



# Filling in the Gaps

Understanding the root causes of the  
“teacher shortage” can lead to solutions that work

**O**n February 10, 2003, an article in the *Los Angeles Times* announced “Teacher Shortage Abates,” proclaiming, “The great national teacher shortage is easing.” This would have been astounding news if it told the whole story. After all, the “teacher shortage” had come to define a significant part of the educational landscape in the 21st century. For much of the 1990s and the early part of this decade, it was a predictable rite of August that school systems across the country would scramble to fill positions left open by teachers who moved, quit, retired, or changed positions. Predictions of mass retirements and class-size reduction movements added fuel to the fire. The end of a staff shortage of such magnitude would be amazing news indeed.

In truth, talking about a “teacher shortage”—whether its growth or its demise—is an oversimplification of a complex situation with real and troubling potential. Oversimplifying distracts attention from the root causes of the situation, which continue relatively unabated.

The shortage issue is best understood as the intersection of variables related to teacher supply, demand, and retention. Teacher supply tends to receive the lion’s share of attention both in the press and at the policy level, but solving the problem exclusively through replacement teachers is both a costly and difficult proposition. To provide schools and students with sufficient numbers of skilled teachers, it is essential to keep teachers from leaving the profession and ensure that those who are trained remain in the classroom for a long period.

It’s true that some communities and states are now in the unusual position of either laying off teachers or not hiring replacements for those who move on. A down economy has increased the number of eligible candidates for teaching positions, slowed the flow of qualified teachers to other fields, and stalled class-size reduction efforts, giving the impression of an end to teacher scarcity. But,

to adapt Mark Twain’s famed quotation, reports of its death are greatly exaggerated.

School districts continue to report shortages in critical areas, including science, math, and special education, while other areas have an overabundance of qualified teachers. Urban and rural districts remain plagued by difficulties hiring and keeping enough qualified teachers, while many suburban districts have far more applicants than they have positions. And while the economy has slowed teacher attrition, it has not affected many of the key reasons teachers leave the profession.

In addition, recent new hires who are seeking shelter from a sluggish economy may prove harder to keep in the classroom than the average teacher as other sectors rebound. Increased teacher salaries, which have played an important role in enticing qualified individuals to the profession, have fallen back in the past 18 months, extending even to reductions in the bonuses some states pay to reward teachers who earn National Board Certification. If this continues, teaching will have a more difficult time reaching parity with the pay of other professions.

This is not the first instance when American policymakers have been warned of an impending “teacher crunch.” As recently as the 1980s, there were dire warnings of coming shortages, yet the teacher attrition rate—including retirement—has remained remarkably consistent during the past two decades. Recent research by Richard Ingersoll and the U.S. Department of Education has shown a slight increase in overall teacher attrition, from 14.5 percent in the late 1980s to 15.7 percent today.

## Demand

In part, predictions of a teacher shortage are a matter of demographics. The American school population is approaching a record high due to the enrollment of the children of baby boomers—the so-called baby-boom

“echo”—and an increase in immigration. According to the National Center for Education Statistics, there are 3.1 million teachers in public schools in the United States, serving 47 million students. Public-school enrollment across all grades is projected to reach a high point of nearly 50 million children in 2013. Adding private schools swells this figure to more than 56 million. As a point of reference, total enrollment in 1988 was only 46 million students. To serve this increase in population, it is estimated that the United States will need more than 3.5 million teachers by 2013, up from 2.6 million in 1988.

With 3.1 million teachers in classrooms today, a net increase of 400,000 over a decade seems like far less than a crisis. But the scope of the potential demand problem is much greater. Accounting for current attrition rates, it is projected that U.S. schools will need to hire 200,000 new teachers annually for the next 10 years to meet the demand. And the sheer number of teachers employed and students enrolled is considerable—minor deviations from projections could have major repercussions when a 3 percent statistical variance could mean that nearly 100,000 more (or fewer) teachers are needed than had been predicted!

But a straightforward demographic profile of student population growth presents a simplified and distorted view of the teacher-demand situation. The United States faces a deficiency not of teachers, but of teachers with particular skills, backgrounds, or willingness to work in particular places. Increased challenges of serving special communities in our schools and competition with the private sector for individuals with certain skills and training have created high demand for teachers of science, math, special education, English as a second language, and other specialty fields.

Furthermore, many education observers are concerned that, in an era when the student population is increasingly diverse, the teacher population is relatively homogenous. Roughly 40 percent of U.S. students are minorities, yet less than 10 percent of teachers are minorities, and about 25 percent of teachers are male. This is of special concern due to a growing body of evidence showing positive educational outcomes for minority children taught by minority teachers [see articles, page 32].

Finally, rural areas have largely missed out on the reprieve from shortages, with rural schools often unable to match the salaries, benefits, and amenities of metropolitan areas. As a result, rural schools cannot afford to be as selective and have to accept higher levels of out-of-field teaching than metro schools [see article, page 22].

These factors are exacerbated by changes in federal education policy that are changing teacher-qualification

standards. A central component of the No Child Left Behind Act is a requirement that every classroom must have a “highly qualified” teacher. The National Commission on Teaching and America’s Future estimates that more than 50,000 teachers enter the field annually with emergency or substandard credentials, such as teachers working out of field or long-term substitutes. In the common shortage areas of math and science, the percentage of high-school students who take courses taught by out-of-field teachers are 27 percent (for math) and 56 percent (for physical science).

Even as these actions at the federal level seem poised to increase demand in the areas already most in need of teachers, many states have initiated a process that will further increase the demand for teachers in all areas: class-size reduction. Beginning in the 1990s, several states began to mandate smaller class sizes or lower student-

teacher ratios. When the state of California capped class size at 20 for grades K–3 in 1996, the result was a need for 20,000 new teachers. To fill these vacancies, California resorted to huge numbers of emergency-credentialed teachers, something not allowed under the new federal education law. While some of the momentum behind reducing class sizes has dissipated as the economy has slowed and states lack the resources to implement the plans, smaller classes are realities in many states, increasing the demand for teachers over what would be expected through enrollment alone.

A final factor affecting teacher demand is the rising number of students who require special educational services, including students who are categorized

as limited English proficient (and thus require specialized language instruction) and those identified as having a learning disability—up 21 percent since 1990 and now accounting for 14 percent of all students. The number of students identified as limited English proficient alone has doubled over this time period and now represents more than 9 percent of the total public-school enrollment. Teachers in these two areas are hard to come by and are more prone to rapid turnover than their peers in many other areas.

### Supply

The supply side of the teacher equation has been lagging from the start of what is a very leaky pipeline [see illustration, page 16]. Annually, approximately 100,000 teachers graduate from the nation’s colleges of education. Of that number, less than 60 percent will ever enter the classroom after graduating. Of those who do, nearly 50 percent will leave teaching within the first five years. Convincing more of those students who graduate from

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colleges of education to enter the profession would improve the situation for school districts. Improving the working conditions of the profession would likely convince even more candidates to enter the pipeline in the first place.

Traditional teacher-training programs continue to face daunting competition from other disciplines in recruiting candidates because the status, working conditions, and compensation for teachers continue to lag behind other fields. With a slowing economy, some of the pressure on school-district recruiting has been relieved. It is unlikely, however, that the supply situation will remain strong when the economy improves and opportunities in other sectors of the economy rebound.

This situation is in some ways exacerbated by the manner in which most teachers enter the profession—through teacher-preparation programs that have been assailed as undemanding, irrelevant, and unresponsive to the realities of the classroom. Many colleges of education are slow to respond to the demonstrated demands of districts for teachers in high-need areas with an increased supply in these specific areas. Thus, while there are openings for all teachers annually, it is often the case that colleges of education graduate more early-childhood education teachers than are immediately needed, even as the needs for specialists are unfulfilled. This disconnect between supply and demand serves to distort the picture of teacher openings, insofar as shortages are both more and less severe than the general statistics would imply.

This is not to say that the United States lacks teachers, per se. In addition to the more than three million Americans teaching, there are approximately six million more who hold teaching credentials but do not teach. The total number of Americans who could teach, even excluding those who are in the classroom currently but are not licensed in their fields, is more than sufficient to cover the anticipated openings in schools in the years to come. The simple reality, however, is that this potential army of nine million is not rushing to the schools.

### **Retention**

Despite this “leaky pipeline,” the teacher-supply system would be more than adequate if it were not for a startling retention problem in the teaching profession. Indeed, there are those who argue persuasively that a teacher shortage does not actually exist—that the experiences of school districts and schools reflect a shortcoming in teacher distribution and a failure to get qualified individuals into classrooms and to keep them there.

Teaching has a turnover rate that is higher than that for most other professions. According to federal statistics, 15.7 percent of teachers leave the profession every year, compared to an 11.9 percent average for all other fields—though due to the many differences among job types, this is a crude benchmark at best. Turnover is particularly pronounced in high-poverty schools—20 percent annually—and is equally high at private institutions, which in general pay less than public schools. Turnover is also particularly high in the very subject areas—science, math, and special education—in which the needs are the greatest and recruitment has been the most difficult.

According to Ingersoll, the key question is not how teacher turnover compares to other professions, but whether it is a problem for schools. As Ingersoll’s 2003 report “Is There Really a Teacher Shortage?” states, “There is a strong link between teacher turnover and the difficulties schools have adequately staffing classrooms with qualified teachers.” Between teachers just arriving at schools and those departing, Ingersoll says, nearly a third of the nation’s teaching force is in transition in any given year. In addition, because so many teachers leave within the first five years of service, the effect is to have a corps of teachers who are disproportionately less experienced in their field than the turnover rates would suggest.

Turnover among teachers takes two forms: attrition, in which teachers leave the occupation, and migration, in which teachers leave one school to teach in another. The latter accounts for about half of all turnover in schools and, while not directly affecting the overall teacher-supply issue, can lead to persistent shortages in high-turnover schools. Ingersoll’s research shows that teachers leave the classroom, for the most part, for personal reasons unrelated to their work, but more than a quarter of public-school teachers who leave or move cite job dissatisfaction as the reason. Among this group, the most frequently cited sources of dissatisfaction were low salaries, poor administrative support, student discipline problems, and a lack of faculty influence and autonomy.

Retirement is one form of attrition that has received much attention, with many educators becoming eligible for, or surpassing the age of, retirement just as the aforementioned swelling tide of students is entering school. The impact of the graying instructional population is difficult to gauge for a number of reasons, not the least of which is the relatively long period between retirement eligibility, sometimes as early as 55 or younger, and a teacher’s actual retirement age. Nearly one-third of all U.S. teachers have been in the field for more than 20 years, the usual tenure requirement for retirement with full benefits. Interestingly, while a wave of teacher retirements would create extensive openings in schools, it could also temporarily increase the amount of money available for new hires or induction programs. Teacher pay is almost always determined by longevity, with teachers reaching the top of their pay scales sometime between their 12th and 20th year of service. Thus, as long-tenured teachers leave, they would be replaced by less-costly personnel—

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but they would also be less experienced.

Ingersoll's research has served to downplay the importance of retirement as a factor in teacher shortages, noting that retirement accounts for only 13 percent of teacher departures. But as the teaching population continues to age, this figure should be expected to increase, even as student enrollment rises. Several early actions in states, including increases in teacher salaries, seem to have postponed retirement for a number of eligible teachers in the 1990s. This may have reduced the need for new teachers at the time, but could have a bubble effect as this group eventually retires.

### What to Do?

If a "teacher shortage" represents an oversimplification of an ongoing and systemic problem for the teaching profession, it must be acknowledged that the solutions will not be simple either. States, which have principal responsibility for directing the supply of teachers and, in many instances, the programs designed to retain them, have recently taken a number of actions to ensure that there are sufficient qualified teachers to fill their classrooms. These take into account the need to provide a steady supply of new teachers who meet high standards, as well as mechanisms to keep these newly minted teachers in the classroom year after year.

Many states are working to increase the pool of potential teachers both by expanding recruitment activities to high school and middle grades, and by providing opportunities for nontraditional candidates to enter teaching. Such alternative certification programs permit individuals with college degrees to teach in classrooms while pursuing full certification, attracting candidates to the classroom who may not otherwise be interested in teaching. The principal advantage is that these teachers do not need to incur the costs and disruption of returning to school to earn another degree in order to take a teaching position.

These programs are controversial, in part because they have been so unevenly developed. In their early stages in particular, alternative certification was in some instances little more than an end run around the certification process, with little or no preparation for the prospective teacher. These programs are very popular at the state and district level, where they are viewed as necessary tools for relieving shortages, particularly in hard-to-staff areas. They are, however, still criticized not only for their quality, which can vary tremendously, but also for the fact that they allow districts to paper over the underlying causes of shortages. Many states have corrected these shortcomings, however, and now require supervision and review by experienced teachers, affiliation with a state-accredited college of education, and extensive mentoring and induction.

Connected with alternative certification has been a move to reform the manner in which teachers are trained in traditional programs. Improving teacher preparation is in many ways a continuation of the standards-reform movement, reflecting the higher academic expectations

for all students. Historically, schools of education have not had strong academic reputations, and subject-area coursework for teachers was not particularly challenging. States, through their certification and licensure requirements, have been working to change this. Increasingly, schools of education are seeking accreditation by the National Council for Accreditation of Teacher Education (NCATE), which requires more demanding and results-oriented preparation. Many schools of education are also adjusting their programs to suit the needs of the new educational workforce, implementing fifth-year master's programs, requiring clinical experience (student teaching) to occur earlier in the program, and tying program completion to performance on more rigorous teacher exams.

As Ingersoll, Thomas Carroll of the National Commission on Teaching and America's Future, and others have pointed out, the greatest opportunity to ensure that America's classrooms are led by qualified, competent teachers is to stop the hemorrhaging of staff that so

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### Resources

#### "Advocacy Issue Brief: Individuals with Disabilities Education Act."

National School Boards Association, March 2002.  
[www.nsb.org/site/doc.asp?TrackID=&SID=1&DID=1091&CID=356&VID=2](http://www.nsb.org/site/doc.asp?TrackID=&SID=1&DID=1091&CID=356&VID=2)

**Berry, Barnett.** "Quality Alternatives in Teacher Preparation: Dodging the 'Silver Bullet' and Doing What Is Right for Students." *The State Education Standard*. National Association of State Boards of Education, Winter 2000.

**Bracey, Bonnie.** "Statistics on Teaching in America." Educational Cyber-Playground. Originally published by Teachers College at Columbia University, July 1998. [www.edu-cyberpg.com/Teachers/tmatters.html](http://www.edu-cyberpg.com/Teachers/tmatters.html)

**Gerald, Debra E. and William J. Hussar.** "Projections of Education Statistics to 2013." National Center for Education Statistics, October 2003.  
[nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004013](http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004013)

**Hayasaki, Erika.** "Teacher Shortage Abates." *Los Angeles Times*. February 10, 2003.

**Ingersoll, Richard M.** "A Different Approach to Solving the Teacher Shortage Problem." *Teaching Quality Policy Briefs*. Center for the Study of Teaching and Policy, January 2001. [depts.washington.edu/ctpmail/Briefs.html](http://depts.washington.edu/ctpmail/Briefs.html)

———. "Is There Really a Teacher Shortage?" *CTP Research Reports*. Center for the Study of Teaching and Policy, September 2003.  
[depts.washington.edu/ctpmail/Reports.html](http://depts.washington.edu/ctpmail/Reports.html)

**Kindler, Anneka L.** "Survey of the States' Limited English Proficient Students & Available Education Programs 1999-2000 Summary Report." National Clearinghouse for English Language Acquisition & Language Instruction Education Programs, George Washington University, May 2002.

**National Center for Education Statistics.** "The Digest of Education Statistics 2001." U.S. Department of Education, 2002.

**"Teacher Shortage Emerging."** National Center for Policy Analysis, 2001. [www.ncpa.org:80/pi/edu/pdedu/pdedu162.html](http://www.ncpa.org:80/pi/edu/pdedu/pdedu162.html)

**The Urban Institute.** "Literature Review on Teacher Recruitment Programs." U.S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service, Postsecondary, Adult, and Vocational Education Division, September 2000.

**Watts Hull, Jonathan.** "Filling in the Gaps: Solving Teacher Shortages." Southern Legislative Conference of The Council of State Governments, June 2003. [www.sclatlanta.org/RecentPublications.htm](http://www.sclatlanta.org/RecentPublications.htm)

“How do you review a portfolio for every teacher?” he asks. “What Connecticut has done is very wisely put it in the hands of teacher-leaders, who have received great professional development to understand how they could look at portfolios of work. And it helps those veteran teachers because it gets them looking at their practice.”

Lastly, Connecticut is willing to pay for its highly qualified teachers. As part of its education reform, the state raised and equalized salaries across districts. “Connecticut’s salaries have typically been among the top salaries in the nation for the last 15 years,” says Darling-Hammond. “They also raised standards at the same time. They raised standards for what teachers needed in terms of content knowledge and teaching knowledge, and they raised standards for schools of education. So they bought a more highly prepared teacher for the higher salary.”

While consistent leadership contributed to the success of the BEST program, Berry and Hirsch agree that other states can emulate Connecticut’s success by profiting from its research and development. “The question at hand,” says Hirsch, “is, ‘How do you fund it?’”

According to Berry, the BEST program’s new teacher support, clinics and seminars for mentors, portfolio scoring and training, and administrative costs total a

mere \$800 per candidate per year—not a lot of money, he maintains, but “far, far more than what other states spend on assessing and supporting beginning teachers. We’re used to testing teachers with a \$70 to \$100 paper-and-pencil test. [With that] you have an assessment that doesn’t tell you very much about what teachers know and clearly nothing about what they can do.”

Both Berry and Darling-Hammond point out that the cost of induction/mentoring programs is much less than what it costs to lose a teacher in the first couple of years of teaching—a minimum of \$8,000, without even including termination, recruitment, substitutes, training, and other related costs, according to a 2000 Texas study. “People who are more highly prepared typically are more successful as beginning teachers and therefore they leave teaching at a lower rate,” Darling-Hammond says. “This saves districts money, which they can then devote to things like mentoring.”

School leaders overwhelmed with new programs and short-term costs could easily find reasons not to launch an induction/mentoring program, Hirsch admits. “But there’s a really great reason to do it,” he says. “It’s going to help student achievement by supporting new teachers and ensuring that your teaching staff is not only highly qualified but of the highest quality.” <

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defines the field. Among the most common new approaches to reducing attrition is the establishment of high-quality induction and mentoring programs [see article, page 12]. These programs affiliate a new teacher with an experienced staff member or team to provide guidance and assistance during their transition to teaching. Most programs provide formal training for the mentor teacher, as well as a reduced class load to allow for classroom observation and collaboration. Induction is usually a requirement of most alternative-certification programs, and is beginning to become integrated into the first years of teachers entering in the traditional manner as well. Induction contrasts sharply with the practice—common in many schools—of placing new staff in the most difficult classes, with multiple courses to prepare.

Another approach is to improve the quality of professional development, creating a continuum of improvement for all teachers that begins with induction and continues throughout their careers. A key need is to align professional development with state standards and academic expectations for students. In many states, teachers are now required to complete a professional-development plan based upon their identified needs, with many states predicating renewal of certification on progress toward, or completion of, an advanced degree.

Creating a coordinated teacher-training system—in which all levels are working toward the same standards,

are held to high expectations, and where teachers receive continual support and opportunities to develop throughout their careers—addresses some of the principal reasons teachers leave the profession. Changing the work environment and school climate should also decrease turnover [see article, page 18]. State policies on this are more likely to meet opposition from local school systems, which might perceive such actions as intrusive on local control, so developing these policies in a coordinated manner with representatives of all stakeholder groups could reduce friction and lead to positive solutions.

The down economy of 2003 does not signal the end of scarcity, regardless of the oracles to be found in the pages of the *Los Angeles Times* and elsewhere. All indicators continue to point to an enduring structural shortfall in the numbers of teachers available to teach in specific fields and specific areas, and of teachers from particular backgrounds. The root causes of the teacher crunch that so dominated the education landscape of the 1990s remain: increasing demand met by insufficient supply and unacceptably high levels of attrition. Turning this situation around demands a strategy that works to bring individuals of the highest caliber into the profession, surround them with a network of committed peers who support and reinforce their professional development, and reward them appropriately for their work. <

*This article was adapted from the author’s “Filling in the Gaps: Solving Teacher Shortages,” available at [www.slcatlanta.org](http://www.slcatlanta.org).*