



Issue Brief

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Teacher Supply and Demand: Is There A Shortage?*

Summary

As we begin a new century, students, parents, employers, and educators know that public schools must do a better job of preparing students to compete in the new economy, both locally and globally. As Governors and other state policymakers seek to improve public education, they are confronted with competing interests and issues. The most significant area they can address is increasing the supply of highly qualified, well-trained teachers who are willing to teach. Recent research indicates that teacher ability is one of the most important factors affecting student achievement—more significant than poverty, race, parent education, or any other single factor.¹ However, the competing need to staff classrooms immediately sometimes forces local school officials to hire staff who are not the most qualified.

The nation's public school system is handicapped by an increasing demand for qualified teachers. School districts across the country are experiencing shortages of qualified teachers. Shortages are most acute in southern and western states, urban and rural schools, and in mathematics, science, English as a second language, and special education. Class-size reduction initiatives, high attrition rates among new teachers, and the upcoming retirements of baby boom teachers increase the number of job vacancies. On the other hand, some regions are oversupplied with teachers in areas where population and enrollment are decreasing, or in popular specialty areas like elementary education or English.

For that reason and others, some education experts and researchers are questioning the broad use of the term "shortage." Thousands of college graduates are prepared each year to teach. Add to them those who already have teaching licenses but do not teach, and there are more than enough licensed teachers to fill the vacancies. However, viewing the number of licensed teachers only in the aggregate sense oversimplifies the issue, and still does not address the issues of teacher quality, district or school access to qualified teachers, and longevity of individuals in the profession. The need is for highly qualified teachers in particular subject areas or regions of the country that are well-prepared, well-supported, and likely to stay in the field for more than three to five years.

Ultimately, local schools and school districts make hiring decisions; however, state policies establish the laws, regulations, and guidelines under which those decisions are made. For states and school districts interested in addressing issues of teacher supply and demand, a comprehensive strategy of recruitment and retention is far more effective than haphazard, piecemeal initiatives that address one aspect or another of teacher supply or quality. A comprehensive strategy might include:

- statewide assessments of teacher supply and demand;
- kindergarten through college (K–16) collaboration to match graduates with jobs in high-demand areas;
- K–16 partnerships to improve teacher preparation;
- accountability measures and licensing changes to promote improved teacher preparation;
- mechanisms to broaden recruiting, streamline hiring, and facilitate teacher mobility;
- incentives for teachers to take jobs in subjects and geographical areas with shortages; and
- improved working conditions and ongoing support for teachers.

Governors and state policymakers may want to consider such strategies as they look for ways to solve teacher shortages and promote teacher quality. However, no one action can solve the complex problems at the root of the shortages. An effective solution requires comprehensive, coordinated, and deliberate strategies that address all aspects of teacher recruitment, development, and retention.

Doing the Math

Student Enrollment Adds Up

Currently there are 53.2 million students in public and private elementary and secondary schools, almost half a million more than last year. Increases in the student population will continue, resulting in 54.3 million public and private school students in 2008, according to the U.S. Department of Education. Student enrollment, among public schools, will rise from 47 million in 1999 to 48 million in 2008.²

Between 1999 and 2009, fifteen states will experience at least a 15 percent increase in public high school graduates. Nevada's increase is projected to be 77 percent, Arizona's 56 percent, and North Carolina's 40 percent. Unlike the post-World War II baby boom, which was followed by a sharp decline in birthrates in the early 1970s, the current increases will continue. The U.S. Bureau of the Census' long-range projections indicate the number of births will rise from 4.2 million in 2009 to 4.8 million in 2028.

The nation also is experiencing increased enrollments of minority students and students with limited English proficiency. The supply of minority teachers is not keeping pace with demographic changes.³ By 2010, 40 percent of Americans ages five to nineteen will be Latino, African American, Asian American, or Native American.⁴ These students pose unique challenges for teachers because their social and economic backgrounds include high-risk factors, such as poverty, low parent education level, and limited English proficiency. Students from such backgrounds are often ill prepared for school, and their teachers are often poorly equipped to address the challenges these students face.

Teachers Subtract Themselves

There are about 3.1 million teachers in public and private elementary and secondary schools—2.7 million in public schools alone.⁵ During the next ten years, according to the U.S. Department of Education, school districts will need to hire a total of 2.2 million public elementary and secondary

school teachers to accommodate increased student enrollment and to replace teachers who retire or leave the profession for other reasons. Because of increased student enrollment, education-related occupations are currently among the fastest growing occupations. From 1994 to 2005, education-related occupations are expected to grow by 27 percent, behind only health occupations with 33 percent expected growth, and engineering, natural science, mathematics, and computer science occupations with 28 percent expected growth.⁶

Surprisingly, the nation is not suffering from a lack of individuals entering preparation programs: more individuals are entering teaching than there are jobs. The number of new teacher graduates jumped by 49 percent from 134,870 in 1983 to 200,545 in 1998. There also is an increase in the number of institutions preparing teachers from 1,287 in 1984 to 1,354 in 1999.⁷ However, while adequate numbers of prospective teachers complete preparation programs, only about 60 percent of those trained take teaching jobs. In addition, 30 percent to 50 percent of new teachers leave the profession within the first five years.⁸

Teacher salaries play a significant role in teachers' decisions to leave teaching. Teachers with higher salaries stay in education longer than those with lower salaries.⁹ While many individuals are choosing not to teach because of lack of respect and low compensation, what most discourages top talent from becoming teachers and staying in the profession is the lack of career advancement opportunities.¹⁰

Contributing to the perceived shortage is the massive number of experienced teachers hired in the late 1960s and 1970s who are beginning to retire. In 1996, almost 26 percent of teachers were past the age of 50. This was up from 15.5 percent in 1976 and 21.2 percent in 1986.¹¹ Over the next ten years, about 700,000 teachers are expected to retire, accounting for about 28 percent of the hiring needs during that period.¹²

Not all of the 2.2 million projected hires will need to be twenty-two-year-old graduates of teacher preparation programs. Vacancies are often filled by former teachers returning to the profession, teachers moving from district to district, and teachers moving from private schools to public schools.¹³ Of the 139,000 "new" public school teachers hired in 1993–1994, 42 percent had just finished a college program and had not taught previously, and 24 percent were teaching for the first time but had been doing something other than going to college in the previous year. The remaining 34 percent of "new" teachers were actually former teachers returning to active practice.¹⁴ Further, an increasing number of individuals are becoming teachers as a second career. Within the past year, 55 percent of the candidates admitted into teacher preparation programs at the graduate level and 11 percent at the undergraduate level were entering teaching from career fields other than education.¹⁵

According to the U.S. Census Bureau, there were more than 6 million individuals holding bachelor's degrees in education in 1993 (more are licensed—only about three-fourths of current teachers have a bachelor's degree in education). Thus, not counting 2 million active teachers, at least 4 million people in the U.S. are trained to teach but choose not to.¹⁶

Class-Size Reductions Multiply Demand

Class-size reduction programs may offer significant benefits for student achievement, but those benefits are minimized if unqualified teachers lead classes of even the most beneficial sizes. State policymakers need, as with all policy decisions, to weigh the competing concerns within the local

context. Many state and local class-size reduction programs have created an increased demand for teachers and can create pressure to get teachers into classrooms without strict attention to qualifications. Those efforts may also conflict with state efforts to improve teacher quality by raising teacher preparation and licensure standards. Further, if the federal class-size reduction program is extended through the sixth grade, districts will be under additional pressure to hire even more teachers. Participating school districts would need to hire an additional 200,000 teachers.¹⁷

Regional Differences Not a Zero-Sum Game

In 1998 approximately 42 million students attended public schools in the United States—38 percent in rural areas, 29 percent in central cities, and 33 percent in urban fringe areas.¹⁸ Enrollment in public elementary and secondary schools is expected to surpass 48 million within ten years. For public and private schools, enrollment will exceed 54 million. This number is increasing rapidly due to high birth rates in certain regions of the country, particularly the southwest and the east coast.¹⁹ The growth in numbers of students is occurring so rapidly that these areas cannot fill schools fast enough with qualified teachers, even though there may be a surplus of teachers in other parts of the nation.

Most public school students live in rural and urban areas; unfortunately, they face the greatest shortage of teachers—qualified or unqualified. Urban schools in particular are faced with challenges that many experienced teachers no longer want to face, such as crime, high poverty, and overpopulated classrooms. These teachers seek the sanctity of suburban public schools that offer higher pay, smaller class sizes, and superior facilities. Consequently, urban and rural schools, often those with higher levels of students in poverty, are forced to hire the newest teachers with little or no experience.

Approximately 65 percent of school districts in high-poverty urban areas are forced to hire noncertified teachers or long-term substitutes for their classrooms.²⁰ Many of these teachers are not qualified because they have little or no knowledge of the subjects they teach. According to the U.S. Department of Education, low-income schools face the highest rates of out-of-field teaching—approximately 26 percent in English, 43 percent in math, 60 percent in history, and 65 percent in science.²¹

Rural areas face similar issues largely because they have a small number of prospective teachers within the community, and low salaries and substandard facilities make it difficult to attract and retain teachers from outside the community. Many qualified teachers leave rural schools for superior pay and better health benefits. Compared with other regions, teachers in rural areas lack the educational background of their peers, with only 37 percent having earned a Master's degree,²² compared with the national average of 45 percent for all teachers.²³

Subject Area Variables Create Inequalities

Many school districts lack qualified teachers in specific subject areas—math, science, special education, and English as a second language. There is a severe shortage in the math and science fields because many educators trained in those disciplines are lured into the private sector by jobs offering higher salaries. As a result, school districts are often forced to use teachers certified in other fields to teach courses in shortage areas—referred to as out-of-field teaching. This problem will continue with the increased enrollment of students with limited English proficiency and students with disabilities, two of the subject areas with the greatest shortages of teachers.²⁴

The demand for teachers is not as great in some subject areas, such as elementary education, English, and social studies, or in regions of the country where populations and enrollments are declining. There is a significant mismatch between the specialty areas teacher education students choose and the areas with the greatest need for teachers. Unfortunately, the oversupply that occurs in some areas has not been able to satisfy the high demand in others for a variety of reasons, including education schools that do not encourage students to match specialty areas with demand, inadequate job placement systems, lack of portability of teaching licenses and retirement benefits across state lines, and unwillingness among many teachers to move to other regions or to work in hard-to-staff districts and schools.

According to the National Center for Education Statistics, this problem affects high-poverty urban districts the most. It is estimated that close to half of all secondary math teachers in urban areas do not have a college degree in math. Overall, 77 percent of urban schools face teacher shortages in math, science, and special education.²⁵ This is not just an urban problem. Approximately 85 percent of school districts nationwide report a serious demand for special education teachers, 96 percent for science teachers, 67 percent for math teachers, and 64 percent for bilingual education teachers.²⁶

Hiring Issues and Immobility Create Complex Equations

Potential applicants for teaching positions often are turned off by a number of “bureaucratic” issues. The mismanagement of the hiring process in many districts, coupled with the sheer volume of applicants, makes it harder to match qualified teachers with schools in need. This problem is most common in larger districts that deal with a large quantity of applicants every year. With such a haphazard hiring process, applications are lost or the process is prolonged, and applicants are discouraged and take jobs elsewhere. The process often leaves schools with vacancies they must fill on short notice, and often they must hire long-term substitutes or noncertified teachers with emergency teaching credentials to fill vacancies until a more qualified applicant endures the process. According to the National Commission on Teaching and America’s Future, disorderly screening processes and delayed hiring decisions prevent many districts from attracting the best applicants.²⁷

A number of prospective teachers also are lured away from the public schools to private schools or the private sector by monetary incentives. According to a 1999 national survey by the American Federation of Teachers, the average starting salary in 1998 for new teachers was \$25,735. This is in stark contrast to salary offers made to graduates in other professions that require similar levels of education. The average salary offer for all other college graduates in 1998 was \$35,524, and graduates with degrees in computer sciences, engineering, and mathematics or statistics received average salary offers of more than \$40,000. Significant salary differences do not just occur at the entry level; they persist over the course of a teacher’s career. The average salary for all teachers, new and veteran, in 1998 was \$39,347.²⁸ In 1998 the average salaries for full professors and attorneys exceeded \$70,000. Engineers earned an average salary of more than \$64,000 and programmers/analysts earned an average salary of more than \$63,000.²⁹

Along with lower salaries and the bureaucratic red tape, there are barriers across states and regions that also hinder the hiring process. According to the U.S. Department of Education’s Initiative on Teaching, there is a lack of portability of teacher credentials, pensions, and credited years of experience across states and districts. As a result, teachers are not encouraged to move to schools where their skills and talents are needed.³⁰ Thus, while there may be an oversupply of teachers in one

state and a critical shortage in another, lack of license or pension portability discourages willing teachers in one state from applying for jobs in a state that needs them. Many states have made progress on license portability, signing reciprocity agreements and recognizing national board certification. However, portability continues to be an issue for many teachers and schools.

It All Adds Up to One Complex Problem

Demographic trends in the United States, including increasing student enrollments, increasing minority and limited English-proficient student enrollments, the changing geographic distribution of students, and teacher retirements are creating significant teacher shortages, particularly in certain geographic and subject matter areas. However, additional factors, such as attrition among teacher education graduates and new teachers in their first three to five years of teaching, bureaucratic barriers to interstate hiring, and a poor match between the needs of school districts and the qualifications and specializations of education school graduates, significantly magnify the shortage. When the numbers are totaled—individuals earning teaching credentials; those taking teaching jobs; those reentering the profession; teachers needed to meet rising enrollments; the mismatch in supply and demand in different subject areas and geographic regions; and the effects of retirement, attrition, and class-size reduction efforts—American schools will be short approximately 870,000 teachers during the next ten years.³¹

The revolving door in the teaching profession leaves schools and school districts with constant turnover and inflates the demand for teachers despite the fact that millions are prepared to teach. Too many trained educators choose not to teach or cannot find jobs in the oversupplied subject fields or geographic areas they choose. A comprehensive strategy is needed for recruitment to particular fields or areas; long-term retention; and to address the issues teachers cite as reasons for leaving the profession, including better preparation, pay, advancement opportunities, and ongoing professional support. Otherwise, school districts will not satisfy the demand for the 2.2 million teachers they must hire during the next ten years.

Solving the Equation: Recommended Strategies

The issues surrounding teacher supply and demand have as much to do with retention as recruitment. In certain states, urban districts, and rural areas, and in some subject areas, there are significant shortages of qualified teachers. Enhanced recruitment efforts are necessary for such high-need areas, but these efforts should not focus only on drawing more individuals to the field. Recruitment efforts should specifically address the mismatch between supply and demand and should encourage teachers to specialize in subject areas and seek jobs in geographic regions where there are shortages.

However, in many cases, supply and demand is more a function of long-term retention than initial recruitment. State strategies to address teacher shortages must focus on retaining teachers, particularly new teachers, in their first three to five years. New teachers are more likely to stay in the profession if they are better prepared and well supported on the job. Strategies addressing teacher shortages must be part of a comprehensive strategy for recruiting, preparing, licensing, supporting, and rewarding high-quality teachers in all subject areas and schools. Many states are making concerted efforts to attract and retain qualified teachers. The recommended actions described below include examples of those state efforts.

Assess State Needs

One strategy Governors might consider is assessing statewide supply and demand, examining factors such as the state's sources of teachers, rates of retention and attrition, and numbers of teaching vacancies by district, grade level, and subject area. To address supply and demand issues, state policymakers and school district officials need concrete data about the number of teaching vacancies, unemployed teachers, teacher education graduates, and job placement. Policymakers need information from their own states and from other states as well. The problem's scope may well require recruitment strategies that extend beyond one state's borders.

A few states have started to assess teacher needs and to help districts use the information locally. North Carolina's Excellent Schools Act of 1997 mandated a comprehensive study of teacher and administrator supply and demand to examine predicted trends during the next decade and to provide information about the effect of attrition rates on supply and demand. The state commissioned two studies, reported findings, and created an online calculator for districts to track local supply and demand.³² The online calculator allows districts to assess local supply and demand and to review and revise hiring strategies in response to assessed needs. The reports provide an analysis of student enrollment and teacher and administrator supply and demand in the nation and in North Carolina and the impact of federal, state, and local policies on the numbers. The authors recommended that state policymakers develop a comprehensive strategy to address teacher and administrator recruitment and retention.

Other states also are beginning to assess their teacher needs. As part of Title II of the federal Higher Education Act, the U.S. Department of Education awarded twenty-four state grants to address teacher quality and recruitment issues. Ohio and Oregon are planning to use part of their Title II grants to create new databases or to revise existing databases to quantify teacher supply and demand, retirement, and misassignments, and to develop strategies for addressing shortages and other quality issues.³³

Promote K–16 Collaboration to Match Supply and Demand

Governors also can consider initiatives that promote collaboration among institutions of higher education and elementary and secondary education. Institutions that prepare teachers should be aware of supply and demand issues in different grade levels and subject areas, particularly in the states, districts, and schools where their graduates primarily obtain teaching positions. Institutions should inform their teaching students about the supply and demand issues and help guide their decisions. By doing this, they help students become more employable. They can even help place students in actual jobs. As with other professions, graduates of teacher programs should be prepared for the realities of the job market they plan to enter.

As part of an accountability system for teacher education institutions, Texas awards commendations to teacher education programs that produce "commendable" percentages of teachers in state or regional high-need subject areas, including English as a second language, foreign languages, mathematics, science, special education, and technology applications. A program is commended if 50 percent or more of the program's candidates were certified in at least one state high-need subject area or if 40 percent or more of the program's candidates were certified in at least one regional high-need subject area. Texas offers similar commendations to programs that produce significant percentages of certified

teachers who are African American, Hispanic, or members of other minority groups, such as Asian or Native American.³⁴

Promote K–16 Collaboration to Improve Preparation

Additionally, collaborative efforts or partnerships among institutions that prepare teachers and the elementary and secondary schools that hire teachers provide opportunities to improve teacher preparation, and better preparation programs boost retention rates for new teachers. To effectively prepare new teachers, teacher educators must know current curricula, instructional methods, student demographics, and working conditions in elementary and secondary schools. Teacher education curricula and assessments, as well as state licensing tests, must be aligned with the state academic standards for elementary and secondary students, and teacher educators should prepare teachers to teach to these standards. Not all teacher education graduates take jobs in the state where they are trained. Therefore, teacher preparation institutions also need to know where their graduates take jobs and to prepare them to teach to standards in a general sense.

Partnerships and collaborative efforts also afford teacher educators opportunities to offer new teachers continued support in their first years of teaching, to maintain contact with practitioners, and to spend time in schools. Future teachers need quality clinical experiences in schools and need the support of mentor teachers and program faculty. Teacher education faculty also benefit from classroom experiences that help them stay current with trends in elementary and secondary classrooms.

In 1985 the University of Southern Maine and six nearby rural school districts formed the Southern Maine partnership to facilitate collaboration between university education faculty and local teachers. The partnership has grown to include thirty-three districts, representing 201 schools, 6,700 teachers, and 82,000 students. Its staff has grown from one part-time university faculty member to fifteen full-time faculty members, five full- and part-time professional staff, and two assistants. The partnership provides teachers in rural school districts with networks of colleagues with whom they can share experiences and ideas. The partnership also benefits the university. Faculty members learn from their new relationships with classroom teachers and from experiences in schools and sometimes use feedback from the teachers in their own classrooms. The partnership provides schools and teachers with critical support through:

- information about research-based practices;
- support for groups of teachers called “critical friends groups” that share advice, review classroom techniques, and set goals and standards;
- lectures, seminars, conferences, and retreats;
- experts who visit schools to help with state test preparation;
- regular meetings of superintendents, principals, and teachers with education experts as speakers;
- teams that will review and evaluate a school’s teaching strategies;
- online access to research, classroom methods, and materials; and
- forums to discuss the state’s education reform program.

The partnership focuses on collaboration, networking, and problemsolving, avoiding controversial or politicized issues. Its success in improving student achievement is difficult to measure, but the teachers in the participating school districts believe it is improving their instructional practices and boosting morale.³⁵

The president of the University of Texas-El Paso and the superintendents of three El Paso school districts formed a partnership to improve professional development and teacher preparation. The university provides teachers and administrators in the El Paso schools with focused professional development and assistance in identifying high-quality curricula. In turn, school and district leaders have helped the university redesign its teacher preparation program so that new teachers are prepared to teach to state and local standards.³⁶

Strengthen Teacher Preparation

State policymakers may also consider efforts to improve teacher preparation. Teachers who enter the profession better prepared to teach are more likely to remain in the profession. According to a report by the National Commission on Teaching and America's Future, "states that want to develop a stable, high-quality teaching force can invest their training resources more wisely by emphasizing program models that prepare effective, career teachers."³⁷ Researchers have found that graduates of extended, five-year preparation programs are more satisfied with their programs and are viewed by their colleagues, principals, and mentor teachers as better prepared. Further, graduates of five-year programs are as effective with students as more experienced teachers and are more likely to enter and stay in teaching than their peers from traditional four-year programs.

Researchers also have determined that—after taking into account the costs to states, universities, and school districts for preparation, recruitment, induction, and replacement due to attrition—the cost of preparing a teacher in the more intensive five-year programs is actually less than that of preparing a greater number of teachers in shorter programs who are less likely to stay in the profession and are less successful in the classroom.³⁸

Some of the most successful teacher preparation programs have several factors in common. Those factors include:³⁹

- a common, clear vision of good teaching that is apparent in all coursework and clinical experiences;
- well-defined standards of practice and performance that are used to guide and evaluate courses and clinical work;
- a rigorous core curriculum;
- extensive use of problem-based methods, including case studies, research on teaching issues, performance assessments, and portfolio evaluation;
- intensely supervised, extended clinical experiences; and
- strong relationships with reform-minded local schools.

Many of these factors require reforms in teacher education programs by education faculty and administrators, collaboration among education faculty and faculty in the arts and sciences, and

partnerships with local school districts. Governors and other state policymakers also should consider actions such as accountability and licensing reforms.

Accountability. Accountability measures force institutions of higher education and their teacher education schools to improve or face consequences, such as the loss of accreditation. Since 1997 the Texas State Board for Educator Certification has implemented the performance-based Accountability System for Educator Preparation (ASEP). Under this system, teacher preparation programs are held accountable for the performance of their graduates. The board issues annual accreditation ratings based on the percentage of each class of graduates—all graduates and those in each ethnic or gender subgroup—who pass the state certification tests.

In 1998 the New York State Board of Regents passed regulations that require all public and private institutions of higher education to attain accreditation for their teacher preparation programs by the end of 2004. Institutions can obtain accreditation from a national body or from the state board of regents. The state retains the right to shut down schools of education where fewer than 80 percent of graduates pass one or more required certification tests.

Licensing. If teacher graduates cannot meet licensing requirements, preparation programs will face a choice of losing students or making changes to ensure graduates can earn licenses. Thus, Governors and other state policymakers may want to consider changing state licensing requirements to include more intensive clinical experiences, subject matter preparation, general and subject-specific pedagogical training, and rigorous assessments.

A number of states are turning to performance-based licensing, in which teacher candidates must demonstrate their knowledge and skills in content areas and teaching methods. Many states are cooperating through the Interstate New Teacher Assessment and Support Consortium (INTASC) and the Interstate School Leaders Licensure Consortium (ISLLC) to create model standards and performance-based assessments for beginning teacher and administrator preparation and licensure. By 1998 thirty-three states were participating in the INTASC project, and by 1997 twenty-four states were participating in the ISLLC project.

Streamline Hiring Processes and Facilitate Teacher Mobility

Governors also can make teacher recruiting and hiring processes more efficient and wide-reaching. First, states can establish license reciprocity with other states or grant licenses to out-of-state entrants who have achieved national board certification. This will make it easier for teachers to move to states where jobs are in greater supply and teachers in greater demand. According to a report by the National Commission on Teaching and America's Future, "with more portable licenses, states that currently have shortages can take advantage of the fact that 60,000 newly prepared teachers each year do not find jobs in the states where they are prepared to teach."⁴⁰

The states participating in the INTASC and ISLLC projects are not only developing model standards and assessments, but are also creating common standards and assessments that will facilitate interstate license reciprocity. Forty states have signed an agreement to facilitate license portability by recognizing professional training completed in another state as long as the candidate completed a state-approved preparation program or is state-certified and has "adequate" experience. Further, at least

twenty states now offer license portability or renewal to teachers who earn national board certification.⁴¹

Second, states can streamline hiring procedures and develop online information technologies for recruitment and hiring functions. Many states and districts are using new technologies to assess needs, maintain databases of applicants and jobs, make the application process easily accessible, and interview potential teachers. Some districts have established web-based application processes and satellite links to conduct long-distance interviews with prospective teachers nationwide. For example, in 1997 California policymakers established the California Center for Teaching Careers (CalTeach) to recruit qualified individuals to the teaching profession and alleviate the shortage of credentialed teachers in California.⁴²

The duties of CalTeach include:⁴³

- developing and distributing statewide public services announcements;
- developing, modifying, and distributing effective recruitment publications;
- providing information to prospective teachers on requirements for obtaining teaching credentials;
- providing specific information to prospective teachers on admission and enrollment into conventional and alternative teacher preparation programs;
- creating or expanding a referral database for qualified teachers seeking employment in public schools; and
- developing and conducting outreach activities for high school and college students.

CalTeach partners with the national organization, Recruiting New Teachers, Inc. (RNT), to provide “a one-stop information and referral recruitment center for individuals who may be interested in a teaching career” and to employers seeking to fill vacant teaching positions.⁴⁴

Create Incentives to Teach in Hard-to-Staff Districts and Subject Areas

Governors also might consider incentives to attract nontraditional candidates to the profession or to attract teachers to jobs in high-need geographic and subject areas. For example, Kentucky has a program that provides scholarships to minority and at-risk students who decide to become teachers. Potential teachers are identified through two separate programs—one for minority middle-school students and another for students considered at-risk. In both programs, students who graduate and apply to a teacher education program at a Kentucky state college or university can qualify for a scholarship of up to \$5,000 per year.

Mississippi created a number of incentives for teachers. One program offers low-interest loans to help teachers build homes in rural, low-income school districts. The new teacher must agree to teach in the region for three years or pay the state board of education a percentage of the amount borrowed. The state also offers full scholarships to full- and part-time college students who agree to teach in a part of the state with critical teacher shortages. Teachers already teaching in those areas can receive funding for advanced degrees at participating institutions. The state covers moving expenses when teachers relocate to teach in areas with shortages.

Washington Governor Gary Locke has proposed conditional scholarships of up to \$3,000 annually for 200 outstanding teacher candidates in such shortage areas as math, science, and special education. Recipients must maintain a 3.0 or better grade point average and commit to two years of teaching in a public school for every \$3,000 received.

Provide Supportive Working Environments

Governors also might consider promoting supportive professional environments in schools. A variety of factors contribute to a productive and supportive work environment, including:⁴⁵

- a close-knit community of colleagues;
- time to reflect, plan, and collaborate;
- supportive leadership;
- access to resources and advice;
- ability to influence educational decisions in the school and classroom;
- opportunities for professional advancement and recognition; and
- a manageable workload of students, classes, and additional activities.

Data from a recent survey show that inadequate administrative support, low salaries, student discipline problems, and limited faculty input into school decisionmaking contribute to higher turnover rates.⁴⁶ The converse is also true—teachers with more support from administrators, higher salaries, fewer student discipline problems, and higher levels of autonomy and influence over decisionmaking are more likely to stay, regardless of personal or school characteristics, such as age, gender, subject taught, school poverty, or school location.⁴⁷

Induction and mentoring. An increasingly popular and potentially more effective way policymakers can support teachers is by establishing induction programs that provide new teachers with direct support from a mentor or master teacher. Initial evidence indicates that induction programs help reduce attrition rates among new teachers. For example, pilot induction programs in California reduced teacher attrition rates by two-thirds.⁴⁸ Over five years, the attrition rate among new teachers participating in the induction program was 9 percent, compared with an attrition rate of 37 percent among new teachers in California who did not participate in the state pilot or a local induction program.⁴⁹ In a recent survey, schools with lower attrition rates had a higher proportion of teachers who agreed with the statement that “this school is effective in assisting new teachers” than did schools with higher attrition rates. “Where average agreement with the statement was high, the probability of departure dropped by about 10 percent.”⁵⁰ A number of school districts, including Cincinnati, Columbus, and Toledo, Ohio, and Rochester, New York, also have reduced the attrition rates of beginning teachers by more than two-thirds through effective new teacher induction programs.⁵¹

A study of the California pilot program found that effective induction programs provided trained mentors, time for interaction between a new teacher and a mentor teacher, and in-service training tailored to new teachers’ needs.⁵² The U.S. Department of Education found that strong mentoring and support programs include:⁵³

- one-on-one mentoring between a novice and master teacher and time for interaction between them;
- mentors who are compensated and receive opportunities for professional growth, such as becoming adjunct faculty members at college campuses;
- orientation programs and training workshops for first-year teachers conducted before the school year begins;
- program designs aligned with state standards that include the knowledge and skill sets necessary for novice teachers;
- assistance with daily classroom issues; and
- alignment with licensure and certification requirements.

Other experts have suggested that induction programs are more effective if mentor teachers receive training on how to support, assist, and constructively provide feedback to new teachers. Mentor teachers have indicated that they feel that both the training they receive and their experiences mentoring new teachers have resulted in greater professional growth and satisfaction for themselves and the new teachers.

Professional development. Ongoing professional development is crucial for new and veteran teachers alike to update subject and teaching knowledge and skills and to provide opportunities for professional collaboration. Researchers have found that effective professional development is related to what teachers do in their classrooms, directed by teachers, and focused on developing teachers' content knowledge and content-specific instructional skills.⁵⁴

State policymakers are taking a more active role in providing resources and opportunities for professional development that are useful and relevant to school-specific needs. For example, when Vermont instituted portfolio assessments for students, officials saw an opportunity to provide aligned, relevant professional development opportunities. The resulting initiative provides professional development linked to the state's academic standards and assessments. Teachers are trained in the grading of student portfolios. As a result, teachers statewide are collaborating on topics that help students meet the state's academic standards.⁵⁵ Vermont teachers have reported, and a 1994 study by the RAND Corporation has concurred, that the initiative is resulting in improved teaching.⁵⁶

Other examples include professional development schools, such as the Mayerson Academy in Cincinnati, Ohio, which focuses on effective professional development for new and veteran teachers; and the California Subject Matter Projects, which provide training in content and teaching methods through Saturday workshops, teacher-run leadership academies, newsletters, and a summer institute. Further, state policymakers are providing additional resources for local professional development, with financial support and time for teachers to spend on professional development or collaboration with colleagues.

Salaries. Teachers cite low salaries as one of the more significant reasons for leaving or considering leaving the profession, and college graduates cite low pay as a significant reason for choosing other professions. Low pay, difficult working conditions, and few opportunities for career advancement create significant barriers to attracting top-quality candidates to teaching. The state role in determining teacher salaries varies. Many states have statewide salary schedules that set minimum pay levels but

allow districts to supplement those amounts; but in most states, teacher salaries are determined through local collective bargaining agreements.⁵⁷

A number of states passed legislation to raise teacher salaries across-the-board while others are offering one-time signing bonuses, assistance with home loans, or rewards for improved student performance. Connecticut offers an example of the benefits of raising teacher salaries. In 1986 the state raised salaries and equalized salary levels across districts in the state. As a result, the average teacher salary in Connecticut in 1996–1997 was \$51,181. Since 1986, Connecticut has virtually eliminated teacher shortages in urban and rural communities across the state.⁵⁸

Massachusetts is offering \$20,000 signing bonuses to attract quality teachers. In 2000 the state will award 125 such bonuses, up from 59 in 1999. The bonuses are payable over four years. To be eligible, new teachers must meet at least one of the following criteria: a ranking in the top 10 percent of their graduating class, a minimum 3.5 grade point average in the major or overall, a ranking at the 90th percentile or above on a nationally recognized exam, or a nomination from the dean of the college or university the teacher attended. Last year, 41 percent of the bonus recipients were mid-career professionals entering teaching for the first time.⁵⁹

Collaboration and local autonomy. In addition to induction programs, professional development, and salary improvements, state policymakers are acting to enhance school workplace environments in other ways. First, policymakers are encouraging mission development, planning, and collaboration among school staff. Such efforts often involve school-based plans for improving teaching and learning in which teachers play a central role in making decisions about school programs, curricula, instruction, and even spending.

Second, state policymakers are devolving more authority to the school level by using waivers or exemptions from state regulations. In many cases, the process is still burdensome and complicated. Some states have turned to charter schools in a more dramatic effort to decentralize authority and eliminate burdensome regulations. In either case, the increase in teacher authority may not be significant, according to available research. Thus, the results of these efforts are not yet known.⁶⁰

A Comprehensive Strategy

Governors and state policymakers should consider a comprehensive strategy to recruit and retain qualified, competent teachers for the long term. Those efforts might include:

- conducting assessments of teacher supply and demand and attrition;
- promoting K–16 collaboration to match graduates with jobs in high-demand areas;
- facilitating K–16 partnerships to improve teacher preparation and increase clinical experiences;
- enacting accountability measures and licensing changes to promote improved teacher preparation;
- developing mechanisms to streamline hiring, recruit nationally for new teachers, and facilitate teacher mobility across state lines;
- creating incentives for teachers to take jobs in shortage subjects and geographical areas; and
- providing improved working conditions and ongoing support for new and veteran teachers.

No one measure can solve the demand for teachers as enrollments continue to rise and baby boom teachers begin to retire. However, comprehensive strategies to recruit and retain top-notch undergraduates, graduate students, paraprofessionals, and “career switchers” will make the numbers more manageable while simultaneously improving teacher quality. Ultimately, while schools need a qualified teacher in every classroom, quality matters more than quantity when the bottom line is improved student learning.

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