacher quality and leadership quality.

The *TQ Source* website offers links to policy and publication databases, interactive data tools, and exciting regional and national programs and initiatives relating to teacher quality. The site also includes *TQ Source* Tips and Tools, with user-friendly guides to emerging strategies as well as established practices for enhancing the quality of teaching and learning in our schools.

Access a multitude of resources related to the career continuum of teachers and leaders—from preparation and certification to recruitment, retention, and advancement.

TEACHING QUALITY
TQSource

Educator Quality Topic

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Every topic features links to all of these resource pools!

- State Policy Databases
- Interactive Data Tools
- Publications Databases
- Exciting Initiatives
- *TQ Source* Tips and Tools: Emerging Strategies to Enhance Educator Quality

Data Sources Used to Define Teacher Quality

Surveys

Author-Developed Teacher Surveys

Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal, 37*(2), 479–507.

Hill, H. C., Rowan, B., & Ball, D. L. (2005). Effects of teachers' mathematical knowledge for teaching on student achievement. *American Educational Research Journal, 42*(2), 317–406.

Leana, C. R., & Pil, F. K. (2006). Social capital and organizational performance: Evidence from urban public schools. *Organization Science, 17*(3), 353–366.

McCaffrey, D. F., Hamilton, L. S., Stecher, B. M., Klein, S. P., Bugliari, D., & Robyn, A. (2001). Interactions among instructional practices, curriculum, and student achievement: The case of standards-based high school mathematics. *Journal for Research in Mathematics Education, 32*(5), 493–517.

McColsky, W., Stronge, J. H., Ward, T. J., Tucker, P. D., Howard, B., Lewis, K., et al. (2005). *Teacher effectiveness, student achievement, and National Board Certified teachers.* Arlington, VA: National Board for Professional Teaching Standards.

Smith, J. B., Lee, V. E., & Newmann, F. M. (2001). *Instruction and achievement in Chicago elementary schools.* Chicago: Consortium on Chicago School Research.

Vandevoort, L. G., Amrein-Beardsley, A., & Berliner, D. C. (2004). National Board certified teachers and their students' achievement. *Education Policy Analysis Archives, 12*(46). Retrieved September 11, 2007, from http://epaa.asu.edu/epaa/v12n46/

National Assessment of Educational Progress (NAEP) Questionnaires

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives, 8*(1). Retrieved September 11, 2007, from http://epaa.asu.edu/epaa/v8n1/

Monk, D. H. (1994). Subject area preparation of secondary mathematics and science teachers and student achievement. *Economics of Education Review, 13*(2), 125–145.

Wenglinsky, H. (2000). *How teaching matters: Bringing the classroom back into discussions of teacher quality* (Policy Information Center Report). Princeton, NJ: ETS.

Wenglinsky, H. (2002). How schools matter: The link between teacher classroom practices and student academic performance. *Education Policy Analysis Archives, 10*(12). Retrieved September 11, 2007, from http://epaa.asu.edu/epaa/v10n12/

Trends in International Mathematics and Science Study (TIMSS) Questionnaires

Marcoulides, G. A., Heck, R. H., & Papanastasiou, C. (2005). Student perceptions of school culture and achievement: Testing the invariance of a model. *International Journal of Educational Management, 19*(2), 140–152.

National Education Longitudinal Study of 1988 (NELS: 1988)

Ehrenberg, R. G., Goldhaber, D. D., & Brewer, D. J. (1995). Do teachers' race, gender, and ethnicity matter? Evidence from the National Educational Longitudinal Study of 1988. *Industrial and Labor Relations Review, 48*(3), 547–561.

Goldhaber, D. D., & Brewer, D. J. (1999). Teacher licensing and student achievement. In M. Kanstoroom & C. E. Finn, Jr. (Eds.), *Better teachers, better schools* (pp. 83-102). Washington, DC: The Thomas B. Fordham Foundation.

Rowan, B., Chiang, F. S., & Miller, R. J. (1997). Using research on employees' performance to study the effects of teachers on students' achievement. *Sociology of Education, 70*, 256–284.

Prospects National Longitudinal Survey

Rowan, B., Correnti, R., & Miller, R. J. (2002). What large-scale, survey research tells us about teacher effects on student achievement: Insights from the Prospects Study of Elementary Schools. *Teachers College Record, 104*(8), 1525–1567.

California Basic Education Data System (CBEDS)

Betts, J. R., Zau, A. C., & Rice, L. A. (2003). *Determinants of student achievement: New evidence from San Diego.* San Francisco: Public Policy Institute of California.

Brazilian EDURURAL Project

Harbison, R. W., & Hanushek, E. A. (1992). *Educational performance of the poor: Lessons from rural northeast Brazil.* New York: Oxford University Press.

Student Surveys

Frome, P., Lasater, B., & Cooney, S. (2005). *Well-qualified teachers and high-quality teaching: Are they the same?* (Research Brief). Atlanta, GA: Southern Regional Education Board. Retrieved September 11, 2007, from http://www.sreb.org/programs/hstw/publications/briefs/05V06_Research_Brief_high-quality_teaching.pdf

Marcoulides, G. A., Heck, R. H., & Papanastasiou, C. (2005). Student perceptions of school culture and achievement: Testing the invariance of a model. *International Journal of Educational Management, 19*(2), 140–152.

Parental Surveys

Leana, C. R., & Pil, F. K. (2006). Social capital and organizational performance: Evidence from urban public schools. *Organization Science, 17*(3), 353–366.

Teacher Interviews

Jacob, B. A., & Lefgren, L. (2005). *Principals as agents: Subjective performance measurement in education* (Faculty Research Working Paper Series RWP05-040). Cambridge, MA: Harvard University.

Kannapel, P. J., & Clements, S. K. (with Taylor, D., & Hibpshman, T.) (2005). *Inside the black box of high-performing high-poverty schools.* Lexington, KY: Prichard Committee for Academic Excellence.

Noell, G. H. (2006). *Value added assessment of teacher preparation* (Annual Report). Baton Rouge: Louisiana State University.

Nye, B., Konstantopoulos, S., & Hedges, L. V. (2004). How large are teacher effects? *Educational Evaluation and Policy Analysis, 26*(3), 237–257.

Rockoff, J. E. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review, 94*(2), 247–252.

Instructional Artifacts

Matsumura, L. C., Garnier, H., Pascal, J., & Valdés, R. (2002). Measuring instructional quality in accountability systems: Classroom assignments and student achievement. *Educational Assessment, 8*(3), 207–229.

Matsumura, L. C., Slater, S. C., Junker, B., Peterson, M., Boston, M., Steele, M., et al. (2006). *Measuring reading comprehension and mathematics instruction in urban middle schools: A pilot study of the Instructional Quality Assessment* (CSE Technical Report No. 681). Los Angeles: Center for the Study of Evaluation.

McColsky, W., Stronge, J. H., Ward, T. J., Tucker, P. D., Howard, B., Lewis, K., et al. (2005). *Teacher effectiveness, student achievement, and National Board Certified teachers.* Arlington, VA: National Board for Professional Teaching Standards.

Newmann, F. M., Bryk, A. S., & Nagaoka, J. K. (2001). *Authentic intellectual work and standardized tests: Conflict or coexistence?* Chicago: Consortium on Chicago School Research.

Observations

Researcher

Matsumura, L. C., Slater, S. C., Junker, B., Peterson, M., Boston, M., Steele, M., et al. (2006). *Measuring reading comprehension and mathematics instruction in urban middle schools: A pilot study of the Instructional Quality Assessment* (CSE Technical Report No. 681). Los Angeles: Center for the Study of Evaluation.

McColsky, W., Stronge, J. H., Ward, T. J., Tucker, P. D., Howard, B., Lewis, K., et al. (2005). *Teacher effectiveness, student achievement, and National Board Certified teachers.* Arlington, VA: National Board for Professional Teaching Standards.

Schacter, J., & Thum, Y. M. (2004). Paying for high- and low-quality teaching. *Economics of Education Review, 23*, 411–430.

Administrator

Borman, G. D., & Kimball, S. M. (2005). Teacher quality and educational equality: Do teachers with higher standards-based evaluation ratings close student achievement gaps? *The Elementary School Journal, 106*(1), 3–20.

Gallagher, H. A. (2004). Vaughn Elementary's innovative teacher evaluation system: Are teacher evaluation scores related to growth in student achievement? *Peabody Journal of Education, 79*(4), 79–107.

Heneman, H. G., Milanowski, A., Kimball, S. M., & Odden, A. (2006). *Standards-based teacher evaluation as a foundation for knowledge- and skill-based pay* (CPRE Policy Brief No. RB-45). Philadelphia: Consortium for Policy Research in Education. Retrieved September 11, 2007, from http://www.wcer.wisc.edu/cpre/publications/rb45.pdf

Holtzapple, E. (2003). Criterion-related validity evidence for a standards-based teacher evaluation system. *Journal of Personnel Evaluation in Education, 17*(3), 207–219.

Jacob, B. A., & Lefgren, L. (2005). *Principals as agents: Subjective performance measurement in education* (Faculty Research Working Paper Series RWP05-040). Cambridge, MA: Harvard University.

Kimball, S. M., White, B., Milanowski, A. T., & Borman, G. (2004). Examining the relationship between teacher evaluation and student assessment results in Washoe County. *Peabody Journal of Education, 79*(4), 54–78.

Milanowski, A. (2004). The relationship between teacher performance evaluation scores and student achievement: Evidence from Cincinnati. *Peabody Journal of Education, 79*(4), 33–53.

Auditor

Kannapel, P. J., & Clements, S. K. (with Taylor, D., & Hibpshman, T.). (2005). *Inside the black box of high-performing high-poverty schools.* Lexington, KY: Prichard Committee for Academic Excellence.

Observations Using Charlotte Danielson's *Enhancing Professional Practice: A Framework for Teaching*

Borman, G. D., & Kimball, S. M. (2005). Teacher quality and educational equality: Do teachers with higher standards-based evaluation ratings close student achievement gaps? *The Elementary School Journal, 106*(1), 3–20.

Gallagher, H. A. (2004). Vaughn Elementary's innovative teacher evaluation system: Are teacher evaluation scores related to growth in student achievement? *Peabody Journal of Education, 79*(4), 79–107.

Heneman, H. G., Milanowski, A., Kimball, S. M., & Odden, A. (2006). *Standards-based teacher evaluation as a foundation for knowledge- and skill-based pay* (CPRE Policy Brief No. RB-45). Philadelphia: Consortium for Policy Research in Education. Retrieved September 11, 2007, from http://www.wcer.wisc.edu/cpre/publications/rb45.pdf

Holtzapple, E. (2003). Criterion-related validity evidence for a standards-based teacher evaluation system. *Journal of Personnel Evaluation in Education, 17*(3), 207–219.

Kimball, S. M., White, B., Milanowski, A. T., & Borman, G. (2004). Examining the relationship between teacher evaluation and student assessment results in Washoe County. *Peabody Journal of Education, 79*(4), 54–78.

Milanowski, A. (2004). The relationship between teacher performance evaluation scores and student achievement: Evidence from Cincinnati. *Peabody Journal of Education, 79*(4), 33–53.

Archival Data

State or District Administrative Records

Aaronson, D., Barrow, L., & Sander, W. (2003). *Teachers and student achievement in the Chicago public high schools* (Working Paper Series No. WP 02-28). Chicago: Federal Reserve Bank of Chicago.

Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2005). *How changes in entry requirements alter the teacher workforce and affect student achievement.* Albany, NY: Teacher Policy Research.

Carr, M. (2006). *The determinants of student achievement in Ohio's public schools* (Policy Report). Columbus, OH: Buckeye Institute for Public Policy Solutions.

Cavalluzzo, L. C. (2004). *Is National Board Certification an effective signal of teacher quality?* (Report No. IPR 11204). Alexandria, VA: CNA Corporation.

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2006). *Teacher-student matching and the assessment of teacher effectiveness* (NBER Working Paper No. 11936). Cambridge, MA: National Bureau of Economic Research.

Cohen, D. K., & Hill, H. C. (1998). *Instructional policy and classroom performance: The mathematics reform in California* (CPRE Research Report No. RR-39). Philadelphia: Consortium for Policy Research in Education.

Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Vasquez Heilig, J. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives, 13*(42). Retrieved September 11, 2007, from http://epaa.asu.edu/epaa/v13n42/

Decker, P. T., Mayer, D. P., & Glazerman, S. (2004). *The effects of Teach for America on students: Findings from a national evaluation.* Princeton, NJ: Mathematica Policy Research.

Frome, P., Lasater, B., & Cooney, S. (2005). *Well-qualified teachers and high-quality teaching: Are they the same?* (Research Brief). Atlanta, GA: Southern Regional Education Board. Retrieved September 11, 2007, from http://www.sreb.org/programs/hstw/publications/briefs/05V06_Research_Brief_high-quality_teaching.pdf

Goe, L. (2002). Legislating equity: The distribution of emergency permit teachers in California. *Education Policy Analysis Archives, 10*(42), 1–50.

Goldhaber, D., & Anthony, E. (2005). *Can teacher quality be effectively assessed?* (Working Paper). Seattle, WA: Center on Reinventing Public Education. Retrieved September 11, 2007, from http://www.crpe.org/workingpapers/pdf/NBPTSquality_report.pdf

Harbison, R. W., & Hanushek, E. A. (1992). *Educational performance of the poor: Lessons from rural northeast Brazil.* New York: Oxford University Press.

Harris, D. N., & Sass, T. R. (2007). The effects of NBPTS-certified teachers on student achievement (CALDER Working Paper No. 4). Washington, DC: National Center for Analysis of Longitudinal Data in Education Research. Retrieved September 11, 2007, from http://www.caldercenter.org/PDF/1001060_NBPTS_Certified.pdf

Jacob, B. A., & Lefgren, L. (2005). *Principals as agents: Subjective performance measurement in education* (Faculty Research Working Paper Series RWP05-040). Cambridge, MA: Harvard University.

Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2006, March). *What does certification tell us about teacher effectiveness? Evidence from New York City.* New York: New York National Bureau of Economic Research.

Kannapel, P. J., & Clements, S. K. (with Taylor, D., & Hibpshman, T.). (2005). *Inside the black box of high-performing high-poverty schools.* Lexington, KY: Prichard Committee for Academic Excellence.

Leana, C. R., & Pil, F. K. (2006). Social capital and organizational performance: Evidence from urban public schools. *Organization Science, 17*(3), 353–366.

Noell, G. H. (2006). *Value added assessment of teacher preparation* (Annual Report). Baton Rouge: Louisiana State University.

Rockoff, J. E. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review, 94*(2), 247–252.

Sanders, W. L., Ashton, J. J., & Wright, S. P. (2005). *Comparison of the effects of NBPTS certified teachers with other teachers on the rate of student academic progress.* Arlington, VA: National Board for Professional Teaching Standards. Retrieved September 11, 2007, from http://www.nbpts.org/UserFiles/File/SAS_final_NBPTS_report_D_-_Sanders.pdf

Smith, J. B., Lee, V. E., & Newmann, F. M. (2001). *Instruction and achievement in Chicago elementary schools.* Chicago: Consortium on Chicago School Research.

Tennessee Value-Added Assessment System

Dee, T. S. (2004). The race connection: Are teachers more effective with students who share their ethnicity? *Education Next, 2*, 52–59.

Nye, B., Konstantopoulos, S., & Hedges, L. V. (2004). How large are teacher effects? *Educational Evaluation and Policy Analysis, 26*(3), 237–257.

Texas Schools Project

Hanushek, E. A., Kain, J. F., O'Brien, D. M., & Rivkin, S. G. (2005). *The market for teacher quality* (Working Paper No. 11154). Cambridge, MA: National Bureau for Economic Research.

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica, 73*(2), 417–458.

References

Braun, H. I. (2005). *Using student progress to evaluate teachers: A primer on value-added models.* Princeton, NJ: Educational Testing Service.

Clotfelter, C., Glennie, E., Ladd, H., & Vigdor, J. (2006). *Would higher salaries keep teachers in high-poverty schools? Evidence from a policy intervention in North Carolina* (Working Paper No. 12285). Cambridge, MA: National Bureau of Economic Research. Retrieved September 11, 2007, from http://www.caldercenter.org/PDF/1001057_High_Poverty.pdf

Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2005). Who teaches whom? Race and the distribution of novice teachers. *Economics of Education Review, 24*(4), 377–392.

Ferguson, P., & Womack, S. T. (1993). The impact of subject matter and education coursework on teaching performance. *Journal of Teacher Education, 44*(1), 55–63.

Fetler, M. (1999). High school staff characteristics and mathematics test results. *Education Policy Analysis Archives, 7*(9). Retrieved September 11, 2007, from http://epaa.asu.edu/epaa/v7n9/

Goe, L. (2007). *The link between teacher quality and student outcomes.* Washington, DC: National Comprehensive Center for Teacher Quality.

Goldhaber, D. D., & Brewer, D. J. (Eds.). (1999). *Teacher licensing and student achievement.* Washington, DC: Thomas B. Fordham Foundation.

Kupermintz, H. (2003). Teacher effects and teacher effectiveness: A validity investigation of the Tennessee value added assessment system. *Educational Evaluation and Policy Analysis, 25*(3), 287–298.

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis, 24*(1), 37–62.

Lockwood, J. R., Louis, T. A., & McCaffrey, D. F. (2002). Uncertainty in rank estimation: Implications for value-added modeling accountability systems. *Journal of Educational and Behavioral Statistics, 27*(3), 255–270.

Milanowski, A. (2004). The relationship between teacher performance evaluation scores and student achievement: Evidence from Cincinnati. *Peabody Journal of Education, 79*(4), 33–53.

Monk, D. H. (1994). Subject area preparation of secondary mathematics and science teachers and student achievement. *Economics of Education Review, 13*(2), 125–145.

Mullens, J. E., Murnane, R. J., & Willett, J. B. (1996). The contribution of training and subject matter knowledge to teaching effectiveness: A multilevel analysis of longitudinal evidence from Belize. *Comparative Education Review, 40*(2), 139–157.

National Commission on Mathematics and Science Teaching for the 21st Century. (2000). *Before it's too late: A report to the nation from the National Commission on Mathematics and Science Teaching for the 21st Century.* Washington, DC: U.S. Department of Education. Retrieved September 11, 2007, from http://www.ed.gov/inits/Math/glenn/report.pdf

Nye, B., Konstantopoulos, S., & Hedges, L. V. (2004). How large are teacher effects? *Educational Evaluation and Policy Analysis, 26*(3), 237–257.

Rockoff, J. E. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review, 94*(2), 247–252.

Sanders, W. L., & Horn, S. P. (1998). Research findings from the Tennessee value-added assessment system (TVAAS) database: Implications for educational evaluation and research. *Journal of Personnel Evaluation in Education, 12*(3), 247–256.

Sanders, W. L., Saxton, A. M., & Horn, S. P. (1997). The Tennessee value-added assessment system: A quantitative, outcomes-based approach to educational assessment. In J. Millman (Ed.), *Grading teachers, grading schools: Is student achievement a valid evaluation measure?* (pp. 137-162). Thousand Oaks, CA: Corwin Press.

Sanders, S. L., Skonie-Hardin, S. D., Phelps, W. H., & Minnis, T. L. (1994, November). *The effects of teacher educational attainment on student educational attainment in four regions of Virginia: Implications for administrators.* Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Nashville, TN. (ERIC Document Reproduction Service No. 386 455). Retrieved September 11, 2007, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/24/97.pdf

Schlusmans, K. (1978). *What is an effective teacher?* Paper presented at the Conference of the International Association for Educational Assessment, Baden, Austria.

The Urban Teacher Collaborative. (2000). *The urban teacher challenge: Teacher demand and supply in the great city schools* (Report). Belmont, MA: Council of the Great City Schools. Retrieved September 11, 2007, from http://www.cgcs.org/pdfs/utc.pdf

U.S. Department of Education & Office of Postsecondary Education. (2005). *A highly qualified teacher in every classroom: The secretary's fourth annual report on teacher quality.* Washington, DC: Author. Retrieved September 11, 2007, from http://www.title2.org/TitleIIReport05.pdf

Useem, E., & Farley, E. (2004). *Philadelphia's teacher hiring and school assignment practices: Comparisons with other districts.* Philadelphia: Research for Action.

Vandevoort, L. G., Amrein-Beardsley, A., & Berliner, D. C. (2004). National board certified teachers and their students' achievement. *Education Policy Analysis Archives, 12*(46). Retrieved September 11, 2007, from http://epaa.asu.edu/epaa/v12n46/

NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

CHAPTER 2

Innovation Configurations to Improve Teacher Preparation in Reading, Classroom Behavior Management, and Inclusive Practices

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Innovation Configurations to Improve Teacher Preparation in Reading, Classroom Behavior Management, and Inclusive Practices

Daniel J. Reschly, Ph.D.,
Vanderbilt University

Susan M. Smartt, Ph.D.,
Vanderbilt University

Regina M. Oliver,
Vanderbilt University

Innovation configurations (IC) involving tables specifying key components of an instructional practice or behavioral intervention on one dimension and levels of implementation on the other have been developed at the National Comprehensive Center for Teacher Quality (NCCTQ) by Vanderbilt University to improve teacher preparation and professional development. The ICs address the areas of reading instruction, classroom organization and behavior management, and inclusive practices. Many current teacher education and professional development programs do not implement the scientifically based research on reading (Smartt & Reschly, 2007; Steiner & Rozen, 2004; Walsh, Glaser, & Wilcox, 2006), behavior management (Horner & Sugai, 2000; Kellam, Xiange, Merisca, Brown, & Ialongo, 1998; Oliver & Reschly, in press), and inclusive practices (Scruggs, Mastropieri, & McDuffie, 2007; U.S. Department of Education, 2004). Inadequate implementation of this knowledge base in teacher preparation reduces the qualifications of teachers and undermines the national policy goals to improve achievement and other educational outcomes.

The ICs described in this chapter are designed to improve teacher preparation and professional development, which will, in turn, improve teacher qualifications and enhance educational outcomes. The reading instruction and behavior management ICs are based on research regarding improving achievement and other outcomes for children and youth. We believe improved teacher preparation reflecting these research-based approaches will improve teaching practices, which will, in turn, improve student achievement. The policy bases, as well as the need, development, and intended uses for the ICs are discussed in this chapter.

Federal Policy Priorities and Foundations for Scientifically Based Instruction

The ICs in reading instruction, behavior management, and inclusive practices are firmly grounded in federal policies established in the Elementary and Secondary Education Act of 2002 (ESEA), now known as the No Child Left Behind (NCLB) Act, and in the Individuals with Disabilities Education Act of 2004 (IDEA). Both statutes place high priority on improving results for all students with additional emphasis on the following:

> (2) meeting the educational needs of low-achieving children in our nation's highest-poverty schools, limited English proficient children, migratory children, children with disabilities, Indian children, neglected or delinquent children, and young children in need of reading assistance;
>
> (3) closing the achievement gap between high- and low-performing children, especially the achievement gaps between minority and nonminority students, and between disadvantaged children and their more advantaged peers… (NCLB, 2002, Section 1001)

Historically, different terms have been used to refer to the children described in NCLB Section 1001. Regardless of terminology, the focus is clearly on students with poor educational outcomes in terms of achievement levels; behavior regulation; school completion; career development; and assumption of positive citizenship roles, including economic self-support.

NCLB and IDEA Mechanisms

The key mechanisms for accomplishing NCLB goals are school reform, scientifically based instruction delivered by highly qualified teachers (HQTs), and accountability for improved results. IDEA also places strong emphasis on improving academic achievement and success in the general education curriculum for students with disabilities as well as improving broader outcomes, such as graduation with a regular diploma and positive early-adult outcomes.

NCLB emphasizes the use of instruction that is structured according to scientifically based research (SBR) as one of the key foundations for improving results in general and remedial education. The term *scientifically based* appears 181 times in the statute, a clear indication of the importance Congress placed on the implementation of instructional procedures grounded in science. As defined in NCLB, the research base for SBR was largely limited to randomized control designs. Although the NCLB and IDEA laws have not changed, terminology in recent discussions has evolved from *SBR* to *evidence-based research* for at least two reasons. First, the narrow criteria for SBR excluded evidence from less rigorous research methodologies. In addition, only a limited number of true randomized control trial experiments have been conducted on many important educational research questions. The criteria for evidence-based research include a broader array of evidence from different research methodologies and have the effect of including a much larger number of research studies on which to base instruction and interventions. Randomized control designs with clear implications for instruction and interventions, however, do exist in some areas, most notably for Vanderbilt University's work in reading and classroom organization and behavior management.

Federal NCLB and IDEA policy clearly encourages instruction firmly grounded in science. Early identification and treatment of problems in general education are emphasized in both NCLB and IDEA, as well as the importance of HQTs to implement scientifically based instruction. Unfortunately, teacher preparation and professional development programs often do not provide adequate preparation in the key areas of reading, behavior management, and inclusive practices.

Innovation Configurations as Program Improvement Tools

ICs typically are established through tables that have two dimensions (Hall & Hord, 1987; Roy & Hord, 2004). Tables 1 and 2 (which appear later in this chapter) define the reading instruction and classroom organization and behavior management ICs. The essential components of the innovation or program are listed in the rows of the far left column, along with descriptors and examples to guide application of the criteria to coursework, standards, and classroom practices. The essential components of the ICs presented originate in research or policy (preferably both), with practice demonstrations and applications establishing the feasibility of wide dissemination and implementation. The research- and policy-based components are the critical features of ICs.

NCLB emphasizes the use of instruction that is structured according to scientifically based research (SBR) as one of the key foundations for improving results in general and remedial education.

The second dimension to be considered in the use of ICs is the degree of implementation. In the top row of the tables, several levels of implementation are defined. For example, no mention of the essential component is the lowest level of implementation and might be assigned a score of zero. Increasing levels of implementation are usually assigned progressively higher scores. Examples of higher implementation levels are as follows:

- The component is **mentioned** in the syllabus. (Score = 1)
- The component is **mentioned, plus readings/tests** are specified in the syllabus. (Score = 2)
- The component is **mentioned, plus readings/tests, and assignments, such as papers, or projects,** are required in the syllabus. (Score = 3)
- **All prior levels, plus supervised practice (field work) with feedback about degree of success** are required in the syllabus. (Score = 4)

The scores created to represent different levels of implementation are based on an ordinal scale—that is, a higher number indicates more of something, in this case more thorough implementation of an IC component. These scale points cannot, however, be interpreted as if the intervals between the scores are equal. For example, the difference between 1 and 2 cannot be assumed to be the same amount as the difference between 3 and 4. Furthermore, a score of 4 indicates more thorough implementation than a score of 2, but it cannot be interpreted as twice as much of some quality as a score of 2. Readers and potential users are urged to consider these limitations in the score scale when using it.

ICs have been used for at least 30 years in the development and implementation of educational innovations and methodologies (Hall & Hord, 1987; Roy & Hord, 2004). ICs have been used to evaluate programs and the fidelity of implementation of educational interventions (the degree to which the intervention was implemented as designed and intended).

ICs have been used most often as professional development tools to guide implementation of an innovation within a school and facilitate the change process. Some professionals use ICs for self-reflection and self-assessments. Other uses for ICs include program evaluation and research. We developed the reading instruction and classroom organization and behavior management ICs to evaluate and improve teacher preparation coursework and continuing professional development, focusing on the degree to which federal policies and SBR are implemented in coursework and supervised experiences. The ICs also are useful for examining professional association standards and state licensure and teacher education program approval requirements.

The reauthorization of IDEA (2004) further reflected Congressional commitment to the use of scientifically based reading instruction in the instruction and related services provided to students with disabilities.

Scientifically Based Reading Instruction IC

Related Federal Policy

NCLB, and by reference, IDEA (2004), were explicit regarding the adoption of scientifically based reading instruction. In this context, scientifically based reading instruction includes instruction in the five components of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension), integration of the five components, systematic and explicit instruction, early universal screening for all children, and periodic progress monitoring and formative evaluation for struggling readers (National Reading Panel, 2000; Snow, Burns, & Griffin, 1998; see also the Florida Center for Reading Research website at www.fcrr.org and the Vaughn Gross Center for Reading and Language Arts website at www.texasreading.org).

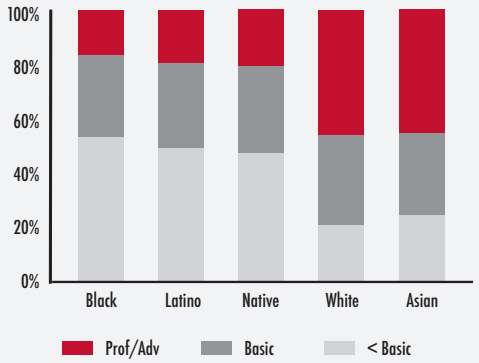
The reauthorization of IDEA (2004) further reflected Congressional commitment to the use of scientifically based reading instruction in the instruction and related services provided to students with disabilities. First, NCLB was cited frequently in the IDEA statute, typically around issues of alignment of requirements in such areas as HQTs, accountability mechanisms, data collection, and state reports

to the U.S. Department of Education. The clear intent was to produce closer alignment between what has been regarded as general, remedial, and special education. In addition, the criteria for scientifically based reading instruction were incorporated by reference into the IDEA explicitly at 34 C.F.R., Section 300.35. This provision established the same SBR and scientifically based reading instruction criteria in both NCLB and IDEA.

Need for Improved Reading Instruction

Improved reading is critical to accomplishing the goals of NCLB and IDEA (2004). The magnitudes of the reading achievement gaps across groups are apparent in the National Assessment of Education Progress 2005 (NAEP) results for fourth-grade students. The proportion of children reading below basic levels is too high for all groups but is particularly disturbing for African-American (58 percent), Hispanic (54 percent), and Native American (52 percent) groups (see Figure 1). High achievement in most academic subjects, socioeconomic mobility, and access to jobs with good incomes are largely dependent on reading and other complex literacy skills. Poor reading markedly undermines later achievement because the school curriculum from fourth grade on increasingly requires students to read to learn. Moreover, students who read below basic levels in fourth grade are unlikely to read competently as young adults.

Figure 1
NAEP Fourth-Grade Reading Results (2005)



Most graduates of current teacher preparation programs are not adequately prepared to implement scientifically based reading instruction in classrooms (Smartt & Reschly, 2007; Walsh et al., 2006). Only 11 of 72 programs in the study by Walsh et al. taught all five of the critical components of reading specified in NCLB. Smartt and Reschly (2007) also reported significant inadequacies in teacher preparation programs, national standards from scientific-professional associations, and state standards and credentialing requirements. These elements are connected. For example, teacher licensure examinations attempt to enhance content validity by reflecting what professional-scientific organizations specify and what is taught in university programs, which, in turn, are strongly influenced by professional standards and state licensure requirements.

Recent analysis substantiates the existence of inadequate scientifically based reading instruction in special education teacher preparation programs (Reschly, Holdheide, Smartt, & Oliver, 2007). Scientifically based reading instruction is not taught thoroughly in teacher preparation programs, nor is it represented adequately in special education professional association standards. Reading difficulties occur at very high frequencies among students with disabilities, yet not all scientifically based reading instruction elements appear in standards related to special education teacher preparation (Smartt & Reschly, 2007).

Development of the Scientifically Based Reading Instruction IC

The scientifically based reading IC, as detailed in Table 1, was developed as a tool to assist regional centers, states, and teacher preparation programs improve the reading instructional skills of teachers. The key components are derived from the scientific literature on reading instruction (Adams, 1990; Foorman et al., 2006; Lyon et al., 2001; Moats, 1999; National Reading Panel, 2000; Smartt & Reschly, 2007; Snow et al., 1998; Snow, Griffin, & Burns, 2005; Torgesen et al., 2001).

Table 1. Scientifically Based Reading Innovation Configuration

	Score = 0	Score = 1	Score = 2	Score = 3	Score = 4	Rating
Instructions: Place an X under the appropriate level of implementation for each course syllabus that meets the criteria specified from 0 to 4. Score and rate each item separately. Descriptors and/or examples are bulleted below each of the components.	**No evidence** that the component is included in the class syllabus.	Syllabi **mention component** in class syllabus.	Syllabi mention component in class and required **readings and tests and/or quizzes.**	Syllabi mention component in class with readings, tests, and **assignments and projects for application:** observations, lesson plans, classroom modeling.	Syllabi mention component in class with readings, tests, assignments, projects, **and teaching with application and feedback:** field work (practicum), tutoring.	The rating in this column is the highest score for any syllabus on each of the respective components.
Scientifically Based Reading Instruction, NCLB, IDEA • *Preventing Reading Difficulties in Young Children* (1998) • National Reading Panel Report (2000) • Reading success for all students • Scientifically based research (randomized studies, peer reviewed, replicated, minimize bias) • NCLB law (mandates scientifically based reading instruction) • Research-based strategies • Five essential elements of reading						
Phonemic Awareness (This is ideally subsumed under the broader topic phonological awareness.) • Individual speech sounds, phonemes • Precursor to phonics • Detect, segment, blend, and manipulate phonemes (sounds) (e.g., /b/ /a/ /t/ = bat) • Rhyming, alliteration in PK–K • Ability to manipulate sounds at the phoneme (sound) level • Elkonin boxes—common activity						
Column Subtotals						

	Score = 0	Score = 1	Score = 2	Score = 3	Score = 4	Rating
Instructions: Place an X under the appropriate level of implementation for each course syllabus that meets the criteria specified from 0 to 4. Score and rate each item separately. Descriptors and/or examples are bulleted below each of the components.	**No evidence** that the component is included in the class syllabus.	Syllabi **mention component** in class syllabus.	Syllabi mention component in class and required **readings and tests and/or quizzes.**	Syllabi mention component in class with readings, tests, and **assignments and projects for application:** observations, lesson plans, classroom modeling.	Syllabi mention component in class with readings, tests, and **assignments and projects for application:** observations, lesson plans, classroom modeling.	The rating in this column is the highest score for any syllabus on each of the respective components.
Phonics • Correspondence of sounds and letters • Phoneme-grapheme correspondences • Blending, decoding, encoding • Syllable types • Prefixes, suffixes, base words • Nonsense words (assessment) • Alphabetic principle • Word analysis • Words composed of letters (graphemes) that map to phonemes • Letters, sounds work in systematic way						
Fluency • Rate, accuracy, and prosody • Repeated readings • Fluency training • Partner reading • Measurable goals • Chart progress						
Column Subtotals						

Vocabulary • Taught directly and indirectly • Preteach • Oral language • Multiple contexts, meanings • Choosing, leveling words for explicit instruction • Word consciousness • Context • Morpheme						
Comprehension • Questioning strategies (i.e., before, during, and after reading) • Summarize/predict/retell • Metacognitive strategies • Teach both narrative and expository text structure • Collaborative strategic reading						
Integration • Planned connections of instruction for five essential elements of reading • Weaving of five essential components of reading (or any combination) first taught in isolation, always placed back in meaningful context • Integrated						
Column Subtotals						

	Score = 0	Score = 1	Score = 2	Score = 3	Score = 4	Rating
Instructions: Place an X under the appropriate level of implementation for each course syllabus that meets the criteria specified from 0 to 4. Score and rate each item separately. Descriptors and/or examples are bulleted below each of the components.	**No evidence** that the component is included in the class syllabus.	Syllabi **mention component** in class syllabus.	Syllabi mention component in class and required **readings and tests and/or quizzes.**	Syllabi mention component in class with readings, tests, and **assignments and projects for application:** observations, lesson plans, classroom modeling.	Syllabi mention component in class with readings, tests, and **assignments and projects for application:** observations, lesson plans, classroom modeling.	The rating in this column is the highest score for any syllabus on each of the respective components.
Systematic Instruction • Planned/purposeful/sequential • Step-by-step • Example: Teach from easy to difficult, such as certain letters (*b*, *m*, *a*) before others (*y*, *x*, *tch*). • Directions for determining whether reading programs use skills sequence and provide adequate practice						
Explicit Instruction • Direct/straight forward, (e.g., this is the letter *b* representing the \b\ sound) • No room for guessing • I do it, we do it, you do it.						
Column Subtotals						

Screening Assessment • Early identification and prevention • Brief measures • All students • Identifying those who require extra support • Valid and reliable instruments						
Progress Monitoring • Ongoing and frequent assessment for those requiring additional support • Providing additional support, monitor every 1–2 weeks • Instructional modifications made accordingly • Reflects appropriateness of the teacher's intervention						
Column Subtotals						
Column Totals (All Pages)						

Two websites provide additional information on scientifically based reading instruction (www.fcrr.org and www.texasreading.org). The content validity of the reading configuration is based on the correspondence of the components (see far left column of Table 1) to the scientific literature on reading instruction.

The scientifically based reading IC was applied in a study of required coursework syllabi from 26 of 31 special education teacher preparation programs in a large-population state. Interjudge reliability was approximately .85 for exact ratings from two independent judges. This level of reliability is sufficient for program evaluation purposes—in this case, examination of the content of teacher preparation coursework (Reschly et al., 2007).

Suggested uses of this scientifically based reading IC are as follows: evaluation and improvement of teacher preparation and professional development in reading instruction, examination and improvement of scientific-professional association standards for teacher preparation, and improved state teacher licensure standards and teacher preparation program approval.

Classroom Organization and Behavior Management IC

Related Federal Policy

Reciprocal relationships between behavior and achievement (see Horner & Sugai, 2000; Shinn, Stoner, & Walker, 2002) are at least implicitly recognized in NCLB and IDEA (2004). Section 2122 of NCLB requires the following:

> (9) a description of how the local educational agency (LEA) will provide training to enable teachers to—
>
> > (A) teach and address the needs of students with different learning styles, particularly students with disabilities, students with special learning needs (including students who are gifted and talented), and students with limited English proficiency;
> >
> > (B) **improve student behavior in the classroom and identify early and appropriate interventions to help students described in subparagraph (A) learn;…** [emphasis added]

A critical Congressional finding that appeared in an early section of the IDEA (2004) statute endorsed schoolwide literacy, behavior supports and management, and prevention of disabilities (20 U.S. 1400.602[c]):

> (5) Almost 30 years of research and experience has demonstrated that the education of children with disabilities can be made more effective by—
>
> > (F) providing incentives for whole-school approaches, scientifically based early reading programs, positive behavioral interventions and supports, and early intervening services to reduce the need to label children as disabled in order to address the learning and behavioral needs of such children;

Both NCLB and IDEA (2004) place significant emphasis on the prevention of poor achievement, learning and behavior problems, and disabilities through intensive instruction in general and remedial education. IDEA now allows LEAs to use up to 15 percent of their Federal IDEA funding for early intervening services in general education. If significant minority disproportionality exists in the special education program, LEAs are required to allocate 15 percent of these monies for prevention efforts. Early intervening services are designed to prevent misidentification and overidentification of students with disabilities through general and remedial education interventions focused on "scientifically based academic and behavioral interventions, including scientifically based literacy instruction …" (34 C.F.R. 300.226).

Need for Improved Classroom Organization and Behavior Management

The need for the classroom organization and behavior management IC is based on the following evidence (Oliver & Reschly, in press):

- Achievement and behavior are reciprocally related.
- The learning opportunities of individuals and groups of children are compromised by disruptive behavior.
- Inclusion of students with disabilities in general education classrooms and curricula is often undermined by disruptive behavior.
- Teacher preparation programs do not provide adequate training in classroom organization and behavior management.
- Teacher attrition is related to problems in classroom behavior management.

Student discipline issues are a significant source of teacher stress and burnout (Brouwers & Tomic, 2000) and a significant reason why teachers leave the profession (Coggshall, 2006; Ingersoll & Smith, 2003).

A recent report suggests that teacher turnover is enormously costly (National Commission on Teaching and America's Future, 2007). If teachers are not able to manage student behavior effectively, instructional time is lost. This leads to reduced opportunities to learn essential content, skills, and competencies. Teacher preparation and support for new teachers that includes content and supervised experiences with classroom management and interventions for disruptive behavior can thus improve teacher retention and effectiveness.

Disruptive behaviors frequently reduce access to general education curricula and classrooms for students with disabilities and diminish the benefits of instruction for students with at-risk characteristics and disabilities, regardless of setting. For example, inattention and disruptive behaviors diminish the effects of small-group, tutoring interventions in reading (Torgesen et al., 1999; Vaughn, Linan-Thompson, & Hickman, 2003; also see the Vaughn Gross Center for Reading and Language Arts website at www.texasreading.org/3tier/). Moreover, sustained effects of small-group interventions depend heavily on more efficient learning in general education classrooms.

Development of the Classroom Organization and Behavior Management IC

The seven key components in the classroom organization and behavior management IC, shown in Table 2, are as follows: (1) structured environment, (2) active supervision and student engagement, (3) schoolwide behavioral expectations, (4) classroom rules, (5) classroom routines, (6) encouragement of appropriate behavior, and (7) behavior reduction strategies. *Behavior reduction strategies* refer to methods to reduce or eliminate undesirable, disruptive behaviors that interfere with the learning opportunities of individuals and groups of students. An example of an intervention to reduce disruptive behavior is response cost, which involves withdrawing reinforcing events such as loss of privileges being made contingent on the occurrence of disruptive behavior.

Teacher preparation and support for new teachers that includes content and supervised experiences with classroom management and interventions for disruptive behavior can thus improve teacher retention and effectiveness.

Classroom management and student engagement can sometimes be improved dramatically by relatively inexpensive continuing education and relatively small changes in the classroom environment. We are impressed with a randomized control study by Kellam, Xiange et al. (1998) in a large urban school district with high proportions of economically disadvantaged, minority, and low-performing schools. The relatively simple procedure was the Good Behavior Game (Barrish, Saunders, & Wolf, 1969) taught to randomly assigned teachers

in one afternoon of continuing education with a half-day follow-up a few months later. Control group teachers received the same amount of continuing education but on different topics—the alignment of state standards, curricula, and high-stakes assessments.

The Good Behavior Game involves constituting two or more groups of children in a classroom who attempt to display the highest rate of appropriate behaviors, such as following classroom rules, engaging in academic tasks, and completion of work. The group with the highest rate of appropriate behavior wins a daily prize (e.g., lining up first for recess or assisting the teacher with classroom tasks such as passing out papers). Elementary age children generally are highly motivated by these arrangements. Applications also exist for middle and high schools (e.g., homework pass consequences). Rates of disruptive and aggressive behaviors declined significantly and immediately in the experimental classrooms. Engaged time and academic productivity increased. The decline in aggressive behaviors for boys in the experimental group compared to controls persisted through sixth grade (Greer-Chase, Rhodes, & Kellam, 2002; Kellam, Mayer, Rebok, & Hawkins, 1998). Three conclusions from Kellam, Xiange et al. (1998) are as accurate today as they were 10 years ago:

- Teacher training typically does not provide effective methods and experience in classroom behavior management. (p. 182)
- Teachers' skills at classroom management were then critical to children's socialization, particularly in the face of family poverty. (p. 182)
- The policy implications are that teachers' colleges and inservice training need to include specific training in classroom behavior management as an important part of the socialization role of the classroom. (p. 182)

The behavior innovation configuration was used in the study of course syllabi described briefly in a prior section (Reschly et al., 2007). The reliability of exact agreements across two independent judges was again approximately .85. Reliability at this level is sufficient to support the use of the instrument in evaluation studies—in this case, evaluation of teacher preparation in classroom organization and behavior management. The intended uses for the classroom organization and behavior management IC are the same as those for the reading IC: improving teacher preparation and professional development experiences, prompting greater attention to classroom behavior management in professional association standards, and improving state licensure and teacher preparation program approval standards.

There is one important caution: Before presenting the behavior IC in this chapter, it is important to emphasize that providing challenging instruction at the student's instructional level and using a variety of teaching methods are prerequisites to effective classroom organization and behavior management. For example, matching instruction to the child's skill level in reading using a variety of methods is much more effective than instruction that may require reading competencies at two or more grade levels above the child's current reading level. Research literature clearly indicates that good instruction, although necessary, is not sufficient to produce high achievement; application of behavior strategies is a second necessary component.

Table 2. Classroom Organization and Behavior Management Innovation Configuration

	Score = 0	Score = 1	Score = 2	Score = 3	Score = 4	Rating
Instructions: Place an X under the appropriate level of implementation for each course syllabus that meets the criteria specified from 0 to 4. Score and rate each item separately.	**No evidence** that the component is included in the class syllabus.	Syllabi **mention** content related to the component by listing it (e.g., classroom environment, structure).	Syllabi mention the component and require **readings** (at least two, either textbooks or journal articles) on the topic.	Syllabi mention the component; require readings; and have either an **assignment, project, or test** on the topic.	Syllabi mention the component; require readings; have assignments, projects, or tests and **supervised practice** related to the concept through student teaching activities.	The rating in this column is the highest score for any syllabus on each of the respective components.
Structured Environment • Predictable routines established and taught (e.g., turning in homework, transitions, bathroom requests) and daily schedule posted. • Environment arranged for ease of flow of traffic and distractions minimized. **Active Supervision and Student Engagement** • Teacher scans, moves in unpredictable ways, and monitors student behavior. • Teacher uses more positive to negative teacher-student interactions. • Teacher provides high rates of opportunities for students to respond. • Teacher utilizes multiple observable ways to engage students (e.g., response cards, peer tutoring).						
Schoolwide Behavioral Expectations • A few, positively stated behavioral expectations, posted, systematically taught, reinforced, and monitored.						
Column Subtotals						

	Score = 0	Score = 1	Score = 2	Score = 3	Score = 4	Rating
Instructions: Place an X under the appropriate level of implementation for each course syllabus that meets the criteria specified from 0 to 4. Score and rate each item separately.	**No evidence** that the component is included in the class syllabus.	Syllabi **mention** content related to the component by listing it (e.g., classroom environment, structure).	Syllabi mention the component and require **readings** (at least two, either textbooks or journal articles) on the topic.	Syllabi mention the component; require readings; and have either an **assignment, project, or test** on the topic.	Syllabi mention the component; require readings; and have assignments, projects, or tests and **supervised practice** related to the concept through student teaching activities.	The rating in this column is the highest score for any syllabus on each of the respective components.
Classroom Rules • A few, positively stated behavioral rules linked to schoolwide expectations. • Posted, systematically taught, reinforced, and monitored.						
Classroom Routines • Classroom routines are systematically taught, reinforced, and monitored within the context of the classroom (e.g., turning in homework, requesting assistance).						
Column Subtotals						

Encourage Appropriate Behavior • Procedures to acknowledge appropriate behavior at the group level (e.g., specific, contingent praise, tokens, activities, group contingencies, "Good Behavior Game"). • Procedures to encourage appropriate behavior at the individual student level (e.g., specific, contingent praise, behavior contracts). • Data collection on frequency of appropriate behavior within classroom environment.						
Behavior Reduction Strategies • Antecedent strategies to prevent inappropriate behavior (e.g., precorrection, prompts, environmental arrangements). • Multiple procedures to respond to inappropriate behavior. • Procedures to teach replacement behaviors and to re-teach appropriate behavior (e.g., overcorrection). • Differential reinforcement (e.g., reinforcing other, competing behaviors). • Effective use of consequences (e.g., planned ignoring, time-out from positive reinforcement, reinforcing around target student).						
Column Subtotals						
Column Totals (All Pages)						

Listen to NCCTQ's National Issues Forums Online

Preparing Special Education Teachers

NCCTQ convened an invitational issue forum for the regional comprehensive assistance centers on June 27, 2007, in Arlington, Virginia. The roundtable discussion focused on special education issues—including recent policy, research, and practice—with an emphasis on teacher preparation.

Information and materials are available online (www.ncctq.org/events.php).

Implementing the Highly Qualified Teacher Plans

NCCTQ convened an invitational issue forum March 28–29, 2007, in Washington, D.C., to assist regional comprehensive assistance centers and state education agencies move toward implementation of the highly qualified teacher plans.

Information and materials are available online (www.ncctq.org/issueforums/hqplans/).

Addressing Personnel Shortages and the Recruitment of Special Education, Mathematics, and Science Teachers in At-Risk Schools

On May 24–25, 2006, NCCTQ hosted its inaugural issue forum, "Addressing Personnel Shortages and the Recruitment of Special Education, Mathematics, and Science Teachers in At-Risk Schools." The primary goals of the meeting were as follows:

- Build knowledge and resource foundation.
- Learn emerging strategies and practices.
- Build capacity to share and apply knowledge base.
- Use applicable tools and resources to identify data trends around special education, mathematics, and science.

Information and materials are available online (www.ncctq.org/issueforums/atrisk/).

Inclusive Practices IC

Related Federal Policy

The first recommendation in the President's Commission on Excellence in Special Education's 2002 report, *A New Era: Revitalizing Special Education for Children and Their Families*, was that all children with disabilities are general education students, regardless of the category or severity of their disability. The current high priority placed on fuller integration of students with disabilities in general education classrooms is a continuation of the well-established Least Restrictive Environment (LRE) Principle from the Education of All Handicapped Children Act (1975). One of the current priorities in IDEA (2004) is the improved integration of students with disabilities into general education classrooms.

Nationwide Need for Inclusive Practices

Currently, states and local districts vary enormously in the implementation of the LRE principle (see www.ideadata.org). Nationally, approximately 54 percent of students with disabilities participate in general education classrooms for 80 percent or more of the school day; however, state patterns for participation in the general education classrooms for 80 percent or more of the school day vary greatly—from 23 percent in Hawaii to 79 percent in North Dakota (www.ideadata.org/tables29th/ar_2-2.xls). Moreover, a recent metasynthesis of qualitative studies regarding integration practices identified significant variations in the roles of teachers, student participation, and curricular emphases (Scruggs et al., 2007). Current policy clearly assumes that low implementation of LRE diminishes opportunities for full participation in the general education curriculum and likely reduces educational outcomes.

Development of the Inclusive Practices IC

The need for the inclusive practices IC is based on the policy mandates to improve the integration of students with disabilities in general education settings and curricula. The content for this IC is based on the extensive literature on integration of students with disabilities into general classroom settings (e.g., Scruggs et al., 2007; U.S. Department of Education, 2004). The work also capitalizes on findings established at two technical assistance centers funded by the U.S. Department of Education's Office of Special Education Programs, the Center on Improving Teacher Quality (www.ccsso.org/projects/), and the Center on Personnel Studies in Special Education (www.copsse.org). We have attempted to build on the work of these two centers by developing a tool that specifies the required content and experiences in teacher preparation coursework that improves collaboration among general and special education teachers and, in turn, improves access to the general education curriculum for students with disabilities.

The inclusive practices IC is a tool to evaluate and improve practices to more fully and effectively integrate students with disabilities in general education settings.

The current version of the inclusive practices IC identifies five key components based on the literature cited previously: (1) collaborative planning; (2) instructional strategies, accommodations, and modifications; (3) services in inclusive settings; (4) social opportunities, relationships, and self-advocacy; and (5) family involvement. Each of these components is firmly grounded in the inclusive practices literature. This literature, however, consists primarily of small sample qualitative studies that do not generate efficacy information for the specific components of inclusive practices (Scruggs et al., 2007). The degree to which the inclusive practices actually produce higher achievement has not yet been firmly established; thus, these components cannot be regarded at this time as being "evidence-based." The justification for developing the inclusive practices IC rests on policy mandates requiring such practices rather than on evidence-based research that supports such practices.

The inclusive practices IC is a tool to evaluate and improve practices to more fully and effectively integrate students with disabilities in general education settings. This IC has been applied in one study of course syllabi described in prior sections (Reschly et al., 2007). Interjudge reliability in this study was .79, closely approximating the level required for use in evaluation studies. The IC is in the final stages of development and will be available on the NCCTQ website (www.ncctq.org) in the near future.

Realization of the NCLB and IDEA (2004) goals requires HQTs who apply scientifically based interventions for all children.

Summary

Many teacher preparation programs do not implement scientifically based research or evidence-based programs for reading instruction (Smartt & Reschly, 2007; Steiner & Rozen, 2004; Walsh et al., 2006), behavior management (Horner & Sugai, 2000; Kellam, Xiange et al., 1998; Oliver & Reschly, in press), and inclusive practices (Scruggs et al., 2007; U.S. Department of Education, 2004). ICs were developed in scientifically based reading instruction and classroom organization and behavior management as tools to align teacher preparation and professional development with federal policies and evidence-based research. Improvements in teacher preparation and professional development are likely to produce changes in teaching practices, aligning them more closely with evidence-based instruction and interventions that produce improved achievement for children and youth.

Ameliorating large gaps in achievement related to group and socioeconomic status is a high priority in NCLB (2002). Enormous gaps exist, for example, among racial and ethnic groups according to National Assessment of Educational Progress (2005) reading results. Implementation of more effective reading instruction firmly grounded in science (Snow et al., 1998) is a promising approach to reducing these achievement gaps and improving results. Furthermore, teachers report dealing with discipline and classroom behavior as a major reason for leaving the teaching profession (Coggshall, 2006; Ingersoll & Smith, 2003). Academic instruction, effective classroom organization, and behavior management are reciprocally related. Reading and behavior ICs presented in this chapter are designed to improve teacher preparation, leading to improved teaching practices and resulting in improved student performance.

The foundation for the inclusive practices IC rests primarily on NCLB and IDEA policy mandates. Currently, the specific inclusive practices components cannot be regarded as being evidence-based, in the sense of the components having demonstrated clear empirical connections to improved student achievement. Instead, these inclusive practices are designed to implement policy mandates and enhance access to the general education curriculum for students with disabilities. Accomplishment of the latter likely sets the stage for improved achievement for students with disabilities.

Realization of the NCLB and IDEA (2004) goals requires HQTs who apply scientifically based interventions for all children. A prerequisite is teacher preparation and professional development that incorporates policy goals and scientifically based instruction. The ICs described here are designed to improve the degree to which teacher preparation programs implement SBR and scientifically based reading instruction, classroom organization and behavior management, and inclusive practices leading to improved teacher qualifications, improved teaching practices, and improved student achievement.

References

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Barrish, H. H., Saunders, M., & Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2*, 119–124.

Brouwers A., & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teaching and Teacher Education, 16*, 239–253.

Coggshall, J. G. (2006). *Prospects for the profession: Public opinion research on teachers.* Washington, DC: National Comprehensive Center for Teacher Quality.

Education of All Handicapped Children Act of 1975, 20 U.S.C. §1400 *et seq.* (Statute); 34 CFR 300.

Foorman, B. R., Schatschneider, C., Eakin, M. N., Fletcher, J. M., Moats, L. C., & Francis, D. J. (2006). The impact of instructional practices in grades 1 and 2 on reading and spelling achievement in high poverty schools. *Contemporary Educational Psychology, 31*, 1–29.

Greer-Chase, M., Rhodes, W. A., & Kellam, S. G. (2002). Why the prevention of aggressive disruptive behaviors in middle school must begin in elementary school. *The Clearing House, 75*(5), 242–245.

Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* New York: State University of New York Press.

Horner, R. H., & Sugai, G. (2000). School-wide behavior support: An emerging initiative (special issue). *Journal of Positive Behavioral Interventions, 2*, 231–233.

Individuals with Disabilities Education Improvement Act of 2004, Pub. L. No. 108–446. (2004). Retrieved September 11, 2007, from http://idea.ed.gov/download/statute.html

Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership, 60*, 30–33.

Kellam, S. G., Mayer, L. S., Rebok, G. W., & Hawkins, W. E. (1998). The effects of improving achievement on aggressive behavior and of improving aggressive behavior on achievement through two prevention interventions: An investigation of causal paths. In B. Dohrenwend (Ed.), *Adversity, stress, and psychopathology* (pp. 486–505) New York: Oxford Press.

Kellam, S. G., Xiange, L., Merisca, R., Brown, C. H., & Ialongo, N. (1998). The effect of level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology, 10,* 165–185.

Lyon, G. R., Fletcher, J. M., Shaywitz, S. E., Shaywitz, B. A., Wood, F. B., Schulte, A., et al. (2001). Rethinking learning disabilities. In C. E. Finn, Jr., A. J. Rotherham, & C. R. Hokanson, Jr. (Eds.), *Rethinking special education for a new century* (pp. 259–287). Washington, DC: Thomas B. Fordham Foundation and Progressive Policy Institute.

Moats, L. C. (1999). *Teaching reading is rocket science.* Washington, DC: American Federation of Teachers. Retrieved September 11, 2007 from http://www.aft.org/pubs-reports/downloads/teachers/rocketsci.pdf

National Commission on Teaching and America's Future. (2007). *The cost of teacher turnover study and cost calculator.* Retrieved September 11, 2007, from http://www.nctaf.org/resources/demonstration_projects/turnover/TeacherTurnoverCostStudy.htm

National Assessment of Educational Progress. (2005). *The nation's report card: Reading.* Washington, DC: National Center for Educational Statistics, Institute of Education Sciences. Retrieved September 11, 2007, from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006451

National Reading Panel. (2000). *Report of the National Reading Panel: Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* Washington, DC: National Institutes of Health, National Institute of Child Health and Human Development (NIH Pub. No. 00-4769). Retrieved September 11, 2007, from http://www.nichd.nih.gov/publications/nrp/smallbook.cfm

No Child Left Behind Act of 2001, Pub. L. No. 107–110, 115 Stat. 1425 (2002). Retrieved September 11, 2007, from http://www.ed.gov/policy/elsec/leg/esea02/index.html

Oliver, R. M., & Reschly, D. J. (in press). *Improving student outcomes in general and special education: Effective classroom management.* Washington, DC: National Comprehensive Center on Teacher Quality.

President's Commission on Excellence in Special Education. (2002). *A new era: Revitalizing special education for children and their families.* Washington, DC: U.S. Department of Education.

Reschly, D. J., Holdheide, L. R., Smartt, S. M., & Oliver, R. M. (2007). *Evaluation of special education teacher preparation coursework reading, behavior, and inclusive practices.* Springfield: Illinois State Board of Education.

Roy, P., & Hord, S. M. (2004). Innovation configurations chart a measured course toward change. *Journal of Staff Development, 25*(2), 54–58.

Scruggs, T. K., Mastropieri, M. A., & McDuffie, K. A. (2007). Co-teaching in inclusive classrooms: A metasynthesis of qualitative research. *Exceptional Children, 73,* 392–416.

Shinn, M. R., Stoner, G., & Walker, H. M. (2002). *Interventions for academic and behavioral problems II: Preventive and remedial approaches.* Bethesda, MD: National Association of School Psychologists.

Smartt, S. M., & Reschly, D. J. (2007). *Barriers to the preparation of highly qualified teachers to teach reading.* Washington, DC: National Comprehensive Center on Teacher Quality.

Snow, C., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Snow, C., Griffin, P., & Burns, M. S. (2005). *Knowledge to support the teaching of reading: Preparing teachers for a changing world.* San Francisco: Jossey-Bass.

Steiner, D. M., & Rozen, S. D. (2004). Preparing tomorrow's teachers: An analysis of syllabi from a sample of America's schools of education. In F. M. Hess, A. J. Rotherham, & K. Walsh (Eds.), *A qualified teacher in every classroom? Appraising old answers and new ideas* (pp.119–148). Cambridge, MA: Harvard Education Press.

Torgesen, J. K., Alexander, A.W., Wagner, R. K., Rashotte, C. A., Voeller, K. K. S., & Conway, T. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities, 34,* 33–58.

Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Rose, E., Lindamood, P., Conway, T., et al. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational Psychology, 91,* 579–593.

U.S. Department of Education. (2004). *Twenty-sixth annual report to Congress on the implementation of the Individuals with Disabilities Education Act.* Washington, DC: Office of Special Education Programs. Retrieved September 11, 2007, from http://www.ed.gov/about/reports/annual/osep/2004/26th-vol-1.pdf

Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003). Response to instruction as a means of identifying students with reading/learning disabilities. *Exceptional Children, 69,* 391–409.

Walsh, K., Glaser, D., & Wilcox, D. D. (2006). *What education schools aren't teaching about reading and what elementary teachers aren't learning.* Washington, DC: National Center on Teacher Quality. Retrieved September 11, 2007, from http://www.nctq.org/nctq/images/nctq_reading_study_app.pdf

NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

CHAPTER 3

The Teacher Preparation ➔ Teacher Practices ➔ Student Outcomes Relationship in Special Education

Chapter 3

The Teacher Preparation ➔ Teacher Practices ➔ Student Outcomes Relationship in Special Education

Laura Goe, Ph.D., ETS

Although the teacher preparation ➔ teacher practices ➔ student outcomes link is important for understanding how teacher preparation programs make a difference in student achievement, it is difficult to document the connection because of a scarcity of research that investigates the *complete* three-part connection. This is true of research in both general education and special education settings. There are, however, a number of research studies that illuminate *part* of the connection (i.e., connecting teacher preparation to teacher practices, connecting teacher practices to student achievement, or connecting teacher preparation directly to student achievement—without consideration of teacher practices). This chapter highlights findings from a research synthesis that provides an overview of the evidence on how components of teacher preparation translate into specific classroom practices that in turn impact the achievement of at-risk students and students with special needs (Goe, 2006) and findings from a National Comprehensive Center for Teacher Quality (NCCTQ) TQ Research and Policy Brief focused on the same topic (Goe & Coggshall, 2007).

These documents focused on promising research that investigated *part* of the connection and suggested avenues to follow in establishing the importance of this relationship for the following:

- Developing better prepared teachers.
- Achieving improved academic outcomes for special-needs and at-risk students.
- Establishing a roadmap for what should be done to better evaluate the teacher preparation ➔ teacher practices ➔ student outcomes link.

Definitions as They Apply to This Work

- *Teacher preparation* means the preparation program, typically in a college of education, that a teacher attends in order to obtain a teaching certification and includes alternative certification programs.
- *Teacher practices* consist of instructional strategies, techniques, and classroom practices that teachers use in day-to-day teaching.
- *Student outcomes* encompass evidence of learning as measured by teacher observations, curriculum-based assessments, scores on standardized tests, and other purposeful evaluations of student progress.

Special-Needs Students. Just over 8 percent of students (ages 6–21) in the estimated U.S. resident population in 1999–2000 were served under the Individuals with Disabilities Education Act (IDEA), and specific learning disabilities accounted for about 50 percent of those students (U.S. Department of Education, 2002, pp. 21–22). *High incidence disabilities* are those that occur at a much greater frequency than less common disabilities and account for more than 80 percent of school-aged special education students' disabilities (Chambers, Shkolnik, & Pérez, 2003). High-incidence disabilities include specific learning disabilities, which IDEA defines as disorders in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest themselves in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations (IDEA, Section 1401[30]A). Other high-incidence disabilities include emotional disturbance, mild mental retardation, and speech/language impairment. The latter category consists primarily of students with attention deficit/hyperactivity

disorder. The "other" health impairment prevalence is higher than either emotional disturbance or mild mental retardation.

Although the percentage of students with special needs is small compared to the general student population, the numbers are substantial: In 1999–2000, nearly 3 million school-aged children were categorized as having specific learning disabilities (U.S. Department of Education, 2002). According to 2003 data, larger percentages of African-American (11.5 percent) and Native American students (11.9 percent) were identified as having special needs than Hispanic (7.5 percent), white (8.4 percent), or Asian students (4.4 percent) (Freeman & Fox, 2005). Students with special needs and students at risk due to poverty are best served by teachers who have participated in specialized teacher training (as part of their teacher preparation or through professional development) as well as exposure to high-quality, targeted instructional practices.

Teacher preparation programs have found it necessary to make changes to their curriculum to better prepare general education preservice teachers to work with students with special needs. It is no longer sufficient to prepare a relatively small number of highly specialized teachers who will have sole responsibility for providing the educational services to special-needs students.

How the Teaching of Special-Needs Students Has Changed. Until the 1970s, with the passage of Public Law 94-142 (PL94-142), which called for special-needs students to be educated in the "least restrictive environment" (Education for All Handicapped Children Act, 1975), students with special needs were often isolated from the general student population for all or most of the day, usually in self-contained classrooms with a single teacher. Although research has shown that students with special needs are more likely to be successful in the least restrictive school environments (Baker, Wang, & Walberg, 1994; Peetsma, Vergeer, Karsten, & Roeleveld, 2001), it has taken many years for states, districts, schools, and teachers to make the needed shift in their policies, structures, and practices to ensure that students with special needs are transitioned into general education classrooms for as much of the day as possible.

After many years of schools adapting to the changing nature of special education, the majority of students with special needs now spend at least part of their school day—and often nearly the whole day—in general education classrooms among their peers without special needs. General education teachers, particularly those whose teacher preparation programs provided only limited exposure to the theory and practice of educating students with special needs in general education settings, have not always felt prepared for working with students with special needs. A study of rural educators found that the most difficult aspect of compliance with PL94-142 was teachers' lack of special education knowledge (Silver, 1987).

Teacher preparation programs have found it necessary to make changes to their curriculum to better prepare general education preservice teachers to work with students with special needs. It is no longer sufficient to prepare a relatively small number of highly specialized teachers who will have sole responsibility for providing the educational services to special-needs students. In the current environment, many teachers, whether their backgrounds are in general education or special education, may share the responsibility for providing instruction and support to special-needs students. Moreover, they may be called upon to collaborate in assessing students and developing appropriate instructional and/or behavioral interventions for students who are deemed at risk of being referred to special education.

This inclusionary approach to teaching students with special needs presents a considerable challenge to teacher preparation

programs, and many of them are working toward better teacher collaboration in their curricular offerings. Some teacher preparation programs still operate under an outdated model of two separate teacher education programs—one for special education teachers and another for general education teachers—with few opportunities for learning how to collaborate to teach students with special needs or to assess at-risk students' needs and develop appropriate teaching strategies.

Accountability for All Students. One reason for the shift toward moving special-needs students into general education classrooms is that accountability pressures have increased considerably, even for special-needs students, who have often been held to lower academic expectations than their general education peers. The reauthorized Individuals with Disabilities Education Improvement Act (IDEA) of 2004 requires that states make certain that students with special needs meet academic as well as developmental goals. Teachers, including general education teachers who work with special-needs students, must now focus on helping their students meet "to the maximum extent possible, the challenging [academic] expectations that have been established for all children" (p. 118, STAT. 2649).

This push toward special-needs students meeting high-level academic goals has been brought about both by federal legislation, particularly NCLB, and by a deeper understanding of how special-needs students learn. Thus, not only are teacher-preparation programs facing the need to prepare *all* teachers to work individually and collaboratively to educate students with special needs, but there is also an increased impetus to ensure that teaching is *effective* in terms of enabling all students to meet academic demands comparable to those in general education.

In the past, special education teachers had considerable leeway to design an individualized education plan (IEP) for each student, based on his or her current skills and academic accomplishments. Now, however, special education teachers are expected to provide support for students to meet grade-level standards. Much of the appropriate instruction to meet those standards takes place in a general education classroom, rather than under the direct supervision of a special education teacher. This suggests that general education teachers need considerably more preparation in working with students with special needs in the general classroom setting.

Adapting instructional goals, ensuring positive peer interactions, addressing behavioral issues, and using appropriate teaching strategies are among the challenges faced by teachers working with special-needs students in general education classrooms.

Developing Better-Prepared Teachers. Given the need to prepare teachers to work together to ensure academic success for all students, it is crucial to develop a better understanding of what works in this regard. Unfortunately, there is little evidence, scientific or otherwise, that has convincingly clarified what teachers should be learning in their teacher preparation programs to accomplish this goal (Allen, 2003; Cochran-Smith & Zeichner, 2005). Nor is there substantial agreement in the field about what teachers should be learning in order to increase their effectiveness (Shulman, 2005).

Adapting instructional goals, ensuring positive peer interactions, addressing behavioral issues, and using appropriate teaching strategies are among the challenges faced by teachers working with special-needs students in general education classrooms.

Empirically studying the connection between what teachers learn in their teacher preparation programs and what they do in the classroom is an area of great interest among institutions of higher education that prepare teachers, as

well as education policymakers, business and industry leaders, parents, and others. There are, however, many challenges to learning more about this connection. In a survey of teacher preparation programs, Wineburg (2006) found that teacher preparation programs were concerned with the connection between how they were preparing teachers and how those teachers were performing in the classroom. Wineburg concluded that the programs were expending substantial resources in an attempt to document the connection and found that program effectiveness data was gathered through four primary methods: (1) observation systems supported by faculty rubrics and program standards; (2) surveys of teachers, principals, and program graduates during or after the program; (3) work samples and portfolios of candidates; and (4) state teacher certification tests such as Praxis I and II. Tests were used by most institutions either at the time of admittance, during participation in the program, or upon exit from preservice education; however, many different measures were used for these evaluations, with some more likely to be useful than others in terms of better understanding the strengths and weakness of the teacher preparation program.

A fundamental stumbling block in developing better-prepared teachers is that there is only weak evidence that relates *specific* aspects of teacher preparation to improved teaching and learning.

Wineburg emphasized that although teacher preparation programs are certainly interested in knowing more about how their teacher candidates perform once they begin teaching, there is no standard method of measuring either new-teacher practice or the achievement of new teachers' students in order to assess the effectiveness of teacher preparation programs. To improve their effectiveness, teacher preparation programs must develop and implement their own strategies for conducting such research and securing the necessary funding. Wineburg also found that states wishing to compare the relative effectiveness of the state's teacher preparation programs are generally left to their own devices, which results in a wide array of evaluation designs, using different measures and methods—not all of which are equally valid and reliable or useful for making curricular adjustments. Thus, it may be difficult for states to determine how their teacher preparation programs are doing in terms of preparing high-quality teachers and how their programs compare with those in other states.

A fundamental stumbling block in developing better-prepared teachers is that there is only weak evidence that relates *specific* aspects of teacher preparation to improved teaching and learning. Until teacher preparation programs are able to conduct research linking what they train teachers to do, whether the teachers actually do it and do it well, and whether their students learn as a result, it will be difficult to know what components of the teacher preparation program should be emphasized, modified, or cut.

The Complex Nature of Research on These Relationships. As a means of illustrating how complex it is for teacher preparation programs to do research on these relationships, consider the large-scale study conducted by Carlson, Lee, and Schroll (2004), which examined special education teacher quality. The researchers identified five key factors that theory and research on general education teachers suggested contributed to the quality of special education teaching: experience, credentials, self-efficacy, professional activities, and selected classroom practices. The researchers developed an aggregate measure of teacher quality composed of these five factors. Using factor analysis on a nationally representative sample of more than 1,400 special education teachers, they found evidence that all of these factors were "viable components to an aggregate teacher quality measure" (p. 350). Although this is an

important and useful finding, the question still remains: Would this constellation of attributes of high-quality special education teachers actually ensure better student outcomes? In other words, are teachers who rate "high" on these measures likely to teach students who subsequently demonstrate *greater* achievement than would be expected given their prior achievement? Answering this research question is the key to the teacher preparation ➔ teacher practices ➔ student outcomes link.

Another important factor to consider is whether the characteristics, qualifications, and behaviors that are important for *general* education teachers are equally applicable to *special* education teachers. Teachers exhibit a preference for *either* general or special education by focusing on one course of study or the other during their years of preparation. Thus, there are differences between the teachers who choose one path or the other. Those who go into special education preparation programs may have a greater eagerness to teach students with special needs because they feel confident that they can master the required theory and practices. On the other hand, their counterparts who go into general education programs may feel less confident in their ability to effectively teach students with special needs. What remains unanswered is whether this preference is a proxy for other important differences that would affect teachers' performance, and thus student outcomes, in situations in which general educators are teaching students with special needs. Moreover, could these preferences be changed if general education teachers felt *more* competent and confident teaching students with special needs? If so, a teacher preparation program tailored toward greater collaboration and more exposure to strategies for teaching students with special needs might better prepare *both* general and special education teacher candidates for active and effective roles teaching this population.

Collaborative Teacher Preparation Programs. Griffin and Pugach (1997) evaluated 10 teacher preparation programs with strong collaborative programs between general and special education teacher training. Although each of the programs they described had unique features, they all shared a common theme: ensuring that all teachers are well-prepared to teach a diverse group of students in a variety of settings. Griffin and Pugach suggested that the success of strong collaborative teacher preparation programs depends on factors such as the following:

- Strong administrative leadership.
- Strong partnerships between the teacher preparation programs and K-12 schools, including professional development schools.
- Commitment to evaluating the programs.
- Effective communication strategies.
- Willingness of both the general and special education programs to consider changing their collective vision of the fundamental nature of teaching and learning.

Other researchers have also recommended collaborative teacher preparation programs as a way to better prepare teachers to improve learning for special needs and at-risk students. Hardman, McDonnell, and Welch (1998) recommend moving toward preparation that involves "(a) collaboration and cross-disciplinary training, (b) a common core of knowledge and skills for both general and special education teachers, and (c) field-based training that involves building and sustaining partnerships between higher education and the public schools" (p. 2).

Incorporating greater emphasis on teaching diverse students in general teacher preparation programs has also been noted as important. Brownell (2003) compared general and special education teacher preparation programs and found that all of the "exemplary" general education programs provided their preservice teachers with experiences designed to change their conceptual views of diverse students.

In addition, Brownell noted that the emphasis on diversity in special education programs focused more particularly on special-needs students.

Achieving Improved Student Outcomes for Special Needs and At-Risk Students. General teacher preparation has been changing to respond to the emphasis on improving education for students with special needs—educational, emotional, behavioral, and cultural—in ways that support their diverse needs (Kavale, 2005; Maheady, 1997; Pugach, 2005; Pugach & Seidl, 1995). There is little evidence thus far, however, to help establish whether these efforts have borne real fruit in terms of improving student outcomes.

One important step for teacher preparation programs is to evaluate how well prepared their *general* education teachers are to work with students with special needs.

There is little documentation of how teacher quality might affect the achievement of special education students because it is so difficult to make the connection between student learning and teacher quality (i.e., the qualifications, characteristics, and behaviors of teachers). Brownell et al. (2005) note the following:

> The field of special education does not have the same extensive research base on teacher quality [compared to general education], particularly as it relates to student achievement gains. Less than a handful of studies have examined linkages between dimensions of teacher quality and student achievement in education. (p. 2)

One study that provides an interesting model for examining student achievement in light of teacher preparation is that of Miller (1991), who used a case-study approach to evaluate a project designed to facilitate the gradual integration of the special education and English teacher preparation programs in one institution. Participating teachers field-tested practices they had learned in particular units. The videotaped field tests were then evaluated to determine whether the unit was taught effectively, whether the "target students" reached the instructional goals set for them (as measured by pre- and posttests), and whether the teachers felt an increase in their sense of competency as a result of implementing these practices. This study is especially useful because it makes two important connections that are missing in most other studies: (1) the knowledge that preservice teachers gained in their coursework is connected with their actual classroom practices and (2) the connection between the teachers' practices and their students' learning using a pre- and posttest design focused on the specific unit being taught. This strategic evaluation of the teacher preparation ➔ teacher practices ➔ student outcomes relationship might be useful in investigating the impact on student achievement of specific curricular offerings; course sequencing; and the blending of content, methods, and pedagogy that are used in teacher preparation programs.

Findings and Recommendations

Using Data to Improve Teacher Preparation. Wilson, Floden, and Ferrini-Mundy (2001) propose the following:

> We need more studies that relate specific parts of teachers' preparation (subject matter, pedagogy, clinical experiences) to the effects on their teaching practice, and perhaps on student achievement. Studies that compare the relative importance of specific parts of teacher preparation could be useful to those designing and revising teacher education programs. (p. iv)

As these authors suggest, we need specific data that will allow teacher preparation programs to retool their course offerings and curriculum to ensure that what teacher candidates are learning will make meaningful contributions to outcomes for all students. One important step for teacher preparation programs is to evaluate how well prepared their *general* education teachers are to work with students with special needs. With that information, preparation programs can design

appropriate curriculum offerings to address areas in which general education teachers appear to have gaps in their knowledge and skills for teaching special education students.

Considering the Entire Continuum of Teacher Learning. Teacher learning continues even after teachers have completed their preparation programs, so it is important to conceptualize teacher learning as a continuum. Feiman-Nemser (2001) suggests a "framework for thinking about a curriculum for teacher learning over time" (p. 1013). From this perspective, teacher preparation is only the first stage of a continuum that includes new-teacher induction and early-career professional development. Teacher learning is a complex, ongoing process, whether through formal mechanisms such as professional development or through informal methods such as discussing a particular student's needs with colleagues. Furthermore, teacher change is influenced by teachers' beliefs about the need to adopt specific practices (Richardson, 1990).

Collaboration Between General and Special Education Teachers. There is a need for teacher preparation programs to educate teachers early in their careers about the importance of and strategies for collaboration between special and general educators and help them develop a repertoire of skills and knowledge to teach at-risk students and students with special needs. By staying connected with teachers as they graduate from teacher preparation programs and begin teaching—perhaps by providing professional development opportunities, seminars, and workshops in collaboration with local school districts—teacher preparation programs can also better understand the needs of the teachers they have prepared.

Explicit instruction on developing collaborations among special and general education teachers, along with opportunities to practice collaborative strategies, should also be useful to teachers in an environment where such collaboration is an expected and essential component of working with at-risk students, particularly in providing early attention and intervention to struggling students. This is especially important for students who are at risk for referral to special education.

Giving teachers opportunities to work together using a case study method or a triage approach and providing opportunities for special and general educators to collaborate on designing and implementing lessons in mixed-ability classrooms are examples of ways that collaboration can be taught, experienced, and evaluated by teacher candidates and their instructors.

Preparing *Both* General and Special Education Teachers to Work with Students with Special Needs. Teacher preparation programs that include ample instruction for all teachers—*general* education as well as *special* education—in educating at-risk students and students with special needs are giving new teachers valuable tools that can serve them well in developing appropriate instruction for the diverse needs of their students.

Learning about what effective teachers actually do in classrooms with students with special needs will facilitate a better understanding of how those practices translate into measurable learning. From there, linking effective practices back to the teacher education program curriculum will enable preparation programs to identify and emphasize instruction in specific practices and strategies.

References

Allen, M. B. (2003). *Eight questions on teacher preparation: What does the research say? A summary of the findings.* Denver, CO: Education Commission of the States. Retrieved September 11, 2007, from http://www.ecs.org/html/educationIssues/teachingquality/tpreport/home/summary.pdf

Baker, E. T., Wang, M. C., & Walberg, H. J. (1994). The effects of inclusion on learning. *Educational Leadership, 52*(4), 33–35.

Brownell, M. T. (2003). Critical features of special education teacher preparation: A comparison with general teacher education. *The Journal of Special Education, 38*(4), 242–252.

Brownell, M. T., Bishop, A. G., Gersten, R., Klingner, J. K., Dimino, J., Haager, D., et al. (2005). *Defining and assessing the quality of beginning special education teachers: First steps, conclusions drawn, and challenges encountered.* Paper presented at the International Special Education Conference, Glasgow, Scotland. Retrieved September 11, 2007, from http://www.isec2005.org.uk/isec/abstracts/papers_b/brownell_m_2.shtml

Carlson, E., Lee, H., & Schroll, K. (2004). Identifying attributes of high quality special education teachers. *Teacher Education and Special Education, 27*(4), 350–359.

Chambers, J. G., Shkolnik, J., & Pérez, M. (2003). *Total expenditures for students with disabilities, 1999–2000: Spending variation by disability* (Report 5). Palo Alto, CA: Center for Special Education Finance. Retrieved September 11, 2007, from http://www.csef-air.org/publications/seep/national/Final_SEEP_Report_5.PDF

Cochran-Smith, M., & Zeichner, K. (2005). Studying teacher education: The report of the AERA panel on teacher education. *Teaching and Teacher Education, 1,* 5–6.

Education for All Handicapped Children Act of 1975, Pub. L. No. 94-142, (S. 6) (1975).

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record, 103*(6), 1013–1055.

Freeman, C., & Fox, M. (2005). Indicator 2.3: Special education [Table]. In *Status and trends in the education of American Indians and Alaska Natives* (NCES 2005-108). Washington, DC: National Center for Education Statistics. Retrieved September 11, 2007, from http://nces.ed.gov/pubs2005/nativetrends/ind_2_3.asp

Goe, L. (2006). *The teacher preparation ➔ teacher practices ➔ student outcomes relationship in special education: Missing links and next steps.* Washington, DC: National Comprehensive Center for Teacher Quality.

Goe, L., & Coggshall, J. (2007). *The teacher preparation ➔ teacher practices ➔ student outcomes relationship in special education: Missing links and new connections.* Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved September 11, 2007, from http://www.ncctq.org/publications/may2007brief.pdf

Griffin, C. C., & Pugach, M. C. (1997). Framing the progress of collaborative teacher education. In L. P. Blanton, C. C. Griffin, J. A. Winn, & M. C. Pugach (Eds.), *Teacher education in transition* (pp. 249–270). Denver, CO: Love.

Hardman, M. L., McDonnell, J., & Welch, M. (1998). *Preparing special education teachers in an era of school reform.* Washington, DC: Federal Resource Center for Special Education.

Individuals with Disabilities Education Improvement Act of 2004, Pub. L. No. 108-446. (2004). Retrieved September 11, 2007, from http://idea.ed.gov/download/statute.html

Kavale, K. A. (2005). Effective intervention for students with specific learning disabilities: The nature of special education. *Learning Disabilities: A Multidisciplinary Journal, 13*(4), 127–138.

Maheady, L. (1997). Preparing teachers for instructing multiple ability groups. *Teacher Education and Special Education, 20*(4), 322–339.

Miller, D. E. (1991). Merging regular and special education teacher preparation programs: The integrated special education-English project (ISEP). *Teaching and Teacher Education, 7*(1), 19–23.

No Child Left Behind Act of 2001, Pub. L. No. 107--110, 115 Stat. 1425 (2002). Retrieved September 11, 2007, from http://www.ed.gov/policy/elsec/leg/esea02/index.html

Peetsma, T., Vergeer, M., Karsten, S., & Roeleveld, J. (2001). Inclusion in education: Comparing pupils' development in special and regular education. *Educational Review, 53*(2), 125–135.

Pugach, M. C. (2005). Research on preparing teachers to work with students with disabilities. In M. Cochran-Smith & K. M. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 549–590). Mahwah, NJ: Erlbaum.

Pugach, M. C., & Seidl, B. L. (1995). From exclusion to inclusion in urban schools: A new case for teacher education reform. *Education and Urban Society, 27*(4), 379–395.

Richardson, V. (1990). Significant and worthwhile change in teaching practice. *Educational Researcher*, *19*, 10–18.

Shulman, L. S. (2005). Teacher education does not exist. *Stanford Educator* [Stanford University School of Education Alumni Newsletter], p. 7.

Silver, S. (1987). Compliance with PL94-142 mandates: Implications for rural teacher training programs. *Research in Rural Education, 4*(3), 103–109.

U.S. Department of Education. (2002). Section II. Student characteristics. In *Twenty-third annual report to Congress on the implementation of the Individuals with Disabilities Education Act* (pp. 1–40). Washington, DC: Author. Retrieved September 11, 2007, from http://www.ed.gov/about/reports/annual/osep/2001/section-ii.pdf

Wilson, S. M., Floden, R. E., & Ferrini-Mundy, J. (2001). *Teacher preparation research: Current knowledge, gaps, and recommendations* (Document R-01-3). Seattle, WA: Center for the Study of Teaching and Policy.

Wineburg, M. S. (2006). Evidence in teacher preparation: Establishing a framework for accountability. *Journal of Teacher Education, 57*(1), 51–64.

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NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

CHAPTER 4

Implementing NCLB: State Plans to Address the Challenge of Equitable Distribution of Effective Teachers

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Implementing NCLB: State Plans to Address the Challenge of Equitable Distribution of Effective Teachers

Tricia Coulter, Ph.D.,
Education Commission of the States

The Challenge of Equity of Opportunity

The promise of America's education system is a high-quality education for all students, regardless of race or ethnicity, geographic location, economic status, or disability. The challenge for America's education system is to keep that promise. This chapter highlights student population changes that have occurred in the American school system related to the student populations it serves and how states are responding to these changes as outlined in their revised highly qualified teacher state plans submitted to the U.S. Department of Education in the summer of 2006.

The types of schools comprising America's public education system and the students populating those schools have changed dramatically over the last several decades. Between 1972 and 2005, the number of public school students considered to be part of a

Table 1. Concentration of Enrollment by Race/Ethnicity and Poverty: 2005

	Percentage of Fourth-Grade Students in the School Eligible for Free or Reduced-Price Lunch: 2005				
	10% or less	11%–25%	26%–50%	51%–75%	More than 75%
Overall					
White	21	23	32	19	5
Black	4	6	18	24	48
Hispanic	4	6	16	24	49
Asian/Pacific Islander	27	19	21	16	16
American Indian	4	8	21	31	36
Central City					
White	17	20	30	22	12
Black	1	3	14	20	62
Hispanic	2	4	10	20	64
Asian/Pacific Islander	21	12	18	22	27
American Indian	9	13	24	26	29
Rural/Small Town					
White	9	18	40	27	5
Black	2	5	15	39	39
Hispanic	3	6	24	38	29
Asian/Pacific Islander	21	18	32	21	7
American Indian	1	3	17	36	44

Black includes African American; Hispanic includes Latino; Pacific Islander includes Native Hawaiian; and American Indian includes Alaska Native. Race categories exclude Hispanic origin unless specified.

Source: National Center for Education Statistics, 2007b

Note: Detail may not sum to totals because of rounding. The National School Lunch Program is a federally assisted meal program. To be eligible, a student must be from a household with an income at or below 185 percent of the poverty level for reduced-price lunch or at or below 130 percent of the poverty level for free lunch.

racial or ethnic minority group rose by 22 percentage points, and there is a clear difference in distribution of these students by poverty indicators (National Center for Education Statistics, 2007a). Minority students are overrepresented in schools with the highest poverty rate (schools with more than 75 percent of the student body eligible for free or reduced-price lunch). As seen in Table 1, almost half of all black and Hispanic students who are eligible for free and reduced-price lunch are enrolled in our country's highest poverty schools. This representation increases for central city schools where more than 60 percent of the black and Hispanic students are enrolled in the highest poverty schools.

The persistent achievement gaps between various racial and ethnic groups are evidence of the challenges these students face—challenges this nation is not yet addressing. The National Assessment of Educational Progress (NAEP) indicates that the achievement gaps between white and black students and white and Hispanic students in reading and mathematics have shown little change since the early 1990s, as illustrated in Table 2.

Table 2. White-Black and White-Hispanic Gaps in Average Reading and Mathematics Scores by Grade: 1990-2005

Subject, Race/Ethnicity and Grade	1990	1992	1994	1996	1998	2000	2002	2003	2005
Reading									
White-Black Gap									
Grade 4	–	32	38	–	32	34	30	31	29
Grade 8	–	30	30	–	26	–	27	28	28
White-Hispanic Gap									
Grade 4	–	27	35	–	32	35	28	28	26
Grade 8	–	26	24	–	27	–	26	27	25
Mathematics									
White-Black Gap									
Grade 4	32	35	–	34	–	31	–	27	26
Grade 8	33	40	–	41	–	40	–	35	34
White-Hispanic Gap									
Grade 4	20	25	–	25	–	27	–	22	20
Grade 8	24	28	–	30	–	31	–	29	27

– Not available (tests not conducted in all grades for all years).

Source: National Center for Education Statistics, 2007c

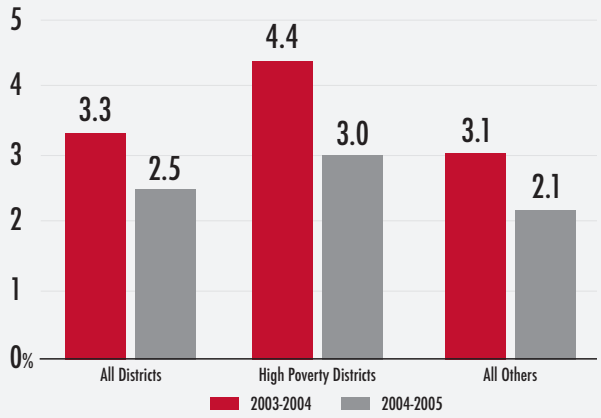
Note: Race categories exclude persons of Hispanic ethnicity. The score gap is determined by subtracting the average black or Hispanic score, respectively, from the average white score. Testing accommodations (e.g., extended time, small group testing) for children with disabilities and limited-English-proficient students were not permitted in 1990–94. Beginning in 2002, the NAEP national sample for Grades 4 and 8 was obtained by aggregating the samples from each state, rather than by obtaining an independently selected national sample. As a consequence, the size of the national sample increased, and smaller differences between years or between types of students were found to be statistically significant than would have been detected in previous assessments.

Research has clearly shown that to ensure equity of educational opportunity, students in our country's most challenging schools should be served by our strongest teachers, yet this is rarely the case. Many researchers have found that high-poverty schools are often populated with the least qualified teachers (Ingersoll, 2002; Lankford, Loeb, & Wyckoff, 2002; Peske & Haycock, 2006).

According to the Secretary's Fifth Annual Report on Teacher Quality (Office of Postsecondary Education, 2006), high-poverty school districts have higher numbers of teachers who are not highly qualified (teachers on waivers) compared to other districts (see Figure 1). Although these data show improvement from the previous year, the challenge is still evident, and the gaps are still dramatic.

Figure 1

Percentage of Classroom Teachers on Waivers by District Poverty Status: 2003–04 and 2004–05



Source: Office of Postsecondary Education, 2006

Federal Requirements and State Responses

With the passage of the No Child Left Behind (NCLB) Act in 2001, the federal government codified requirements for teachers to be considered *highly qualified* and required all teachers to be highly qualified in accordance with those criteria by the 2005–06 school year. An additional provision of the law requires that states submit annual reports documenting their efforts and actions related to highly qualified teachers (HQTs), including the following:

> … steps that the state educational agency will take to ensure that poor and minority children are not taught at higher rates than other children by inexperienced, unqualified, or out-of-field teachers, and the measures that the state educational agency will use to evaluate and publicly report the progress of the state educational agency with respect to such steps. (NCLB, Section 1111[b][8][C])

In the summer of 2006, the U. S. Department of Education required states to submit HQT state plans and specified that these reports include an equity plan to ensure that poor or minority children are not taught by inexperienced, unqualified, or out-of-field teachers at higher rates than other children. For a plan to be accepted, the state must be able to identify where inequities in teacher assignments exist, delineate specific strategies whereby the identified inequities would be addressed, and provide evidence for the probable success of those strategies.

According to the HQT plans, states vary in the differences between high- and low-poverty and high- and low-minority schools in the percentage of core academic courses taught by HQTs. In fact, some states reported no significant difference or even a higher percentage of core academic classes being taught by HQTs in high-minority schools (e.g., Arkansas) and high-poverty schools (e.g., Arkansas, Vermont, and West Virginia), although these differences are usually very small (see the HQT revised state plans at www.ed.gov/programs/teacherqual/hqtplans/index.html). Generally, however, states continue to struggle with ensuring that poor and minority children are not taught at greater rates by teachers who are not highly qualified.

Almost universally, the problem is more pronounced in secondary schools than in elementary schools. Although this may demonstrate a more defined challenge of finding, recruiting, and retaining secondary school teachers as compared to elementary

school teachers, it may also be an artifact of the structure of our school system and the NCLB requirements for HQTs. In other words, in order to be considered highly qualified, teachers must demonstrate subject competency. Secondary school teachers are certified to teach specific subjects, which offers somewhat less flexibility compared to elementary school teachers, who are not certified in the same way. The problems associated with efforts to have all classes taught by HQTs are exacerbated in rural districts where one teacher may have responsibility for teaching several courses. This is often due to a combination of factors, including the small number of students, the relative geographic isolation of the school, and consequent fiscal constraints. Additionally, states' analyses of their data reveal that, in most states, schools not making adequate yearly progress (AYP) are more likely to have more teachers who are not highly qualified teaching core academic classes than are other schools.

Challenges and Actions for Equitable Teacher Distribution

Why is there such inequity in the distribution of HQTs, and what can be done about it? At-risk schools (i.e., high-poverty and high-minority schools with low percentages of HQTs) generally face at least three interrelated challenges. First, they have trouble hiring enough HQTs, and then, they have trouble retaining them. Finally, as a consequence of the first two challenges, they have a larger number of teachers who are not highly qualified on staff. It is important to note that, in many states, the problem is specific to certain content areas. Although some states have an overall shortage of HQTs, other states struggle with staffing particular classes and subject areas with HQTs. The requirement that states report the percentage of core academic classes not being taught by HQTs, rather than requiring that these data be reported at the school or district level, has highlighted these challenge areas for some states because the method does not reveal the specific schools or districts that are having trouble staffing specific subjects with HQTs. Local education agencies (LEAs) are required to report on teachers' professional qualifications by degree level, the percentage of teachers with emergency/provisional certification, and the percentage of core academic courses taught by HQTs for high- and low-poverty schools in their LEA report cards; however, the requirement to report percentages makes it difficult to identify specific challenge areas. Policies enacted and actions taken to address these challenges would be most effective when targeted at the specific challenges that states—and their districts and schools—face. This only can be determined using accurate, reliable, and appropriate data.

Goe (2006) provides an excellent overview of the types of data states should collect and appropriate analyses that should be performed on those data to best define and respond to states' equitable teacher distribution challenges. Examples of the types of data that a robust data system should include are as follows:

- Teacher information including certification, education level, experience, completion of specific coursework, and required professional development.
- Course-level teaching assignments by school, connecting teachers to classes taught.
- School-level data on teacher turnover rate and on the characteristics of teachers who have left.
- Teacher attrition data to determine whether teachers move to another school or leave the profession.

Additionally, these data should be longitudinal. Cross-sectional data do not supply policymakers with the information they need. Knowing that a state does not have enough teachers in one specific timeframe does not provide that state with solid information about the reasons behind the shortage. Were they not able to find qualified teachers to hire? Were they hiring enough teachers, but those teachers subsequently left? With timely information based upon a robust data system, states can move toward taking appropriate action.

State Equity Plans

In the summer of 2006, all states were to submit their HQT revised state plans as required by NCLB. As part of these plans, states were specifically required to submit an equity plan, in which they outlined their strategy to ensure that poor or minority children are not taught by inexperienced, unqualified, or out-of-field teachers at higher rates than other children.

With a robust data system as its foundation, a state should be able to identify its strongest areas of need. Sound longitudinal data sets would also help states identify possible causes for patterns of inequitable distribution of teachers and suggest plans of action most likely to be effective. A strong equity plan should include a clear identification of the challenge areas, a statement of goals and appropriate benchmarks, a demonstration of the state's capability to track progress toward the goals, and a set of initiatives clearly targeted to the areas of challenge. Each targeted initiative should also include specific information about how the initiative addresses the challenge area and what resources will be committed to the initiative.

Areas of challenge for a state could include recruitment, retention, and training of existing teaching personnel, and initiatives to ameliorate these often-interrelated problems could be numerous. To assist states in their efforts to write comprehensive plans, the Council of Chief State School Officers created a template for state equity plans. The template asks states to consider the following eight elements (Prince, 2006):

- The development of adequate and appropriate data and reporting systems.
- The coordination of effective teacher preparation to build a pipeline of prospective teachers for at-risk schools.
- The creation and accessibility of systems through which the incidence of out-of-field teaching is reduced.
- The creation of a system for recruiting HQTs to at-risk schools and establishing systems of support and training that encourage them to stay in these schools.
- The creation of targeted, effective professional development to provide teachers with ongoing information, resources, and training to continually prepare them to address the ongoing challenges and changes in these schools and populations.
- The establishment of a system whereby teachers obtain the specialized knowledge and skills they need to be effective with the students in these schools.
- The creation and maintenance of positive working conditions that contribute to teacher retention.
- Policy coherence, so all policies put into effect work in a coordinated, nonredundant, and noncounteractive manner.

When focusing their resources, states should consider the specific challenges they have identified related to the equitable distribution of HQTs and how they might effect the greatest change.

A strong equity plan should include a clear identification of the challenge areas, a statement of goals and appropriate benchmarks, a demonstration of the state's capability to track progress toward the goals, and a set of initiatives clearly targeted to the areas of challenge.

At-risk schools are generally at a disadvantage for hiring highly qualified, experienced, and effective teachers. In addition, teachers tend to leave these schools once they have tenure and sufficient longevity to give them preference for transfer. Although a valuable ultimate goal for the teaching profession would be for these positions to become sought-after—for their value to society and for the professional challenges they offer—at-risk schools are not

New California Law Helps Struggling Schools Hire the Best Candidates

The following information is an excerpt from the Office of the Governor of California (2006):

> Students at low-performing schools have the greatest need for high-quality educators. Currently, school principals must give existing teachers first priority for open positions. They can be forced to hire voluntary transfers, who may not be performing well at another school.
>
> SB 1655 reforms teacher transfer policies to:
>
> - Provide that no K-12 school ranked 1-3 on the Academic Performance Index may be forced to accept the voluntary transfer of any teacher that is not acceptable to the school.
> - Allow principals to hire any qualified applicant, not just voluntary transfers, after April 15 of the year before the school year's commencement.
>
> *School principals are ultimately responsible for student success. SB 1655 lets principals say no to teachers who aren't the right fit, and hire promising teachers earlier (emphasis added).*

California SB 1655 became effective January 1, 2007.

presently an attractive teaching option when compared to other schools. States outlined a variety of initiatives to address this challenge in their HQT state plans.

Financial Incentives

Districts that set salary systems with no incentive for working in at-risk schools perpetuate teacher quality disparities. There is little economic reason for teachers to take on the challenges associated with working in a high-poverty school if they can live in the same area with approximately the same commuting time and make the same amount of money working in a school that is not high poverty.

Districts offer a variety of financial incentives for teachers to work in at-risk schools. The most common are federal or state loan-forgiveness programs. Teachers are eligible for forgiveness of up to $17,500 worth of federal student loans if they work in a high-need subject at a hard-to-staff school (Stroup, 2004). Many states have implemented additional loan forgiveness programs for students who commit to teaching in at-risk schools for a minimum period of time. Other financial incentives include housing assistance and signing bonuses.

Having more teachers entering the pipeline is sometimes discussed as a remedy for the overall teaching shortages in certain fields, such as science, mathematics, and special education. States are also addressing specific challenges faced by teachers in at-risk schools through context-specific requirements and programs.

Urban Education. New Jersey and Connecticut have programs in place to prepare teacher education students to better understand the culture and contexts specific to urban schools.

- With funding from a federal Teacher Quality Enhancement grant, the New Jersey Department of Education in partnership with The College of New Jersey created an urban education program. The goal of the program is to provide teacher candidates with an understanding of the effects of an urban context on student learning and to train them in culturally responsive pedagogy. Similar programs have been established at Montclair State University and Rutgers University–Newark. For information on the Montclair program, visit the Montclair State University College of Education and Human Services website (http://cehs.montclair.edu/academic/cop/njcue.shtml). For information on the program at Rutgers University, visit the Department of Urban Education website (http://edu.newark.rutgers.edu).
- In Connecticut, the Yale Urban Teaching Initiative is a one-year graduate program with similar goals. Graduates of the program receive a master's degree in urban education studies and a Connecticut Initial Educator License to teach in Grades 7–12. These teachers must commit to teach in a public middle or high school in one of the state's highest need school districts for three years.

Rural Education. Alaska presents a unique set of challenges for a teaching force with its extremely rural setting and in terms of meeting the needs of its Alaskan Native populations. The Alaska Rural Systemic Initiative and native villages in the five regions of the state have collaborated to develop "culture camps." The camps help non-native teachers incorporate native ways of knowing into the curriculum. Teachers, native elders, and students attend. For information on Alaska's Rural Systemic Initiative, access the state's equity plan online (www.ed.gov/programs/teacherqual/hqtplans/ak.doc).

Teacher Retention

The ability to retain teachers, in general, is an issue in the teaching profession. This challenge is exacerbated in at-risk schools from which teachers often transfer once they have gained tenure and longevity. A number of states have retention efforts already in place. Establishing and financially supporting a

system of induction—specifically using a mentoring component—is one frequent way of addressing retention.

- In South Carolina, the Division of Educator Quality and Leadership (DEQL) and the Center for Educator Recruitment, Retention, and Advancement (CERRA) collaborated to develop state induction and mentoring guidelines and work together to promote and support mentor training. Their Foundations for Mentoring training supports quality learning opportunities to help teachers develop mentoring skills. CERRA also offers training in cognitive coaching from the Center of Cognitive Coaching. For more information on these efforts, visit the South Carolina Department of Education website (www.scteachers.org/cert/mentoring.cfm).
- Other states have looked more broadly at teacher working conditions, a primary reason identified by many teachers for leaving the profession. North Carolina and Nevada are two states that have completed educator surveys on working conditions. North Carolina has conducted this survey since 2002 and has used the results to inform changes to policy and practice. For information on North Carolina's efforts related to teacher working conditions, visit the Governor's Teacher Working Conditions Initiative website (www.northcarolinatwc.org).

Other Efforts

Some states have implemented initiatives designed to return retired HQTs to the classroom without jeopardizing their pensions. In Maryland, for example, Senate Bill 633 allows for retired teachers and principals to return to their profession without affecting their pension payments if they work in high-poverty or low-performing schools and teach hard-to-staff subjects. To be eligible, retirees must have been certified to teach in Maryland and have verification of satisfactory or better performance in their last assignment prior to retirement.

Several states are focusing effort and resources on low-performing schools or on schools in need of improvement. The efforts are comprehensive, providing specialists and technical assistance or support teams.

- Louisiana assigns District Assistance Teams (DATs) to provide on-site assistance to schools in need of improvement. Each DAT includes specially trained staff from the local education agency and local universities. The team takes a leadership role for the schools, conducting a needs assessment, gathering and analyzing data, implementing an improvement plan, and evaluating the impact of initiatives (see www.louisianaschools.net/lde/RegionVII/728.html).
- North Carolina provides Turn Around Teams that undertake a similar function for many of its low-performing schools. For information on North Carolina's Turn Around Teams, download the state's equity plan online (www.ed.gov/programs/teacherqual/hqtplans/ncep.pdf).

Highlighting Two State Plans

The following section provides a review of efforts being made by two states to ensure that at-risk children are not taught by inexperienced, unqualified, or out-of-field teachers at higher rates than other children. These states were selected for inclusion in this report because in their HQT state plans, they demonstrated a clear use of their collected data to target their efforts and resources on identified areas of challenge. While many state plans included certain targeted initiatives, other plans described programs without a specific focus on a challenge area.

These states are not the only ones to develop quality state plans, nor are they the only states that analyzed or used their data for targeted initiatives. They are included as examples to illustrate ways states are using data systems to examine teacher assignment inequities and address the identified challenges.

Delaware

Data Systems. The primary strength of the Delaware state equity plan lies in the state's exceptionally robust relational data systems through which the state department of education can collect and analyze HQT data at the classroom, teacher, and student levels.

The Delaware Educator Data System (DEEDS) houses teacher information including employment history, years of experience, certification, licensure, educational background, Praxis scores, HQT status, progress in the statewide new teacher induction program, and other data elements. To determine the status of each class relative to HQT status, teachers who teach core academic classes complete an electronic teacher quality survey through DEEDS. Additionally, each teacher has a unique identifier through the state personnel system, and DEEDS links with this system. Each student also has a unique longitudinal identifier.

Student and teacher information and class assignments are maintained through eSchoolPLUS (eSP), the statewide pupil accounting system. Classes are coded according to the NCLB core academic subjects and further identified as special education, bilingual, or ESL. Other databases contain information on school accountability, poverty status, and other student and school characteristics, all of which can be analyzed in conjunction with data on the highly qualified status of teachers. The data systems allow for analysis of teacher quality data at the class, teacher, and student levels, so Delaware is able to determine distribution of teachers within schools, as well as across schools.

General Equity Findings. According to the Delaware state plan, during the 2005–06 school year, 79.2 percent of content area courses were taught by HQTs. Of the 20.8 percent of classes not taught by an HQT, however, over 75 percent could not be accurately classified because of incomplete information in eSP, districts not verifying completed teacher quality surveys, teachers not taking or completing the teacher quality survey, and other issues related to data incompleteness. Delaware has addressed data quality issues, and the 2006–07 data collection had dramatically fewer incompleteness issues.

Overall, Delaware found discrepancies in the percentage of classes taught by HQTs based on poverty and minority status in both elementary and secondary schools. In addition to noting general discrepancies *between* schools based on these characteristics, the Delaware data systems allow for analysis of data *within* a school to determine the likelihood of traditionally underserved student populations being assigned to classes with non-HQTs. In other words, Delaware is able to determine whether classes have greater concentrations of students from identified subgroups and whether these classes are more likely to have non-HQTs or less experienced teachers (defined as having less than four years of teaching experience).

Delaware data systems allow for analysis of data *within* a school to determine the likelihood of traditionally underserved student populations being assigned to classes with non-HQTs.

Using this level of data analysis, Delaware looked at comparisons between the following subgroups: low- and high-poverty students, African American and white students, Hispanic and white students, students with and without disabilities, and English language learners (ELLs) and non-ELLs. Delaware also analyzed data for elementary, middle, and high schools and for inequities by school improvement status. The 2005–06 findings are summarized below:

- Overall, higher percentages of core academic classes were taught by teachers who were not highly qualified at secondary schools than at elementary schools. The discrepancy was due more to a large number of certified teachers teaching out-of-field than to a large

number of noncertified teachers. Also, a high number of certified secondary special education teachers had not demonstrated competency in the subject(s) taught. Almost half of the out-of-field secondary-level teachers were located in two LEAs.

- Students with disabilities, low-income students, African-American students, and Hispanic students were more likely to be taught by teachers who were not highly qualified or less experienced teachers. The majority of these discrepancies were in secondary schools.
- ELLs were more likely to be taught by teachers who were not highly qualified or less experienced teachers. Most discrepancies existed in middle and high schools.
- The data indicated that certain districts and schools showed greater differences than others in the percentage of core academic classes being taught by teachers who were not highly qualified.
- African-American students, Hispanic students, students with disabilities, and ELLs in middle and high schools under school improvement were more likely to be taught by teachers who were not highly qualified.

To further inform their efforts, the Delaware Department of Education carefully considered its annually commissioned study on personnel hiring practices and attrition issues conducted by the Institute for Public Administration at the University of Delaware. Some important findings from this study were as follows:

- Personnel directors cited a lack of qualified candidates as the main reason for teacher shortages.
- Contractual barriers hinder the ability to offer timely contracts to teachers.
- Funding and support for teacher recruitment varies greatly.

Goals and Strategies. The analyses led Delaware to develop six short-term goals and one long-term goal to meet equitable distribution challenges. For each goal, Delaware developed a response for which measurable targets, strategies and timelines, and an evaluation plan were designated. For example, one of their short-term goals is to reduce the incidence of classes for students with disabilities being taught by teachers who are not highly qualified, particularly in schools under school improvement at the secondary level. The designated target was for 100 percent of NCLB content area classes to be taught by HQTs by June 2007. To meet this goal, the SEAs established priority LEAs and schools with significant numbers of students with disabilities in classes taught by teachers who are not highly qualified. Targeted monitoring and technical assistance, including site-based needs analyses and planning, was to be provided for these priority LEAs and schools. Success will be evaluated through longitudinal analyses of the percentage of students with disabilities in classes not taught by an HQT for all LEAs and schools. Delaware's other short-term goals are as follows:

- Significantly improve data completeness and data quality in 2006–07.
- Eliminate out-of-field teaching at the secondary level.
- Reduce the incidence of non-HQT classes for low-income and minority students, particularly within secondary schools under school improvement and within specific LEAs.
- Reduce the incidence of non-HQT classes for ELL students.
- Reduce LEA policy barriers to and ineffective practices for teacher recruitment.

Delaware's long-term goal is to ensure that all students, regardless of poverty status, racial/ethnic background, language proficiency, disability, and geographical location, have equitable access to highly qualified, experienced teachers. The target is for all student subpopulations to have equitable access to NCLB content area classes taught by experienced HQTs by June 2010. The strategy is for the SEA to work with the state legislature to fund incentives for experienced HQTs to teach in hard-to-staff and low-performing schools.

Advancement towards the goal will be evaluated using longitudinal analyses of the percentage of low-income, non-low-income, minority, and white students in classes not taught by an experienced HQT in all LEAs and schools.

Virginia

Data Systems. The Virginia Department of Education has created a set of comprehensive and interconnected databases related to teacher quality through collaborative efforts between higher education institutions and local school divisions. Through the Instructional Personnel and Licensure (IPAL) system, Virginia collects information on the number and types of courses being taught by HQTs for each school, as well as teacher license type, endorsement, and assignments.

Through the Teacher Education and Licensure system (TEAL), Virginia is able to track information on all licensed personnel in the state including licensure application data, endorsement areas, years of service, licensure expiration, evaluations, employment history, route to licensure, recognitions received, courses and grade levels taught, and highly qualified status. In addition, the TEAL system is able to import and store Virginia assessment test scores and scores for PRAXIS I, PRAXIS II, and School Leadership assessments and is able to interface with the National Association of State Directors of Teacher Education and Certification (NASDTEC) clearinghouse to download information relative to action against licenses.

Virginia is currently piloting the next iteration of TEAL, TEAL II. This new system will include information for students currently enrolled in and graduating from teacher preparation programs to improve the state's ability to identify trends in teacher preparation, placement, and retention. It will also include quantitative data on schools in Virginia (e.g., school size, location, demographic and poverty indicators), along with qualitative indicators (e.g., teacher empowerment, administrative leadership, and parental involvement). TEAL II also will include reporting and data analysis functions.

General Teacher Equity Findings. Virginia has made great advances toward the goal of having HQTs in every classroom. Between the 2002–03 and 2004–05 school years, the percentage of core academic classes being taught by teachers who were not highly qualified dropped from 16.5 percent to 4.4 percent. The gap in non-HQTs teaching core academic classes in high-poverty versus low-poverty schools was 3.7 percent, although the gap in secondary schools was larger than it was in elementary schools (4.14 percent and 3.3 percent, respectively).

Virginia completed further analyses of its data in accordance with the structure of its state school system. Virginia's school system is divided into eight superintendents' regions all containing multiple school divisions. In order to most effectively and efficiently target resources to the regions with the greatest challenges, data for each region were analyzed separately. Regional data were reported for percentage of high-poverty schools, percentage of high-minority schools, percentage of classes taught by HQTs, percentage of inexperienced teachers, and percentage of schools making AYP. Data were also analyzed to determine the distribution of HQTs at the elementary, middle, and high school levels, by course.

The state plan included strategies targeted at the highest need regions based on differences noted through this data analysis. Region VIII showed challenges in each indicator category: 80.36 percent of its schools are classified as high-poverty—the highest percentage in the state; 55.36 percent of its schools have high minority enrollment; 7.5 percent of classes are taught by non-HQTs—the second highest percentage in the state; and 19.64 percent of the schools are not making AYP. While Region VIII had challenges across all measured variables, other regions had more specific challenge areas. The data analyses allowed Virginia to use target strategies to address teacher quality needs for high-needs regions, schools, and divisions.

Virginia's Goals and Strategies for Region VIII. To illustrate Virginia's use of data to target its resources and efforts, initiatives implemented to address the many challenges facing Region VIII are detailed here. Region VIII is comprised of 13 mostly rural school divisions, which include 16 schools that have been designated as hard to staff. Targeted strategies for Region VIII include the following:

- Additional funds for mentoring programs have been allocated to the hard-to-staff schools. The ETS Pathwise New Teacher Mentoring Program has been adopted.
- Two of the divisions have been targeted to participate in the Hard-to-Staff Teacher Incentive program. The program provides professional development; high-quality mentoring; and financial assistance to improve working conditions, performance bonuses, and recruitment and retention stipends for teachers meeting high teacher-effectiveness standards.
- Turnaround specialists have been deployed in high-needs schools in two Region VIII counties. An executive education and school leadership program is designed to develop a cadre of school administrators who are trained to turn around consistently low-performing schools by using principles of business and education management. Turnaround specialists receive intensive support throughout the school year, with the goal of increasing student achievement in a low-performing school within three years. Successful turnaround specialists meet targets agreed upon by the school division and the state and receive incentives. Benchmark data for these schools are reported to the Virginia Department of Education.

What States Should Consider

States are faced with increasing pressures for performance and accountability in a context very different from those of when the nation's school system was designed and implemented. As discussed above, the student population has changed as has the social context in which schools operate. To keep the promise of America's education system, states need to respond to today's challenges by strategically using data to inform their efforts and by investing their resources to achieve the greatest effect.

Data

The importance of having a robust data system to guide a state's efforts cannot be overstated. The ability to gather reliable, accurate data is vital to informing the state of specific challenges and guiding efforts to address those challenges most appropriately and efficiently. To guide equitable teacher distribution, states must be able to gather, at a minimum, the following types of data:

- Teacher certification and education information.
- Course-level teaching assignments by school, connecting teachers to classes taught.
- Teacher attrition data to determine whether teachers move to another school or leave the profession and to track the characteristics of teachers who leave and their reasons for leaving.

To be prepared to meet likely future data needs, a state should also consider longitudinally tracking student performance data linked to specific teachers.

Goals

Once a state's challenge areas are identified through reliable data, clear goal statements and benchmarks should be developed. The establishment of clear goal statements and appropriate benchmarks will also make obvious the most appropriate data elements to gather and track to best inform progress. For example, analysis of the data may reveal that high-poverty schools are largely staffed with teachers who are not highly qualified and that the primary cause is teacher attrition from specific schools. This finding should suggest that resources be appropriated to determine possible causes for the attrition in these schools. Once

likely causes are identified, initiatives can be targeted to address these root causes. Initiatives could include professional development for the school administrator, release time for teachers, the creation of stronger partnerships with higher education institutions, and the creation of collaborative communities of teachers within the school. These initiatives could be piloted, and data on attrition could be tracked over a reasonable period of time to determine whether the efforts are successful. This information could then be disseminated to policymakers in order to determine the most appropriate policies to enact to better support and make permanent positive changes.

Targeted Efforts and Allocation of Resources

It is important for states to focus their efforts and initiatives on the specific problem areas identified. Many state equity plans listed numerous current efforts to address a broad range of perceived teacher supply needs. Although each of these efforts may seem logical in itself, the overall result can be disappointing. The diffusion of effort and lack of clarity about linking activities to goals often results in inadequate resources and efforts allocated to the specific areas most in need of help. States may achieve more powerful results by allocating a greater percentage of their resources to carefully identified challenge areas.

Identification of Partners and Stakeholders

Several states are recognizing and marketing the fact that student success benefits all members of the community. They are establishing partnerships and other collaborative associations with members of the business community and with other education organizations. These partners may provide funding for certain endeavors and may also be able to provide other types of resources, technical assistance, convening, and marketing. Perhaps most important is the strong public and political advocacy that selected partners and stakeholders can bring to the efforts of education in addressing the tough issues associated with the distribution of HQTs.

A Final Word on State Education Policy

Quality state education policy serves two primary functions: (1) it establishes parameters of authority and activity (who is responsible for doing what), and (2) it sets priorities for efforts and resources. State policy should serve to empower, not hinder, the systems it governs. A state-level policy that is overly prescriptive may inadvertently obstruct the ability of other involved agencies and organizations to reach their goals or serve their populations. Alternately, by providing too little direction, a policy may not give a clear indication of priorities. State policy also needs to be dynamic to reflect advances in knowledge and changes in context and culture.

Districts and schools may have specific hurdles and opportunities affecting their ability to respond to the challenge of equitable teacher distribution. Policymakers need to consider this as they attempt to create the most effective policies to help districts, schools, and our whole education system keep America's promise of a high-quality education for all students, regardless of race or ethnicity, geographic location, disability, or economic status.

References

Goe, L. (2006). *Planning tool to provide evidence of progress toward equitable teacher distribution.* Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved September 11, 2007, from http://www.ncctq.org/TeacherDistributionPlanningTool2.pdf

Ingersoll, R. M. (2002). *Out-of-field teaching, educational inequality, and the organization of schools: An exploratory analysis* (Research Report No. R-02-1). Seattle, WA: Center for the Study of Teaching and Policy.

Lankford, H., Loeb, S., & Wyckoff, J. (2001). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis, 24*(1), 37–62.

National Center for Education Statistics. (2007a). *The condition of education 2007* (NCES 2007-064). Washington, DC: U.S. Department of Education. Retrieved September 11, 2007, from http://nces.ed.gov/pubs2007/2007064.pdf

National Center for Education Statistics. (2007b). Percentage of 4th graders eligible for free or reduced-price lunch and percentage distribution of students in the school eligible for a free or reduced-price lunch, by race/ethnicity and school location: 2005 [Table]. *The condition of education 2007* (NCES 2007-064). Washington, DC: U.S. Department of Education. Retrieved September 11, 2007, from http://nces.ed.gov/programs/coe/2007/section1/table.asp?tableID=440

National Center for Education Statistics. (2007c). White-black and white-Hispanic gaps in average reading and mathematics scores, by grade: Various years, 1990–2005 [Table 14-1]. From Indicator 14: Trends in the achievement gaps in reading and mathematics. In *The condition of education 2007* (NCES 2007-064). Retrieved September 11, 2007, from http://nces.ed.gov/programs/coe/2007/pdf/14_2007.pdf

No Child Left Behind Act of 2001, Pub. L. No. 107–110, 115 Stat. 1425. (2002). Retrieved September 11, 2007, from http://www.ed.gov/policy/elsec/leg/esea02/index.html

Office of Postsecondary Education. (2006). *The secretary's fifth annual report on teacher quality: A highly qualified teacher in every classroom.* Washington, DC: U.S. Department of Education. Retrieved September 11, 2007, from http://www.ed.gov/about/reports/annual/teachprep/2006-title2report.pdf

Office of the Governor of California. (2006). *Fact sheet: Increasing number of highly qualified teachers.* Retrieved September 11, 2007, from http://gov.ca.gov/index.php?/fact-sheet/4374/

Peske, H. G., & Haycock, K. (2006). *Teaching inequality: How poor and minority students are shortchanged on teacher quality.* Washington, DC: The Education Trust.

Prince, C. (2006). *Template for state teacher equity plan.* Washington, DC: Council of Chief State School Officers. Retrieved September 11, 2007, from http://www.ccsso.org/content/PDFs/StateTeacherEquityTemplate.doc

Stroup, S. (2004, December). *Enactment of the "Taxpayer-Teacher Protection Act of 2004"* (Pub. L. 108–409; 118 Stat. 2299) [Letter]. Information for Financial Aid Professionals Online Library. Retrieved September 11, 2007, from http://www.ifap.ed.gov/dpcletters/GEN0414.html

Quality Is the Best Policy

Visit the NCCTQ's NCLB Highly Qualified Teacher and Paraprofessional database (www.ecs.org/html/educationissues/teachingquality/NCLB-HQTP/NCCTQ_db_intro.asp).

There you will find the following:

- Highly Qualified Teacher (HQT) definitions
- High, Objective, Uniform State Standards of Evaluation (HOUSSE) options
- Title I paraprofessional requirements

NCCTQ partner, the Education Commission of the States (ECS), tracks changes that states make to teacher-quality definitions and policies and makes them available for your easy state-by-state reference. Users may search for information by selecting individual states on an interactive map; compare definitions, options, and reciprocity across states; or download preselected 50-state reports.

For example, the site's state comparisons report section allows a user to search for states that require Title I instructional paraprofessionals to be certified. The database allows users to instantly identify the 11 states that have paraprofessional certification requirements on the books:

- Delaware
- Georgia
- Iowa
- Maine
- Minnesota
- New Mexico
- New York
- North Dakota
- Ohio
- Texas
- West Virginia

Users may also quickly find information about the three states that have delineated reciprocal HOUSSE options:

- Florida
- North Carolina
- South Carolina

NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

CHAPTER 5

Emerging Strategies and Practices to Improve Teacher Quality in At-Risk and Hard-to-Staff Schools and Subject Areas

Chapter 5

Emerging Strategies and Practices to Improve Teacher Quality in At-Risk and Hard-to-Staff Schools and Subject Areas

Cortney Rowland,
Learning Point Associates
Michael Allen, Ph.D.,
Allen Education, LLC

Introduction

Two things are clear: (1) research shows that having a high-quality teacher matters for student growth and learning and (2) every state has young people who do not have access to a high-quality teacher. Unfortunately, this situation is not simply happenstance; low-income and minority students in at-risk and hard-to-staff schools consistently are far more likely to have teachers with less experience or more marginal qualifications. With data from North Carolina, Clotfelter, Ladd, Vigdor, and Wheeler (2007) recently confirmed that this point holds true for principals as well; good principals move away from high-poverty schools. Furthermore, in most states and districts, the subject areas of mathematics, science, and special education suffer from consistent teacher shortages and high teacher turnover, thus perpetuating the presence of less effective teachers in these classrooms. Most likely in part because of pressure from the No Child Left Behind (NCLB) Act, but also on their own initiative as the seriousness of this problem becomes apparent, states and districts are increasingly attempting to identify the dimensions of the inequitable distribution of quality teachers more precisely and to develop appropriate strategies to resolve the problem (see "Overarching Strategy to Improve Teacher Quality in At-Risk and Hard-to-Staff Schools" on page 87).

This chapter describes a variety of emerging strategies and practices employed by districts and states across the country to address issues related to the availability, recruitment, and retention of teachers for at-risk and hard-to-staff schools. The work of the National Comprehensive Center for Teacher Quality(NCCTQ) hinges on the notion that for schools to impact student learning, especially that of students in at-risk schools, education as a whole needs to do a better job of recruiting people into the teaching profession, especially for mathematics and science; producing more high-quality teachers; tapping into pools of teachers and individuals who would be willing to be teachers and then distributing them equitably; recruiting current teachers to specific schools, areas, or classrooms that are in need of their experience and skills; and using resources wisely to retain teachers. By studying emerging strategies and practices related to the availability, recruitment, and retention of quality teachers in a variety of district and state contexts, policymakers and administrators with similar needs can learn from the experiences of others.

Low-income and minority students in at-risk and hard-to-staff schools consistently are far more likely to have teachers with less experience or more marginal qualifications.

This chapter includes primary sections on teacher availability and recruitment and retention. The section pertaining to teacher availability focuses on increasing the overall pool of teachers. The section on teacher recruitment and retention addresses strategies for recruiting and retaining teachers in at-risk and hard-to-staff schools and subject areas. Each section details the importance of the theme and provides several state- and district-level strategies that reflect policy and practice.

Teacher Availability for Hard-to-Staff Schools and Subject Areas

In developing strategies to address issues of inequitable teacher distribution, a fundamental question is, "Are there enough good teachers available to make any solutions successful?" For example, each year more than 13 percent of special educators leave the profession or transfer to general education; every four years, half of all special education teachers have departed (McLeskley, Tyler, & Flippin, 2003). Although it would be tempting to determine availability and appropriate solutions based on some assessment of the entire pool of teachers, both those who are teaching and those in the so-called "reserve pool" who are not currently working in school (National Commission on Teaching and America's Future, 2003), the situation is much more complex.

National factors contribute to the difficulty of finding good teachers for at-risk and hard-to-staff schools (e.g., the underproduction of special education and high school physics teachers in our nation's teacher preparation programs). Ultimately, however, the problem is local and must be addressed based on local realities and locally appropriate solutions. One district may have a shortage of middle school science teachers, while a neighboring district may have a shortage of high school music teachers. Even within the same district, one school may have a full complement of effective and well-qualified mathematics teachers, while other schools in the district struggle to find any well-qualified teachers to teach mathematics.

Many different factors might account for such disparities, and thus different courses of action may be needed to address them. A state might have difficulty producing enough teachers in specific areas and also may not be successful in luring enough teachers from elsewhere to fill the need. One state may set a relatively low bar for teacher certification, thus ensuring supply. Another state's relatively high bar may help ensure teacher quality but reduce the potential teacher supply. A significant science-related industry in one part of a state may lure prospective science teachers away from teaching in the area because of the opportunity to earn much higher salaries elsewhere. These realities demonstrate the importance of the following points:

- Whether there is a sufficient number of well-qualified teachers available to address inequities in the distribution of teachers in a particular district depends on an array of factors; some are national or regional and some are statewide, but many are associated with policies and conditions in individual districts and schools.
- States and districts ultimately need to consider all factors that contribute to the problem and all strategies that could facilitate a solution. They should begin, however, by addressing the more localized factors over which they have specific jurisdiction and greater control and chances of success in resolving the problem.

Increasing the Pool of High-Quality Teachers in At-Risk and Hard-to-Staff Schools

State-Level Strategies to Increase the Pool of High-Quality Teachers in At-Risk and Hard-to-Staff Schools

- **Allow retired teachers to return to the classroom as part-time, salaried teachers while continuing to draw full retirement benefits exempt from any earnings cap.** Maryland, Missouri, and North Carolina are among a number of states that have implemented this policy, at least for districts with a documented teacher shortage.
- **Make it easier for well-qualified teachers coming from other states to obtain a teaching license.** In the Mid-Atlantic region, Virginia, Maryland, and the District of Columbia have implemented a jointly recognized "meritorious new teacher" designation that grants full reciprocity to qualifying teachers moving from one of these states to another.

- **Significantly increase the number of teachers that state universities prepare in subjects for which there are general teacher shortages.** The Texas A&M University system attempts to adjust the number of teachers it prepares in different subjects in response to projections of state needs. Both the University of California system and the California State University system have large initiatives to increase their production of mathematics and science teachers.
- **Tap the potential of community colleges to increase the number of teachers in the pipeline.** Community colleges, with their diverse student populations, are playing an increasingly important role in postsecondary education. States like Maryland and Georgia have attempted to integrate community colleges into their overall teacher preparation strategy, not only by making it easier for community college credits to transfer to four-year institutions but also by providing special support at the community college level to students who express an interest in teaching careers.
- **Create teacher preparation programs specifically designed for rural districts.** Rural districts lack the resources and critical numbers necessary to create their own programs, but several states, including Mississippi and Colorado, have created or approved programs aimed at the preparation of rural teachers. These programs often involve community colleges and include incentives to attract prospective candidates and ensure that they will work in the intended districts.
- **Create high-quality alternative routes to certification.** Alternative routes to certification can provide a path to move certified teachers, career changers, and other nontraditional prospective teachers into the classroom. This may be especially helpful for hard-to-staff subject areas. One example is North Carolina's NC TEACH II program. Funded by a Transition to Teaching grant, NC TEACH II will work with four universities to recruit and prepare lateral-entry teachers of high-need subject areas who are committed to remaining in a teaching position in a high-need school for a minimum of three years.

District-Level Strategies to Increase the Pool of High-Quality Teachers in At-Risk and Hard-to-Staff Schools

- **Create teacher preparation programs that prepare teachers for specific assignments in hard-to-staff schools.** A number of urban districts in partnership with local colleges and universities have created alternate route programs specifically to address the needs of hard-to-staff schools. Examples include the New York City Teaching Fellows, the Boston Teacher Residency, and Houston's Alternative Certification programs. Many of these programs focus on "home-grown" teacher candidates, who are more likely to remain in local classrooms.
- **Encourage and support paraprofessionals to become full-time teachers.** Teacher aides and assistant teachers often have the dedication to be effective in hard-to-staff schools and have valuable real-world experience as well. Supporting these teachers' efforts to pursue a degree program and a full teaching certificate with the promise of a full-time teaching job makes good sense and takes advantage of a prime pool of candidates.
- **Create greater interest in the teaching profession.** It may not "take a village," but a concerted effort, particularly on the local level, to push the teaching profession as a fulfilling and important career alternative might have some impact. Local business, political, and community leaders could all be influential and help to create financial support for incentives. Although more money for schools is not always the answer, communities that demonstrate a strong commitment to their schools systems—financial or otherwise—are likely to create greater general interest in teaching in those systems.

Teacher Recruitment and Retention for Hard-to-Staff Schools and Subject Areas

In addition to the complicated notion that there are not always enough good teachers to address state and district problems related to inequitable teacher distribution, there is also the issue of actually being able to recruit and retain available teachers into specific schools for particular subject areas. These schools are often at-risk and located in places where teachers do not necessarily want to work. The subject areas are often those in which a teacher could make a higher salary in a related, nonteaching position.

Certainly, there is much research on which kinds of schools most good teachers gravitate to and what it will take to get them to work in an at-risk school or subject area instead. Like teacher-availability issues, recruitment and retention issues must be addressed with an understanding of the local context. For example, some districts have problems with hiring late in the academic cycle. Jessica Levin and Meredith Quinn (2003) noted that because of hiring delays (e.g., not offering positions until July or August), urban districts often lose stronger applicants because those applicants have an earlier opportunity to accept positions in schools that are not hard to staff, commonly in suburban districts.

On the other hand, some districts may have a particularly effective human resources department with stellar recruitment and hiring practices that give them an important edge over neighboring districts. Teachers may be attracted to some schools in a district and avoid others, based on the reputations of the schools' leadership or learning environments. In Eric Hirsch's report (2006) on recruiting and retaining teachers in Alabama, survey responses from teachers showed school leadership to be one of the most important factors in whether or not a teacher remains in a school. A collective bargaining agreement in a particular district may make it difficult for the superintendent to reassign teachers in order to balance the quality of the teaching staff among the district's schools, or such an attempted reassignment might risk a backlash from parents whose children currently enjoy a large share of the best teachers. Furthermore, forced reassignment may result in some teachers leaving the profession. Finally, teacher compensation in one district may be substantially lower than compensation in neighboring districts, making it difficult for the district with lower pay to attract and retain good teachers.

Many current state and district efforts aim to address the inequitable distribution of teachers by recruiting and retaining them for specific schools and subject areas without compromising teacher quality. Efforts like those discussed in the next section are intended to increase the likelihood that high-quality teachers from the currently available pool will teach in at-risk and hard-to-staff schools.

State-Level Strategies to Recruit and Retain High-Quality Teachers for Hard-to-Staff Schools and Subject Areas

- **Develop and fund pay-for-performance programs to attract, retain, motivate, and reward teachers.** Although these are still relatively new efforts with a minimal research base, many schools, districts, and states have developed performance-based pay programs to address teacher availability, recruitment, and retention. Performance-based pay systems have the potential to improve retention of effective teachers; draw accomplished teachers to at-risk and hard-to-staff schools; and motivate teachers, administrators, and other staff through recognition for supporting student success. States such as Texas and Mississippi have performance-based pay programs with components that target hard-to-staff, low-performing, low-income, or urban schools.
- **Develop and implement a coordinated state recruitment and retention effort.** Many states are using an assortment of technologies and strategies to launch statewide recruitment and retention

campaigns. Virginia has a statewide recruitment and retention effort that includes teacher incentives and teacher mentoring. Coordinated recruitment efforts in some states focus on a specific subject area of need, such as Tennessee's Become a Special Educator in Tennessee Teaching Program (BASE-TN).

- **Support new teachers through induction and mentoring.** Induction, mentoring, and support for new teachers continues to be one of the strongest ways to improve teacher quality in at-risk and hard-to-staff schools by increasing the level of teacher retention, accelerating the professional learning of new teachers, and creating learning communities of experienced and novice teachers. Several states, including California, Connecticut, and Louisiana, have mandatory new-teacher support programs, although the levels of state funding provided for these programs vary; California funds two years of participation, while Connecticut funds only the first year.

District-Level Strategies to Recruit and Retain High-Quality Teachers for Hard-to-Staff Schools and Subject Areas

- **Provide incentives and policies to redistribute the teacher workforce.** The "best" teachers rarely list pay as the reason for entering the teaching profession, yet given equal pay across assignments, most will choose to work in better resourced systems with higher performing students. Teacher pay and incentives should be structured to encourage the distribution of high-quality teachers across districts, schools, and content areas by combining pay with improved working conditions, cohort assignments, or a focus on a particular geographic or subject area. Sixty-nine low-performing middle schools in Virginia can hire qualified mathematics teachers from the Middle School Mathematics Teacher Corps. Teachers apply to enter the state-approved pool and receive extra pay for teaching in those schools. If hired from outside the district, teachers receive an extra $10,000 per year for three years. Teachers from inside the district who enter the pool and take assignments in designated schools earn an extra $5,000 per year for three years.
- **Improve working conditions.** Improving the working environment of teachers helps at-risk and hard-to-staff schools retain new teachers as well as reduce turnover for all teachers. Most teachers want to work in a school that is safe, provides necessary resources, and has supportive administrators. The Center for Teaching Quality currently has teacher working conditions initiatives with seven states or districts within states: Arizona, Kansas, Mississippi, Nevada, North Carolina, Ohio, and South Carolina. These working conditions initiatives survey teachers and then use the data to make connections between working conditions, student achievement, and teacher retention. Schools and districts are also provided with customized reports on the status of their working conditions.
- **Build the capacity of school leaders to support teachers.** Teacher retention depends on support and guidance from leaders. Miami-Dade County Public Schools' program, the Superintendent's Urban Principal Initiative, develops leadership skills in high school and middle school administrators (e.g., assistant principals and district central office administrators) to prepare them for principalship in the district's highest need secondary schools. The program also provides professional development.
- **Improve district recruitment and hiring practices.** Many districts lack the staff and systems, and sometimes the knowledge, to make teacher recruitment and hiring as successful as it could be. One organization that has expertise in this area is the New Teacher Project, which has researched the issue and helped a number of districts to improve human resources processes and advance teacher hiring timelines.

Conclusion

States and districts across the country are developing and implementing strategies to address the inequitable distribution of teachers. Many of these strategies focus on the availability, recruitment, and retention of high-quality teachers for at-risk and hard-to-staff schools.

Teacher availability refers to whether or not there are enough good teachers available to facilitate the success of teacher-quality efforts. Teacher recruitment and retention indicates the difficulty of being able to lure teachers into specific schools to teach in specific subject areas. To a certain extent, there are national trends that can be identified in teacher availability and recruitment and retention, but these issues are specific to certain states and districts and must be addressed with solutions that are contextually appropriate as indicated through the examples in this chapter.

It is difficult to isolate factors that facilitate the relative success of many of these strategies. The *TQ Source* Tips and Tools resource on the *TQ Source* website (see www.tqsource.org/strategies/index.asp) provides tips and cautions to keep in mind before embarking on many different strategies related to the availability, recruitment, and retention of teachers for at-risk and hard-to-staff schools. The most notable and far-reaching recommendation is that strategies be data-driven and focused on contextually identified issues of inequitable teacher distribution. Barriers to the success of these strategies often include a lack of funding allocations, political will to implement programs, buy-in from all stakeholders, and political and economic sustainability.

So far, little data has been collected on these programs, so a full understanding of what has worked and what has not worked is not yet possible. As states and districts come to understand the nuances of how teachers are distributed in their particular locales and look to develop and implement effective strategies, more data will become available. For example, Virginia is documenting the influence of a pilot incentive program launched in 2004 that awarded bonuses to high-quality teachers who went to work in high-needs areas.

Many of the problems surrounding teacher availability, recruitment, and retention are functions of the teacher labor market—teachers most often want to teach in schools with a combination of better working conditions and better pay. Equal access to quality teachers for all students is a serious issue. Policies must be developed to address these tendencies and help make at-risk schools places that are not hard to staff because they pay competitively and tie pay to teacher retention, they are safe, and they reflect communities of learning where teachers can make a real difference.

See the Helpful Resources section for more information about additional resources that provide easily accessible research, data, strategies, and examples on many different teacher quality issues. Several of these resources were mentioned throughout the chapter.

Helpful Resources

- **Center for Teaching Quality (CTQ)**
  www.teachingquality.org
  CTQ engages in a wide variety of policy and research initiatives, including developing teacher leadership, assessing the impact of the NCLB teacher quality requirements, and analyzing what it takes to recruit and retain quality teachers for at-risk schools. The website offers an array of tools and publications.
- **Center on Personnel Studies in Special Education (COPSSE)**
  www.coe.ufl.edu/copsse/
  COPSSE is a partnership between the University of Florida and Johns Hopkins University. It provides reliable information to policymakers, practitioners, parents, and the general public regarding special education personnel issues.

- **Data Quality Campaign (DQC)**
  www.dataqualitycampaign.org/
  The DQC is a national, collaborative effort to improve the collection, use, and reporting of quality education data and to encourage the implementation of state longitudinal data systems to improve student achievement. The website provides a variety of tools and resources related to the improvement of data quality, including teacher data.
- **Education Commission of the States (ECS)**
  www.ecs.org/ecsmain.asp?page=/html/issue.asp?issueID=129
  An NCCTQ partner, ECS's Teaching Quality page provides policymakers and other education leaders a variety of resources, including research, policy information, and examples of what other states are doing to improve teacher quality.
- **Mid-Atlantic Regional Teachers Project (MARTP)**
  www.aacte.org/programs/martp/aboutmartp.cfm
  MARTP is a collaboration of six Mid-Atlantic states to improve regional teacher reciprocity in order to address such factors as rural/urban challenges, subject area needs, and equitable hiring practices.
- **National Association of State Directors of Teacher Education and Certification (NASDTEC)**
  www.nasdtec.org/
  NASDTEC represents professional standards boards, commissions, and state departments across the country. It promotes high standards for educators, teacher mobility across states, personnel screening, and a clearinghouse on teacher discipline.
- **National Center for Alternative Certification**
  www.teach-now.org/
  The National Center for Alternative Certification's site is a comprehensive place to find information about alternative routes to certification, including state-by-state policy information as well as research.
- **National Center for Special Education Personnel and Related Service Providers (The Personnel Center)**
  www.personnelcenter.org/
  The Personnel Center seeks to recruit and retain special education teachers and other personnel by offering information on such things as careers, preparation programs, and certification and licensure requirements as well as by working to increase the capacity of states, districts, and other special education programs to recruit, prepare, and retain high-quality special educators.
- **Teacher Quality Enhancement Grants**
  www.ed.gov/programs/heatqp/index.html
  Teacher Quality Enhancement Grants are competitive, discretionary grants that seek to improve states' capacity around teacher recruitment, preparation, licensing, and support, particularly to increase the number of qualified teachers in high-needs schools.
- ***Teaching Quality (TQ) Source***
  www.tqsource.org
  This website, made available by NCCTQ, is designed to help policymakers and educators make informed decisions on teaching quality by identifying policies and initiatives that impact fundamental issues of teaching quality, including teacher preparation, recruitment, and retention. The website also has an extensive library of research on teacher quality issues. One resource that can be found on the website is the *TQ Source* Tips and Tools page (www.tqsource.org/strategies/index.asp), which provides practical strategies and resources to assist policymakers and practitioners to improve teacher quality.
- **The New Teacher Project**
  www.tntp.org/
  The New Teacher Project partners with school districts, state education agencies, colleges and universities, and other educational entities to help prepare, recruit, and certify high-quality teachers for public schools. The website offers, among other things, research and information about an array of programs.

Recruiting and Retaining Teachers in Shaw, Mississippi: How a Small, Rural District Staffs Its Classrooms

The Socioeconomic and Academic Achievement Context

Shaw, Mississippi, is a small, rural settlement in Bolivar County, in the heart of the Mississippi Delta, about 95 miles north of Vicksburg and 115 miles south of Memphis, Tennessee. In 2000, Shaw was home to just over 2,300 residents, 92 percent of whom are African American. It is an economically poor community, with a median household income of just under $19,000, compared with the state median income of $31,300, and a poverty rate of roughly 42 percent (U.S. Census Bureau, 2003).

Two public schools serve the town. McEvans School, which had a population of 436 students in 2005-06, is a K-7 elementary/middle school originally built in the 1950s as the town's high school for black students. The present high school, Shaw High School, covers Grades 8-12 and had a population of 282 students in 2005-06. It occupies an aging building in the middle of the town that was constructed in 1923 "for the education of white children and white children only." There are, however, virtually no white students these days in the Shaw school district; some 99 percent of the students are black. Of the students in the Shaw district, 96 percent are eligible for free or reduced-price lunch, well above the state average of 64 percent. They come from homes in which roughly half of the adults aged 25 or older have earned a high school diploma.

Shaw's small, relatively poor population and the correspondingly low property values in the district mean that the district has difficulty raising the revenue it needs to support the schools. Moreover, Shaw is facing a declining student population, lowering revenues even more. The 2005-06 total of 718 enrolled students in the Shaw district was down 24 percent from the 949 students enrolled in 1995-96. (2006-07 figures from the district superintendent's office indicate a total current enrollment of only 665 students.)

In spite of limited resources, under the leadership of Superintendent Charles Barron the district has been able to participate in a number of statewide and national programs, such as the Algebra Project and the Mississippi Writing and Thinking Institute. These efforts seem to have had a generally positive impact on student performance in Shaw, but the level of student achievement in the district is still far from ideal.

The performance of Shaw's second and third graders ranks in the top 20 percent to 30 percent in Mississippi, but Shaw students' showing on the Mississippi Curriculum Test begins to fall off in the fourth grade. By the time Shaw students get to high school, the indicators of academic success are decidedly mixed. Attendance and graduation rates have increased over the last few years, and 70 percent of graduates go on to pursue some sort of post-secondary education or vocational training.

Achievement as measured by various test scores is mediocre and generally below state averages, however, Shaw students generally score near or slightly above the average for students in the state's other high-poverty districts. On the ACT college entrance examination, the mean scale score of Shaw high school graduates in 2006 was 15.2 compared to the statewide average of 18.7, figures that have not varied much over a number of years. Ultimately, the weak academic performance of students in Shaw reflects the larger challenge for a state whose fourth- and eighth-grade students scored next to the lowest in reading and mathematics among all states on the 2005 National Assessment of Educational Progress.

Teaching in Shaw

In spite of lackluster student performance, it is hard to escape the perception that, for most teachers, the positives of teaching in Shaw significantly outweigh the negatives. Teachers and administrators complain about student motivation and parental support, and the absence of resources like the Internet and good libraries in students' homes is certainly a handicap. With only 27 full-time teachers at the K-7 McEvans School (2005-06 figures) and only 26 at Shaw High School, however, student-to-teacher ratios are small, and teaching in Shaw is a much more intimate experience than is the case in many larger districts. Like many of the professionals who remain in the Mississippi Delta, many of the teachers in the Shaw schools were themselves raised in Shaw or the surrounding area and are committed to helping students improve their lives and the future of their community.

Moreover, in view of the limited economic opportunities in the area, teaching is a relatively well-paid occupation; the average Shaw district teacher salary in 2001-02 was just under $34,000, far above the town's $19,000 median household income (Mississippi Department of Education, 2003). Many teachers are also the first in their families to have attended college, and their salaries and professional prestige are much greater than those of their parents and other family members. Given the positives of teaching in Shaw, the closeness among teachers and administrators, and the absence of collective bargaining, the teachers association in the district is not very active and is not seen as particularly important, especially by most of the younger teachers.

Shaw's Teacher Recruitment and Retention Challenge

Nevertheless, Shaw faces a steep challenge in recruiting and retaining teachers, a challenge it shares with many other small, high-poverty districts. There is a general shortage of teachers in the state, although it does not impact all regions as negatively as it does the delta. The situation in Shaw has historically been particularly severe, and the district is one of 47 districts officially designated as a "Critical Teacher Shortage Area" by the Mississippi Department of Education.

Passed in 1998, the state's Critical Teacher Shortage Act is a vital piece of legislation for Mississippi's hard-to-staff schools and districts. The act provides scholarships, loan forgiveness, housing allowances, and other benefits directly to teacher candidates, new teachers, and veteran teachers who agree to teach in identified schools. It supports a number of alternate route teacher preparation programs and master's degree programs throughout the state. It also increases support for the efforts of the Mississippi Teacher Center to recruit teachers for critical shortage schools and provide them with ongoing training and instructional support. Shaw's designation as a Critical Teacher Shortage Area has been of enormous benefit, and indeed several of the younger teachers in the district have taken advantage of the incentives the program offers, without which it is doubtful they would have been able to complete their college degrees.

Of the students in the Shaw district, 96 percent are eligible for free or reduced-price lunch, well above the state average of 64 percent.

At present, the teacher corps in Shaw is remarkably stable, with an annual turnover rate of only 3 percent. That figure betrays the reality, however, that there are simply not very many teachers interested in teaching in Shaw. On average, teachers in Shaw have 25 years of experience—a very high figure that reflects the commitment of many teachers to the profession and the district but also raises a concern that an insufficient number of younger teachers are replenishing and reinvigorating the district's teaching pool. In 2003-04, only 29.3 percent of Shaw teachers had advanced degrees compared with a state average of 38.3 percent, which increases the likelihood that the district's aging teacher workforce may not be as skilled or knowledgeable as their long tenure might indicate. In addition, there are few options for replacing teachers who might be minimally effective, and the district has particular difficulty staffing middle school mathematics and language arts positions.

Meeting the Recruitment and Retention Challenge

In the end, the strategy the district has identified as most successful—even if it limits the district's recruitment focus to a smaller number of candidates—is a "grow-your-own" strategy that seeks to encourage Shaw residents or residents of nearby towns to pursue the education and credentials necessary to teach in the district. This is because, in the view of the superintendent and others in the district, the real problem is less one of recruitment than it is one of retention. Shaw occasionally has been able to attract first-time teachers willing to give teaching in the district a try, but they too often leave within a few years if they are not originally from the Shaw area or a similar location. Low salaries compared to those in other Mississippi districts, even districts in the surrounding area, also play a role in discouraging teachers from remaining in the district. There do not appear to be any long-term incentives available (e.g., significant salary bonuses) to encourage teachers to remain longer in hard-to-staff schools like those in Shaw, and the idealism of younger teachers fades as they are confronted with the realities of a high-poverty, geographically and culturally isolated district.

In addition to the general opportunities the Critical Teacher Shortage Act makes possible, several specific programs have been particularly central to Shaw's grow-your-own strategy. Coahoma Community College offers evening classes and an education track that can provide paraprofessional certification, and its low tuition and the automatic transferability of its courses to four-year institutions in the state make it an important option for a poor region like the Mississippi Delta. Several young teachers in Shaw have used the Coahoma program as a stepping stone to a teaching career.

Another valuable part of the pipeline for Shaw is the America Reads program, a partnership among Americorps, the Shaw District, and Delta State University to train tutors for afterschool programs. Tutors, virtually all of whom are from Shaw or the surrounding area, also receive a small monthly stipend and a tuition credit once they complete their term of service. The program not only provides an opportunity for individuals to gain first-hand experience in the schools but also for school administrators to identify individuals who show promise as future teachers and support them in continuing on to the university and obtaining their teaching certificate.

Another effort in Shaw to further its grow-your-own strategy is its Future Educators Association. Funded by the Mississippi Teacher Center, the program enrolls 19 out of the 282 students at Shaw High School. A lack of resources limits what the program can provide, however. Field trips to college campuses, for example, are rare.

Finally, the district tries to provide ongoing career development opportunities. For teachers who do begin their careers in Shaw, the district ensures they have a mentor. Professional development is also offered through the state department of education, Delta State, or other providers. Delta State also has a tuition-paid master's degree program specifically for individuals who already have teaching certificates and who agree to teach (or to continue to teach) in the state's critical shortage districts for at least three years. Financial and logistical difficulties, however, such as simply finding substitute teachers, make it difficult for interested teachers to take advantage of these options.

The district continues to work to grow their own teachers to ultimately staff all of their classrooms, as it faces decreasing student enrollments and impoverished conditions.

What Else Can Be Done?

One important barrier to certification among Shaw teachers seems to be the difficulty they have passing the Praxis I and II examinations required for entry into teacher preparation and licensure. Several teachers interviewed expressed a belief that the fear of the examinations leads potential teachers to choose other occupations. The district is attempting to address this problem head-on. For teachers hired on a provisional basis and working toward licensure, once they have passed the Praxis II exam, the district reimburses them for the costs of test preparation classes and the examination itself. Also under consideration is administering the Praxis I to interested individuals right out of high school so that the basic knowledge this examination assesses will be fresher in their minds.

Institutions that prepare teachers also can be more helpful to Shaw and districts like it. New Shaw teachers often have weak classroom management and presentation skills, as well as deficits in reading comprehension and writing. Postsecondary institutions must address these deficits by providing adequate remediation for students entering college or teacher preparation and, at the same time, maintain a high standard for graduation and program completion. Shaw and similar districts also need to be more visible partners in the teacher preparation programs of larger institutions like Delta State University. Having more student teachers assigned to the district, for example, might increase their level of comfort with teaching in Shaw and thus increase likelihood that they will want to teach there and to succeed once they graduate.

Ultimately, any efforts that Shaw and similar economically impoverished districts might make to grow teachers from within must confront the fact that teaching is simply not a highly sought-after occupation, even for students with limited occupational opportunities and whose family and friends have jobs that are far less lucrative and respected. Shaw's reliance on the grow-your-own strategy to recruit teachers into the district for long-term retention has resulted in a more stable corps of teachers for the district than it might otherwise have had, but always with a seriously restricted pool of candidates. Additional economic support for career development might be of some help in retaining teachers and improving their effectiveness. Long-term compensation incentives, such as significant rewards for teachers who are successful teaching in high-poverty districts like Shaw, might help extend the time that teachers from outside the area are willing to stay and might provide additional motivation for all teachers in the districts to improve their knowledge and skills.

Conclusion

Shaw, Mississippi, confronts specific local issues while trying to recruit and retain teachers for its, primarily, at-risk schools and students. The district continues to work to grow their own teachers to ultimately staff all of their classrooms, as it faces decreasing student enrollments and impoverished conditions. The district has collaborated with area teacher preparation institutions, but continued efforts are needed in order to ensure targeted preparation for specific district needs as well as potentially to secure a pipeline of prospective teachers to fill their classrooms.

How the Fifth Largest County in the Country Recruits and Retains Teachers: A Case Summary of the Clark County School District

The Socioeconomic and Academic Achievement Context

Although most people are probably familiar with Las Vegas, what they may not know is that the city sits within larger county boundaries that encompass well over 7,000 square miles. Clark County has a booming population of nearly 2 million people and is one of the fastest growing counties in the country—nearly 5,000 people move there each month. Over half of the population of Clark County is white, but in the past several years alone, there has been a growing Hispanic population—Hispanics now make up a little more than 25 percent of the Clark County population (Clark County, Nevada, 2006). The casino and gaming sector and the leisure and hospitality sector employ most Clark County residents (Clark County, Nevada, 2006).

Clark County is also home to the Clark County School District (CCSD), the fifth largest school district in the country, with approximately 300,000 students in 326 schools. The district opens 12 to 14 new schools per year. CCSD is organized into five regions, each of which has its own administrative staff, including a regional superintendent, and is charged with developing an improvement plan along with strategies and practices to meet the goals of that plan. Clark County is able keep up with growth, in part, through the issuance of bonds. For example, the district has one of the largest construction and school modernization programs in the nation.

According to student achievement results from state tests, K-8 reading, mathematics, and science suffer from the highest percentage of students performing in the two lowest (out of four) ranges of achievement (Nevada Department of Education, 2006). While there has been some improvement in K-8 mathematics, reading and science have been relatively stagnant over the past few years. In 2005-06, nearly 56 percent of K-8 students were either in the lowest range of achievement or were in the "Approaches Standards" range of achievement. Fifty percent of students scored in these ranges for mathematics and 52 percent for science. Assessment information for Grades 9-12, however, has shown steady improvement over the past three years (Nevada Department of Education, 2006). The average daily attendance is around 93 percent and mirrors that of the state. In 2005, the district had a graduation rate of about 60 percent, which was almost 5 percentage points lower than the state's overall graduation rate (CCSD, 2006). Although enrollment in postsecondary institutions has grown, the state of Nevada, including CCSD, continues to show low numbers of students who go on to college after high school.

Teaching in the Clark County School District

All of this district growth also means a lot of teachers—more than 17,000 full- and part-time teachers to be exact. CCSD hires approximately 1,500 to 2,000 new teachers per year (McRobbie & Makkonen, 2005). The district primarily imports teachers from other districts and states; its two main teacher preparation institutions, University of Nevada Las Vegas (UNLV) and Nevada State College, cannot possibly turn out enough teachers to fill the ever-growing shortages in CCSD's classrooms. Approximately 75 percent of CCSD's teachers are from out of state. Many teachers report that they come to teach in Clark County because of the offerings of the district, the attributes of the area including the weather, and the cultural diversity represented in Clark County.

In an agreement with the teachers' association, Clark County Education Association, the district started new teachers last year at Step 3 of the salary schedule, bringing their beginning salary to approximately $33,000. The context in which they are receiving that salary has been changing, however. Housing costs in Clark County have steadily risen—the average median price of a new home in 2006 was $330,094, which was up from $309,990 in 2005 (Southern Nevada Home Builders Association, 2007).

District officials note that despite some of their very best efforts, and due to a variety of reasons including capacity issues, sometimes they have to place a teacher in a classroom who is not highly qualified. According to the CCSD Accountability Reports 2005-2006, the content areas with the highest percentages of classes not taught by highly qualified teachers were English (31.4 percent), mathematics (27.1 percent), and science (26.5 percent).

Clark County School District's Teacher Recruitment and Retention Challenge

When district officials are asked how they identify their teacher shortage needs, the response is usually something along the lines of, "It's more about what we don't need!" The district is not in search of social studies teachers and boys' secondary physical education teachers. Otherwise, there are shortages across the district in all other areas. The major focus, however, reflects national needs; Clark County has a dearth of mathematics, science, and special education teachers. With the growing Hispanic population as well as other students whose first language is not English, there is a burgeoning need for ELL teachers.

The call for recruiting teachers for area shortages is mostly a function of the growth of the district. Teacher distribution issues are somewhat a result of what one district staff member characterized as follows: "the shortage has created picky teachers." District officials, however, are able to isolate some of the primary problem areas. For example, Nevada has high entrance requirements for teachers coming from other states, which often stifles interstate mobility. Furthermore, as is common in many other states and districts, collaboration with area universities needs to be improved. District officials note that teacher candidates need more on-the-job training than they are currently getting, and training needs to be tailored to specific district needs. Additionally, many in the district will indicate that the problem of teacher shortages and teacher distribution is not necessarily one of teacher recruitment but one of retention, which cannot happen in the human resources office. According to 2005 data from the CCSD Human Resources Division, approximately 22 percent of teachers who were hired between 2000 and 2005 have since resigned from the district. Many issues may contribute to this, two of which were noted by teachers surveyed for the Working Conditions Survey: leadership and working conditions. A large majority of principals in CCSD's schools are new and had to move into administration positions quickly in order to accommodate district growth. New principals tend to lack the essential experience to foster a community of learning necessary for teacher satisfaction and student growth.

In 2005, the district had a graduation rate of about 60 percent, which was almost 5 percentage points lower than the state's overall graduation rate (CCSD, 2006).

Meeting the Recruitment and Retention Challenge

In the past several years and under the vision and leadership of Dr. George Ann Rice, former associate superintendent of the Human Resources Division, CCSD has exerted a tremendous recruitment and retention effort. Through technology and targeted recruitment and retention efforts, particularly for hard-to-staff schools, the district has been able to address many of the teacher shortage and distribution issues. There is still much more to be done, however, as student enrollment continues to grow, particularly for special populations.

Potential and existing teachers learn about CCSD teaching opportunities in a variety of ways (e.g., online, traveling job fairs, teacher fairs, principal recruitment trips, and campus visits). The district currently has an advertising campaign, "We Teach It," which includes a video available on the district's website that is often shown at fairs and recruiting events. The district has tried to maximize the use of technology not only to share district opportunities but also to make the most of recruitment and hiring strategies. Teachers can go online, fill out an interest form, and manage their own application. The internal application process is unusually efficient—once the application is filled out and uploaded, it is disseminated to one of two recruitment specialists in the Human Resources Division. The recruitment specialists assign the candidate a rating and ensure that the candidate's file is complete. The candidate's file is then moved to the certification and licensure office where he or she may get an early offer. These files become the infrastructure of the recruiting system.

The district's recruitment efforts also hinge on a great deal of site-based management. Principals have a fair amount of control over recruiting and hiring at their schools. Once teacher candidate files are complete, they are uploaded into an online system used by principals to search for candidates to fill available positions in their school. Schools with openings or shortages are given a code that allows them to search the system; they can even put a hold on someone in the system for an open position. The district sends out principal recruiting teams to various cities and campuses. Principals are able to offer contracts on the spot during recruiting events if they consider teacher candidates promising and do not want them to lose interest. At the beginning of each year, hard-to-staff schools have the option of choosing teachers before their counterparts from schools that are not hard to staff. Another effort put in place by the district is one in which teachers are required, as part of their hiring contract, to remain teaching in a school for two years unless they want to transfer to a high-needs school, which they can do at any time.

One important component of the CCSD recruitment and retention efforts is the strong relationship between the district administration and the Clark County Education Association. Union officials note two major factors that have helped develop and sustain the relationship: (1) interest-based bargaining and (2) consistency of leadership. In 2003, union executives and district officials attended training sessions for interest-based bargaining in order to alter the course of years of arbitration to settle contracts. After interest-based bargaining, they settled two contracts in a row and just recently ratified three 4-year contracts.

CCSD's growing population and high cost of living as well as the increasing minority population have greatly challenged the district to fill its classrooms with high-quality teachers who can meet all of the students' needs

The comprehensive package of recruitment and retention programs and initiatives in CCSD is impressive. Getting "buy-in" for these programs is half the battle, and one early effort to achieve this buy-in is that personal letters are often sent to candidates from Dr. Rice. Some of the district's recruitment and retention programs and initiatives are described below:

- *Multilingual Individuals Training to become Teachers (MITT).* MITT is a program that puts teacher candidates into the Rosetta Stone Language Acquisition Program through Nevada State College. These candidates, who have poor English language skills, have expressed the desire to become teachers through one of the district's Alternative Route to Licensure (ARL) Programs. They perfect their language skills online, and once they demonstrate their proficiency in English through an exam, they have the opportunity to participate in an ARL program. The funding for the MITT program is from a Transition to Teaching grant, and the main goal is that candidates fill high-shortage areas such as mathematics and science positions. At this point, district officials note that they have not had a great deal of success increasing minority recruitment through MITT.
- *Student to Teacher Enlistment Project Undergraduate Program (STEP UP).* STEP UP focuses on recruitment for low-performing schools. High school students who are interested in teaching have the opportunity to earn dual credit while in high school, earn an associate degree at Community College of Southern Nevada (CCSN), and subsequently enroll at Nevada State College to finish an education degree. The program is completely funded by the district and the teachers association.
- *Incentives for Retirees.* Retirees who meet certain qualifications and want to return to the classroom can apply to come back to work and receive full wages and their full pension. They may be a mentor or a teacher and must be highly qualified in the subject area in which they will teach.
- *"We Care."* The "We Care" program was founded by the Las Vegas Chamber of Commerce and the CCSD and is designed to help district recruitment efforts by sharing information about the community and offering assistance in finding housing and in helping spouses and older children find employment in the community.

- *Alternative Routes to Licensure (ARL)*. In an effort to increase the number of teachers in critical shortage areas, CCSD developed and now runs several different ARL programs. About 10 percent to 15 percent of teachers new to CCSD come through various ARL programs. Of particular interest is the ARL program geared to assist with special education teacher shortages. ARL seeks to address one of CCSD's primary shortage areas. The program is in partnership with UNLV. In 2005, an in-depth report completed by an external evaluator examined the efficacy of CCSD's ARL programs and concluded that based on relatively high retention rates, the ARL programs have been successful for the district.
- *Teaching and Learning Conditions (TLC) Team*. With the help of the Center for Teaching Quality, the district issued a working conditions survey in January 2007 and is collecting data on round two of the survey in April 2007. Results from these surveys provide the newly created Teaching and Learning Conditions (TLC) Team with the information they need to identify problem areas and evaluate their efforts to improve the working conditions in some schools. The team worked with 15 schools in 2006.
- *New Teacher Induction Program*. The district has a concerted focus on new teacher induction and mentoring as well as professional development. Title II funding as well as some district funding provide support for induction efforts, which include new teacher orientation, post-hire new teacher orientation, training opportunities, and new teacher conferences.

Conclusion

CCSD faces specific local issues while trying to recruit and retain teachers for their, primarily, at-risk schools. CCSD's growing population and high cost of living as well as the increasing minority population have greatly challenged the district to fill its classrooms with high-quality teachers who can meet all of the students' needs. The district has collaborated with area teacher preparation institutions, but more needs to be done in order to ensure targeted preparation for specific district needs as well as secure a pipeline of prospective teachers to fill classrooms.

Additional Reading

Center on Personnel Studies in Special Education. (2006, November). *Special education teacher education: An update.* Paper presented at the Council for Exceptional Children Teacher Education Division Conference, San Diego, CA. Retrieved September 11, 2007, from http://www.coe.ufl.edu/copsse/docs/panelBW2/1/panelBW2.pdf

Perie, M., Grigg, W., & Dion, G. (2005). (2005a). *The nation's report card: Mathematics 2005* (NCES 2006–453). Washington, DC: National Center for Education Statistics. Retrieved September 11, 2007, from http://nces.ed.gov/nationsreportcard/pdf/main2005/2006453.pdf

Perie, M., Grigg, W., & Donahue, P. (2005b). *The nation's report card: Reading 2005* (NCES 2006–451). Washington, DC: National Center for Education Statistics. Retrieved September 11, 2007, from http://nces.ed.gov/nationsreportcard/pdf/main2005/2006451.pdf

References

Clark County, Nevada. (2006). *Comprehensive planning*. Retrieved September 11, 2007, from http://www.co.clark.nv.us/Comprehensive_planning/ComprehensivePlanning.htm

Clark County School District. (2006). *Accountability reports (2005-2006)*. http://ccsd.net/schools/acc_pdfs_2006/districtAcc2006.pdf

Clotfelter, C., Ladd, H., Vigdor, J., & Wheeler, J. (2007). *High-poverty schools and the distribution of teachers and principals* (Working Paper). Washington, DC: National Center for Analysis of Longitudinal Data in Education Research. Retrieved September 11, 2007, from http://www.caldercenter.org/PDF/1001057_High_Poverty.pdf

Hirsch, E. (2006). *Recruiting and retaining teachers in Alabama: Educators on what it will take to staff all classrooms with quality teachers.* Hillsborough, NC: Center for Teaching Quality. Retrieved September 11, 2007, from http://www.teachingquality.org/pdfs/al_recruitretain.pdf

Levin, J., & Quinn, M. (2003). *Missed opportunities: How we keep high quality teachers out of urban classrooms.* New York: The New Teacher Project. Retrieved September 11, 2007, from http://www.tntp.org/files/MissedOpportunities.pdf

McLeskey, J., Tyler, N., & Flippin, S. (2003). *The supply of and demand for special education teachers: A review of the research regarding the nature of the chronic shortage of special education.* (COPSSE Document No. RS-1). Gainesville, FL: University of Florida, Center on Personnel Studies in Special Education. Retrieved September 11, 2007, from http://www.coe.ufl.edu/copsse/docs/RS-1/1/RS-1.pdf

McRobbie, J. & Makkonen, R. (2005). *Student achievement and graduation rates in Nevada: Urgent need for faster improvement*. San Francisco: WestEd. Retrieved September 11, 2007, from http://www.wested.org/online_pubs/NevadaReport.pdf

Mississippi Department of Education. (2003). *Mississippi student information system classroom teachers report*. Retrieved September 11, 2007, from http://www.mde.k12.ms.us/Account/2003Report/Cl-Tch03.pdf

National Commission on Teaching and America's Future. (2003). *No dream denied: A pledge to America's children.* Washington, DC: Author. Retrieved September 11, 2007, from http://www.nctaf.org/documents/no-dream-denied_full-report.pdf

Nevada Department of Education. (2006). *Nevada report card: Annual reports of accountability*. Retrieved September 11, 2007, from http://www.nevadareportcard.com/

Southern Nevada Home Builders Association. (2007). *Area information: January 2007– June 2007*. Retrieved September 11, 2007, from http://www.snhba.com/economic_indicators.html

U.S. Census Bureau. (2003). *American community survey: Median household income (in 2003 inflation-adjusted dollars).* Washington, D.C. Retrieved September 11, 2007, from http://www.census.gov/acs/www/Products/Ranking/2003/R07T050.htm

Williams, D. (2004). *Shaw High School: A case study in rural high school improvement*. Arlington, VA: The Rural School and Community Trust. Retrieved September 11, 2007, from http://www.ruraledu.org/site/apps/s/link.asp?c=beJMIZOCIrH&b=1000973 (free registration required)

Overarching Strategy to Improve Teacher Quality in At-Risk and Hard-to-Staff Schools

Know Your Data; Know Your Needs

To develop and implement strategies that will increase the pool of available teachers as well as to recruit and retain teachers for specific geographic and subject areas of need, states and districts need to take stock of available teacher data across departments, think about how these data sources can be used to create a picture of teacher supply and demand over time, and make plans to continually reevaluate the data.

Example

In California, recent legislation (Senate Bill 1614) created the California Longitudinal Teacher Integrated Data System (TDS) to streamline data that are collected across education agencies in the state and use those data to understand how many teachers are needed and where. It is, potentially, a much improved system for tracking teacher supply and demand in the state.

NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

CHAPTER 6

Getting Started: A Survey of New Public School Teachers on Their Training and First Months on the Job

Chapter 6

Getting Started: A Survey of New Public School Teachers on Their Training and First Months on the Job

Jonathan Rochkind, Public Agenda
John Immerwahr, Ph.D., Public Agenda
Amber Ott, Public Agenda
Jean Johnson, Public Agenda

Introduction

To learn more about teacher preparation, recruitment, and retention and to shed light on the nature and quality of current teacher education and induction practices, Public Agenda completed a random sample survey of 641 public school teachers during their first year in the classroom in spring 2007. Commissioned by the National Comprehensive Center for Teacher Quality (NCCTQ), this nationally representative survey aimed to enhance understanding of the aspirations and experiences of new teachers, including those teaching in at-risk schools. In this chapter, Public Agenda reports on a portion of the findings as they relate to the challenge of providing effective teachers for at-risk schools and students.

NCCTQ and Public Agenda developed the research design for this project working in close consultation, and teams from both organizations cooperated to generate the lines of inquiry. The survey covered a wide variety of topics including the following: the new teachers' motivation for entering the profession; subject areas covered during training; experiences as student teachers; relationships with cooperating teachers; experiences as beginning teachers; degree of support and counsel from colleagues; degree of support from administration; expectations about their future in the profession; and reactions to different ideas about ways to improve teacher quality.

Public Agenda wrote the survey questionnaire and analyzed the results. A brief description of the survey methodology is included at the end of this chapter, and a more complete description, including notes on questionnaire design, is available on the NCCTQ website (www.ncctq.org). Public Agenda is a nonprofit, nonpartisan research and engagement organization that has conducted dozens of opinion studies on public education, including surveys of teachers, parents, students, principals, and superintendents. Additional information about Public Agenda and its other work in education can be found online (see www.publicagenda.org).

The Benefit of Hindsight

NCCTQ and Public Agenda focused the research on first-year teachers because their experiences and insights may be especially revealing for those working to enhance teacher preparation and training. Since the subjects were roughly six months into their first teaching jobs, their preservice preparation was still fresh in their minds. Thus, detailed questions about their coursework and student teaching experiences would elicit crisp recollections. At the same time, the new teachers also had the perspective of assuming the responsibilities of full-time public school teachers. Respondents were able to reflect on their experiences—both preservice and on the job—and comment on the usefulness and applicability of their preparation.

This survey offers a detailed look at the views, judgments, and concerns of new teachers nationwide and also allows the comparison of the experiences of new teachers in somewhat different circumstances. In this report, for example, we compare the views of new teachers in elementary schools versus middle and high schools and those in high-needs schools versus other schools.

Respondents' Training

The vast majority (96 percent) of the new teachers surveyed entered the profession through college- or university-based schools of education—most had a bachelor's degree in education (70 percent); 11 percent took a fifth year to get a degree in education; and 15 percent had a master's degree in education. The remaining 4 percent reported that they had completed an alternative certification program.

The study also included a special oversample of new teachers entering the profession through three prominent alternative certification programs: (1) Teach for America, (2) Troops to Teachers, and (3) The New Teachers Project. Results from this additional oversample are not included in this initial analysis. Public Agenda and NCCTQ plan to release a comparison of the views of new alternative certification teachers versus those from college- and university-based education programs later this year.

In the following pages, a series of key findings are presented, accompanied by figures detailing the most significant results. In future work, NCCTQ intends to provide context for these important findings from the research literature. The methodology section that follows the report describes the process used to design and field the study. In addition to the full methodology, complete questionnaire results are available online (see www.publicagenda.org and www.ncctq.org).

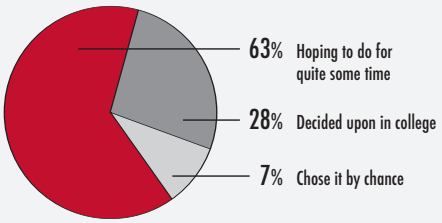
Finding 1: Inspired and Confident

First-year teachers in public schools nationwide say they are dedicated to their profession and excited by their initial experiences. Most say, at least during their first year in the classroom, that they see teaching as a career rather than a short-term endeavor. Most of those surveyed say they planned to be teachers even before they went to college (see Figure 1). Their primary motivations for entering the profession are the joys of communicating subjects they love; the desire to help underprivileged children; and, to a lesser extent, the inspiration they received from their own teachers. Practical attractions, such as the idea of high job security and summers off, are of much less interest to them (see Figure 2). Most new teachers say they are happy with their new profession and, at this point at least, plan to stay in it for a number of years (see Figure 3). Large majorities are convinced that all students can learn if inspired by good teachers, and they are confident of their own ability to teach. Most say that their students are learning and that, even though they are new teachers, they compare favorably with other teachers in their schools (see Figure 4). When it comes to teaching specific subjects, most new teachers in middle and high schools say they feel confident in their knowledge of their own subject area, and, indeed, most have majored or minored in their subject in college (see Figure 5).

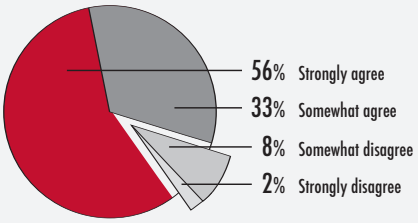
Figure 1

Most new public school teachers say they have been planning to be teachers for quite some time and that it's exactly what they want to be doing.

Would you say that you ended up choosing your current profession by chance, was it something you decided upon in college, or was it something you had been hoping to do for quite some time?



Do you agree that teaching is exactly what you wanted–there's nothing you would rather be doing?



Note: In all graphs, results may not total 100% due to rounding.

Figure 2

Teachers' primary motivations for entering the profession are the satisfactions of teaching subjects they love and helpin underprivileged kids.

How important was each of the following factors to your decision to go into teaching? Would you say that this was one of the most important factors, a major factor, a minor factor, or not a factor at all?

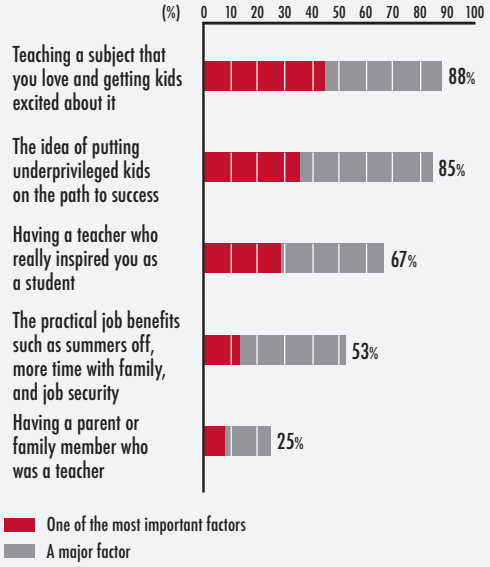
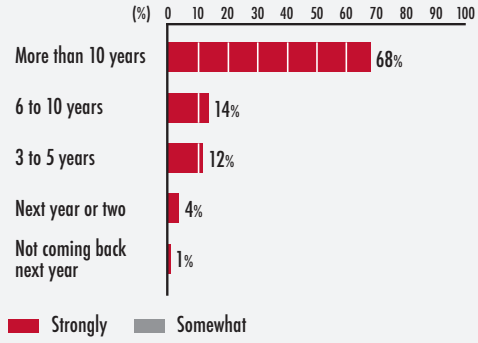


Figure 3

Most new teachers say they plan to stay in the field for at least a decade.

What is your best estimate for how many years you think you'll be a classroom teacher?



Do you think of teaching as a lifelong career choice, do you think you'll probably leave the classroom for another job in education, or will you change fields altogether?

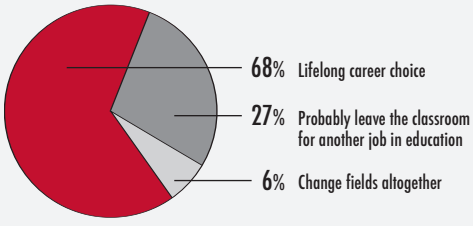
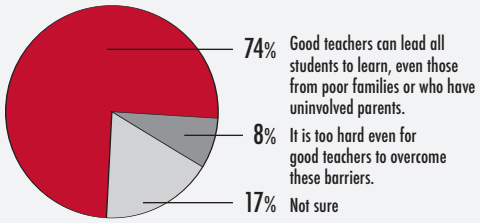


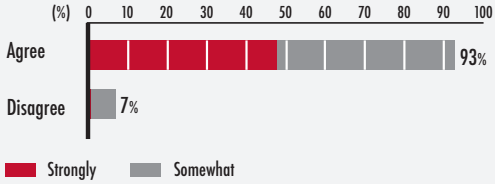
Figure 4

New teachers are confident in their own abilities.

Which comes closer to your view?



Do you agree that most days you feel really confident that your students are learning and responding to your teaching?



Which of the following two statements comes closer to your own view?

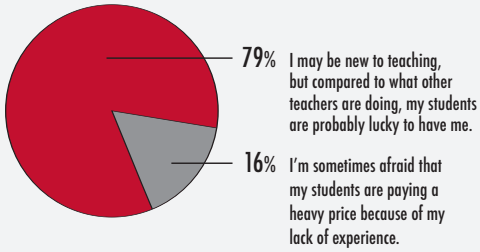
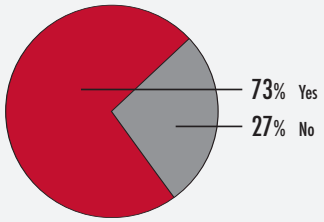


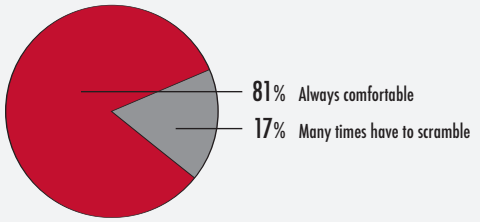
Figure 5

Most new teachers feel comfortable teaching their subject area.

In college, did you major or minor in the subject area in which you are teaching or not?



Do you feel that you are almost always comfortable with your knowledge of the subject area you are teaching, or are there too many times when you have to scramble to learn it yourself before you have to teach it?



Finding 2: But There Are Drawbacks to Teaching, Too

Despite their generally positive orientation, new public school teachers do have concerns. They see teaching as a demanding job and, even in their first years, understand the threat of burnout (see Figure 6). There also are some specific features of teaching that they identify as "major" drawbacks, headed by their concerns about testing and not having enough freedom to be creative in their teaching (see Figure 7). The doubts about testing that emerge here among new teachers are not unexpected and in fact echo findings from other surveys of teachers overall. For example, recent surveys have shown that more than 8 in 10 public school teachers say that there is too much emphasis on testing, and 79 percent say that teachers will end up teaching to the test instead of saying that real learning is taking place (Johnson & Duffett, 2003, p. 13; see also www.publicagenda.org/specials/wherewearenow/wherewearenow.cfm).

Unmotivated students and discipline problems fall right behind testing and freedom to be creative in their teaching as frequent areas of concern. (Salary is a more complex issue, which is discussed in the next section.) Other possible drawbacks, such as lack of rewards for superior performance, lack of support from administrators, low prestige, and threats of physical danger, are much less frequently mentioned as major problems.

Figure 6

Most new teachers see the profession as very demandin with the potential for burnout.

Do you agree or disagree that teaching is so demanding, it's a wonder that more people don't burn out?

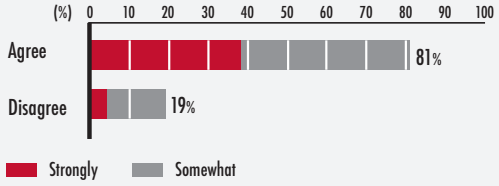
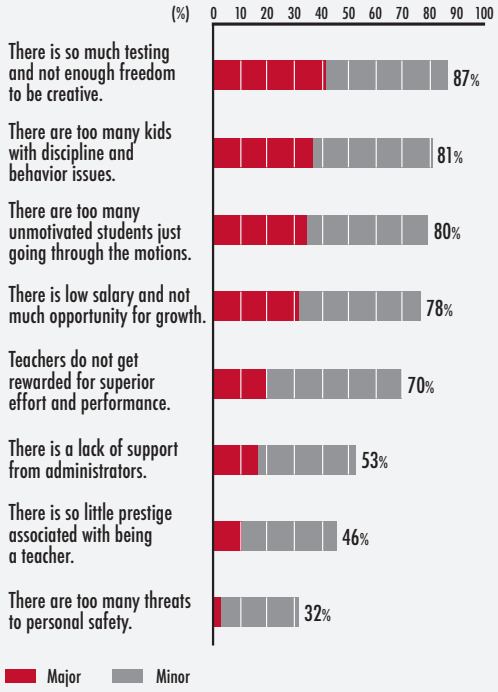


Figure 7

Too much testing and too little freedom to be creative top the list of major drawbacks.

Based on your personal experience, please tell us whether each of the following is a major drawback, a minor drawback, or not a drawback for you:



Finding 3: How Important Is Salary?

There is a broad discussion among policymakers and researchers about the role of teacher pay in recruitment and retention and what forms of teacher pay are most likely to contribute to broader teacher effectiveness. To be sure, new teachers do express some concerns about salary and lack of opportunity for growth, with a majority (77 percent) seeing it as either a major or minor drawback of the profession (see Figure 8). Only one third of new teachers, however, consider salary and lack of opportunities for growth as major drawbacks of their profession, and this concern ranks well below issues such as testing, creative freedom in their teaching, classroom discipline problems, and unmotivated students. In fact, more than two thirds of new teachers say it is possible for a teacher to make a decent living (see Figure 9),

and new teachers overwhelmingly would choose better working conditions over higher salaries (see Figure 10). Again, the findings among first-year teachers reported here echo similar results from new teachers in other survey research. In a study by Farkas, Johnson, and Duffett (2003), a plurality of teachers said that the best way to improve quality of teaching is to improve working conditions as opposed to financially rewarding outstanding teachers or increasing pay for teachers overall. Although pay-for-performance approaches are prominent parts of the national discussion on improving teacher quality and have received wide news coverage (see Dillon, 2007), the approach is not a high priority for the new teachers surveyed. One in five new teachers say that the fact that teachers do not get rewarded for superior effort and performance is a major drawback of the profession, and fewer than one in six thought that tying teachers' salary increases to their principals' and colleagues' assessments (15 percent) or tying teacher rewards and sanctions to their students' performance (13 percent) would be "very effective" ways to improve teacher quality overall (see Figure 11). Again, this echoes findings from other surveys of new teachers. In 2000, only 12 percent of teachers with experience of five years or less said that tying teacher rewards or sanctions to student performance would be a very effective way to improve teacher quality (Farkas, Johnson, & Foleno, 2000, p. 100).

Figure 8

Only one third of new teachers see low salary and little opportunity for growth as a major drawback of the profession.

Do you believe that the low salary and relative lack of opportunity for growth are drawbacks to teaching?

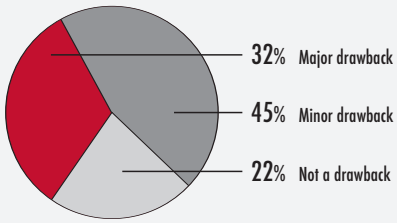


Figure 9

More than two thirds of new teachers believe teachers can make a reasonable living.

Thinking about the profession of teaching, do you think that the nature of the job means teachers are never well paid, or do you think it is very possible for a teacher to make a reasonable living?

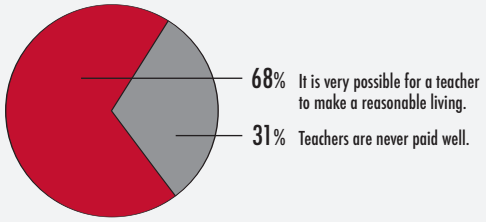


Figure 10

Very large majorities say they would choose schools with better student behavior and parental and administrative support over schools with a significantly higher salary.

Given a choice between two schools in otherwise identical districts, which would you prefer to work in?

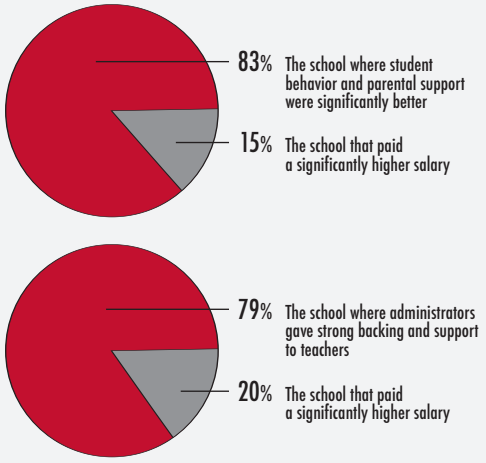
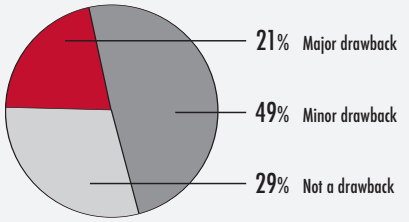


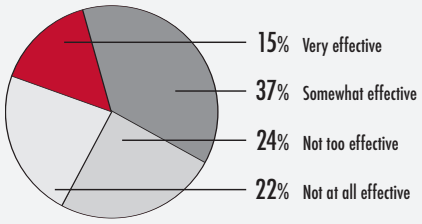
Figure 11

Very few new teachers see a lack of merit pay as a major drawback to teaching, and even fewer think it would be "very effective" at improving teacher quality.

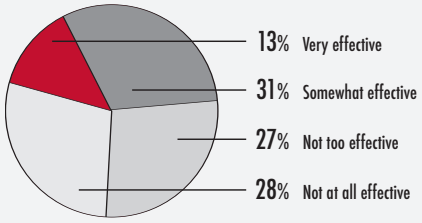
Is it a drawback to teaching that teachers do not get rewarded for superior effort and performance?



Would tying teachers' salary increases to their principals' and colleagues' assessments be effective at improving teacher quality?



Would tying teachers' rewards and sanctions to their students' performance be effective at improving teacher quality?



Finding 4: Feeling Well Prepared for Teaching but Challenged by Diverse Classrooms

Overall, these new teachers speak positively about their preparation for teaching. For the majority of those interviewed, the most positive part of new teachers' training was their work as student teachers. Most say they received adequate time in student teaching (see Figure 12), and most give high marks to their cooperating teachers. Most report that their cooperating teachers were positive role models who mentored them in useful skills, especially classroom management (see Figure 13). They also value their coursework. According to the survey, courses covered a wide range of subjects from children's emotional and psychological development and the history and philosophy of education to practical topics such as classroom management (see Figure 14). Most of the material is perceived as helpful, but several possible problem areas emerged.

One potential problem involves the challenges of teaching in an ethnically diverse classroom.

Figure 12

A strong majority of new teachers say they spent sufficient time working with a teacher in a classroom during training.

As part of your teacher preparation, how much time did you spend working with an actual public school teacher in a classroom environment?

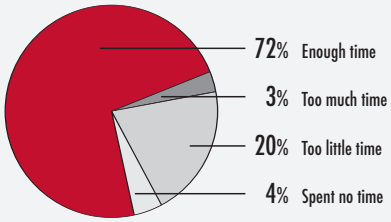
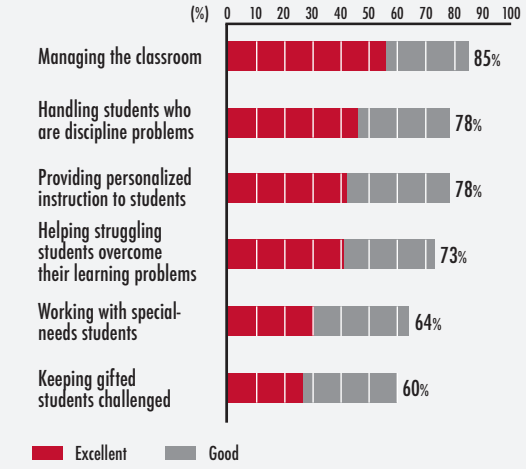


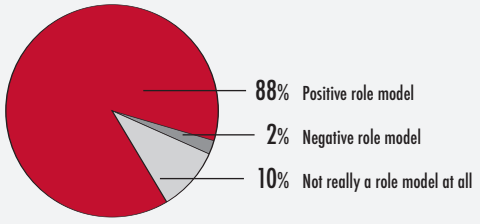
Figure 13

Cooperating teachers get high marks for teaching useful skills and for being a positive role model.

How would you describe the mentoring and feedback you received from your cooperating teacher (who you spent the most time with) when it came to each of the following?



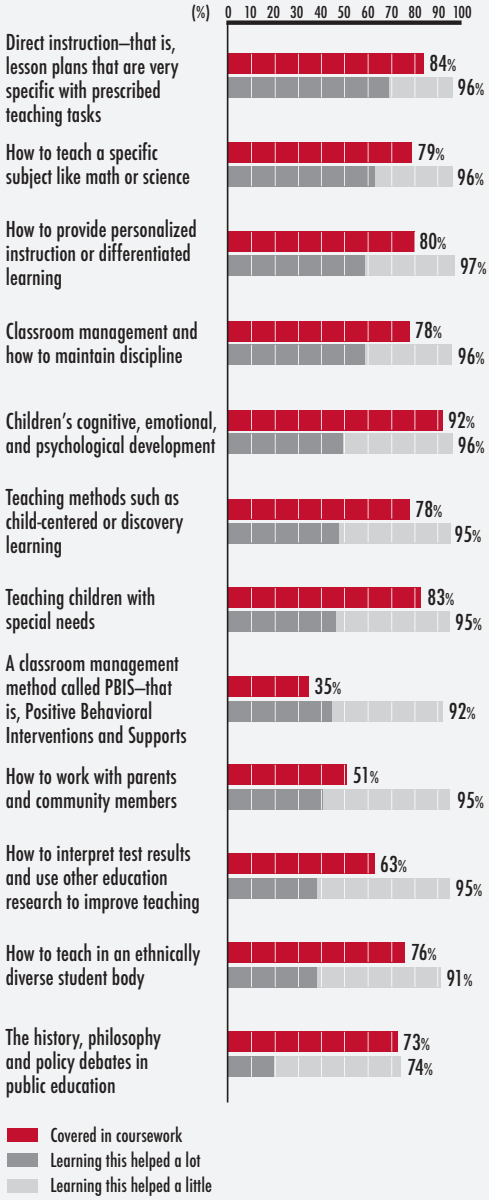
Overall, would you say your cooperating teacher was a...



Although most new teachers say they received training in this area (with 76 percent saying that this was covered in their classroom preparation), far fewer (38 percent) say their training in this area was very effective (see Figure 15). No other area showed as big a gap between prevalence in training and perceived usefulness later.

Figure 14

New teachers have been exposed to a wide range of subjects in their preservice courses, most of which they consider useful.



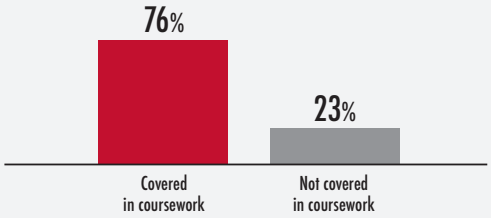
Note: Only respondents who indicated they had covered an item in their coursework were asked whether their training on that subject was helpful in the classroom.

Another potential problem area for new teachers is dealing with parents. As seen above, parental support is a point of concern. Most new teachers say they would choose a school with better student behavior and parental support over a school with a higher salary, so relations with parents are clearly on new teachers' minds; however, slightly more than half say that this topic had been covered in their training. The new teachers also are divided on whether their education focused too much on theory and not enough on practice, with a sizeable minority seeing the training as overly theoretical (see Figure 16).

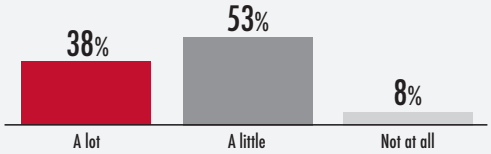
Figure 15

Most new teachers do not feel adequately prepared for the challenges of teaching in diverse classrooms, even though their training covered it.

Did your training cover how to teach in an ethnically diverse student body?



Did your training in how to teach in an ethnically diverse student body help you in the classroom?*



* Only respondents who indicated they had covered an item in their coursework were asked whether their training on that subject was helpful in the classroom.

Figure 16

While half say their training struck the right balance between theory and practical training, nearly as many (45 percent) complain of too much emphasis on theory.

Do you feel that your teacher training...

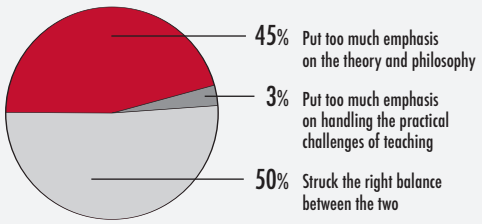
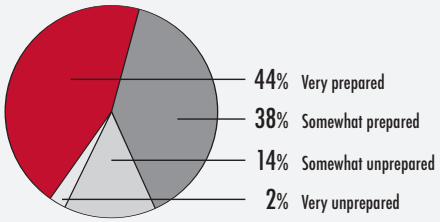


Figure 17

More than 4 in 10 new teachers consider themselves "very prepared" for their first year of teaching.

Overall, looking back, would you say you were prepared or unprepared for this first year of teaching?



Overall, the new teachers seem to believe that their training provided them with a solid foundation, with a plurality (44 percent) saying that they felt "very prepared" for their first year of teaching, and almost as many saying that they were "somewhat prepared" (see Figure 17).

Finding 5: Getting Started in a Real Classroom

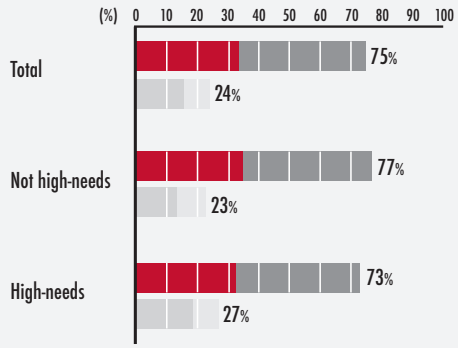
Generally speaking, the new teachers surveyed report good experiences in their first months in the classroom and give high marks to their fellow professionals. Most say colleagues and mentors are helpful in areas such as handling disruptive students, communicating with parents, and developing lesson plans (see Figure 18). Most also give school

Figure 18

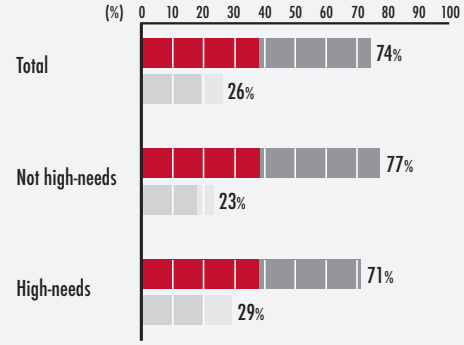
Most new teachers, even those in high-needs schools, report that they get good support from colleagues and mentors.

Now that you are in the classroom, how would you rate the support you feel you are getting from other teachers or mentors in the following areas?

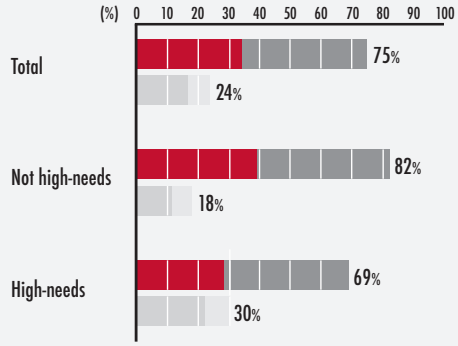
Creating strong lesson plans and teaching techniques:



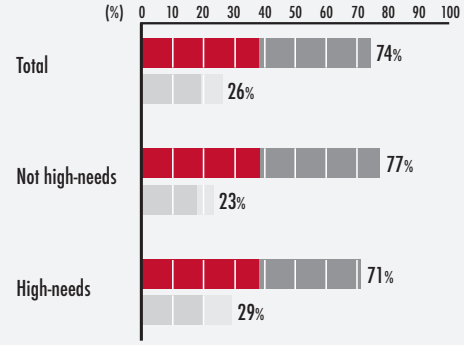
Handling students who are disruptive or unmotivated:



Working and communicating with parents:



Working with special-needs students:



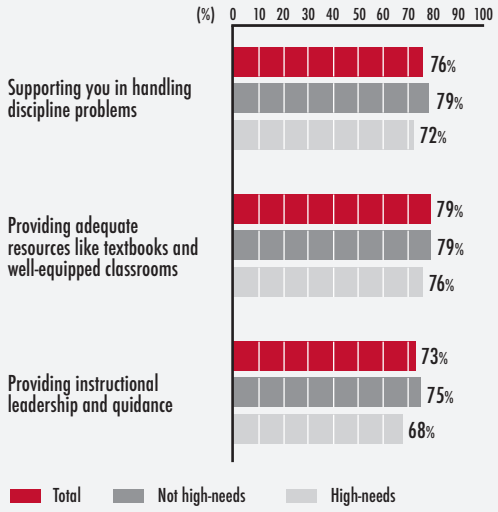
Note the differences between the responses of teachers in high-needs schools versus those who are not are not statistically significant.

administrations good ratings for supporting teachers and providing adequate resources (see Figure 19). In addition, most do not believe that they have been assigned the hardest to reach students while more senior colleagues have classes that were easier and more satisfying to teach (see Figure 20). New teachers, however, in high-needs schools (i.e., those in which teachers report 51 percent or more of enrolled students are eligible for the federal free or reduced-price lunch program) give their school administrators and colleagues less glowing reviews and are significantly more likely to report that they have been assigned to teach the hardest to reach students.

Figure 19

Most also give administrators good marks for supporting them on discipline and providing good resources and instructional guidance.

Percent who give the administration at their schools an "excellent" or "good" rating when it comes to the following:



Note: These differences are not statistically significant.

Figure 20

Although most new teachers say that they had not been assigned to teach the hardest to reach students, 4 in 10 of those in high-needs schools say this is the case for them.

For you, as a first-year teacher, do you tend to have the hardest to reach students, or is this not the case for you in your school?

	Total	Teachers in non-high-needs schools	Teachers in high-needs schools
Tend to have the hardest to reach	33%	25%	42%
Not the case	65%	74%	56%

Finding 6: New High School Teachers Are Significantly Less Positive About Their Jobs

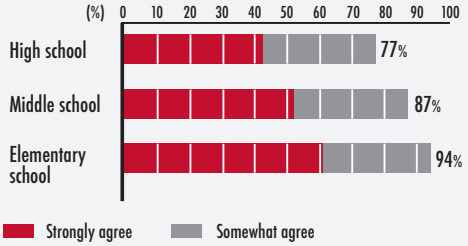
Although most new teachers are upbeat and optimistic about teaching, high school teachers are somewhat less positive on a number of dimensions. New high school teachers are less likely to be satisfied with teaching (see Figure 21), less likely to believe that all students can learn (see Figures 22 and 23), and more critical of their school administrators (see Figure 24). New high school teachers also are more likely to think that their training put too much emphasis on theories of learning as opposed to more practical classroom issues, and they are less likely to say that the training they received on classroom management and discipline has proven to be helpful (see Figures 25 and 26).

Public Agenda studies of teachers overall suggest strong concerns about social problems and discipline at the high school level. Nearly 9 in 10 high school teachers (88 percent) felt that the most pressing problems facing high schools come from "social problems and kids who misbehave" rather than academic issues (Johnson, Arumi, Ott, & Remaley, 2006, p. 4). In another study, fewer than one in five high school teachers (18 percent) reported that their students were civil and respectful to one another (Johnson, Duffet, Farkas, & Collins, 2002, p. 39). More than half (57 percent) also reported that their schools had serious problems with drug and alcohol abuse (p. 42).

Figure 21

High school teachers are less likely to be satisfied with a teaching career.

Do you agree that teaching is exactly what you wanted—there is nothing you would rather be doing?



Percent who think of teaching as a lifelong career choice:

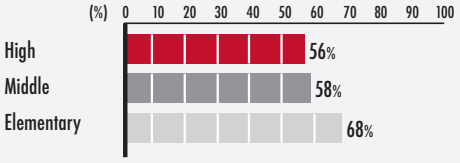
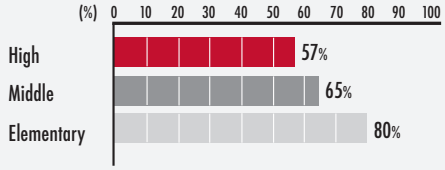


Figure 22

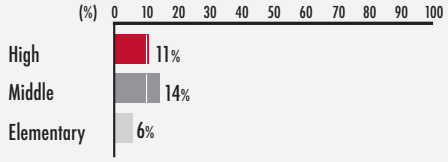
High school teachers are less likely to think that good teachers can help all students learn.

Which comes closer to your view?

Good teachers can lead all students to learn, even those from poor families or who have uninvolved parents.



It is hard even for good teachers to overcome these barriers.



Not sure

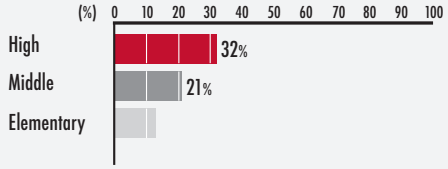


Figure 23

High school teachers are much more likely to complain about unmotivated students.

Is it a drawback to teaching that too many unmotivated students are just going through the motions?

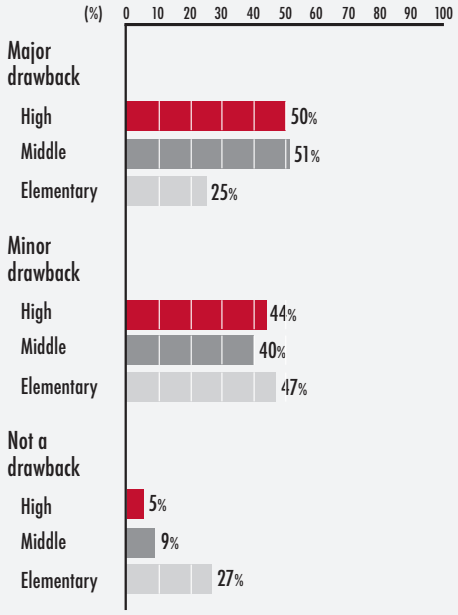
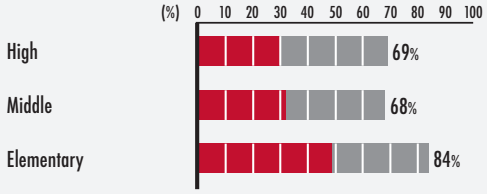


Figure 24

High school teachers are more critical of school administrators.

How would you rate the administration at your school when it comes to the following?

Providing adequate resources like textbooks and well-equipped classrooms:



Providing instructional leadership and guidance:

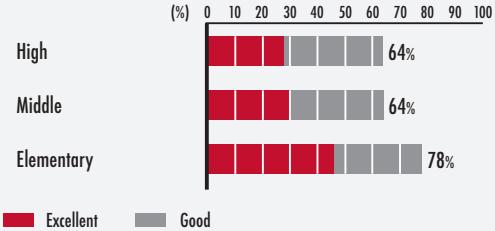


Figure 25

High school teachers also are more likely to say their preparation focused too much on education theory.

Do you feel that your teacher training put too much emphasis on the theory and philosophy of education? Did it...

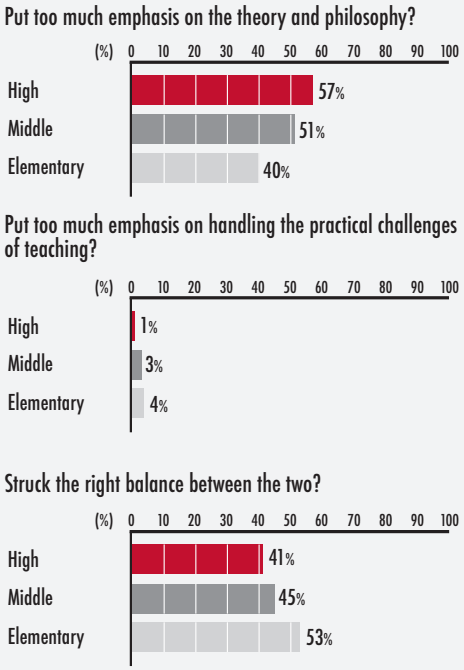
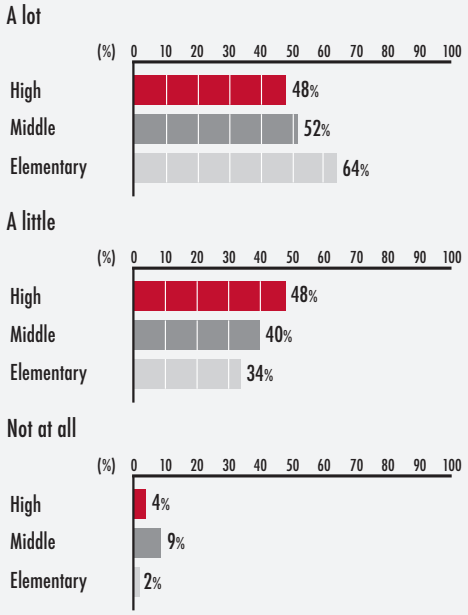


Figure 26

They are less likely to feel that their training in classroom and discipline management is helpful in the classroom.

Please tell me whether what you learned about classroom management and maintaining discipline helped you in your classroom experience a lot, a little, or not at all.



Finding 7: How Would They Improve the Profession?

In addition to covering their training and early experiences on the job, the survey also queried the first-year teachers on a range of ideas for improving the profession overall. Two items top their list of recommended improvements: (1) reducing class sizes and (2) giving teachers better preparation to individualize teaching in a diverse classroom (see Figure 27). Even teachers with more experience rank reducing class size as their top priority for improving education. In Farkas et al. (2003), all teachers rated reducing class size as more important than increasing pay for teachers.

The most common explanation for the desire for smaller classes is that it allows for more personalized instruction (see Figure 28). Part of the need for individual instruction may be driven by the diversity of the experiences and needs that children bring to their classrooms. Others strategies for enhancing teacher quality, such as eliminating tenure, tying pay to performance, or changing certification practices, draw significantly lower levels of interest as ways to improve the profession overall.

As noted above, most new teachers (76 percent) report that teaching in a diverse classroom had been covered in their coursework, but far fewer (38 percent) say that the training has been very useful on the job.

Figure 27

Smaller classes and better preparation for diversity top the list of solutions to improve the teaching profession, with ideas such as pay for performance and alternative certification at a much lower level.

How effective do you think each of the following proposals would be in terms of improving teacher quality?

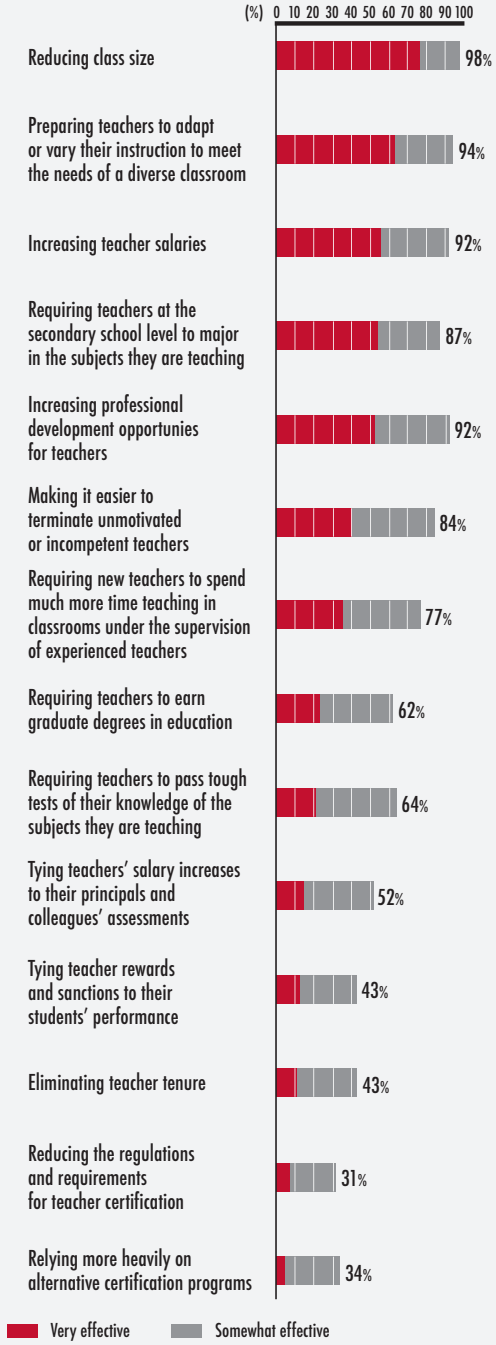
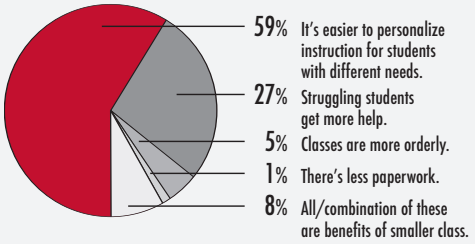


Figure 28

The desire for smaller classes is driven by a need to personalize instruction.

Which of the following is the biggest benefit of smaller classes, in your view?



Conclusion, In Brief

Overall, the findings depict a new public school teacher corps that is optimistic and generally confident about both their classroom effectiveness and their career choice—at least in their own minds at this early point. At the same time, the survey shows distinct areas in which policymakers and researchers may want to focus additional effort. Notably, new teachers in high-needs schools are more likely to believe they have been assigned to teach the hardest to reach students, and they are more likely to complain about lack of support from colleagues and administrators. These results may just reflect perceptions of new teachers feeling insecure in difficult jobs, or they could reflect a reality in which new teachers in high-needs schools are in fact more likely to tackle the toughest teaching assignments without adequate support. In either case, the findings seem to warrant attention. This group of new teachers is seeking guidance and support.

Similarly, new teachers in high schools are less upbeat about teaching and their future in the field. In both instances—for new teachers in high-needs schools and in high schools—additional research could provide more detail on the precise nature of the problems and suggest policy responses.

The survey also suggests several areas in which training and mentoring should be strengthened. Based on their own judgments, the vast majority of new teachers believe that

they are fairly well-prepared for their jobs, but many report concerns in several crucial areas. Working with diverse student populations and communicating with parents, as well as working with students with special needs are among the areas that may merit greater attention by policymakers, both in preservice training and in support and mentoring for new teachers once they are on the job.

Finally, the research suggests that a significant part of the problem public schools face in retaining teachers stems from what happens once teachers are on the job—not because most "new hires" enter the profession as a "fall back" or take on teaching as a transitional job that they expect to leave quickly. Almost two thirds of first-year teachers (64 percent) say they intend to make teaching a lifelong career. Based on past experience, however, many may become discouraged over time by the challenges of teaching and leave the field before they expect.

NCCTQ and Public Agenda will delve further into these data to provide policymakers more guidance on how to better support new teachers and increase their effectiveness. The initial results presented here offer considerable food for thought on how to design a strategy for enhancing the equitable distribution of highly motivated and well-prepared new teachers.

Methodology

This survey includes interviews with a nationally representative sample of 641 first-year school teachers throughout the continental United States. Oversamples of teachers who participated in alternative teaching certification programs were also conducted. Those interviews are not included in this analysis but will be included in subsequent reports on this data.

Data were collected by telephone and online between March 12 and April 23, 2007. In designing the survey questions and sample, Public Agenda conducted interviews with leading experts from both university-based schools of education and alternative programs to discuss the sampling frame and the topics to explore in the survey. NCCTQ and the Farkas-Duffett Research Group (FDR) were consulted further regarding sampling, survey topics, and questionnaire design.

The sample includes oversamples of teachers in both Midwest and high-needs schools. The final data were weighted to account for the disproportionate sample design. Final results based on the general sample are representative of all first-year teachers in continental U.S. public schools. The margin of sampling error for the complete set of weighted data is ±4 percent. The response rate for this survey was 29 percent, which is derived as the product of the contact rate (32 percent), the cooperation rate (89 percent), and the completion rate (99 percent). Please note that respondents deemed ineligible because they were not first-year teachers or were no longer teachers were excluded from the survey. Further details on the design, execution, and analysis of the survey are discussed on the NCCTQ website (www.ncctq.org).

Respondents were asked 111 items. These included screener questions to ensure our respondents were first-year teachers, demographic questions to describe the teachers who took part in our survey, and closed-ended opinion questions. This questionnaire uses a blend of different kinds of questions, some of which tackle similar issues in different ways. Most questions ask the respondents to use a scale (either 3 or 4 points) to rate different aspects of their training or teaching experiences and to measure the strength of various beliefs they may have about teaching. For our 4-point scales, we often collapse the choices to the nominal level by combining the positive and negative responses. Those interested in seeing the degree to which someone agreed or disagreed with the statement can consult either the charts in the report, which break out strength of acceptance, or the full questionnaire and results online (see www.ncctq.org and www.publicagenda.org).

Some questions ask the respondent to choose between two mutually exclusive and balanced statements regarding tradeoffs. Analyzed in context with other results, these "forced-choice" items shed light on respondents' priorities and avoid the central tendency bias inherent in Likert-style 4-point scale questions.

References

Dillon, S. (2007, June 11). Long reviled, merit pay gains among teachers. *The New York Times*. Retrieved September 7, 2007, from http://www.nytimes.com/2007/06/18/education/18pay.html?ex=1339819200&en=f2c4545c82704cc3&ei=5088&partner=rs

Farkas, S., Johnson, J., & Duffett, A. (with Moye, L., & Vine, J.). (2003). *Stand by me: What teachers really think about unions, merit pay and other professional matters*. New York: Public Agenda. Retrieved September 11, 2007, from http://www.publicagenda.org/research/pdfs/stand_by_me.pdf (Free registration required)

Farkas, S., Johnson, J., & Foleno, T. (with Duffett, A., & Foley, P.) (2000). *A sense of calling: Who teaches and why*. New York: Public Agenda. Retrieved September 11, 2007, from http://www.publicagenda.org/research/pdfs/sense_of_calling.pdf (Free registration required)

Johnson, J., Arumi, A. M., Ott, A., & Remaley, M. H. (2006). *Reality check 2006: Issue No. 1: Are parents and students ready for more math and science?* New York: Public Agenda. Retrieved September 11, 2007, from http://www.publicagenda.org/research/pdfs/rc0601.pdf

Johnson, J., & Duffett, A. (with Vine J., & Moye, L.). (2003). *Where we are now: 12 things you need to know about public opinion and public schools*. New York: Public Agenda. Retrieved September 11, 2007, from http://www.publicagenda.org/research/pdfs/where_we_are_now.pdf (Free registration required)

Johnson, J., Duffet, A., Farkas, S., & Collins, K. (2002). *Sizing things up: What parents, teachers and students think about large and small high schools*. New York: Public Agenda. Retrieved September 11, 2007, from http://www.publicagenda.org/research/pdfs/sizing_things_up.pdf (Free registration required)

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Teachers Talk: Public Opinion Research on the Profession

Prospects for the Profession: Public Opinion Research on Teachers

NCCTQ's Jane Coggshall conducted a comprehensive review of 16 nationally representative public opinion polls to investigate the ways teachers, school administrators, parents, and the general public view teaching. Tackling issues such as teacher availability, recruitment, and retention in at-risk schools, this report provides insight to policymakers working to enhance teacher quality for all students. Findings focus on teacher retention as a dominant challenge. While teachers indicate that the profession is attractive and satisfying, 25 percent also report that they plan to leave teaching in the future for other careers. Improving working conditions, specifically administrator support, is also a priority. Although administrators described widespread teacher shortages in urban and high-minority schools and districts, teachers said that they would move to such schools if they received high levels of support there.

How New Teachers See Their Jobs: A Comparison of the Attitudes and Experiences of Alternatively Certified New Teachers and Traditionally Trained New Teachers

This teacher opinion poll by the research firm Public Agenda delved into the attitudes and experiences of alternatively certified beginning teachers as compared to those of teachers prepared in traditional, college- or university-based programs. Major findings from interviews with a nationally representative sample of 641 first-year teachers reveal that alternatively certified new teachers perceive a lack of support from both administrators and colleagues, regardless of whether or not they are working in high-needs schools, and that they are less likely than traditionally certified teachers to report teaching as a lifelong career choice. Both traditionally and alternatively certified teachers also cited feeling underprepared to deal with diverse students and parents. The implications of these findings inform potential policy initiatives designed to enhance teacher recruitment, retention, and quality in all schools.

NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

CHAPTER 7

The National Comprehensive Center for Teacher Quality: A Resource for Systemic Improvement in the Equitable Distribution of Teachers

Chapter 7

The National Comprehensive Center for Teacher Quality: A Resource for Systemic Improvement in the Equitable Distribution of Teachers

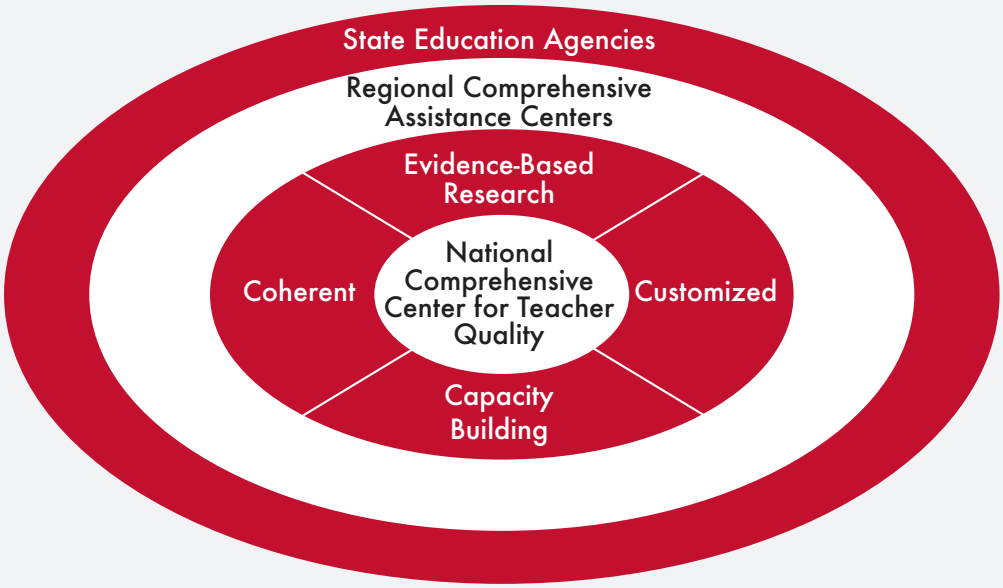
Carol A. Dwyer, Ph.D., ETS
Amy Jackson, Learning Point Associates

The National Comprehensive Center for Teacher Quality (NCCTQ) is a national resource for strengthening the quality of teaching—especially in high-poverty, low-performing, and hard-to-staff schools. The regional comprehensive assistance centers (RCCs), states, and other education stakeholders turn to NCCTQ for guidance in addressing needs related to teacher quality to ensure that highly qualified teachers (HQTs) are serving all students.

Funded by the U.S. Department of Education, NCCTQ is a collaborative effort of the Education Commission of the States, ETS, Learning Point Associates, and Vanderbilt University. The University of Michigan serves as its external evaluator. NCCTQ is part of a group of 21 federally funded centers, 16 RCCs that each serve a specified geographical region, and 5 comprehensive content centers that focus on a particular research area (i.e., NCCTQ, the National High School Center, the Assessment and Accountability Comprehensive Center, the Center on Innovation and Improvement, and the Center on Instruction). As a comprehensive content center, NCCTQ's mission is to help the RCCs and the states they serve with issues related to teacher quality. The NCCTQ website (www.ncctq.org) provides more information.

As shown in Figure 1, NCCTQ's operating principles are built upon technical assistance that is research-based, capacity-building, coherent, customized, and focused.

Figure 1
NCCTQ's Operating Principles



As NCCTQ begins its third year of operation, it has identified systemic change through collaboration as the framework for future teacher-quality technical assistance and outreach. Equitable distribution of HQTs is the overarching focus.

The NCCTQ Approach: Systemic Change Through Collaboration

A thorough review of collected and analyzed needs-assessment data gathered during the first two years of the grant, makes it clear to NCCTQ that the RCCs and state education agencies (SEAs) often need models for systemic change strategies to initiate teacher quality improvements. They require assistance with how to think through and implement the array of actions required to institute change across the whole system of public education in their states.

NCCTQ firmly believes that systemic change and collaboration are two key elements that drive innovative reform. During the past year, NCCTQ developed a mapping tool—the Teacher Quality Gap Analysis Tool (www.ncctq.org)—and worked with states to help them meet their NCLB requirements for comprehensive planning for teacher quality change. The Teacher Quality Gap Analysis Tool directs systemic change by guiding conversations and plans that eventually will lead to new state teacher quality policies and changes in practice at the local levels of education. Such a systemic approach to planning and implementation can be powerful but only if collaboration and open communication are supported between and among all offices of the SEAs down to the local education agencies, and across to all who want to provide services to improve teaching and learning for all students.

As one example of this approach, NCCTQ will demonstrate to the RCCs and SEAs that what students need to know and be able to do (as defined by state standards of academic achievement) should drive what teachers should know and be able to do (as exemplified in teacher standards, teacher exams, credentialing, and other areas). This, in turn, directs what institutions of higher education and alternate teacher-preparation systems should offer in their syllabi, as well as in their student teaching requirements.

Program approval processes conducted by SEAs should reflect these teacher requirements and initiate systems of checks and balances that drive changes in overall teacher preparation. Evaluation systems that collect reliable data should be established and made part of the system of review and analysis. Finally, the findings of these analyses should direct new policy and the targeting of funds to support those most in need of improving the education they offer to students. NCCTQ is committed to helping its constituents find best practices grounded in verifiable research that will lead to systemwide change. NCCTQ's focus is always centered on helping educational institutions meet the academic achievement needs of all students—in general education; in special education; and, especially, in high-poverty and hard-to-staff schools.

NCCTQ will continue to provide cutting-edge support for systemic, collaborative, and innovative thinking about teacher quality and educational change. NCCTQ will continue to offer the best policy, practice, and research to define teacher quality and effectiveness. In the third year of operation, NCCTQ will create opportunities for the 16 RCCs and their partner SEAs to work as teams to establish teacher quality action plans that are feasible, systemic, and sustainable. Data on the needs of the RCCs and SEAs guide this work.

Reaching the Goal: Equitable Distribution of HQTs

Teacher quality issues are embedded across the teacher-development continuum. In its work to date (see www.ncctq.org for complete details), NCCTQ has approached the complex topic of teacher quality by focusing on a number of interrelated teacher quality issues,

including recruitment, teacher preparation (university-based and alternative routes), licensure, credentialing, teacher testing, new teacher induction, professional development, and teacher effectiveness as it relates to student achievement. NCCTQ's work concentrates specifically on how these issues take shape for high-poverty, low-performing, and hard-to-staff schools. NCCTQ is committed to assisting with these issues as they are reflected in both the general and special education environments.

As it begins its third year, the unifying goal of all NCCTQ efforts is the equitable distribution of HQTs. NCCTQ plans to unite all of its print and online products and publications and all of its events, such as webcasts, issue forums, and the NCCTQ national conference, around the theme of the equitable distribution of HQTs. With these resources, NCCTQ hopes to empower states with the tools they need to work strategically, using data-driven decision making, to target resources and implement systemwide change in service of the most critical aspect of improving education for all of the children in our nation: providing HQTs to every student in general and special education.

Tapping into *TQ Source* Tips and Tools

As educational practitioners continue to explore reforms related to teacher and leadership quality, it is necessary to tap into resources and identify strategies they can use to enhance their efforts. *TQ Source* Tips and Tools: Emerging Strategies to Enhance Educator Quality (see www.ncctq.org/strategies) provides up-to-date information, including research bases for certain classroom practices and examples of policy initiatives in various districts and states. These resources are indexed into three salient topic areas:

- Recruiting Quality Teachers for Mathematics, Science, and Special Education
- Teacher Quality in At-Risk Schools
- Leadership Quality

Within each topic area, a user can find one or more key issues that are most relevant.

These comprehensive and carefully indexed resources allow teachers, administrators, and other professionals to access and leverage emerging expertise to meet the immediate challenges in their own states, districts, and schools.

NATIONAL COMPREHENSIVE CENTER FOR TEACHER QUALITY

Glossary

Glossary

This glossary is intended as a guide to the specialized language of educational policy literature used in this report. Where applicable, alternative definitions and usages are offered as well. The reader is cautioned that the definitions in this glossary are intended neither as comprehensive nor as absolute statements of a term's meaning or significance in educational policy and practice.

accountability—The primary form of accountability practiced in education policy today is *outcomes-based accountability*, which seeks to hold any or all of the following entities responsible for improving student achievement: state education agencies, local education agencies, schools, and teachers. Sanctions used to hold these entities accountable include withholding federal and state funds, publicly reporting schools' failure to meet adequate yearly progress (AYP) targets, school restructuring, or state takeover.

achievement gaps—The difference between the academic achievement of underserved groups of students and their more privileged peers, often attributed to differences in resources and opportunities to learn. Specifically, there is a gap between the average test scores, grades, and educational attainment of low socioeconomic status, black, and Hispanic students and those of high socioeconomic status and white students.

at-risk schools—High-poverty, high-minority, and low-performing urban and rural schools that may not be able to facilitate good educational outcomes for their students due to insufficient physical, financial, and human resources, among other things.

at-risk students—Students in jeopardy of poor educational outcomes, such as low achievement, dropping out of school, or developing behaviors that interfere with learning. Student risk factors include low socioeconomic status, membership in an under-represented racial or ethnic group, attendance at a low-performing school, disability status, health, and lack of role models for healthy cognitive and social development.

AYP—Adequate yearly progress. The No Child Left Behind (NCLB) Act mandates that schools must demonstrate AYP toward the goal of 100 percent student proficiency on annual achievement tests. Each state has developed its own formula for assessing progress toward specific, state-defined AYP goals and targets.

benchmark—A standard of practice or performance to which an individual or organization, such as a school, can strive.

effective teacher—In the context of this report, *effective teacher* denotes one who makes an average or larger contribution to his or her students' learning, usually as reflected by increases in student test scores. Teacher effectiveness focuses on the effect or output of teachers' work in the classroom rather than on the qualifications or input that teachers bring to the classroom (see Goe, Chapter 1). In teacher quality research and policy discussions, more generally, the word *effective* connotes direct impact—or effect—on outcomes such as high school graduation rates, student motivation, efficacy beliefs or other social outcomes, as well as achievement test scores.

ELLs—English language learners. Students who are not native speakers of English. Also referred to as ELs (English learners), ESL (English as a second language) students, and LEP (limited English proficiency) students.

endorsement areas—The specific subject or licensure areas in which a teacher is licensed to teach. Teachers who are certified or licensed in one primary subject area can attain endorsements to teach additional subject areas in which they have demonstrated competency (see Coulter, Chapter 4).

equitable distribution of teachers—Providing at-risk students the same level of access to highly qualified and highly effective teachers as is afforded to more privileged students. This is called for under Title I of NCLB (Pub. L. No. 107-110, Section 1111(b)(8)(C); www.ed.gov/policy/elsec/leg/esea02/pg2.html#sec1111):

> the state educational agency will take [steps] to ensure that poor and minority children are not taught at higher rates than other children by inexperienced, unqualified, or out-of-field teachers, and ... evaluate and publicly report the progress of the state educational agency with respect to such steps.

equity plan—NCLB requires states to have *equity plans* to detail the strategies and actions that the state will take to ensure that poor or minority children are not disproportionately taught by inexperienced, unqualified, and/or out-of-field teachers. These plans should identify challenge areas, indicate state-specific equitable teacher-distribution goals and benchmarks, and describe initiatives and processes for tracking progress toward meeting equitable teacher distribution goals (see Coulter, Chapter 4).

free or reduced-price lunch—Often used as an indicator of the socioeconomic status of students, free or reduced-price lunch is available to those who meet state-defined poverty guidelines, which usually derive from official federal poverty guidelines (see also, *poverty*).

high-needs schools—In the context of this report, high-needs schools are those reported as having 51 percent or more students participating in the free or reduced-price lunch program. Considering other factors as well, such as teacher turnover, may help rank the "neediest" schools within the larger category of *high-needs* schools. In teacher quality research and policy discussions, more generally, *high-needs* is often used synonymously with *at-risk*.

HOUSSE—High, Objective, Uniform State Standard of Evaluation. NCLB's HOUSSE provision allows states to set equivalencies for veteran teachers who need to demonstrate subject-area proficiency in their fields under NCLB requirements. Without requiring additional coursework or testing, HOUSSE permits states to grant points toward highly qualified status to veteran teachers based on their teaching experience, previous coursework, professional development, and so forth, to meet the highly qualified teacher (HQT) requirements of NCLB (see www.ed.gov/nclb/methods/teachers/hqtflexibility.html).

ICs—Innovation configurations. ICs translate learning standards into action to help schools design and implement professional development that will facilitate increased student learning. Often displayed as "maps," ICs align structures, policies, practices, roles, and responsibilities to specify how they contribute to increased teacher capacity and student learning (see Reschly, Smartt, & Oliver, Chapter 2).

IDEA—The Individuals with Disabilities Education Improvement Act of 2004 (IDEA) (Pub. L. No. 108-446) is a law to ensure that "all children with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for further education, employment, and independent living." It was originally enacted as the Education for All Handicapped Children Act in 1975 (see Reschly et al., Chapter 2; idea.ed.gov/).

IEP— Individualized education program; see *students with disabilities.*

learned society—Societies of professionals who share some type of expertise, such as teaching mathematics. The National Council of Teachers of Mathematics is an example of a learned society (see Reschly et al., Chapter 2).

LEAs—Local education agencies. District-level organizations responsible for student, staff, and school accountability reporting. LEAs include regular local school districts, local school district components of supervisory unions, supervisory union administrative centers, and regional education service agencies.

linked student-teacher data—Educational data collected and stored in such a way that student and teacher information are connected. Linked student-teacher data enable researchers to attribute changes in student learning to a student's assignment to a particular teacher (see Goe, Chapter 1).

NAEP—The National Assessment of Educational Progress. NAEP, also known as The Nation's Report Card, is a longitudinal assessment program of a nationally representative sample of 4th-, 8th-, and 12th-grade students administered by the U.S. Department of Education. NAEP results inform educational policy by providing information about trends in education and are often used in research about influences on student achievement (see nces.ed.gov/nationsreportcard/).

NCLB—The No Child Left Behind (NCLB) Act of 2001. Among its other provisions, this federal law requires teachers to be "highly qualified," with the intention that this will "ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (Pub. L. No. 107-110, Section 1001; see www.ed.gov/policy/elsec/leg/esea02/107-110.pdf).

out-of-field teachers—Certified teachers teaching in subject areas in which they are not certified. Teachers who are not able to demonstrate competency in their assigned subject areas may also be considered to be teaching out-of-field (see Coulter, Chapter 4).

performance-based pay—Broadly refers to a system that ties teacher or administrator salaries, bonuses, or other financial awards to their job performance or to the performance of their students. Performance-based pay program models vary by state and district and may include individual teacher or schoolwide awards based on student achievement, teacher evaluations, and/or working in a high-needs subject area or in an at-risk school (see Rowland & Allen, Chapter 5).

poverty—Official federal poverty guidelines were first developed in the 1960s by the Social Service Administration and reflect the cost of the U.S. Department of Agriculture's economy food plan multiplied by three. The Department of Health and Human Services updates the official federal poverty guidelines annually for inflation using the Consumer Price Index (see *free or reduced-price lunch*; aspe.hhs.gov/poverty/faq.shtml).

qualified teacher—Under NCLB, a *highly qualified teacher* (HQT) is one who has the following professional qualifications: a minimum of a bachelor's degree, full state teacher certification (or a passing score on the state teacher licensing examination[s], where applicable), a state teaching license, *and* demonstrated subject-area competence in each of the academic subjects taught. In the context of this report, teacher qualifications reflect the credential inputs that teachers bring to the classroom (see Goe, Chapter 1). In teacher quality research and policy discussions, more generally, *qualified teachers* refer to those who are fully credentialed, meaning that they have successfully completed a state-approved teacher preparation program (whether traditional or alternate route). Such programs usually involve coursework in a specific content area, pedagogy, educational foundations, and a teaching practicum.

quartile—In research, scores in a distribution can be grouped into four groups, or *quartiles*, with the same number of scores in each group. Quartiles are used to describe the scores or to facilitate comparisons between groups.

RCCs—Regional Comprehensive Centers. RCCs serve the states in their regions, providing technical assistance, capacity-building, and other expertise to support state initiatives to improve teacher quality and student achievement to meet NCLB requirements. Nationally, 16 RCCs are funded with five-year grants from the U.S. Department of Education.

RTI—Responsiveness to Intervention. RTI is an alternative to the traditional method of referring underachieving students for special education. Although RTI can be implemented in a variety of ways, its key features include continuous progress monitoring to identify underachieving students at an early age, multiple tiers of increasingly concentrated educational intervention, differentiated curriculum tailored to specific student needs (as indicated by screening and assessment results), specialized instructional staff at the higher tiers of intervention, and use of research-based instruction and interventions (see Reschly et al., Chapter 2; nrcld.org/publications/papers/mellard.shtml).

SBR—Scientifically based research. NCLB calls for SBR as the standard for evidence to inform strategies to improve student learning. Originally, the criteria for SBR emphasized a specific type of experimental approach, randomized control designs; in more recent discussions, the term *SBR* has evolved to mean *evidence-based research*, which includes evidence from a greater number of studies utilizing various methodologies (see Reschly et al., Chapter 2).

scientifically based reading instruction—Scientifically based reading instruction focuses instruction on five components of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension), integration of the components, and frequent progress monitoring and feedback for students (see Reschly et al., Chapter 2).

school context—The many educational, cultural, social, political, economic, and physical conditions of schools and classrooms that can influence student achievement as well as teacher performance or effectiveness. School context also may play a role in teacher turnover.

SEAs—State education agencies. SEAs are state-level organizations that oversee educational administration and policy. State departments of education and state boards of education are examples of SEAs.

standardized tests—Tests designed to be written, administered, scored, and interpreted in the same way for every test-taker. The advantage and weakness of using standardized tests is that all test-takers, regardless of age, sex, creed, color, background, experience, disability, or other characteristics, are treated exactly the same and judged on a common scale. Standardized tests can be developed by teachers or by external test-makers.

students with disabilities—Under IDEA and state NCLB reporting definitions, students with disabilities are usually defined as those with *Individualized Education Programs* (IEPs). Under federal law, an interdisciplinary team of educational professionals must determine that a student has a disability and requires special education and related support services for him or her to have an IEP. Students with disabilities are also sometimes referred to as *students with special needs*.

teacher attrition—Also known as teacher turnover or teacher mobility. Two types of teacher attrition may lead to workforce instability in schools: (1) teachers who move to different schools and (2) those who exit the teaching profession (see Coulter, Chapter 4). Generally, at-risk schools are defined in part by high teacher turnover, regardless of the cause.

teacher practices—Instructional strategies, classroom management techniques, and other behaviors that teachers enact in the classroom to facilitate learning (see Goe, Chapter 3).

teacher preparation—The training, usually in a college of education, intended to provide teachers with the knowledge and skills necessary to be successful in the classroom. Teacher preparation includes alternative certification programs as well as college or university-based programs (see Goe, Chapter 3).

value-added models—Statistical techniques that use multiple years of student achievement data to estimate the effects of schools or teachers on student learning. Individual or cohort growth models also look at multiple years of student achievement data to estimate the rate of change over time. Results from value-added models can be used to identify low- and high-performing teachers to target supports, tailor professional development opportunities, and identify potential mentors (see Goe, Chapter 1). Value-added models do not explain why or how schools or teachers differ in effectiveness.

1100 17th Street NW, Suite 500
Washington, DC 20036-4632
877-322-8700 • 202-223-6690
www.ncctq.org

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America's Challenge: Effective Teachers for At-Risk Schools and Students

Chapter 6 Methodology

Getting Started: A Survey of New Public School Teachers on Their Training and First Months on the Job

This survey includes interviews with a nationally representative sample of 641 first-year school teachers throughout the continental United States. We also conducted oversamples of teachers who participated in alternative teaching certification programs. Those interviews are not included in this analysis but will be included in subsequent reports on this data. The survey was conducted by Princeton Survey Research Associates International (PSRAI). Data were collected by telephone (324 interviews) by Princeton Data Source, LLC, and online (324 surveys) by PSRAI between March 12, 2007, and April 23, 2007.

In designing the survey questions and sample, Public Agenda conducted interviews with leading experts both from traditional schools of education and from alternative programs to discuss the sampling frame and the topics to explore in the survey. The National Comprehensive Center for Teacher Quality (NCCTQ) and the Farkas-Duffett Research Group (FDR) were consulted further regarding sampling, survey topics, and questionnaire design. Prior to interviewing, the questionnaire was tested multiple times with two new teachers and items were recrafted based on these pretests. In addition, random interviews were monitored to insure the quality of the interviews and that the questions were clear and answerable.

The sample includes oversamples of teachers in both Midwest and high-needs schools. The final data were weighted to account for the disproportionate sample design. Final results based on the general sample are representative of all first-year teachers' continental U.S. public schools. The margin of sampling error for the complete set of weighted data is ±4 percent. Details on the design, execution, and analysis of the survey are discussed below.

Questionnaire Design

Respondents were asked 111 items. These included screener questions to ensure that respondents were first-year teachers, demographic questions to describe the teachers who took part in our survey, and closed-ended opinion questions. The questionnaire uses a blend of different kinds of questions, some of which tackle similar issues in different ways. Most questions ask respondents to use a scale (either three or four points) to rate different aspects of their training or experiences teaching and to measure the strength of various beliefs they may have about teaching.

Many of our four-point scales are Likert scales, in which we ask the degree to which a respondent accepts a particular statement. In the report, we often collapse the choices to the nominal level by combining the positive and negative responses. (Collapsing Likert scales into their nominal components [agree/disagree] is a commonly used technique in public opinion

research. After transforming the data, it is subject to chi-square assessments.) Those interested in seeing the degree to which someone agreed or disagreed to the statement can consult the charts in the reports, which break out strength of acceptance.

We also used questions in which respondents were asked to choose between two mutually exclusive and balanced statements involving tradeoffs. Analyzed in context with other results, these "forced-choice" items shed light on respondents' priorities and avoid the central tendency bias inherent in Likert-style questions. The choices themselves may be artificial, but they typically echo natural language gleaned from qualitative research. This questionnaire reflects the language and expressions used by teachers during focus groups for this project and from previous research with teachers.

For example, one of the questions asked new teachers, "Which comes closer to your view?"

1. I may be new to teaching, but compared to what other teachers are doing, my students are probably lucky to have me. [OR]
2. I'm sometimes afraid that my students are paying a heavy price because of my lack of experience.

This item is drawn directly from the qualitative research where a new teacher said in a focus group, "I'm a teacher to these kids. I'm not qualified at all. Yet, I'm still possibly better than what could be there. It's absolutely ridiculous." Because the other teachers in the focus group agreed with this perspective, we decided to counter-balance the notion that students are lucky to have a new teacher with one that gives an equally reasonable, but very different response. In this instance, the presentation of the alternative viewpoint is intended to test and probe whether this response is strongly held even when positioned against a robust alternative.

In a few instances, the questionnaire contains compound questions combining two seemingly separate concepts. The decision to combine concepts within a single item mirrors the way teachers discuss and couple ideas in focus groups.

For example, one item in our series of questions about potential drawbacks to teaching is, "There is so much testing and not enough freedom to be creative." This item mirrors a comment by a new teacher in a focus group who said, "I think it's absolutely a matter of testing taking away too much time…You are very restricted in the amount of time that you have to try new, creative theories, because you have to get this, this, and this in before."

Obviously, compound items could be asked separately, and other researchers may wish to tease them apart based on the results here; indeed, we invite them to do so. However, we believe these compound items capture authentic and useful information about new teachers' overall priorities and concerns and are consistent with previous studies conducted by Public Agenda.

Sample and Data Collection Procedures

Sample

The sample was drawn from Market Data Retrieval's (MDR) New Teachers list. MDR (www.marketdataretrieval.com/mdredlists.asp), a company of Dunn & Bradstreet, is a leading provider of marketing information and services for the education market. The list was stratified by region and high-needs status so that schools in the Midwest and schools considered high-needs could be oversampled. The Midwest was defined as seven states: Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin. Schools were considered high-needs when at least 51 percent of students received free or reduced-price lunch. For sampling, schools were considered high-needs if a majority of the students were eligible for a free or reduced-price lunch program as reported in the MDR sampling frame (i.e., LUNCHPRGM/EXACTERL> = 0.51). For analysis purposes, teachers were identified as working in high-needs schools if they answered that a majority of their school's students were eligible for a free or reduced-price lunch program (D3 = 3). This variable is similar to the high-needs variable used in the sampling phase. Prior to starting each interview, respondents were screened to confirm that they were first-year classroom teachers.

Contact Procedures

Data for the sample were collected by telephone and online between March 12, 2007, and April 23, 2007. Teachers in the general sample were mailed advance letters explaining the purpose of the study and encouraging their participation. The advance letters included a web address and password so respondents could complete the interview online. A follow-up e-mail also was sent by MDR to all teachers in the sample who had a valid e-mail address. Daytime phone interviews were conducted by interviewers at Princeton Data Source (PDS).

Two batches of general MDR samples were sent out during the field period. An initial wave of 3,592 first-year teachers (2,688 not high-needs and 904 high-needs) from the general MDR sample first were contacted through advance letters mailed on Thursday, March 8. On Wednesday, March 14, PDS began daytime calling of teachers in this first batch who had not yet completed the interview online. E-mail reminders for the first batch were sent out by MDR on Friday, March 23, to those who had not yet completed the interview by phone or online.

A second wave of 2,504 first-year teachers (673 not high-needs and 1,831 high-needs) from the general MDR sample were first contacted through advance letters mailed on Monday, April 2. On Monday, April 9, PDS began daytime calling of teachers in this second batch who had not yet completed the interview online. E-mail reminders for this second batch were sent out by MDR on Thursday, April 19, to those who had not completed the interview by phone or online. Samples and quotas were tracked daily so that the telephone and online data collection modes remained coordinated. For the general sample, 324 interviews were completed by phone and 317 surveys were completed online.

Interviewers with experience in reaching and gaining cooperation from hard-to-reach populations were used for this project. All interviewers received training on this questionnaire and were

briefed on special refusal aversion techniques that apply to this population. Ten percent of all interviews were monitored by supervisors who could identify problems and challenges and coach interviewers. In addition, Public Agenda staff reviewed recordings of three interviews recorded on the first full day of interviewing. Interviewers accommodated respondents' schedules and arranged appointments. Respondents also were given a toll-free phone number to call to schedule an appointment or complete an interview at their convenience.

Weighting and Analysis

The data were weighted to account for the oversampling of key groups. Population parameters came from two sources. The regional distribution parameter was defined as the regional distribution of all teachers for 2003 as reported by the National Center for Education Statistics (NCES). The high-needs parameter was defined by first computing percentage of teachers teaching in at risk schools in each state individually. This within-state, at-risk percentage was taken from the MDR new teacher sampling frame. Then the states were combined in the proportions used in the regional distribution. The final estimated population distribution used from weighting is given in Table 1.

Table 1. Estimated Population Distribution

	High Needs	Not High Needs	Total
Midwest	3.3%	14.9%	18.2%
Not Midwest	31.3%	50.5%	81.8%
Total	34.6%	65.4%	100.0%

The first step in the weighting was to correct for the disproportionate sampling of the general teacher list. The weighting ensures that the final general sample region and high-needs percentages match the population distribution. Table 2 compares unweighted and weighted general sample demographics to population parameters.

Table 2. Traditional Sample Weighting

	Population Parameter	Unweighted Sample	Weighted Sample
High-Needs			
Midwest	3.3%	5.9%	3.3%
Not Midwest	31.3%	33.1%	31.4%
Not High-Needs			
Midwest	14.9%	17.2%	14.8%
Not Midwest	50.5%	43.8%	50.5%

Effects of Sample Design on Statistical Inference

Postdata collection statistical adjustments require analysis procedures that reflect departures from simple random sampling. PSRAI calculates the effects of these design features so that an

appropriate adjustment can be incorporated into tests of statistical significance when using these data. The so-called "design effect," or deff, represents the loss in statistical efficiency that results from disproportionate sampling and systematic nonresponse. The total sample design effect is 1.27.

PSRAI calculates the composite design effect for a sample of size *n*, with each case having a weight, w_i, as:

$$deff = \frac{n\sum_{i=1}^{n} w_i^2}{\left(\sum_{i=1}^{n} w_i\right)^2} \qquad (1)$$

In a wide range of situations, the adjusted standard error of a statistic should be calculated by multiplying the usual formula by the square root of the design effect ($\sqrt{}$deff). Thus, the formula for computing the 95 percent confidence interval around a percentage is:

$$\hat{p} \pm \left(\sqrt{deff} \times 1.96\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}\right) \qquad (2)$$

where $\hat{p}$ is the sample estimate and *n* is the unweighted number of sample cases in the group being considered.

The survey's margin of error is the largest 95 percent confidence interval for any estimated proportion based on the total sample—the one around 50 percent. For example, the margin of error for the entire sample is ±4 percent. This means that in 95 out every 100 samples drawn using the same methodology, the estimated proportions based on the entire sample will be no more than 3.8 percentage points away from their true values in the population. It is important to remember that sampling fluctuations are only one possible source of error in a survey estimate. Other sources, such as respondent selection bias, questionnaire wording, and reporting inaccuracy, may contribute additional error of greater or lesser magnitude. Table 3 shows design effects and margins of error for key sample subgroups.

Table 3. Design Effects and Margins of Error for Key Subgroups

	n	**Design Effect**	**Margin of Error**
Total sample	641	1.09	4.0%
High-needs	315	1.10	5.8%
Not high-needs	326	1.07	5.6%

Subgroup Analysis

Although most of the findings in this report are derived from the total sample, additional significance tests were employed when comparing survey results across subgroups. Any differences reported between groups were deemed significant after considering the overall margin of error, sampling tolerance, and Pearson's chi-square calculations for each question.

Response Rate

Table 4 reports the sample disposition for the sample. The response rate estimates the fraction of all eligible respondents in the sample that ultimately were interviewed. At PSRAI it is calculated by taking the product of three component rates (PSRAI's disposition codes and reporting are consistent with the American Association for Public Opinion Research standards):

- Contact rate—the proportion of working numbers where a request for interview was made—of 32 percent
- Cooperation rate—the proportion of contacted numbers where a consent for interview was at least initially obtained versus those refused—of 89 percent
- Completion rate—the proportion of initially cooperating and eligible interviews that were completed—of 99 percent

Thus, the response rate for this survey was roughly 29 percent.

Table 4. General Sample Disposition

Size	Description
5868	**T** Total Pieces of Sample
65	**OF** Not a working phone number
25	**OF** Computer/Fax
5778	Working numbers
98.5%	Working Rate
715	**UH** No Answer
94	**UH** Busy
1356	**UO_{NC}** Answering Machine
1735	**UO_{R}** Callbacks
0	**NC** Non-Contacts after determined eligible
20	**UO_{NC}** Other Non-Contacts
1858	Contacted numbers
32.2%	Contact Rate

Size	Description
202	**UO_R** Refusal 1 - Refusal before eligibility status known
0	**R** Refusal 2 - Refusal after case determined eligible
1656	Cooperating numbers
89.1%	Cooperation Rate
331	**IN1** Teacher no longer with school
681	**IN2** Not a first year teacher
644	Eligible numbers
38.9%	Eligibility Rate
3	**R** Interrupted
641	**I** Completes
99.5%	Completion Rate
28.5%	Response Rate

The Focus Groups

Focus groups allow for an in-depth, qualitative exploration of the dynamics underlying the public's attitudes toward complex issues. Insights from participants in these focus groups were important to the survey design and actual quotes were drawn from the focus groups to give voice to attitudes captured statistically through the surveys. All focus groups were moderated by Public Agenda senior staff.

Four focus groups were conducted. One was conducted with participants in an alternative certification program in the Philadelphia region. Two more also were held in Philadelphia, one with senior education majors and master's-plus students from an urban university and one with the same population from a suburban university. The last group was done in Chicago with first-year teachers in an urban alternative certification program and with urban master's-plus students.