

CHAPTER 2. THE SUPPLY OF AND DEMAND FOR QUALIFIED TEACHERS FOR CALIFORNIA'S CLASSROOMS

DEMAND

How many teachers will California schools have to hire to serve the state's growing and diverse student population?

- Through the middle of the next decade, California can expect a sustained demand for a large number of teachers—increasing from 28,000 new hires in 1999 to 36,000 in 2007.
- From 1999-2000 through 2007-08, we estimate that approximately 287,000 *new* teachers will need to be hired to adequately serve California's growing student population (for a total teacher workforce of 306,000 in 2007-08).
- The central factors fueling the increased demand for teachers are student enrollment growth, class size reduction, teacher attrition, and baby-boomer retirement.

SUPPLY

How many teachers will the state produce to meet the demand for new teachers?

- California issued approximately 17,000 new credentials in 1997-98.
- However, the number of new credentials does not equal the number of new teachers entering the workforce. It is estimated that 50% to 70% of new credential holders take jobs the following year. This fact is somewhat offset by credentialed teachers reentering the labor pool.
- Taking into account recent key policies, estimates of teacher supply in the year 2007-08 range from a high of approximately 315,000 to a low of approximately 268,000.

SUPPLY AND DEMAND

Will there be enough new teachers to meet the demand in California schools?

- Currently, there are not enough qualified teachers in California classrooms. In 1998-99, more than 28,500 emergency permits were issued to underqualified teachers, a sharp increase from the 15,400 emergency permits issued in 1995-96, before class size reduction.
- California will need 306,000 qualified teachers to staff its classrooms in school year 2007-08.
- We project that the supply of credentialed teachers willing to take these jobs is likely to fall short of this demand, absent aggressive policy intervention.
- Even under the most optimistic scenarios, we do not project the gap between the demand for teachers and the supply of credentialed teachers willing to take jobs to close for 7 years.

Does California produce, attract, and retain a sufficient number of teachers to ensure that every California schoolchild is in a classroom with a qualified teacher? The answer is no. Over the past decade, the state has experienced a severe shortage of fully credentialed teachers willing to accept jobs in the public school system. As we outline in detail in this chapter, as student enrollment has grown, class size reduction has been put in place, and teachers have left the system, increasingly larger numbers of California classrooms have been staffed by underqualified teachers—teachers who have not met the state’s minimum requirements for obtaining a full credential.

Is there any hope that the situation will improve in the future? Certainly, state policy-makers have taken some steps to address the problem, such as the expansion of the Beginning Teacher Support and Assessment program and the expansion of the capacity of the California State University system to prepare teachers. The degree to which these and other policies can close the gap can only be estimated. Such estimates have to be combined with projections of the future decisions of hundreds of thousands of current teachers—whether they will stay in the profession—and potential future teachers—those who currently hold credentials but have chosen to remain out of the teacher workforce, those who are in teacher preparation programs, and those who potentially could enter preparation programs in the future. Past trends—of attrition, retirement, and job taking—can serve as guides to these projections but can yield only estimates.

Consequently, we present our projections as a range of possible outcomes. We conclude that even under the most optimistic scenario—one with historically low attrition, high job-taking rates, and effective implementation of new state policies—the shortage of qualified teachers in California classrooms is likely to continue for at least another 7 years. Under less optimistic scenarios, the gap will continue into the foreseeable future, absent aggressive policy intervention.

In the remainder of this chapter, we build these findings in detail. We begin with an examination of the historical demand for teachers in the state and project that demand into the future, accounting for a series of factors we identify as fueling demand. Next, we examine the historical supply of qualified teachers—that is, fully credentialed teachers willing to take available jobs—and project supply figures into the future as well. In doing so, we consider the impact of recent policy initiatives designed to increase the number of qualified teachers.

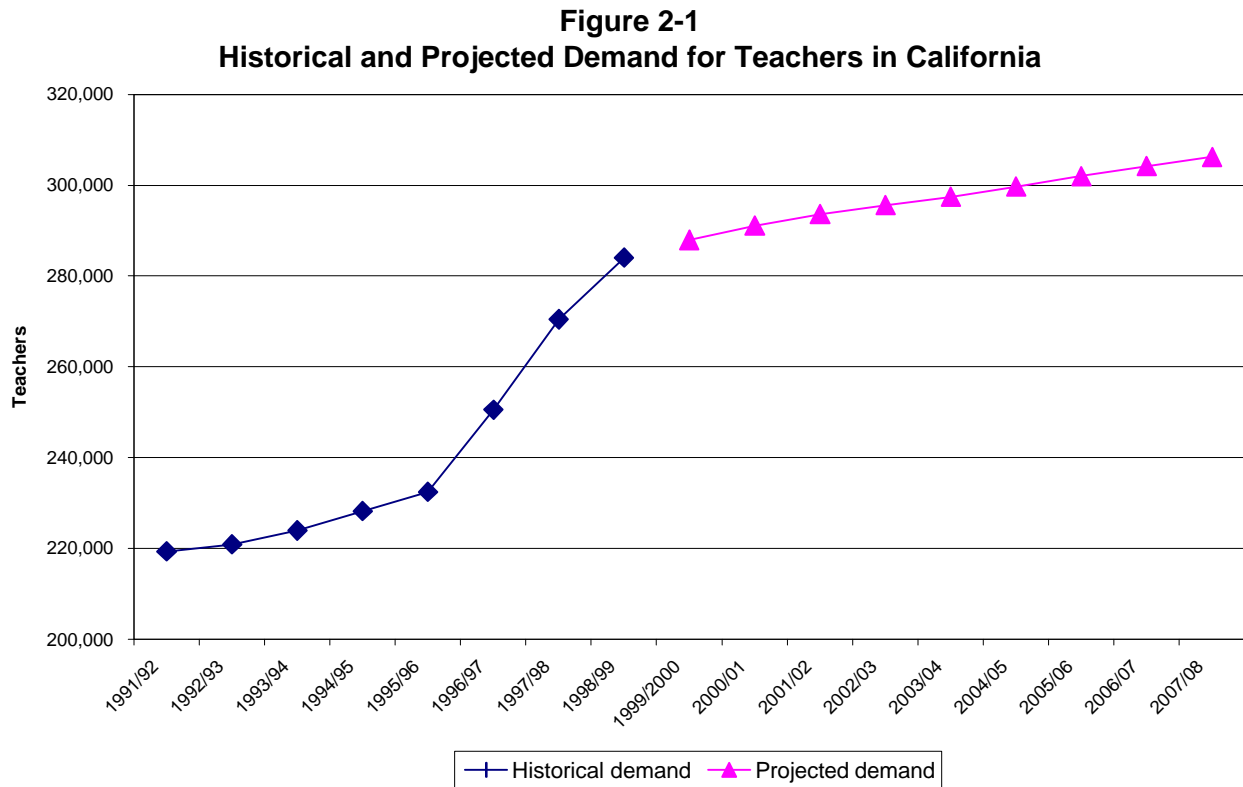
The Demand for Teachers in California’s Classrooms

The demand for teachers in California has grown dramatically during the 1990s and is expected to continue to increase. In the past decade, the size of the teacher workforce has increased nearly 40%, starting with approximately 197,000 teachers in 1988-89.¹ In 1998-99,

there were approximately 284,000 teachers in K-12 classrooms throughout California.² This increasing demand for teachers stems from a combination of increasing enrollment, natural attrition, increasing retirement from the profession, and the policy decision to reduce class sizes in the early elementary grades. Figure 2-1 illustrates both the historical demand for teachers in California and our projection of the future demand.

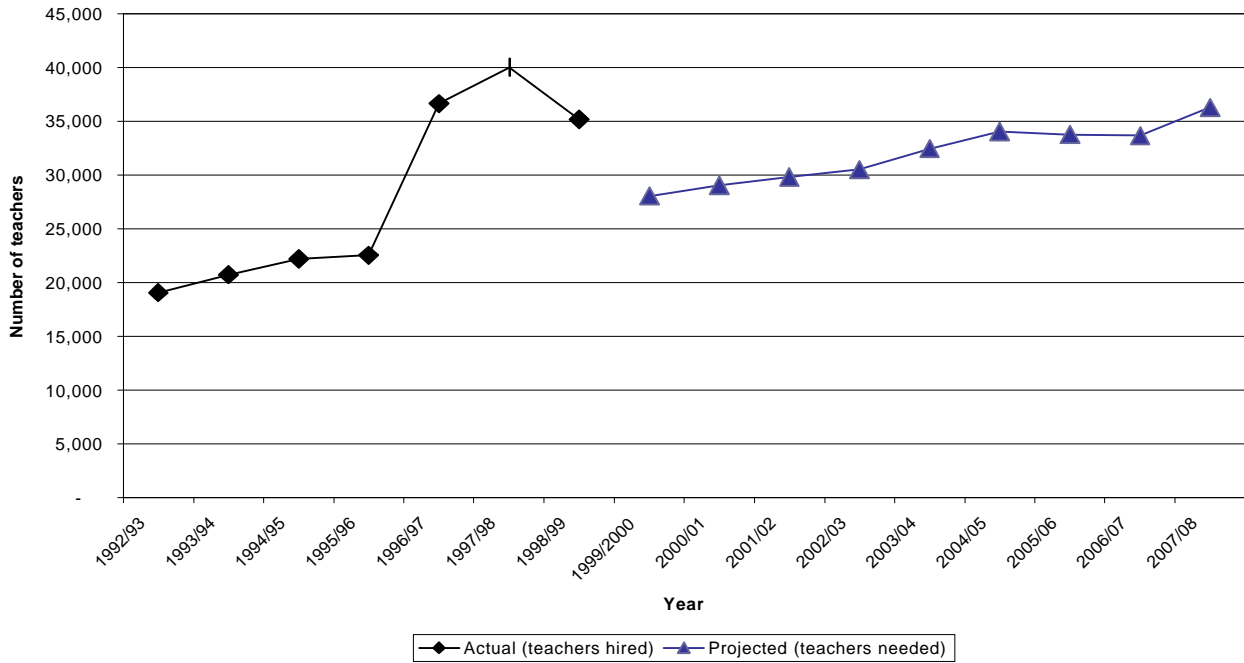
The large increases in the demand for teachers during the 1996-97 and 1997-98 school years, as illustrated in Figure 2-1, are largely reflective of the 1996-97 class size reduction (CSR) legislation. The projected increase in demand reflects the anticipated retirement of the baby boomers, should the average retirement age remain unchanged.

This rising demand means that California can expect to hire a large number of teachers—growing from 28,000 in 1999-2000 to 36,000 in 2007-08, and averaging about 32,000 each year (see Figure 2-2). From 1999 through 2008, we estimate that about 287,000 new teachers must be hired to fill California’s classrooms. These figures do not include the credentialed teachers needed to replace emergency permit holders currently in California classrooms.



Sources: Fetler (1997)³; SRI analysis.

**Figure 2-2
Actual and Projected Teacher Hires, 1992-2007**



Sources: CDE (August 1997); SRI analysis.⁴

Projecting the demand for new teachers requires assumptions about enrollment trends, the stability of teacher-student ratios, and attrition and retirement rates. Thus, these projections represent estimates and should be interpreted as such. It is also important to keep in mind that other contextual factors could change and subsequently affect these projections. For example, if class size reduction were expanded to cover more grade levels, we would expect a sharp increase in the demand for teachers. Conversely, increases in teacher salaries or other policy initiatives might reduce attrition and lower the growing demand. Below, we explore three key factors that are fueling the demand for teachers.

Factors Fueling Demand: Student Enrollment Growth

Increasing numbers of school-age children account for some of the growing demand for teachers. Student enrollment is growing nationally, in part because of “the baby boom echo,” as children of baby boomers continue to fill classrooms.⁵ In California, which has added approximately 4 million new residents since 1990, student enrollment is also affected by overall population growth.⁶ From 1988-89 to 1997-98, student enrollment in California grew by approximately 1.1 million, or 25%.⁷ Looking forward, enrollment in California is projected to grow from 5.8 million K-12 students in 1998-99 to 6.2 million students by 2007-08.⁸ Assuming

the current pupil-teacher ratio, California would need to add about 19,400 new teachers from 1998-99 to 2007-08 to keep pace with student enrollment growth alone.

Factors Fueling Demand: Attrition and Retirement

Much of the predicted increase in future demand is due to the expected departure of many teachers from California's workforce through retirement and attrition. The attrition of practicing teachers—and their retirement, to a lesser extent—are individual economic decisions, based on the salary for teaching vis-à-vis salaries in competing industries, working conditions, teaching assignments available, and location of the job. Because available data on retirement and attrition is limited and because we can only estimate how individuals will choose to act in the future, the demand due to these factors can only be estimated.

Overall, most estimates of annual attrition (the loss of teachers from the profession for reasons other than retirement) cluster around 6%.⁹ This estimate includes the high number of teachers who leave the profession early in their careers.¹⁰ Estimates of annual retirement cluster around 2%—ranging between 1.3% and 2.3%.¹¹ These estimates are generally based on data from the California State Teachers' Retirement System (STRS). We estimate that 1.9% of active STRS members retired in fiscal year 1997-98.¹²

However, many expect the retirement rate to increase among teachers (as it probably will in all professions) in the coming years because of the age of the current workforce. In 1997-98, half of all active STRS members were more than 45 years old, and one out of seven were 55 or older.¹³ Although current data sources do not allow a precise analysis of the probable impact of the baby boomers' retirement, a rudimentary analysis with available data shows that the potential impact is enormous.

Using conservative assumptions based on average 10-year historical STRS membership growth and the average membership retirement age of 60, we estimate that the annual retirement *rate* for K-12 teachers could increase from 2% in 1998-99 to a high of 5.3% by 2007. The increasing rate of retirement would stimulate, from 1999 through 2008, a cumulative demand for 53,000 teachers.¹⁴

Factors Fueling Demand: Class Size Reduction (CSR)

Despite existing shortages of qualified teachers in California classrooms, policy-makers implemented CSR in 1996 to address the problem of large classes and to lower student-teacher ratios in the primary grades. By 1998-99, the third year of CSR implementation, nearly all first- and second-grade students, 80% of kindergartners, and 74% of third-grade students were in

classes of 20 students or fewer.¹⁵ Lowering class sizes in these grades forced many districts in the state to hire additional teachers. Statewide, the CSR initiative created a need for approximately 18,400 new elementary teachers in 1996-97, its first year of implementation—in addition to the approximately 16,000 elementary teachers hired for normal replacement and growth needs.¹⁶ This represented a 115% increase in the demand for new elementary teachers over the previous year.¹⁷ An estimated 7,800 additional teachers had to be hired to fully implement CSR in the second year of implementation, 1997-98.¹⁸ In addition, the 1998 augmentation of the 1989 Morgan-Hart Class Size Reduction Act aimed to reduce class sizes in ninth-grade core subject areas and resulted in increased demand for single-subject high school teachers.

Our projections of teacher demand (Figures 2-1 and 2-2) rely on a stable pupil-teacher ratio that assumes full implementation of CSR in K-3 and in grade 9 in the core subjects. As noted above, we project that California will need to hire 287,000 new teachers through school year 2007-08. Next, we turn to the supply side of the supply and demand equation.

The Supply of Qualified Teachers in California Classrooms

Here we examine historical data on the supply of teachers and present projections of future supply. These projections include estimates of the impacts of recent key policy initiatives meant to increase teacher supply.

We define the supply of teachers as the number of teachers who hold preliminary or professional clear credentials as specified by California's Commission on Teacher Credentialing (CTC) requirements *and* who are willing to take jobs for the salary, assignment, location, and working conditions offered. Our supply count does not include those who are teaching with emergency permits, waivers, or internship credentials from the CTC. As such, the supply includes: (1) the base of veteran credentialed teachers remaining in the workforce at the beginning of each school year, (2) "new" teachers entering the workforce for the first time, and (3) "reentrant" teachers who hold credentials and are returning to the profession after a period of absence.

A larger *supply pool* of individuals who hold teaching credentials but who are not teaching exists. This supply pool consists of those who left the profession, those who completed teacher preparation programs but did not take teaching jobs, and those who hold credentials from another state and are not teaching in California. These individuals, though qualified, choose not to teach for a variety of reasons that presumably include higher salaries in competing industries, working conditions, location, and teaching assignments available. There are no estimates of the size of the

supply pool, but arguably policies directed at economic factors might draw these qualified individuals into teaching.¹⁹

Below, we describe what is known about the participation of veteran teachers, newly credentialed teachers, and reentrants in the workforce.

The Base of Veteran Credentialed Teachers

The base of veteran credentialed teachers at the beginning of a given school year is equal to the number of teachers in the workforce from the previous year minus normal attrition and retirement, and minus teachers with emergency permits, waivers, or internships.

Thus, for example, at the end of the 1997-98 school year, there were approximately 270,000 teachers in California classrooms. We estimate that approximately 22,000 retired or left the profession (approximately 8%) and more than 26,000 held emergency permits, waivers, or internship credentials. Thus, at the beginning of the 1998-99 school year, the base of veteran credentialed teachers remaining in the workforce from 1997-98 was about 222,000.

New Teachers Entering the Profession

Each year, the base of veteran teachers is augmented by “new” credentialed teachers. In 1997-98, the California Commission on Teacher Credentialing issued approximately 17,000 new multiple- and single-subject teaching credentials to individuals recommended by teacher preparation programs. The actual number of newly credentialed teachers who take vacant positions each year, however, is not equivalent to the total number of new credentials. Many recent graduates of California teacher preparation programs do not apply for teaching positions the following year.* The exact number of first-time, in-state credential holders who actually enter the teaching force each year is hard to estimate. Because neither the state nor teacher preparation programs track the employment of these individuals, estimates must be made from limited data collected at the district level. Estimates of how many preparation program graduates actually enter the workforce go as high as 70% based on national data²⁰ and down to around 50% based on California data.²¹

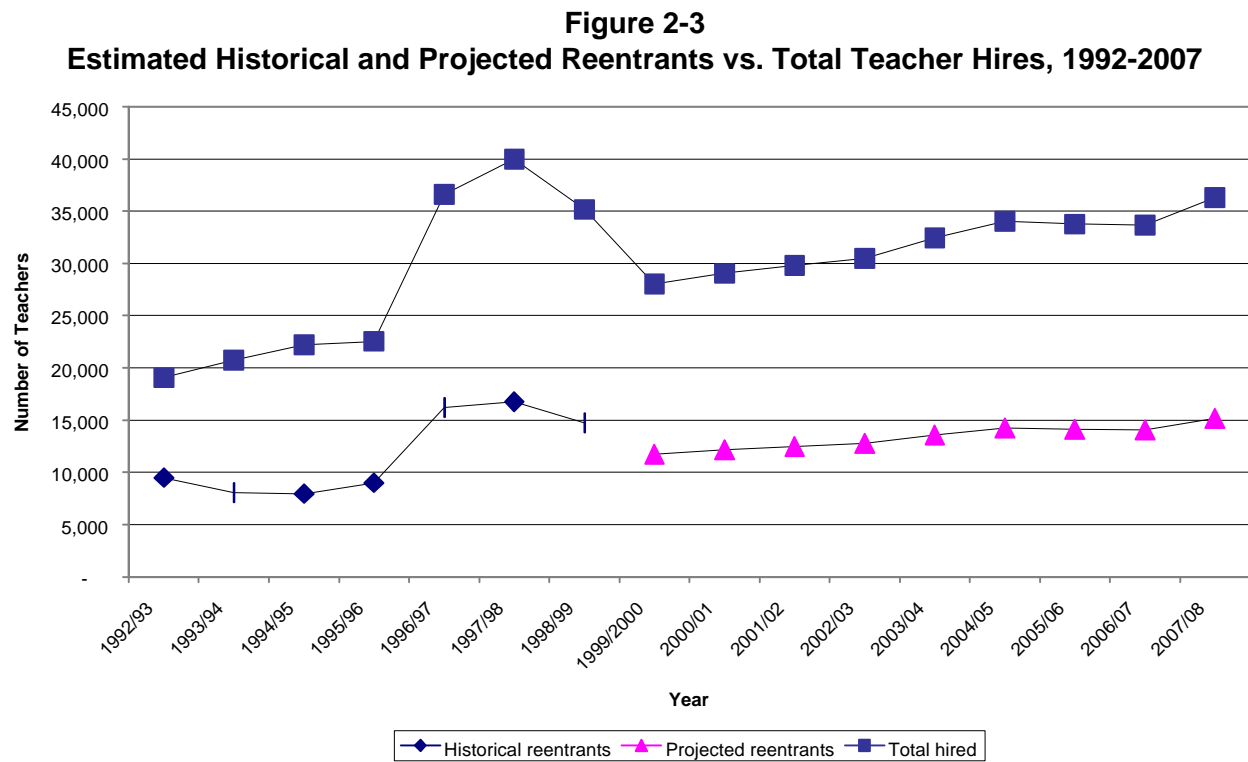
Of the approximately 17,000 individuals who completed a teacher preparation program in 1998-99, only 8,500 would have entered the teaching force in the fall of 1999, assuming a 50%

* Out-of-state teachers who apply for temporary credentials typically have high prospects of employment—it is for that reason that they make their application. Thus, we assume that the vast majority of out-of-state teachers who receive credentials actually go on to teach.

participation rate, and 11,900 using the 70% assumption. In the projections presented here, we estimate the impact of both 50% and 70% participation of newly credentialed teachers.

The Influx of Reentrants to the Teacher Workforce

Many teachers leave the profession early in their careers—whether for personal reasons (to raise a family), professional ones (to pursue other career interests), or economic ones (to pursue more lucrative jobs). These teachers make up a large part of the supply pool of qualified teachers. Some portion of the supply pool reenters the workforce each year, supplementing the number of newly credentialed teachers just graduating from training programs. Following the methodology of other workforce projections,²² we estimate that reentrants comprise just over 40% of new hires. As Figure 2-3 indicates, reentrants remain a critical source of qualified teachers in projecting the size of the teacher workforce through 2007-08.



Source: Fetler (1997); CDE (1997); SRI analysis.

There is little data on the employment decisions of these individuals, making it difficult to determine under what conditions they reenter the workforce. Economic factors such as salary and location may influence the decision, as well as professional considerations such as teaching

assignment and working conditions. The number of reentrants did surge with class size reduction as teaching positions opened up in every community in the state. Other potential policy initiatives, such as increasing teachers' salaries, might attract more of these individuals back into the profession, as well.

Projecting the Supply of Qualified Teachers in California Classrooms

Projecting the size of California's teaching force depends on a series of assumptions that can be based only in part on historical data. Not only do we need to estimate the numbers of veteran and new teachers who remain in the teaching force, we also must project potential impacts of new policies. In the wake of class size reduction and the attendant spike in the demand for classroom teachers, state policy-makers have enacted a series of initiatives to address the supply of qualified teachers. It is impossible to estimate the impacts of many of these initiatives, but we have sufficient information to project the impacts of two promising policy initiatives from the 1998 legislative session: the expansion of the Beginning Teacher Support and Assessment program, designed to reduce attrition, and the expansion of the capacity of the CSU system, intended to produce a greater number of newly credentialed teachers. The projections presented here do not take into account other policies designed to address aspects of supply for which we have no historical data to project impact.

Incremental Impact of BTSA Expansion. The Beginning Teacher Support and Assistance program provides fully credentialed first- and second-year teachers with opportunities to deepen their pedagogical content knowledge and skill with the assistance of support providers—more experienced and expert teachers. SB 2042 (1998) requires that all teachers who receive preliminary credentials participate in a formal induction program to receive their clear credential. The 1999-2000 budget provided \$72 million for BTSA programs, up from \$17.7 million in 1997-98, to support all teachers in their first 2 years of teaching.

Pilot studies of BTSA's precursors, such as the California New Teacher Project (CNTTP), showed higher retention rates among those teachers who volunteered to participate in an induction program than among nonparticipants. Eighty-seven percent of CNTTP teachers returned to teach in the same district for a second year, and 81% for a third year, both much higher than national averages. Even higher percentages remained in the teaching profession, even if they changed districts.²³ The expansion of BTSA to all new teachers is meant to reduce the attrition rate among teachers in their first 5 years of teaching

Because this historical data represents the results of pilot programs, we are uncertain of the degree to which the scaled-up program will have similar results. Consequently, we present high

and low estimates of the future impact of the BTSA legislation on the size of the teacher workforce. High estimates assume that expanded BTSA programs will be almost as successful as they have been in the past, at an 80% 5-year retention rate and a participation rate of 70% of newly credentialed teachers. Under these assumptions, we estimate that improved retention of new teachers produces a cumulative increase of 104,000 teachers from 1999-2000 to 2007-08, so that by the year 2007, almost 27,000 teachers will be in the workforce who otherwise would not be. At a 60% 5-year retention rate and 50% participation of newly credentialed teachers, low estimates assume a lower effectiveness of expanded BTSA programs but recognize improvements over the historical 50% 5-year retention rate of new teachers. The low assumption results in an additional 25,000 teachers over the same period of time, and an incremental increase of almost 6,500 in 2007.

Increasing CSU's Capacity to Prepare Additional Teachers. The California State University system has historically been the state's largest producer of teaching candidates. Throughout the 1990s, as we will explore in Chapter 4 of this document, CSU-recommended new credentials have remained relatively flat while both the absolute number and the percentage of the total credentials produced in independent schools have increased.

In response, the state augmented CSU's funding to increase its production of credentialed candidates. CSU plans to produce a total of 15,000 credentialed graduates per year by 1999-2000, up from 11,736 in 1996-97 and almost 13,900 in 1997-98.²⁴ Because the majority of new credential growth has been among the independents at much higher tuition fees than those CSU charges, we can expect that prospective teachers who otherwise would have enrolled in independent institutions of higher education (IHEs) will fill some percentage of the new CSU positions. Thus, the announced expansion does not realistically represent the net number of new credentials. We use sensitivity analysis to estimate the impact of the new CSU positions under several scenarios—from 100% (i.e., 0% shift from independents) to 50% new positions—and assume that all new teachers participate in the expanded BTSA programs discussed above. Under a moderate assumption of 75% new positions (i.e., 25% shift from independents), the cumulative number of new teachers entering and staying in the workforce through 2007-08 as a result of the CSU expansion policy is 18,500, assuming low BTSA impact and 50% participation of newly credentialed teachers, and 29,000 assuming high BTSA impact and 70% participation.

The Promise of Other State Policies to Affect the Supply of Fully Credentialed Teachers

Other state policies enacted in California in recent years aim at lowering entry barriers to the teaching profession. Without any historical data, however, their impacts are extremely difficult to quantify. They will need to be tracked in the ensuing years to accurately gauge whether the measures are sufficient to meet the remaining gap and to end the need for emergency permits within a reasonable time. Three types of programs appear especially promising in that they may increase the supply of teachers in the next few years: those that support uncredentialed teachers, those that lower barriers for out-of-state teachers, and those that offer financial incentives to current and prospective teachers.

Support for Uncredentialed Teachers. The Intern and Pre-intern programs support practicing teachers who have not yet completed a teacher preparation program and who do not hold a preliminary teaching credential. Both aim to support and retain these individuals in the classroom, as well as get them through a preparation program. Individuals qualify for intern status if they have a baccalaureate degree and have passed the California Basic Education Skills Test (CBEST) and subject matter requirements. While teaching full-time, interns also engage in a planned course of study with expert teachers or IHE faculty. In 1999-2000, the intern program is funded at \$11.0 million to serve 7,300 interns.

Introduced in 1998, the Pre-intern program targets individuals on emergency permits who have not met subject matter requirements and typically have had no previous teaching experience. The program is supposed to help pre-interns meet subject matter requirements, as well as give them basic classroom management strategies and instructional methods. In 1998-99, the CTC issued approximately 250 pre-intern certificates. For 1999-2000, the legislature has earmarked \$11.8 million to serve 6,000 pre-interns.

Lowering Barriers for Out-of-State Teachers. Passed in 1998, AB 1620 will reduce the barriers that teaching candidates credentialed outside of California face in accepting teaching positions in California. The CTC is in the process of evaluating other states' teacher preparation standards and so far has identified nine states with standards that are equivalent to California's. Credentials from institutions in these states will be recognized in California, and the bill will also simplify the process for those from states whose standards are not equivalent to California's. With lower entry barriers, teaching in California may be a more attractive alternative for out-of-state graduates than it previously was.

Financial Incentives. Several recent initiatives aim to increase teacher recruitment and retention with financial incentives, either student aid or salary enhancements. In 1998, the Cal

Grant T Program was initiated, providing \$10 million in awards for prospective teachers enrolled in teacher preparation programs. Funding allows for up to 3,000 awards annually—approximately \$1,600 for CSU students, \$3,600 for UC students, and \$9,000 for students at independent institutions. This program may increase access to teacher preparation programs and increase the pool of credentialed teachers.

The Assumption Program of Loans for Education (APLE) assumes educational loans for students who promise to enter the teaching profession and agree to teach in a subject area with teacher shortages or in schools that serve large populations of students from low-income families. In 1998, the number of APLE warrants was expanded from 400 to 4,500. In addition, the program was expanded to require participants to teach for 4 rather than 3 years in a California public school, a feature aimed at retaining teachers through the first few critical years. In the first year, the program assumes \$2,000 of a teacher's student loans. In years 2 to 4, the program assumes \$3,000 of a teacher's loans, for a total of \$11,000 over 4 years. The APLE program is designed to increase recruitment and retention of new teachers.

A new program initiated in 1999 offers financial incentives to districts to increase their minimum teacher salary to at least \$32,000. The Beginning Teacher Salary Incentive Program provides funds only to increase salaries of teachers who hold a valid teaching credential, and cannot be used to pay teachers on emergency permits or waivers. As with the Cal Grant T and APLE programs, this program is expected to have a positive impact on the number of teachers attracted to and retained in the profession.

Other Policies. Other policies expected to have some marginal impact are: accreditation of out-of-state preparation programs with satellite campuses in California, the California Math Initiative, blended 4-year teacher preparation programs, and CalTeach. In addition, CSU launched a new credential program, CalStateTEACH, in the fall of 1999. This 18-month program will use the Internet, school site mentors, and site-visiting faculty supervisors, and aims to certify up to 1,000 teachers per cohort currently working on emergency permits.

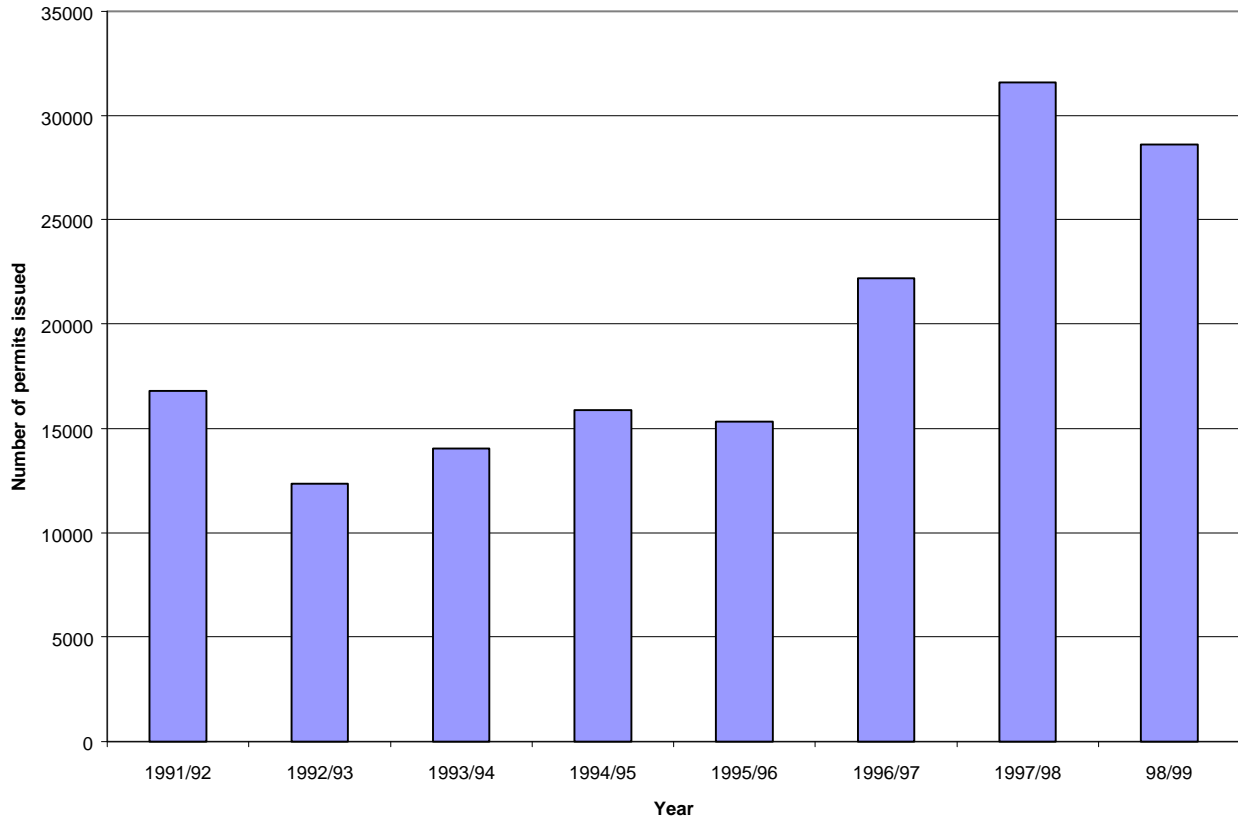
In aggregate, policies designed to help underqualified teachers get credentials and remain in the profession, to lower barriers to teachers from other states, and to increase the financial incentives to enter the profession can be expected to have a positive impact on the supply of qualified teachers willing to take jobs in the state's schools. Unfortunately, because these programs are only beginning to be implemented, their implementation is quite uneven (for example, many districts have not chosen to accept the incentive to raise beginning teacher salaries) and because we have no historical data on which to base estimates of their impact, we do not include their potential effects in the projections presented here.

Putting Supply and Demand Together

Given historical trends and our projections of the future supply of and demand for qualified teachers, will California have a sufficient number of teachers to fill the state's classrooms? Such an analysis has to begin with recognition of the fact that California has long suffered from a shortage of fully credentialed teachers willing to teach in its classrooms. At the beginning of the 1990s, 12,200 classroom teachers held emergency permits, representing about 5.5% of the teacher workforce.* This figure remained steady through the first half of the decade until the implementation of class size reduction, when the number of teachers with emergency permits increased to over 18,000 in 1996-97 and climbed to over 28,500 in 1998-99 (Figure 2-4). Currently, we estimate that about 10% of California classrooms are staffed by teachers holding an emergency permit.

* The minimum requirements for an emergency single- or multiple-subject teaching permit are completion of a bachelor's degree, passage of the California Basic Education Skills Test (CBEST), and verification of subject matter competence at a level established in regulation for the emergency permit. Individuals serving on an emergency permit must enroll in a CTC-approved professional preparation program for the credential and complete a minimum of six semester units of coursework each year to renew the permit. Emergency permits can be renewed for only five consecutive years, after which individuals on emergency permits wishing to remain in teaching must achieve a preliminary or professional clear credential.

**Figure 2-4
Total Emergency Permits, 1991-92 to 1998-99^a**



Source: CTC.²⁵

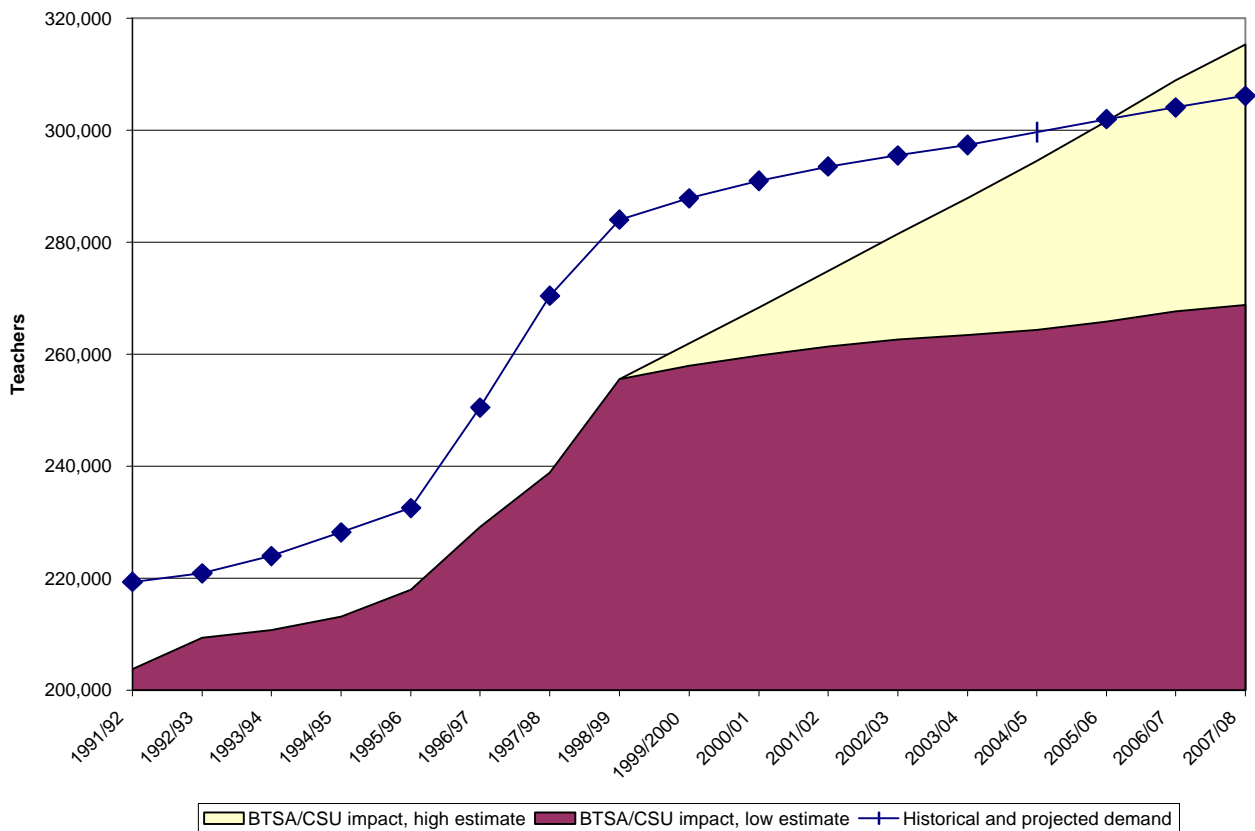
^a Preliminary data for 1998-99. The CTC anticipates that the actual count will be slightly higher.

In addition to emergency permits, there are two other categories of working teachers who have not completed the minimum state requirements for a basic teaching credential and whom we therefore define as underqualified: interns and waiver holders. Interns are individuals who are teaching while concurrently enrolled in a teacher preparation program. We discuss interns further in Chapter 4. Waivers are issued when teacher candidates cannot meet or have not yet met the requirements for an emergency permit. In 1997-98, according to data collected by the California Department of Education, 12% of the credentials held by teachers working in California’s classrooms were emergency permits, intern certificates, or waivers.²⁶ Although complete data is not available for 1998-99, the preliminary estimate of emergency permits issued by the California Commission on Teacher Credentialing is approximately 10% of the current size of the teacher workforce. As in previous years, we would conclude that the total percentage of working teachers who are underqualified—that is, emergency permit holders, waiver holders, and interns

combined—is more than 10%. Future demand for teachers includes the replacement of these individuals with fully credentialed teachers.

Finally in Figure 2-5, we present our estimate of the supply of credentialed teachers participating in the workforce relative to overall demand through the year 2007-08. We project two estimates of the future teacher workforce, based on the assumptions we described in this chapter, combined with high and low estimates of the impact of BTSA and CSU expansion.

**Figure 2-5
Projected Teacher Workforce through 2007-08**



Sources: Fetler (1997); CDE (1998); SRI analysis.

As Figure 2-7 shows, under the most optimistic scenarios of high participation of newly credentialed teachers, BTSA expansion, and CSU expansion, the gap between supply and demand is projected to remain until 2006. Using the low-impact estimates, the gap grows to 37,000 in 2007-08, to be filled by underqualified teachers. These projections incorporate the estimated impact of the retirement of baby boomers. Although the total number of emergency permits

issued may drop or even be eliminated in the medium term, it will by no means be insignificant in the next few years.

The above projections illustrate the difficulty of estimating the supply of California's teaching force and can be refined only with better data tracking. The incompleteness of data on supply factors, in particular, necessitates a range of assumptions that cloud the answer as to whether there will be enough qualified individuals willing to take the jobs offered to replace the existing large numbers of emergency permit holders and to meet new demand.

Given the high stakes involved for students—not being able to graduate from high school if they cannot meet state standards—we believe that the state should not rely on the outside hope that the most optimistic scenario will prevail. Importantly, it seems likely that large numbers of emergency permits will be necessary for a number of years; even under the most optimistic scenario, today's first-graders will be in junior high before the gap is closed. Moreover, because the shortages of teachers willing to take jobs are not evenly distributed across geographic or content areas—as discussed in the following chapter—even optimistic scenarios about the aggregate number of teachers in the state will not necessarily translate into qualified teachers in every classroom.

Endnotes

- ¹ California Department of Education (CDE), Educational Demographics Unit, Research, Evaluation and Technology Division. (1997, August). *Number, percent, and average salary of new teachers in California public schools: 1981-82 through 1996-97 (one year of total educational service)*. Sacramento, CA: Author.
- ² CDE, Educational Demographics Unit. (1999). *Statewide classroom teacher credential and experience report for the year 1998-99*. Sacramento, CA: Author.
- ³ CDE, Educational Demographics Unit. (1997, January). *Count of certificated and classified staff in California public school districts, in the California Basic Educational Data System (CBEDS)*, in Fetler, M. (1997, January). Where have all the teachers gone? *Education Policy Analysis Archives*, 5(2).
- ⁴ CDE. (1997, August). SRI analysis follows the methodology in Fetler (1997, January).
- ⁵ National Center for Education Statistics. (1997). *Projections of education statistics to 2007*. Washington, DC: Author.
- ⁶ State of California, Department of Finance. (1998, December). *Historical state population estimates with components of change and crude rates, July 1, 1941–1998*. Sacramento, CA: Author.
- ⁷ State of California, Department of Finance. (1998). *California public K-12 enrollment projections by ethnicity, 1998 series*. Sacramento, CA: Author.
- ⁸ CDE, Educational Demographics Unit. (1999). *Statewide enrollment in California public schools by ethnic group, 1998-99*. Sacramento, CA: Author.
State of California, Department of Finance. (1998, December).
SRI analysis.
- ⁹ Cohen, D. K., & Das, H. (1996, July). *The need for teachers in California* (Working paper series, Policy Analysis for California Education). Berkeley, CA: University of California at Berkeley.
Fetler (1997, January).
- ¹⁰ Although we do not have hard data on when in their career trajectories teachers actually leave the profession, others have estimated that as many as 50% of all new teachers leave the profession within the first 5 years. See CSU Institute for Education Reform. (1996, September). *A state of emergency ... in a state of emergency teachers*. Sacramento, CA: Author. The SB 1422 Advisory Panel reported that 30% to 50% of teachers leave within the first 3 years. See also Fetler (1997, January).
- ¹¹ Cohen & Das (1996) and Fetler (1997, January).
- ¹² California State Teachers' Retirement System (STRS). (1998). *Population information for fiscal year 1997-1998*. Sacramento, CA: Author.
SRI analysis. STRS data includes community college teachers as well as K-12 teachers.
- ¹³ STRS (1998).
- ¹⁴ The retirement rate as a percentage of the K-12 teaching force should start to decrease beginning in 2007, the point at which the largest cohort of baby boomers, aged 52 in 1999, will pass the average retirement age of 60. The retirement rate will flatten out, signifying the end of the "bulge" when those aged 41 in 1999 reach the average retirement age of 60 in 2018.
- ¹⁵ Bohrnstedt, G. W., & Stecher, B. M. (Eds.). (1999). *Class size reduction in California: Early evaluation findings 1996-98 (CSR Consortium, year 1 evaluation report)*. Palo Alto, CA: American Institutes for Research.

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- CDE. (1999, June). *Summary data as of June 1999: K-3 class size reduction program*. Sacramento, CA: Author.
- ¹⁶ Schwartz, J. (1997, February 12). *Policy brief: Class size reduction*. Sacramento, CA: Legislative Analyst's Office (LAO).
- Bohrnstedt & Stecher (1999).
- ¹⁷ LAO (1997, February 12).
- ¹⁸ LAO (1997, February 12).
- ¹⁹ Darling-Hammond, L. (1999). *Solving the dilemmas of teacher supply, demand, and standards—How we can ensure a competent, caring, and qualified teacher for every child?* Retrieved October 15, 1999, from the World Wide Web: <http://www.tc.columbia.edu/~teachcomm/CONFERENCE-99/SOLVING/>.
- ²⁰ See Gray, L., et al. (1993). *New teachers in the job market. 1991 update*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- Choy, S. P., et al. (1993). *Schools and staffing in the United States: A statistical profile, 1990-91*. Washington, DC: National Center for Education Statistics, U.S. Department of Education.
- ²¹ Fetler (1997, January).
- ²² Fetler (1997, January).
- ²³ CTC & CDE. (1992). *Success for beginning teachers: The California New Teacher Project*. Sacramento, CA: Author.
- ²⁴ CTC. (1998). *Credential profile for fiscal year 1996/97*. Sacramento, CA: Author.
- CTC. (1999). *1997-1998 multiple and single subject teaching credentials*. Sacramento, CA: Author.
- ²⁵ Data for 1991-92 to 1996-97 from CTC. (1998). *Six year report on emergency permits issued during fiscal years 1991 through 6/30/1997*. Sacramento, CA: Author. Data from 1997-98 from CTC. (1999). *Totals of credentials granted fiscal year 1997/98*. Sacramento, CA: Author. Preliminary data for 1998-99 from CTC. (1999). Personal communication. Annual totals include first-time, new type, and renewals for multiple subject, single subject, and special education. Includes both limited assignment and long-term permits. Totals for years 1997-98 and 1998-99 include special education permits issued under both the new and old regulations. Because of a change in the CTC's reporting policy, totals from 1991-92 to 1996-97 are "workload numbers," and indicate the number of permits processed by the CTC. Totals from 1997-98 and on indicate the number of permits actually issued by the CTC. The CTC estimates that workload numbers are within 1%-5% of the total number actually issued.
- ²⁶ CDE, Educational Demographics Unit. (1999). School-level teacher certification data compiled by special request. SRI analysis. Does not include data from adult, vocational, or other alternative schools.