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Legislating Equity: The Distribution of Emergency Permit Teachers in California

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Abstract

There is a significant negative relationship between the percentage of teachers on emergency permits and student achievement at the school level in California schools, after controlling for other student and school characteristics. Generally, the more emergency permit teachers there are in a school, the lower the school's achievement. This phenomenon is examined in the context of other contributors to student achievement such as socio-economic status and school size. The effects of teacher distribution and school selection as contributing factors are considered. In addition, policy and legislative initiatives related to emergency permit teachers that have been recently debated in California will be discussed.

Finally, a set of initiatives is proposed that attempt to decrease the need for emergency permit teachers and ensure that those that must be hired due to shortage conditions have the support they need to become credentialed teachers.

Introduction

Class size reduction, teacher retirement and attrition, and a burgeoning school-age population have all played roles in recent severe shortages of qualified K-12 teachers throughout California (EdSource, 2001). One of the consequences of shortages of qualified personnel is that large numbers of teachers have been hired on emergency permits. In the 2000-01, 34% of all first year teachers in California were emergency permit (EP) teachers, and 10% of *all* California teachers held emergency permits (Note 1). As will be documented in this paper, EP teachers tend to be concentrated in schools with low standardized test scores, high percentages of minority students and English learners, and high percentages of students with free or reduced-price lunch status.

Because of the correlation between high percentages of EP teachers in schools and low student test scores on standardized assessments such as the SAT-9, California legislators proposed several pieces of legislation in 2001 designed to limit the number of EP teachers in schools and districts. The proposed bills varied from an outright cap on the percentage of EP teachers in a district to complex formulas for determining the “teacher quality” in a given school and district accompanied by a plan to improve the quality of the teaching force. All of the proposals were designed to decrease the number of EP teachers employed by districts, and/or redistribute EP teachers where they are concentrated in low-performing schools.

In this paper, I will 1) examine the current distribution of emergency permit (EP) teachers; 2) discuss the association between EP teachers and low test scores; 3) consider current legislative solutions to the EP teacher “problem” in California; 4) discuss how the policy system can influence teacher distribution; 5) discuss the preparation available to teachers who are currently entering teaching on emergency permits

Teacher Credentials and Quality

Emergency permit teachers. California has been hard-pressed in recent years to find enough fully credentialed teachers to fill its classrooms. Shortages of qualified teachers are not spread across all schools and districts equally, and some schools and districts suffer more severely from hiring difficulties than others. Urban districts in particular have had difficulty recruiting sufficient numbers of qualified teachers. The problem of recruiting teachers to work in urban schools is not confined to California, and urban areas in many states have faced similar shortages (Fideler, Foster, & Schwartz, 2000). Urban schools frequently hire EP teachers to fill their staffing needs after exhausting other teacher hiring mechanisms (Note 2).

Teacher quality. Since legislation passed in 1990 making it possible for teachers to begin K-12 teaching careers without full credentials, there has been ongoing concern about the quality of EP teachers. Studies in California have suggested that the students most in need of qualified, highly trained teachers are least likely to get them (Center for the Future of Teaching and Learning, 2001; Public Policy Institute of California, 2000;

Shields et al., 2001). The students generally considered most in need of highly qualified teachers are those attending schools where student standardized test scores are low and where there are large percentages of low-income students and/or minority students and English learners.

Teacher quality and student achievement. As shown in Figure 1 below the percentage of EP Teachers increases monotonically as student achievement (using school API scores (Note 3)) decreases. Thus, the top-performing schools in the state (Decile 10), have about 5% EP teachers on average, though many schools in this decile have *no* EP teachers. Conversely, schools in the lowest performing schools in the state (Decile 1) have an average of about 23% EP teachers, though there are some schools with more than half the faculty teaching on emergency permits. It should be emphasized that the high correlation between having many EP teachers and having low test scores demonstrates an *association*, but does not necessarily suggest a *causal* relationship.

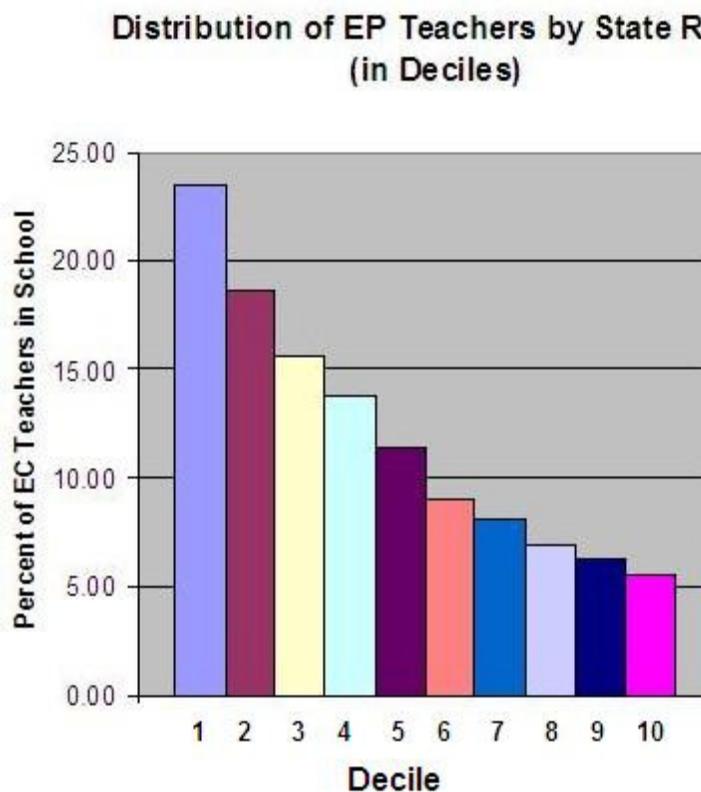


Figure 1. Relationship of CAP Performance Index and Percentage of EP Teachers

Data Source: California Department of Education (see Appendix A)

Note: Decile 1 is *lowest*-performing, Decile 10 is *highest*-performing

Figure 1 demonstrates the relationship between percentages of EP teachers and decile rankings on California's Academic Performance Index. Data for EP teachers and state rankings are based on school year 1999-2000.

Research has shown that teaching has an important and substantial impact on student achievement. A study using Texas data matching student gain scores to teachers demonstrated that individual teachers have a much stronger influence on student achievement than previously suspected (Hanushek, 1998). But does teacher credentialing

matter? Many studies suggest that uncredentialed teachers are less effective in the classroom than teachers with credentials as measured by student achievement. (Darling-Hammond, 1994; Darling-Hammond, 2000; Fetler, 1999; Fuller, 2000; Goldhaber & Brewer, 2000; Hawk, Coble, & Swanson, 1985). While it is difficult to prove a *causal* connection between EP teachers and poor student achievement, (Note 4) there is strong and substantial evidence of a correlation between these variables, even after other potential sources of influence, such as socioeconomic status of students and other school resources, are taken into account.

Some researchers contend that there is insufficient empirical evidence to claim that having teacher certification results in better teaching and higher student achievement (Ballou & Podgursky, 1999; Goldhaber & Brewer, 1996, 2000, 2001; Hanushek, 1994). The lack of consensus among education researchers is an indication of how difficult it is for observational research to establish connections between particular teacher qualities and qualifications (such as credentials) and particular student outcomes (such as test scores).

Even if it is possible to connect student achievement with particular teachers, it is more difficult to establish which particular practices, strategies, skills, knowledge, communication ability, etc. contributed to the students' achievement, whether good or bad. Further, the school conditions and context in which teachers work may have a substantial impact on their ability to teach effectively. And since many EP teachers work in schools where facilities are inadequate, teaching resources are scarce, and teaching conditions are difficult, it is hard to determine what percentage of a students' test scores are related to teacher credentialing and what percentage are related to extraneous factors in the classroom or school.

Researchers who are concerned about the quality of EP teachers realize that more research needs to be done in this area. The question to be considered in looking closely at EP teachers' impact on student achievement is “*How* does certification matter?” As Darling-Hammond has pointed out, it is crucial to determine what certification actually means in terms of different qualities and performance among teachers (Darling-Hammond, Berry, & Thoreson, 2001).

Some states (Tennessee, for example) have developed or are developing student-level record-keeping systems that should allow researchers to better examine the effects of teachers on students (Anderson, 1998). Texas has also made matched student and teacher data available to interested researchers. With such data, student achievement information can then be further examined with reference to the certification of the teachers. Unfortunately, California is years away from implementing a student-level tracking system that will allow individual student achievement to be tracked by teacher and school. Thus, further exploration of the association between credentials and student achievement is still a long way off for California.

Teacher qualifications

States vary widely in the qualifications they demand of teachers. California relies heavily on a single test, the CBEST (California Basic Education Skills Test) as the initial gateway into teaching,. Credentialed teachers must also pass subject matter tests or complete a subject matter approved program, a test of reading knowledge, and complete

other teacher education requirements, but these requirements do not pertain to the nearly 40,000 teachers on emergency permits or waivers. California places less importance on graduation from an approved preparation program or having a teacher credential than almost any other state, ranking second-to-last in the nation (just ahead of Florida) in the percentage of districts demanding these qualifications (46.4%) (National Center for Education Statistics, 2002). California is moving towards performance evaluation and induction as requirements for teacher credentialing, but little evidence exists about how induction benefits new teachers, including those without preservice preparation, or how performance evaluation helps ensure better teaching.

There are many factors that contribute to student achievement that cannot be measured by whether or not teachers have clear credentials. Consider that there are many schools in California that are “underperforming” (Note 5) even though they do not have high percentages of EP teachers. An analysis of API scores and percentages of EP teachers in schools reveals that 15% of California schools that were “underperforming” in 1999-00 had below the median number of EP teachers. There were more than 200 schools that scored in the lowest two deciles of the API (considered seriously underperforming) yet had fewer than 8% EP teachers. And there were 60 schools in the lowest two deciles with 1% or fewer EP teachers. These findings illustrate the importance of considering teacher characteristics and qualifications *besides* teaching credentials that may contribute to student achievement.

Teacher education and experience

California's EP teachers have generally completed a BA or BS degree and passed the CBEST (California Basic Education Skills Test), but have not completed teacher preparation coursework or passed the required content-area tests for teachers in California. While some EP teachers are transfers from out-of-state who teach on an emergency permit while completing California requirements, most EP teachers are novices who have had no teacher training and who have never taught in a K-12 public school. Many are recruited from teacher education programs before they have finished their coursework, a practice which was rampant in California after class size reductions in the 1996-97 school year and growth in the student population in California resulted in some districts desperately scrambling for teachers.

EP teachers not only lack specific teacher preparation coursework, they are also less likely to hold higher degrees such as masters' degrees (Note 6). The evidence about whether teachers' overall education levels are correlated with student test scores is mixed. For example, while some studies on teachers' education levels have shown that having a master's degree has little effect student achievement (Ferguson & Ladd, 1996; Monk, 1994; Wenglinsky, 2002), other studies have found small effects of teachers' education levels on student achievement (Ferguson, 1991; Public Policy Institute of California, 2000). Teaching experience also has been found to have variable effects on student achievement. Some studies find little effect (Monk, 1994; Wenglinsky, 2002), while others suggest that experience has a small overall effect on student achievement (Ferguson & Ladd, 1996; Sutton & Soderstrom, 1999). Other researchers have found that lack of teaching experience appears to have a negative impact in the first few years of teaching (Betts, Rueben, & Danenberg, 2000), but that there is not a clear linear relationship between teaching experience and student achievement (Hanushek, 1998). Thus, while teaching experience and higher levels of education are valuable to schools

and classrooms for many reasons (Note 7), the evidence about how these characteristics impact student performance is inconsistent.

Subject-specific training may also be important to student test scores. Several studies have found that having subject-specific training has a significant impact on secondary math and science achievement (Fuller, 2000; Goldhaber & Brewer, 1996; Monk, 1994; Wenglinsky, 2002). Thus, ensuring that the teachers hired have an appropriate major or minor for the subject they are teaching may be at least as important to student test scores as previous teaching experience or advanced degrees. This is an important consideration in designing a plan for increasing student achievement through higher quality teaching.

Pedagogical coursework has also been found to be associated with higher student achievement. Wenglinsky used multilevel structural equation modeling on NAEP data and found that some teacher inputs are positively correlated with student achievement (Wenglinsky, 2002). He found that particular professional development topics (higher-order thinking skills and methods of teaching diverse learners) were positively related to student achievement, as were specific classroom practices (hands-on learning and employing higher-order thinking skills). This study could be construed as evidence that at least some pedagogical training matters, though it is not clear whether teacher preparation programs or professional development are better delivery systems for this training (Wenglinsky's measure included both college coursework and in-service training). Similarly, Monk found that pedagogical training in subject matter methods was positively correlated with student achievement in math and science, sometimes even more strongly than subject matter knowledge (Monk, 1994).

Ethnicity of California's EP teachers

As shown in Table 1, EP teachers in California are considerably more likely to be from a minority group than are fully credentialed teachers. They are more than twice as likely to be Hispanic or Latino (26.1% vs. 10.7%), more than twice as likely to be African American (10.5% vs. 4.8%), and more likely to be Asian (4.4% vs. 3.9%), Pacific Islander (.3% vs. .2%), and Filipino (1.4% vs. .9%). EP teachers are slightly less likely to be American Indian (.6% vs. .7%), and considerably less likely to be white (55% vs. 77.9%).

Table 1		
Characteristics of California EP vs. Credentialed Teachers		
	EP Teachers	Credentialed Teachers
% Doctorate	.9	1.7
% Master's + 30 or more hours	4.7	20.1
% Master's degree	7.9	17.5
% Bachelor's + 30 or more hours	27.2	46.0
% Bachelor's degree only	58.4	13.7

% Less than Bachelor's degree	.7	.6
Years of service in district	2.46	11.72
Years of teaching	3.25	14.70
% Male	34.6	28.1
% Female	65.3	71.7
% American Indian/Alaska Native	.6	.7
% Asian	4.4	3.9
% Pacific Islander	.3	.2
% Filipino	1.4	.9
% Hispanic or Latino	26.1	10.7
% African American, Not Hispanic	10.5	4.8
% White, Not Hispanic	55.0	77.9
% Multiple Race or No Response	1.6	.9
% Authorized to teach English	8.1	13.2
% Authorized to teach Life Sciences	4.7	4.8
% Authorized to teach Mathematics	6.9	6.2
% Authorized to teach Physical Science	3.7	3.3
% Authorized to teach Special Education	15.7	12.8
% Authorized Reading Specialist	.5	2.2
% Authorized Bilingual Teaching	4.3	10.1

Data Source: California Department of Education (see Appendix A)

The ethnic composition of California's schools is becoming increasingly more minority and less white. Thus, the greater number of minority teachers entering the profession through alternative pathways than through traditional programs may be beneficial to California in terms of moving towards a teaching force that is more representative of the students being taught. This is an important consideration in planning ways to decrease the numbers of emergency permits while increasing diversity among the teaching force. Further, it is interesting to note that, unlike white teachers, African-American and Hispanic teachers are less likely to transfer *away* from schools with high percentages of minority students and more likely to transfer *into* schools with even higher percentages of students of the same ethnic backgrounds as themselves, regardless of the students' poverty or achievement (Note 8) (Hanushek, Kain, & Rivkin, 2001). It could be argued that recruiting more minority teachers into the teaching force could result in the creation of more stable teaching staffs at schools with high percentages of African-American or Hispanic students.

Teacher Distribution

Grade levels taught by EP teachers. EP teachers are most likely to be hired by a middle school or junior high. One reason for this is that teachers are most likely to transfer away from, rather than into a middle school (Chester, Offenber, & Xu, 2001). These vacancies are then disproportionately filled with either new, recently credentialed teachers, or with teachers holding emergency permits. Second to middle schools, EP teachers are most likely to work in high schools.

The distribution of teachers nationally.

Data from the National Center for Education Statistics provides some insight into patterns of hiring by school characteristics (NCES, 1996). The data shows that newly hired teachers in urban schools are more likely to be beginning teachers, and newly hired teachers in urban fringe/large towns (i.e., the suburbs), are more likely to be transfers. Even more striking is the breakdown of hiring patterns by student socioeconomic status. The data shows that newly hired teachers in high poverty central city schools are far more likely to be beginning teachers than transfers. In addition, newly hired teachers at schools with 20% or more minority students are considerably more likely to be beginning teachers than transfers (Table 2).

National Distribution of Newly Hired Teachers (NCES Data)		
School and Student Characteristics	Beginning Teachers	Transfers
Hired in Central City	43.2%	27.7%
Hired in Urban Fringe/Large Town	39.6%	34.2%
Hired in Central City school with 41-100% free/reduced price lunch students	45.8%	25.6%
Hired in Urban Fringe/Large Town with 0-5% free/reduced price lunch students	36.2%	42.3%
Hired in Urban Fringe/Large Town with 41-100% free/reduced price lunch students	52.2%	25.7%
Hired in Rural/Small Town with 41-100% free/reduced price lunch students	56.0	28.5%
Hired in schools with less than 20% minority students	42.8%	35.7%
Hired in schools with 20% or more minority students	46.2%	29.0%

Source: NCES (1996) Sources of Supply of Newly Hired Teachers

This national data can be construed as confirmation of what district level researchers are finding about teacher transfers, i.e., that they are transferring *away* from high-poverty, high-minority schools into schools with lower levels of poverty and fewer minority students (Chester et al., 2001). Research done at the state level in New York reveals a

similar trend, with teachers moving away from schools with mostly high poverty, low-achieving students and into schools with fewer minorities, less poverty, and better achievement (Lankford, Loeb, & Wyckoff, 2001). Some of this effect appears to be due to the fact working conditions and salaries are frequently also lower in these schools. In California, recent analyses suggest that these factors matter even more than student characteristics in predicting high levels of teacher turnover (Loeb, Darling-Hammond, & Luczak, 2002).

The distribution of EP teachers across the state of California

The statewide average of EP teachers per school was 11.5% (Note 9) in 1999-2000. But in urban schools, the average percentage of EP teachers climbed to 14.6% for the same time period, compared to less than 7% in small towns and rural areas. Further details are shown in Table 3. This provides clear evidence that more EP teachers are finding employment in urban school districts, which are likely to be lower in student achievement and socio-economic status and higher in the percentage of minority students and English language learners. Table 4 divides the percentage of EP teachers at schools into two halves at the median. This table confirms that schools with higher percentages of EP teachers are also likely to have nearly twice the percentages of African American and Hispanic students, and half the percentage of white students. Similarly, much higher percentages of EP teachers are found in schools with low income students. And in schools with higher percentages of EP teachers, there are nearly twice as many English language learners.

Table 3		
Distribution of California EP Teachers by Population		
Population Status	Mean Percentage of EP Teachers	N (schools)
Large City (pop > 250K)	14.61	1427
Mid-Size City (pop < 250K)	9.01	973
Urban Fringe of Large City	11.81	3210
Urban Fringe of Mid-Size City	9.47	425
Large Town (pop > 25K)	10.18	33
Small Town (pop < 25K but >2500)	6.25	179
Rural (pop < 2500)	6.94	217

Data Source: California Department of Education (see Appendix A)

Table 4						
California Student Characteristics by EP Teachers						
Emergency permit teachers above and below median	2000 API Score	% African American	% Hispanic	% White	% Low SES	% English Language Learners

0-8% EP teachers (below median)	721.07	5.90	26.26	53.61	37.13	15.48
9-85% EP teachers (above median)	607.09	10.73	50.22	26.37	58.94	30.24
Total	664.24	8.31	38.21	40.03	48.00	22.84

Data Source: California Department of Education (see Appendix A)

EP teachers are more likely to find placements in schools that are low-performing, which are more likely to be found in urban areas. Table 5 shows a crosstabulation of 2000 API scores divided into deciles and the population status for the schools. The table demonstrates that in large cities, schools are far more likely to appear in the lowest deciles of the API than in the highest. In the urban fringe (i.e., suburbs) of large cities, more schools are found in the high end of the API distribution.

Table 5				
<i>California API Scores in Deciles by Population**</i>				
API Scores by Deciles	Large City (pop > 250K)	Mid-Size City (pop < 250K)	Urban Fringe of Large City (Suburbs)	Urban Fringe of Mid-Size City
1 st Decile: 346-493	314 (146.3)*	71 (99.9)*	215 (329.2)*	44 (43.6)*
2 nd Decile: 494-542	202 (139.0)*	107 (94.9)*	251 (312.9)*	45 (41.4)*
3 rd Decile: 543-589	158 (143)*	115 (97.6)*	290 (321.8)*	41 (42.6)*
4 th Decile: 590-628	132 (143.0)*	124 (97.6)*	299 (321.8)*	54 (42.6)*
5 th Decile: 629-665	106 (143.9)*	123 (98.2)*	317 (323.8)*	46 (42.9)*
6 th Decile: 666-703	104 (141.0)*	100 (96.3)*	332 (317.3)*	45 (42.0)*
7 th Decile: 704-741	99 (144.3)*	94 (98.5)*	341 (324.8)*	46 (43.0)*
8 th Decile: 742-785	96 (141.5)*	92 (96.6)*	335 (318.3)*	55 (42.1)*

9 th Decile: 786-836	115 (144.6)*	68 (98.7)*	395 (325.3)*	37 (43.1)*
10 th Decile: 837-969	101 (140.4)*	80 (95.8)*	436 (315.8)*	12 (41.8)*

*First number is *observed* value; number in parentheses is *expected* value.

**Large and small towns and rural areas excluded due to relatively small counts.

Data Source: California Department of Education (see Appendix A)

The percentage of EP teachers is correlated with student, teacher, and school characteristics as well, as shown in Table 6. The Pearson correlation between the percentage of EP teachers in a school and the percentage of students on free or reduced price lunch is .439, and the correlation between the percentage of EP teachers in a school and the percentage of Hispanic students is .493. Both correlations are significant at the .01 level (one-tailed). These correlations suggest that Hispanic students and low-income students are more likely to be taught by EP teachers than students from other ethnic groups and students from higher-income families.

Table 6	
California EP Teachers Correlated with Selected Student, Teacher, and School Characteristics	
	% EP Teachers
% African-American students	.243**
% Asian students	-.094**
% Hispanic students	.493**
% Students on free/reduced price lunch	.439**
% Parents not high school graduates	.378**
% Parents that attended graduate school	-.281**
% 1 st year teachers	.401**
School Size	.148**

**Correlation is significant at the .01 level (1-tailed)

Data Source: California Department of Education (see Appendix A)

The distribution of EP teachers within districts

Besides the substantial variation in the distribution of EP teachers across the state, variation is also found within districts. A district may have vast differences in

percentages of EP teachers found in particular schools. For example, the distribution of EP teachers in Visalia Unified School District's elementary schools ranges from zero to 20%, with a mean of 6.56% (Note 10).

In many cases, the percentages of EP teachers are high throughout the entire district. For instance, Buena Vista Elementary District, Columbine Elementary District, Ravenswood City Elementary District, and Compton Unified School District—all districts serving predominantly minority students—had 1999-2000 averages of 50% or more EP teachers for the district. That year, Compton Unified had the dubious honor of having the highest percentage of EP teachers in California, with an average of 56.29% EP teachers district-wide, and a high of 85% EP teachers in one school! However, as Table 7 shows, there are a far greater number of districts with *fewer* than 10% EP teachers than districts with *more* than 10% EP teachers. New Haven Unified School District, well known for its emphasis on teacher quality and aggressive recruitment of the best teachers (Note 11) had the distinction in 1999-2000 of having the smallest percentage of EP teachers in the state. However, other districts, such as San Diego Unified, have recently changed their hiring policies to eliminate or curtail the numbers of EP teachers hired. San Diego Unified will no longer hire teachers on emergency permits.

Table 7	
Distribution of EP Teachers by District in California	
Number of Districts	% EP Teachers
4	50% or more
18	30-40%
71	20-30%
188	10-20%
387	Fewer than 10%

Data Source: California Department of Education (see Appendix A)

Redesignation of EP teachers as Pre-Interns.

It is interesting to note that a change in credentialing designations which recently occurred in California has led to the *appearance* of a decrease in EP teachers. The change is the addition of a new category called “pre-intern,” which is the next step up from emergency permit on the credentialing ladder. In order to qualify for this designation, teachers must have met the EP requirements and they must have enrolled in a teacher preparation program. By encouraging or forcing EP teachers to immediately enroll in teacher preparation programs, districts can seem to have fewer EP teachers, while in fact they still have about the same number of underqualified teachers.

Variables Correlating with Student Achievement

Multiple regression results.

To examine variables that impact student achievement, a multiple regression was performed using the 1999-2000 API data (Note 12). Data for 6,387 California schools was used for the regression. The dependent variable used was the school-wide API score. The coefficients are shown in Table 8. The regression demonstrated that factors that are significantly *negatively* correlated with API scores (in order of standardized coefficient beta size) include the percentage of students qualified for free/reduced price lunch, the percentage of Hispanic students, the percentage of parents without a high school diploma, school size, the percentage of African-American students, the percentage of emergency permit teachers, and the percentage of first-year teachers. The factors that were significantly *positively* correlated with API scores were the percentage of parents who had attended graduate school and the percentage of Asian students. A production function for this regression yields:

$$\begin{aligned}
 Z_{\text{Predicted API score}} = & \mathbf{-0.349} Z_{\% \text{ Free lunch}} \mathbf{-0.198} Z_{\% \text{ Hispanic students}} \\
 & \mathbf{-0.173} Z_{\% \text{ Parents with no HS diploma}} \mathbf{-0.155} Z_{\text{School size}} \mathbf{-0.055} Z_{\% \text{ Emergency permit}} \\
 & \mathbf{-0.031} Z_{\% \text{ 1st year teachers}} \mathbf{+0.199} Z_{\% \text{ parents completed grad school}} \mathbf{+0.076} Z_{\% \text{ Asian students}}
 \end{aligned}$$

The R of .905 and the adjusted R² of .819 suggests that most of the variation in test scores *at the school level* is explained by this set of variables (Note 13). With an N of 6,389 and nearly all eligible California schools included in the regression (Note 14), these results are significant and interesting (though not particularly surprising) demonstrating that most of the variation among schools is accounted for by factors that are beyond the immediate control of schools, districts, or the state, including student ethnicity (Note 15), student poverty, and parent education (Note 16). In fact, there are only three variables in this model that could conceivably be impacted by state or district actions: the percentage of EP teachers and first-year teachers at school sites, and school size. While policy changes could affect all of these factors, none are easily changed by simple mandate. .

The EP teacher coefficient in the regression is significant but small relative to the other coefficients (see Table 8. However, it is clear from the regression that the percentage of EP teachers in a school does have an association with API scores above and beyond factors such as the socio-economic status of the student body and school size. Furthermore, although inexperience and EP status are highly correlated, both exert independent effects on student achievement. School size is an additional factor that has been found in other research to influence student achievement, along with teacher characteristics.

Regression Coefficients							
	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>Sig</i>	Correlations	
	<i>B</i>	<i>Std Error</i>	<i>Beta</i>			<i>Partial</i>	<i>Part</i>
(Constant)	809.527	2.371		341.423	.000		

% African American Students	-1.382	.067	-.135	-20.480	.000	-.248	-.109
% Asian Students	.828	.063	.076	13.177	.000	.163	.070
% Hispanic Students	-.908	.051	-.198	-17.892	.000	-.219	-.095
% Free Lunch	-1.469	.048	-.349	-30.879	.000	-.361	-.164
% Parents Not H.S. Grads	-1.181	.064	-.173	-18.423	.000	-.225	-.098
% Parents Attended Grad School	2.006	.072	.199	27.890	.000	.330	.149
% Emergency Permit Teachers	-.618	.076	-.055	-8.143	.000	-.101	-.043
% 1 st Year Teachers	-.588	.112	-.031	-5.242	.000	-.065	-.028
School Size	-.127	.005	-.155	-27.463	.000	-.325	-.146

N = 6,387 (schools)

R = .905, Adjusted R² = .819

Constant (Dependent Variable): Academic Performance Index Score for School

Data Source: California Department of Education (see Appendix A)

Policy, Politics, and California Teacher Preparation

It is rather puzzling that California has such an incoherent, conflicting, and poorly coordinated set of policies for the recruitment, preparation, development, and retention of teachers. Cynics who might believe that most state policies are incoherent have only to look closely at the efforts of other states to discover that policies do exist for teacher recruitment, preparation, and development that are focused and consistent. One example is Connecticut, where there has for years been a concerted effort focused on improving teacher quality, rather than a single “silver bullet” strategy (Wilson, Darling-Hammond, & Berry, 2001). Connecticut also built on initial policies rather than switching to new strategies. This continuity of efforts and the participation of experienced educators in the formation and evaluation of policy at all levels helped the state policy maintain coherence over time. Many believe that Connecticut's improvement in student achievement is a direct result of the improvement in teacher quality that resulted from the state's policy.

It is relatively easy to find examples of California state policies that have served to hurt teacher quality in the state, and which have probably impacted student learning as a result. Perhaps the most glaring example is the institution of class size reduction (CSR) in the state of California, an event that occurred precipitously and with little thought to

collateral consequences. Without careful consideration about where teachers would be found to fill the additional classrooms created by CSR, the legislation was passed and classes in grades K-3 were limited to 20 students. There is little doubt that CSR might be beneficial, at least in early grades, in terms of student learning and teacher and parent satisfaction (Mosteller, 1995). However, the impact of CSR on California's students is less clear, and a recent report has indicated that there is no clear causal connection between improved achievement and CSR (CSR Research Consortium, 2002). However, RAND researchers have suggested that smaller class size is one of the most important factors in differences between math scores on the most recent NAEP assessment (Note 17) (Grissmer, Flanagan, Kawat, & Williamson, 2000). The Public Policy Institute of California noted the negative effects of CSR on teacher characteristics, stating that “CSR led to a dramatic increase in the percentages of inexperienced and uncertified teachers” (p. 1) (Public Policy Institute of California, 2002).

As policy analysts have pointed out, the effects of improvements (in this case, improvements resulting from CSR) must be considered in context and in terms of their interaction effects, not in isolation (Hatch, 2000). CSR, a program that was intended to be beneficial to students and teachers, opened the door to increasing numbers of emergency permit teachers by making jobs readily available. With districts clamoring to hire teachers with or without a credential, CSR served as a disincentive for students in teacher preparation program to continue their efforts at obtaining a teaching credential through traditional pathways. Teacher training institutions were raided by desperate districts looking to fill teaching slots that had been created virtually overnight. In response to the changed teacher training landscape, teacher training institutes were forced to immediately expand their course offerings to nights and weekends and change course requirements and expectations to accommodate teachers who had already become teachers of record for their own classrooms.

The most unfortunate consequence was that the very children that stood to benefit most from CSR were the ones most hurt by the precipitous nature of the policy implementation, for two reasons. The first is that the suddenly increased demand for teachers in schools with middle-class students, high test scores, and fewer challenges meant that many teachers who had been in more challenging schools were able to take advantage of an opportunity to transfer into these “better” teaching placements. A RAND study on California schools found that districts and schools with large proportions of Black and Hispanic students had higher initial vacancy rates for teachers (Carroll, Reichardt, & Guarino, 2000). They also found that teachers tended to transfer away from these schools, and that districts with large proportions of Black and Hispanic were not as successful as other districts in recruiting credentialed teachers. Thus, the openings that were available for the legions of emergency permit teachers needed to fill classrooms were openings in the schools with higher proportions of Black and Hispanic students, which also tend to be schools with higher poverty rates and lower student achievement. While the students in these schools gained the benefit of smaller class sizes, evidence shows that they became even more likely to be taught by underqualified teachers (CSR Research Consortium, 1999).

In terms of preparing emergency permit teachers, there are numerous instances in official California state policy where regulations make it difficult to assist EP teachers to be more effective. For example, the state-funded Beginning Teacher Support and Assessment (BTSA) program discourages districts from funding the induction of emergency permit

teachers. BTSA's website introduction states that BTSA “provides opportunities for *fully-prepared* first and second year teachers to expand and deepen their teaching knowledge and skill” (italics added) (Beginning Teacher Support & Assessment, 2000). However, the idea that “fully-prepared” teachers should be given priority in terms of funding and slots in the program seems like a contradiction in terms. The first of BTSA's stated purposes is to “Provide an effective transition into the teaching career for first- and second-year teachers in California” (under “BTSA - Basics”). The second purpose is to “Improve the educational performance of students through improved training, information, and assistance for new teachers.” If these are the primary purposes of BTSA, it seems that emergency permit teachers need the support of BTSA at least as much as teachers who are already much farther along in their training. Further, once EP teachers have completed two or three years of teaching while attending school at night and on weekends, they will be understandably reluctant to participate in BTSA, a program designed for “first- and second-year teachers.” However, it is also clear that reshaping BTSA to include EP teachers would result in a program that would be less useful to traditionally-prepared first- and second-year teachers.

Another example of ways in which policy conflicts are making it difficult for EP teachers to receive the training and support they need is that pre-interns and EP teachers can legitimately teach in a classroom as the teacher of record, but they are *not* permitted to student teach until they have passed their subject matter requirements. Thus, an EP teacher or pre-intern is not allowed to student teach under the supervision and guidance of an experienced teacher, but they are allowed to teach a class by themselves, without support!

Additionally, California has provided scholarships for teachers to support them as they complete their teacher preparation program and obtain their credentials. But the funding available for these scholarships is adequate only to support a few hundred teachers each year. Consider that there were about 10,000 new EP teachers hired in California last year, many (perhaps most) of whom chose an alternative credentialing route because they did not have sufficient funds for traditional teacher preparation. The funding provided for helping teachers complete their preparation programs is clearly inadequate, even though reducing the numbers of EP teachers is a priority for the state, judging by the legislation addressing the issue, as will be discussed in more detail in the next section.

Legislative Solutions to the Emergency Permit Problem

As noted previously, most of the variables negatively correlated with API scores are beyond the direct control of policymakers. The legislature cannot easily solve child poverty, which explains most of the variance in test scores at the school level. They can, however, try to impact teacher quality and thus indirectly help student achievement. Some legislation has sought to mandate reductions in emergency permits without responding systemically to the underlying problems that have produced the shortage of qualified teachers and the maldistribution of underqualified teachers (Note 18).

In the 2001-02 Regular Session of the California Legislature, several bills were introduced in an attempt to impact the distribution and/or preparation of EP teachers, to increase the overall number of qualified teachers, or to increase the percentages of credentialed teachers in low performing schools. Table 9 summarizes these bills and their status (Note 19). Some of the bills that seek to eliminate or reduce the percentages of EP

teachers in schools are problematic. Without state support and incentives, the goal of eliminating EP teachers would be difficult or impossible for many districts, particularly in the four California districts where 50% or more of all teachers are teaching on emergency permits (Note 20).

Table 9		
2001 California Legislative Proposals Related to EP Teachers		
Bill and Author	Status	Summary
AB 833 (Steinberg)	Vetoed by Davis 10/5/01	Establishes the Public School Teacher Qualification Equity Program which provides for a teacher qualification index (TQI)*. The bill would require that school districts calculate a TQI for each school and make efforts to increase the TQI for each school until it obtains a specified rating. The original version of the bill called for specific interventions if the districts did not meet its TQI goals within a certain length of time, but this part was taken out of the final submission of the bill. *TQI is based on the number of underqualified teachers within the district and within each school. Fewer underqualified teachers result in higher TQI scores.
AB 721 (Steinberg)	Under submission	Establishes the Teachers for Low-Performing Schools Renewable Grant Program designed to encourage postsecondary institutions with teacher preparation programs to “recruit, prepare, and support new teachers to work and be successful in low-performing schools.” The bill is premised on the belief that low-performing schools suffer particularly from a shortage of credentialed teachers.
SB 57 (Scott)	Approved by Davis 9/8/01	Clears the way for quicker credentialing of private school teachers who decide to teach in public schools and for district interns to complete their credentialing program early if they pass certain assessments.
SB 743 (Murray)	Vetoed by Davis 10/13/01	Provides funds and mandate for the California Commission on Teacher Credentialing to address the issue of emergency permit teacher distribution and make specific recommendations to districts with large numbers of EP teachers in low-performing schools in low-income communities, including recommendations for recruitment and retention policies.
SB 837 (Scott)	Approved by Davis	Requires school districts to meet specific requirements in a diligent search for certificated teachers.

	10/5/01	Documentation will be required from districts hiring teachers on emergency permits to demonstrate that they made a diligent search for credentialed teachers prior to offering positions to non-credentialed teachers.
SB 508 (Vasconcellos)	Suspended by Assembly 9/12/01	Extensive set of recommendations to assist “California Unrealized Learners,” i.e., schools in the lowest two deciles of the API. Provides for additional funding as well as improved recruitment and retention strategies in the form of extra salary and bonuses, professional development, extended school year, outreach and assessment consultants, benefits to highly qualified teachers who teach in these schools, loan assumptions for new credentialed teachers, limits on the number of underqualified teachers at the schools, smaller class size, etc.
SB 321 (Alarcon)	Unfinished business 10/15/01	Authorizes Los Angeles Unified School District to create a pilot program for offering a 30-day training session to all emergency permit teachers who are assigned to schools have 20% or more teachers on emergency permits. The training would take place before the teachers began teaching.
SB 319 (Alarcon)	Set for hearing 1/16/02	Amends the Teaching as a Priority Block Grant that awards grants to schools districts to attract credentialed teachers for low-performing schools. The amendment would require that the school district meet its API performance goal and that the district agrees to increase credentialed teachers in all schools to 90% or more in order to be eligible for grants.

AB 833

The authors of AB 833 proposed a Teacher Qualification Index (TQI) that is comprised of two separate school scores. A school would receive a “quantity rating” of “10” at the high end of the spectrum if it had fewer than 5% underqualified teachers, and a “1” at the low end of the spectrum if it had 45% or more underqualified teachers. A school would receive a “distribution rating” of “10” at the high end if its percentage of underqualified teachers was less than or equal to the average percentage of such teachers for the entire district, and garner a “1” if its percentage of underqualified teachers was greater than 80 percent more than the average for the district. A special adjustment would be made for schools with low percentages of underqualified teachers, since it would be possible for a school with only 4% underqualified teachers to get the lowest distribution rating in a district where the average was 1%. An average of the two ratings provides the single number designated TQI. In order to raise a particular school's TQI, the number of underqualified teachers would have to be reduced at the school to improve the quantity rating, and would have to be reduced in comparison to the district average in order to improve the district average. Thus, the district is provided with an incentive to redistribute both credentialed and EP teachers within the district more evenly.

This bill encourages districts to equalize placements of EP teachers among schools, a legislative act that might carry some weight at the bargaining table. Teacher unions might agree to stricter transfer rules in order to prevent the continual turnover in low-performing schools that would result in the schools being constantly out of compliance.

However, as the bill evolved, it lost its enforcement section. Districts that were out of compliance would have had to submit to an evaluation of the problem and development of a Teacher Quality Improvement Plan (TQIP). Subsequent to this examination, the Fiscal Crisis and Management Assistance Team might also conduct their own investigation and recommend changes in the district in an attempt to achieve compliance. According to earlier drafts of the bill, some of the actions the State Board of Education might then mandate were

- class size reduction in certain schools and grades;
- pay incentives for teachers willing to work at certain schools;
- housing subsidies for teachers willing to teach at selected schools;
- increased funding for materials, books and technology at certain schools;
- facility improvements; and
- focused staff development for beginning teachers.

While these measures alone might not have resolved the teacher distribution problem, they might have alleviated some of the reasons for high teacher turnover, thus providing hope for maintaining a stable staff as the new teachers gain experience and the EP teachers achieve their clear credentials. However, after the language regarding the TQI was deleted, the bill passed but was vetoed by Governor Davis.

SB 508

This is a comprehensive proposal that attempts to work on some of the systemic problems underlying poor student performance in the state (as defined by the two lowest deciles of the API). The belief that is demonstrated throughout this bill is that good teaching matters. The bill focuses simultaneously on a number of important aspects of improving the quality and distribution of the teacher workforce in districts with low-performing schools, including:

- improving recruitment and retention,
- providing increased salaries and bonuses for highly qualified teachers,
- offering professional development for teachers in low-performing schools,
- extending school years in low-performing schools with extra days being used for professional development and for developing working relationships with parents,
- offering extra benefits for highly qualified teachers willing to work in low-performing schools,
- providing outreach consultants to help schools develop working relationships with parents and community members,
- providing assessment consultants so that schools can better understand where their students are failing and thus develop measures to directly address the areas of greatest need,
- providing loan assumption opportunities for new credentialed teachers (not EP

- teachers) willing to teach in low-performing schools,
- setting limits on the numbers of underqualified teachers at low-performing schools,
- reducing class size in low-performing schools.

These measures are intended to act in concert to assist low-performing schools in improving their achievement (as measured by the API). The combined effects of these measures might in fact go a long way towards helping these schools, but they will be costly. Besides the bonuses, incentives, and loan reductions payable directly to teachers, there would be substantial costs for reducing class size, hiring consultants, and extending the school year. The current economic crisis in California (and in the nation) will make such expensive measures less likely to meet with approval. Whatever the fate of the bill might have been before September 11th, the fact that the bill was suspended by the Assembly on September 12th suggests that it was seen as too sweeping and too expensive to gain acceptance in the current economic climate. The bill remains in suspension, lacking appropriations.

Two pieces of legislation that were approved by Governor Davis require little in the way of additional expenditures, but their impact on the hiring and distribution of EP teachers will probably be slight. *SB 57* makes it easier and faster for private school teachers to get their credentials to become public school teachers in California. The bill also allows district interns to take certain assessments (performance and written) that will allow them to gain their credentials earlier, though exactly what these assessments are and who will judge acceptable completion of the required assessments is not clarified. *SB 837* mandates that districts meet specific requirements in a diligent search for certificated teachers. Documentation of the districts' efforts in this search will be required from districts who hire EP teachers in order to demonstrate that they made a concerted effort but were unable to find and hire qualified teachers.

An Alternative Proposal for Reducing the Number of EP Teachers in California

Another approach would be to focus efforts on improved retention rather than focusing most of the efforts on the teacher labor market, through the following mechanisms.

I. Help EP teachers quickly obtain their clear credentials

Many EP teachers in California work for years to get their clear credential. While districts may be willing to help these teachers, most districts are not providing the sort of guidance and assistance that EP teachers need in order to surmount the obstacles. EP teachers interviewed for a report sponsored by the Bay Area Consortium for Urban Education (BACUE) expressed a longing for more assistance through the district, the county office and the universities where many of them were taking the courses they need for their credential (Goe, Castro, & Curry, 2001). One way to help these teachers would be for the state to provide funds to districts with high percentages of EP teachers to develop pilot programs to assist these teachers in more quickly getting their credentials. Districts that create very successful programs (as judged by how quickly and effectively they were able to prepare *high-quality* teachers and move them from EP to clear credential status ([Note 21](#))) could then share their models with similar districts.

Many EP teachers are valuable to schools for a variety of reasons. In a state with a very diverse student population, hiring and keeping minority teachers is a priority, and EP teachers are more likely to be minorities than traditionally certified teachers. In addition, many EP teachers are willing to teach in urban schools and schools with high percentages of minority students, and retaining teachers in those schools is crucial. EP teachers in California are more likely to be male than the currently certified teachers, and are teaching in subjects where there is a great need (such as math, physical science, and special education) in higher percentages than are regularly certified teachers (Note 22). Thus, the state could benefit from finding ways to assist and train these teachers while moving them efficiently through the system to obtain their clear credentials.

One possibility is to create a second branch of California's Beginning Teacher Support and Assessment system (BTSA) specifically for EP teachers. Many EP teachers already participate in BTSA, though they are discouraged from doing so because BTSA was designed for teachers who had completed a traditional teacher preparation program. The advantage to creating a second branch of BTSA for EP teachers would be to create improved regulation of teacher training for EP teachers, while extending to them the support and mentorship new teachers receive through BTSA. Under the existing system, EP teachers have no provisions for training, support, and assessment other than what is provided by school districts (Note 23) and by colleges where teachers are taking courses in order to earn their clear credential. This results in substantial variability in the types of support and training that these EP teachers are receiving. Providing a regulated, uniform set of standards for the training of EP teachers could be of great benefit to the EP teachers as they work towards their clear credentials.

II. Create incentives for experienced, credentialed teachers to teach in low-performing schools

Some states, including Connecticut, have legislated that supplementary grants be given to poorer school districts to enable them to hire and retain high quality teachers (Wilson et al., 2001). Salary increases or one-time bonuses could be offered as incentives to attract experienced, qualified teachers into low-performing schools with high turnover and high percentages of EP teachers, though the effectiveness of such incentives remains to be seen. In California, the Teaching as a Priority (TAP) grant program serves a similar purpose, providing allocations to schools with an API rank of 1-3 with \$44.00 per student and schools with an API of 4-5 with \$29.00 per student.

However, districts must apply for the grants on a competitive basis, and the funding is limited. In addition, there are few regulations on how the district may use the funds, other than the requirement that the funds must be used for “retention and recruitment of credentialed teachers to work in low-performing schools” (California Department of Education, 2001). Thus, districts, working either independently or in consortiums, may use the funds for signing bonuses, housing subsidies, vested annuities, and improving working conditions. Obviously, the ways in which districts will use funds will vary considerably, and it remains to be seen how successful these funds will be in attracting credentialed teachers to underperforming schools. It is possible that different uses for the funds are differentially successful in attracting teachers. Geographic differences may also contribute to the success of various uses of the funds, with housing subsidies undoubtedly appealing to teachers in areas with soaring housing costs, such as San Francisco.

It might be most productive to create financial incentive packages for experienced, credentialed teachers that include 1) a contract requiring a certain number of years of service in the low-performing school, and 2) an agreement to mentor an EP or novice teacher. This requirement would help stabilize teacher turnover in low-performing schools by building a base of teachers who are committed to staying with the school and by providing assistance to EP or novice teachers who might then be more successful in their first years of teaching and more willing to stay at the school. An added bonus of requiring mentoring is that mentoring a new teacher within the BTSA program as a support provider has been found to be very beneficial to the mentoring teacher (Wing et al., 2002). Thus, both the beginning teacher and the more experienced teacher are likely to benefit from the relationship.

Another approach which could be tried is paying teachers at underperforming schools a salary based on a longer work day. The justification is that the teachers at these schools have a more challenging workload and thus spend more hours on the job. The difficulty is that all teachers at such schools are assumed to work longer hours, including the EP teachers. Thus, it may be difficult to justify differential pay for only the credentialed teachers.

III. Emphasize new teacher retention

The state might provide low-performing schools with substantial targeted funds that would be used solely to provide bonuses to teachers designated by the schools as “keepers,” i.e., teachers that the principal (perhaps with the help of an advisory committee of teachers and parents) felt had the potential to become excellent teachers *at that school*. This would allow the principal to go beyond simply asking particular teachers to stay for the good of the school by offering the teachers an incentive to stay for their own good as well. The bonus would thus provide the “keepers” with clear affirmation that they were considered valuable to the school, and might provide enough of an incentive to prevent their transferring to other less challenging schools. In addition, new teachers are lower on the salary scale and thus might see even relatively small bonuses as substantial incentives, meaning that this could be a cost-effective strategy. Those new teachers who did not receive the bonuses would feel free to move on to other schools. It should be clarified that the “non-keepers” would not necessarily be “bad” teachers. Rather, such teachers might be poor matches for the particular schools they were in, and a transfer would give them an opportunity to find schools that were better suited to their particular talents and needs.

Most bargaining agreements allow transfers after only one year of teaching. Keeping the best new teachers in their initial placements could greatly benefit low-performing schools by providing a stable faculty of teachers beyond the first year. Such a faculty may increase in experience, knowledge, and cohesiveness each year, all of which may benefit students. As an added bonus for these schools, school reform efforts that are hampered by continual turnover of staff will have an improved chance of success. In addition, each year after the first year, teachers would earn an additional bonus if they chose to remain, up through the first five years.

IV. Provide adequate resources, training, and facilities for low-performing schools

The items listed in AB 833 as the “sanctions” for districts that are unable to achieve compliance under the TQI plan should be provided to underperforming schools *as a matter of course*, not as a reward or a punishment. It is clear from the regression shown in this article that most of the variance in student test scores at the school level appears to be associated with variables that are beyond the control of the state, district, or school. Districts with high percentages of minority and low-income students may have little flexibility in teacher hiring, and may not be able to avoid hiring EP teachers. Rewarding or punishing districts based on their test scores or their hiring practices flies in the face of these realities. If the state provides better support, more resources, improved training, and adequate facilities at low-performing schools, teacher attrition should decrease, and thereby lower the demand for additional teachers. As demand falls, it will be possible to become more selective in hiring practices so that fewer EP teachers will be needed. With less demand for EP teachers, more teachers will seek credentials through traditional teacher preparation programs. The requirements for entering teaching under an emergency permit could also be augmented at that point to discourage all but the most serious applicants from taking an emergency route to their credentials.

In addition, schools with high percentages of minority students and/or poor students should receive additional resources from the states for targeted professional development aimed at better equipping teachers to understand and work with the challenges that their students may face. Many teacher preparation programs inadequately prepare teachers for these challenges, resulting in teachers leaving the profession because they are unable to cope with the demands. Teaching in high-poverty schools can be rewarding, and with appropriate training and support, teachers can discover the rewards and overcome many of the frustrations. One approach to preparing teachers for working in low-performing schools is to assign some teachers (Note 24) to these schools for student teaching, *under the guidance of a strong, effective teacher*. While inexperienced teachers may be reluctant to take on the challenges of a low-performing school, a student teaching experience with a strong supervising teacher might give them an opportunity to see for themselves that good teaching and learning is possible even in low-performing schools, and to develop strategies that would increase their confidence that they, too, could be successful in such a setting.

V. Provide more state funding for teacher preparation scholarships

Since many EP teachers choose to complete their teacher credentials while they are teaching because of financial burdens, offering greater incentives for them to complete traditional programs may discourage this trend. However, the incentives should be focused on recruiting more *minority* teachers to traditional teacher preparation programs, since California's teaching force is very short of minority teachers, particularly given the high percentage of minority students in California's schools. And since minority teachers are more likely to take an alternative route into teaching than to take the traditional route, it is important to consider providing additional incentives to recruit high-quality minority candidates into traditional teacher preparation programs.

VI. Place EP teachers in high-performing schools with reduced loads

There may be useful reasons to keep teachers currently on emergency permits as part of the teaching force for many reasons. However, their current pathway into full credential status usually starts in an underperforming school, an unfortunate starting place for both

the EP teachers and the students, whose poor test scores may indicate greater academic needs. In these underperforming schools, they are usually relegated to the grades and classes that the teachers with more seniority do not want. They are typically assigned full class schedules, with no release time for observing other teachers, meeting with mentor teachers (if they even have one), etc. They are usually placed in schools that are particularly challenging in terms of high percentages of low-SES students or English language learners. And they are usually placed in schools where greater-than-average percentages of the teachers are also teaching on emergency permits, are new teachers, or both. Thus, the schools' capacity to help these beginning teachers is limited by their inability to provide on-site mentoring and support.

Most bargaining agreements do nothing to prevent this placement of EP teachers at the most challenging low-performing schools, but in at least one case (Los Angeles) there have been efforts to ensure that at least the EP teachers are not all concentrated in high numbers at particular schools, and that teaching experience is more spread out among schools. Such efforts were likely the result of long negotiations, but they are at least a possibility for other districts. Legislation that mandated a lighter load for EP teachers (60-70% of the regular teaching load) accompanied by intensive training programs (under the umbrella of district induction programs) designed specifically for EP teachers could go far to ensure that these teachers are quickly brought up to speed and that they develop the talents and knowledge that put them on the road to becoming excellent, credentialed teachers.

Putting EP teachers on reduced loads throughout the state is certainly an expensive proposition. One factor in making the spending of additional resources more cost effective would be to adopt a graduated schedule for EP teachers, so that their greatest reduction in teaching load would occur their first year in the classroom, and teaching loads would increase each year after that. Progress towards their credential would be closely monitored and remediation supplied as needed.

However, given the expense of such a plan, it is essential that regulatory mechanisms are built into the system that so that the reduced load and additional support provided by EP teachers does not become an incentive for teachers to bypass traditional teacher training programs. Emergency permits were intended to serve districts in *emergency situations*, and this method of beginning teaching was never intended to be institutionalized as a legitimate alternative to traditional teacher preparation. If California were to subsidize the preparation of large numbers of EP teachers with reduced loads and additional help, safeguards should be developed to avoid institutionalizing this as a credentialing mechanism. One safeguard would be that districts would have to demonstrate that they made every possible effort to recruit and hire credentialed teachers.

Further, it is essential that specific demands on teachers to progress towards their credential be set and adhered to; otherwise, it might be tempting for teachers to enter the profession on an emergency permit to take advantage of the comparatively lighter load. By demanding demonstrated progress on a set schedule, it would be clear to teachers that the advantages of a lighter load were far outweighed by the progress requirements.

In addition, in the interest of recruiting more minority teachers and bilingual teachers, the plan could be offered only to teachers meeting certain district-level needs. For example, in a district with a very high percentage of Spanish-speaking students, priority could be given to bilingual Spanish/English emergency permit teachers.

Further, in the interest of cost-effectiveness in a cash-strapped state, it is important that state subsidies for assisting EP teachers be used for teachers that are genuinely interested in a career in teaching, as opposed to those who are just “trying out” the profession to see how it suits them. Teachers who wanted to take advantage of EP status and support should demonstrate, perhaps through a contractual agreement with the state or a particular district, that they are serious about teaching as a profession, committing to a minimum of three years of classroom teaching in exchange for state and district support. This would exclude short-term teachers such as those placed on two-year assignments through Teach for America in hard-to-staff schools (Note 25).

VII. Focus class-size reduction funds on underperforming schools

When California policymakers decided to approve over a billion dollars a year for class-size reduction, they restricted the funds to grades K-3, but made no requirements in terms of school performance for the funds. Thus, high-performing schools with upper- and middle-class students were entitled to the same small classes as schools with high-poverty students or mostly English language learners, students who ostensibly need extra teacher attention much more. Most studies of class-size reduction find greater benefits for minority students and for high-poverty students than for students with high socioeconomic status. While CSR is a popular reform, its cost-effectiveness in terms of student benefits for middle- and upper-income students has not been demonstrated. However, teachers are decidedly in favor of smaller classes.

By limiting CSR to K-3, California has effectively concentrated many of its best multiple-subject teachers in these grades, since teachers with more seniority often have a greater choice in what grade they will be teaching. Teachers in grades four and five do not receive the CSR benefits, so there is a sharp division between what both teachers and students experience at the classroom level in the early grades as contrasted with grades four and five. My proposal would encourage teachers who desire smaller classes to remain in (or transfer into) underperforming schools by prioritizing CSR funding for schools in the bottom deciles of the state's Academic Performance Index.

The way CSR is currently structured, even schools that already had fewer than 20 students qualified for the CSR funds, so districts that already had small class sizes (suggesting that they had an ample supply of teachers as well), qualified for and received the additional funding for making no change whatsoever in class size! From a cost-effectiveness standpoint, such a policy is seriously flawed. Further, districts have always been able to choose to implement CSR in only certain schools, and even in certain classrooms, as long as they follow the state's requirement of implementing CSR first in grade one, then in grade two, and then in either kindergarten or grade three (Note 26). But since the state provides no incentives whatsoever to implement CSR only in certain grades or in certain classrooms; districts tend to implement it across the board if they can find enough teachers (credentialed or otherwise) to staff the classrooms.

I propose that California adopt new legislation that would phase out CSR in high-performing schools with stable teaching forces and phase in CSR at grades four and five in low-performing schools. While there are no guarantees that this would improve student achievement at these schools, it might reduce teacher turnover at underperforming schools by reducing teacher workloads and increasing teacher

satisfaction. Likewise, it would be an incentive for teachers to choose to teach in (or transfer into) underperforming schools if they wanted to teach smaller classes, or to remain in these schools rather than transferring to higher-performing schools, thus stabilizing the teaching force and reducing the need to hire new or emergency permit teachers. Optimally, a balance would be achieved during the phase-in that would reduce the statewide need for additional teachers to support CSR, which triggered the influx of EP teachers in the past few years. New teachers will continue to be needed in large numbers in California due to the growing number of teachers nearing retirement age and the burgeoning school-age population (at least in some areas of California). It is hoped that a combination of traditional teacher preparation programs and selective, subsidized, well-supported emergency permit programs could supply sufficient numbers of new teachers to meet the demands.

Coherency and Coordination of Policies

The policy solutions suggested in the previous section focus on using various forms of incentives (support, mentoring, release time, monetary awards, targeted class-size reduction, and training opportunities) to:

- increase retention in the profession and in underperforming schools;
- increase teacher commitment to underperforming schools;
- increase enrollment in traditional teacher preparation programs, particularly among minority and bilingual teachers;
- provide additional supports to EP teachers and move them systematically towards full credential status.

This set of solutions attempts to build upon structures that are already working successfully in California, phase out programs or policies that are ineffective, and focus resources where they are most likely to benefit students. As a coordinated effort, such policies would have to be implemented carefully and systematically, with constant reference to both collateral effects of the policy and to the context for implementation (i.e., ensuring capacity before stressors are added to existing systems).

Conclusion

California's accountability system has created an interesting opportunity to better understand what matters most in school achievement. Researchers and policy makers, as well as the general public, can now clearly connect student achievement (at the school level) with a number of other variables, including the percentages of underqualified teachers. Seeing these connections, like the stair-step pattern of test scores and teacher credentials in Figure 1 presented above, can be shocking. However, it is important that policy makers and legislators do not rush to judgment and condemn all EP teachers as the cause of poor student achievement. Rather, both the EP teachers and the students are victims of poverty and state policy. Poverty cannot be so easily addressed, but state policy can be. State and district policies have made it necessary, possible, and even desirable for teachers with limited funds to begin teaching before they are fully credentialed and then to transfer to “better” schools when they get seniority. State policy has also allowed conditions in some California schools to deteriorate to such an extent that both teachers and students are depressed and frustrated by their teaching and learning conditions, as evidenced by the recent class action suit against the state of California filed by students in

underperforming, underresourced schools (Sahagun & Helfand, 2000).

There can be no question that all students should have a well-qualified and highly trained teacher, and California should work towards that goal at a reasonable pace, using incentives to encourage redistribution of experienced, credentialed teachers into low performing schools and to encourage more teachers to complete their full credential before taking full responsibility for the education of California's children. In particular, minority teachers should be aggressively recruited into teaching through traditional teacher preparation programs where they can be better supported and provided with added incentives to encourage them to make teaching a career. Finally, researchers into the connection between teacher quality and student achievement should focus on clarifying the skills, qualities, and characteristics that a full credential represents, and should ensure that teacher preparation programs, credentialing mechanisms, and induction programs focus on building those skills, qualities, and characteristics.

Notes

1. Shields et al. shows 14% of CA teachers on emergency permits or waivers (Shields et al., 2001). The difference in these figures is likely due to data sets used and how teacher credentials are designated.
2. It is widely believed that some California districts have “dysfunctional” hiring processes which result in missed opportunities to hire qualified teachers. Interest is growing among education reform organizations and those who sponsor reform efforts in California to consider “deep” human resources reform as a mechanism for improving district-level teacher recruitment and retention.
3. Academic Performance Index scores are single scores given to California schools based on the SAT-9 scores for students in grades 2-11. The Index will eventually include other measures, such as scores on the state standards tests, but these measures are still being tested for reliability and validity. The Index is composed of weighted SAT-9 scores so that students moving from lower quintiles of the SAT-9 into higher quintiles earn more points for the school than do schools moving from middle quintiles into higher quintiles. For further information on the API, see the California Department of Education website: <http://api.cde.ca.gov/>.
4. Since true experimental designs are rarely possible in education, evidence is generally developed through triangulation of studies using a range of correlation methods and quasi-experimental designs.
5. “Underperforming” for API purposes means that the schools received a score of 5 or below in the API, i.e., that they are performing in the bottom half of the API statewide.
6. 35% of California teachers had a master's degree (data year 1999-2000).
7. Experienced teachers can serve as mentors and support providers to less experienced teachers. They are also more likely to feel competent to serve on school site committees and assist in leading professional development sessions. And they are important for school continuity in reform efforts.
8. However, the results of this study controlled for teacher preparation status. It could

thus be argued that the transfer patterns would be different for teachers depending on their credential and preparation status.

9. Using 1999-2000 school year data. The 2000-01 data shows a slight decrease in the number of EP teachers to about 10%, though there has been an equivalent increase in the numbers of pre-interns.

10. 1999-2000 data.

11. For a description of New Haven's strategies, see Snyder, J. (2000). New Haven, California's Teaching Quality System: What States Can Learn from One District's Success. *The State Education Standard*, 1(1), 7-11.

12. Additional details about the regression can be found in *Appendix B*.

13. It is important to note that because the data are aggregated at the school level rather than the individual level, there is undoubtedly more unexplained variation within schools than is captured by this between school analysis.

14. Schools that were missing API scores or missing data for one of the other variables were omitted from the regression.

15. Since student ethnicity is highly correlated with socio-economic status in California, it is likely that ethnicity serves as a proxy for SES in the regression.

16. Parent education probably serves as a proxy for socio-economic status in the regression.

17. The other factors named by the authors are higher rates of pre-kindergarten attendance and “more of the resources necessary to teach.”

18. Many underlying problems have been listed in the literature on teacher recruitment and retention, including: lack of incentives to attract new teachers, salaries that are not competitive with other jobs teachers might qualify for, the requirement of additional education beyond a baccalaureate degree, school conditions that teachers find frustrating, de-professionalization of teaching, and recently, high-stakes testing and the resulting emphasis on test preparation.

19. Status as of December, 2001. Full text versions of the bills and their histories are publicly available at <http://www.leginfo.ca.gov/bilinfo.html>.

20. In 2000-01, Compton Unified had 56% EP teachers, and three elementary districts had 50% or more EP teachers: Ravenswood City, 55.11; Columbine and Buena Vista, 50% each.

21. It is important that the effectiveness of a program designed to move teachers quickly towards a clear credential is judged not only by its speed but by the quality of the resulting teachers. Effectively prepared teachers should be as competent as teachers prepared in traditional teacher training programs.

22. However, it must be noted that EP teachers may not be credentialed in the field in which they are currently teaching. In other words, they may be teaching math because

they were the only teacher available, not because they have a degree and training in teaching math.

23. Some districts have redirected PAR (Peer Assistance and Review) funding to provide support to some new teachers, thus ensuring that every teacher receives the support they need, regardless of their credential status. PAR was originally formed to provide assistance and mentoring to struggling teachers who had been in the teaching force for a while, under the assumption that new teachers would receive ample support from BTSA. But the burgeoning population of EP teachers caused many districts to prioritize the funding for new teachers.

24. It would be important to ascertain initially whether the student teacher had an open mind about teaching in a low-performing school, so as not to waste the opportunity of working with a strong teacher on a student teacher with a confirmed disinterest in such schools.

25. This is not meant to penalize TFA teachers, but only to ensure that resources are spent in a cost effective manner, i.e., where there is a likelihood that they will contribute most to the development of a pool of qualified, permanent teachers for California. It is also assumed that TFA teachers have other means of support and mentoring through the TFA organization.

26. For further information on CSR and the rules governing its implementing, see the CSR page on the CDE website: www.cde.ca.gov/classsize/sy0102/question.htm

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recruitment, preparation, and retention.

Appendix A

Data Used in this Study

Data sources. Title I reporting requirements as well as the recent push for school, district, and state accountability for student achievement has resulted in many states offering public access to the data used in making judgments about schools. California is no exception. Starting in 2000, the California Department of Education (CDE) began posting data files containing school-level variables and Academic Performance Index scores on its website. These files are available for downloading by the public. Other databases with school-level information are also available.

For this study, variables were analyzed from a number of different data sets. All data files are available at the CDE website, www.cde.ca.gov/demographics (teacher and school variables data files) or at <http://api.cde.ca.gov/datafiles.html> (API data files). Some of the files are updated by the CDE regularly during the year or as new information becomes available. Thus, the files downloaded at one point in time may have undergone changes. The sources for the files used for this study are as follows:

- Teacher credentials and experience (tchcrd99). Contains a breakdown by school of teacher experience and credentials, aggregated at the school level into total numbers and/or percentages.
- Profile of certificated staff, by school (prcert99). Contains school-level aggregated variables on gender, race, degrees held, age, and years of service in education.
- List of California public school districts and schools (pubschls). Contains information on schools such as grade span, charter status, and categories of populous areas such as urban and rural.
- Teachers (full-time equivalent) by subject area and school (teasch99). Contains numbers of teachers in secondary subject areas, special education, etc.
- API (api2Kbdf). Contains API scores for 1999 and 2000, along with breakdowns of scores by student race and other designations such as socio-economically disadvantaged and English language learners. Also contains parent education variables and percentages of teachers with full or emergency credentials. More recent API scores for 2000-01 school year are also used, but less extensively because this article was nearly finished when they were made available. The file is api01g.dbf.
- PAIF (paif.97_98, paif.98_99, paif.99_00, paif.00_01). Staff characteristics by record identification and CDS code from the CBEDS Professional Assignment Information Form (PAIF). Contains information on all California teachers, identified with a unique record identification code that changes each year. Provides teacher-level information on gender, credential status, ethnicity, education level, years of service, and subject authorized to teach.

Data Analysis. All files were downloaded as zipped dbf files to a personal computer. After unzipping, files were opened in SPSS statistical analysis software. Besides downloading files directly from the internet, a number of variables were also created using other sources of information or using the compute function in SPSS. Figure 1 was created from statistics generated in SPSS and copied into Excel XP software.

Appendix B

Multiple Regression

Number of schools. The entire population of 6,389 elementary, middle, and high schools with valid API scores (dependent variable) and valid data for independent variables for the 1999-2000 school year were included in the regression. Fewer than 1,000 schools were missing relevant data and were excluded from the regression.

Dependent variable. The dependent variable is the school-level API Score (Academic Performance Index), which is the score received by participating schools for the SAT-9 test taken in spring 2000. For further information about the API, see the California Department of Education (CDE) website:

<http://www.cde.ca.gov/psaa/api/yeartwo/base/apiinfofb.pdf>. The SAT-9 test is given to students in grades 2-11. The CDE then weights the scores for various subjects (greatest weight is given to reading and math), and weights the scores according to which of five performance bands students are in. Subgroup scores for significant subgroups (based on ethnicity, English language ability, and socioeconomic status) are calculated separately and are available in the data set. For further information about the calculation of API scores, see the CDE website <http://www.cde.ca.gov/psaa/api/yeartwo/base/apicalc.xls>.

Independent variables. There are a limited number of variables to choose from in the publicly accessible API data base, including student race, parent education levels, free lunch eligibility, English proficiency, student enrollment in grades tested, and teacher credentialing status. All variables were used directly as reported in the data file downloaded from the CDE *except* for the school size variable. The school size variable was computed from the enrollment in grades 2-11 reported by the CDE divided by the number of grades in the school. The decision to compute this number and use it as the school size was made because California schools vary widely in grade configuration, with some schools having only one or two grades and others having six or more. The computed school size thus gives a more comparable estimate of school size across schools with different grade configurations.

The model. The model was selected after numerous combinations of independent variables were examined. To avoid collinearity, some variables were omitted. Other variables were omitted because they did not add substantial information to the model. The final model is relatively parsimonious while including the variable of interest (teacher credentialing) as well as variables that demonstrated a strong relationship with the dependent variable. All variables are significant at the .00 level.

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