Data Use, English Language Learners, and Literacy Programs in California High Schools: A Principal Survey

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Background to the Study

Are schools responding to calls for greater school accountability with measures likely to improve student performance? This important question guides our research in a survey of almost 300 California high schools in 2005-2006.

Politicians' greater emphasis on assessment and accountability have forced states and school districts to implement tougher—often unattainable—standards in terms of promotion and graduation of the students they serve. Over the past fifteen years, the number of states mandating student testing increased from twenty-nine to forty-nine. By 2003, of the forty-nine states that had adopted some form of standards-based reform, twenty-one established accountability systems that could be rated moderate to strong. Education reform expert Robert Linn (2000) argues that these assessment and accountability systems have become popular because they offer a relatively inexpensive, quick, and highly visible way to bring about change in schools. The question then arises as to whether this attention to assessment and accountability leads to actual change in schools.

The Consortium for Policy Analysis in Education (CPRE) has studied the relationship between state efforts to make schools accountable for their students and changes inside schools for the past ten years. Much of CPRE's recent work focuses on high schools. High schools are, in today's America, the arbiter of life success—students that complete their high school coursework reasonably well will go on to college and to decent job opportunities and income. Those who have difficulty in high school often leave and, therefore, face a high probability of economic and social marginalization.

In earlier work on California high schools, we found some relationship between high schools that used student test data extensively and systematically to guide teaching in mathematics, language, and science to the performance of students in those schools on the state's standards-based tests. However, this important finding was based on only eight schools. And in a majority of these school districts, district offices, not high schools themselves, took responsibility for analyzing state data and then supplying schools with the results.

We further observed that high schools in California took unusual measures in teaching English. State pressure to include English Language Development (ELD) in state student assessment has pushed high schools much more into English language improvement for non-native speakers—an effort largely excluded in the past from the high schools' perceived mission. Similarly, California high schools have begun to offer—indeed, require— that ninth grade students with poor reading skills take literacy courses simultaneously with freshman English. Students' ability to decode text represents a basic literacy skill analyzed in this survey.

All three of these activities—using data on student achievement to guide instructional improvement and curricular focus, improving English language skills for ELL students, and remediating poor reading skills for students entering high school—connect to state pressure to improve student achievement.

Having observed these three activities in several of the high schools in our study, we wanted to know how pervasive the use of data, ELD programs, and literacy courses

and training teachers to teach literacy were in California high schools. Based on that information, we then wanted to test whether any pattern existed between the frequency of the activities and the type of students who attended the high school, and the relationship of the three activities to improved student performance. We decided to revisit and expand our eight-school study. We extended the reach of our data collection by constructing a survey based on themes that emerged from the preliminary research and sent it to over 485 schools statewide. Of the 485 schools receiving surveys, 296 responded.

Given the importance of the three areas determined in the qualitative study (data use, ELL, and literacy), we constructed the following specific research questions to learn more about how these processes functioned for different personnel within the school environment.

Data Use

1) Do schools actively use data in decision-making processes?
    1a. Within the school, which faculty or staff use these data?
    1b. Who provides the data for faculty or staff to use?
2) In which specific activities or decision-making processes do faculty or staff incorporate data?
    2a. How often do faculty or staff use data in these processes?
    2b. How important do they find data use for these processes?
3) Does the school have software to facilitate data use?
    3a. If so, who provides or funds the purchase of the software?
    3b. How much professional development do teachers receive for using this software?
4) How do specific data use activities affect school decision-making regarding accountability measures such as California's Academic Performance Index (API)?

English Language Learner Programs

5) What processes occur when a student indicates a non-English language on the home language survey?
6) Do teachers with predominantly English Language Learners (ELL) receive professional development for teaching ELL?

Literacy Programs

7) Do English teachers teach reading for students that do not know how to decode text?
8) Do teachers with students that do not know how to decode text receive professional development for teaching these students?

The Sample

In drawing the sample, we used a probability-proportional-to-size (PPS) sampling strategy to create strata based on socio-economic and minority differences. We created five strata based on an SES measure that included a combination of the number of students receiving free or reduced lunches at a school and the total percentage of minorities in a school (% F+R lunch + % Minority = SES measure). A lower score corresponds to a higher SES level for each school and vice versa. We then calculated the

percentage of schools in each stratum within the total population of 1197 schools and multiplied that by 485 (the total number of schools necessary given a 60% response rate). For example, low SES schools made up 13.7% of the sample so we sent surveys to 66 schools (485 schools x .137 = 66 schools). Finally, we drew a simple random sample (with replacement) within each stratum for the calculated number of schools using the random number generator.

In addition to data collected from the survey, we also collected assessment and demographic information on the schools from the CA DOE website. The variables (all school level) collected for this analysis include: API base and growth scores from 2005-2006; type of district (High School, Unified, or Other), ELL subgroup API base and growth scores from 2005-2006, 2004-05 dropout rate, 2005 ELL percentage of students, 2006 graduation rate, and the 2006 percentage of students tested. These variables combined with percentage of minority population and the free and reduced lunch and the survey questions comprise the independent variables in this analysis.

Main Results

Data Use

- ✓ Sixty-three percent of schools in this study report having data software. However, the data disaggregated by strata show that less than half (45%) of high SES schools have data software, while over three quarters (76%) of low SES schools have data software. This suggests that low-income high schools invest more in technology to support data use than high-income high schools.

- ✓ Schools whose principals report that they develop strategies based on results from the California High School Exit Exam (CAHSEE) and inclusion in the High Priority Schools Grant Program (HGSGP) have significantly higher API scores. This confirms other results showing that when schools focus on assessment data their API scores improve (Williams et al., 2005).

- ✓ High schools located in High School districts have had significantly higher API growth than high schools in Unified districts. High schools in High School districts may benefit from focused attention by the central office. In Unified districts, high schools may compete with elementary and middle schools for district attention.

- ✓ Content area matters to principals in prioritizing data use. School personnel more frequently used mathematics and language arts assessments in distributing individual student data to teachers, assessing yearly gains, and attempting to adjust curriculum. Additionally, principals reported that mathematics teachers placed significantly more importance on data-based decisions regarding curriculum and instruction than language arts teachers, science teachers, and social studies teachers. Principals reported that language arts teachers were significantly more concerned with using data to make decisions regarding curriculum and teaching practices than science and social studies teachers.

Finally, according to principals, science teachers used data to guide instructional practice significantly more than social studies teachers. These results show a clear hierarchy between content areas about the importance of making curricular and pedagogical decisions using student performance data.

English Language Learner Programs

- ✓ High schools in the middle socio-economic strata are more likely to have an ELL program or department than are high schools with high or low socioeconomic students. Schools in strata 3 (middle level) are the most likely to have an ELL department and the most likely to have an ELL program.

- ✓ Having an ELL *department* in a high school is associated with a significant and large increase in ELL API scores from 2005 to 2006. Regression coefficients suggest this increase would be approximately 12 points. Conversely, having an ELL *program* in a high school relates negatively to the difference between 2005 and 2006 ELL API scores. While this result is significant only at a 10 percent significance level, the magnitude of the effect is quite large at 14 points.

- ✓ Having both an ELL program and department is negatively correlated with the difference in overall API scores between 2005-2006 (non-ELL and ELL). Schools with an ELL program and department experienced a 19-point decrease in overall API scores between 2005 and 2006.

Literacy Programs

- ✓ Schools in High School districts more frequently provide in-service training and professional development to their high school teachers than those in Unified districts. The patterns are not as clear regarding the differences in schools from different SES strata. Nevertheless, the patterns indicate that the middle SES strata schools and schools from High School districts are focused on developing strategies aimed at improving literacy instruction for the lowest-performing readers.

- ✓ The more frequently English teachers teach reading to students who lack decoding skills, the higher the school's API growth.

- ✓ High schools that provided in-service literacy training for English teachers had a higher growth in API growth.

I. Introduction to the Study

State Accountability and School Response

Are schools responding to calls for greater school accountability with measures likely to improve student performance? This important question guides our research in a survey of almost 300 California high schools in 2005-2006.

Federal measures such as *No Child Left Behind* and local state standards seek to make schools accountable by calling for the implementation of assessments at almost every level of the K-12 system. Accountability and assessment are two long-standing themes in the U.S. educational system. Today's assessment-based reforms, however, have taken the focus away from using assessment for measuring intelligence, tracking students, and standardizing learning and placed it on formal assessments of students to judge the quality and equality of public schooling as a whole.

Politicians' greater emphasis on assessment and accountability have forced states and school districts to implement tougher—often unattainable—standards in terms of promotion and graduation of the students they serve. Over the past fifteen years, the number of states mandating student testing increased from twenty-nine to forty-nine. By 2003, of the forty-nine states that had adopted some form of standards-based reform, twenty-one established accountability systems that could be rated moderate to strong. Education reform expert Robert Linn (2000) argues that these assessment and accountability systems have become popular because they offer a relatively inexpensive, quick, and highly visible way to bring about change in schools. The question then arises as to whether this attention to assessment and accountability leads to actual change in schools.

The Consortium for Policy Analysis in Education (CPRE) has studied the relationship between state efforts to make schools accountable for their students and changes inside schools for the past ten years. Much of CPRE's recent work focuses on high schools. High schools are, in today's America, the arbiter of life success—students that complete their high school coursework reasonably well will go on to college and to decent job opportunities and income. Those who have difficulty in high school often leave and, therefore, face a high probability of economic and social marginalization.

Research from CPRE and others on state efforts to improve student outcomes suggests that these efforts seem to have much more impact on elementary schools than on middle schools and least of all, on high schools. Thus, good student performance in high schools is very important for students' economic and social futures, but high schools do not seem to be able to improve what they do even under intense pressure.

An earlier CPRE study (Carnoy et al, 2003) explored how the relationship between external accountability at the state level and schools' internal accountability systems interacted to produce varied responses to and varied effects on teaching and learning. The concept of internal accountability (Abelmann and Elmore 1999) emerges from the premise that schools actually have conceptions of accountability embedded in the patterns of their day-to-day operations and that a school's conception of accountability significantly influences how it delivers education. Since schools must solve the problem of accountability—both so they can function properly and in many

districts not face sanctions, how teachers, administrators, parents, and students talk about fundamental issues of schooling reflects how schools solve these problems (Carnoy et al, 2003, p. 3). In viewing school organizations in this manner and by highlighting the internal accountability of the actors, we suggest that external accountability measures, such as NCLB and statewide mandates, are few of the many factors that influence how schools respond to calls for increased accountability.

More recently, we extended this research to 48 high schools in six states (Gross and Goertz, 2005). We found a number of these high schools with low-middle and low-income clientele much better organized than other demographically similar schools to make systematic instructional improvements and increase student achievement.

In California, a state with a "strong" accountability system that puts considerable pressure on schools to show continuous improvement in student test scores from year to year, and a state with a high proportion of minority students, we analyzed the responses of eight high schools to the state's accountability pressures. We found some relationship between high schools that used student test data extensively and systematically to guide teaching in mathematics, language, and science to the performance of students in those schools on the state's standards-based tests. However, this important finding was based on only eight schools. And in a majority of these school districts, district offices, not high schools themselves, took responsibility for analyzing state data and then supplying schools with the results (Luschei et al, 2007).

We further observed that high schools in California were taking unusual measures in teaching English. State pressure to include English Language Development (ELD) in state student assessment has pushed high schools much more into English language improvement for non-native speakers—an effort largely excluded in the past from the high schools' perceived mission. Similarly, California high schools have begun to offer—indeed, require— that ninth grade students with poor reading skills take literacy courses simultaneously with freshman English. Students' ability to decode text represents a basic literacy skill analyzed in this survey.

All three of these activities—using data on student achievement to guide instructional improvement and curricular focus, improving English language skills for ELL students, and remediating poor reading skills for students entering high school—connect to state pressure to improve student achievement.

Having observed these three activities in several of the high schools in our study, we wanted to know how pervasive the use of data, ELD programs, and literacy courses and training teachers to teach literacy were in California high schools. Based on that information, we then wanted to test whether any pattern existed between the frequency of the activities and the type of students who attended the high school, and the relationship of the three activities to improved student performance. We decided to revisit and expand our eight-school study. We extended the reach of our data collection by constructing a survey based on themes that emerged from the preliminary research and sent it to over 485 schools statewide. Of the 485 schools receiving surveys, 296 responded.

External Accountability in California

California is a state with a "strong" accountability system that puts considerable pressure on schools to show continuous improvement in student test scores from year to year. Carnoy and Loeb (2002) and Carnoy (2005) ranked California below Florida, New

York, and North Carolina and above Michigan and Pennsylvania in terms of the overall strength of the state's system of accountability. Along with high stakes for schools via school report cards, rewards, sanctions, and programs for underperforming schools, California also nominally had high stakes in place for students via the California High School Exit Exam (CAHSEE.)

California's accountability system in 2002-2003 included both sanctions and rewards for schools depending on whether they met benchmarks for growth on the Academic Performance Index (API), a scale created for statewide use to judge student academic growth based on a set of standards and norm-referenced tests. With rare exceptions, every school in California receives an API score. API scores range between 200 and 1000, calculated from student scores on the California Standards Test (CST); the California Achievement Test, Sixth Edition (CAT/6); the California Alternate Performance Assessment (CAPA,), if appropriate; and the California High School Exit Examination (CAHSEE). In addition to assigning a score for the school as a whole, the state creates a score for each "numerically significant" subgroup of pupils categorized by ethnicity and poverty.[1] Under the current formula, to be "numerically significant," a subgroup must have 100 students or have 50 or more students that constitute at least 15 percent of the school's student body. All students' test scores (including English Language Learners) enrolled in October of the school year are included in the final tally to determine the API (Williams, Kirst, Haertel, et al. 2005, p. 7).[2]

Repercussions for low-performing schools included identification and voluntary participation in the state's Immediate Intervention/Underperforming Schools Program (II/USP), which provided funds for schools to develop and implement school improvement action plans. II/USP schools failing to demonstrate adequate growth were monitored by the state and were subject to possible sanctions. The state also added a High Priority Schools Grant Program (HPSGP) in 2001-02 for schools in the lowest decile of API scores. Of the 296 schools in our California sample, 93 schools reported that the II/USP program influenced their attempts to raise their API scores.

The CAHSEE was first administered in 2001, and originally, students in the class of 2004 and beyond were required to pass the CAHSEE in order to receive a high school diploma. However, in July 2003, California's State Board of Education delayed the requirement until 2006 due to excessive lawsuits and claims of inequity in schooling throughout the state. Regardless of the state's decision, schools in our sample varied greatly in the effort, time, and concern that they devoted to preparing students for the CAHSEE. Differing degrees of internal alignment may explain some of this variation in preparedness, as more internally coherent schools were able to organize around the immediate needs of their students at risk for not receiving a diploma (Luschei et al, 2007).

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[1] To date, API subgroups have included: White, Hispanic, African-American, Asian, Filipino, Pacific Islander, American Indian/Alaskan, and economically disadvantaged. APIs are also calculated for both Special Education students and English learners beginning with the 2005-06 cycle.

[2] In assigning this index that was still used in California in 2007, schools are divided into ten deciles and are ranked from one to ten, one being the lowest and ten being the highest. Schools also receive a "similar schools" rank that compares their performance to schools with similar student populations. Schools meeting or exceeding their growth targets were originally entitled to monetary rewards but a budget crisis beginning in 2002 led to discontinuing most of the incentive programs.

Also, the Federal accountability requirements under NCLB directly impact California's education system. While many areas of California use its own state program to answer the Federal government's call for more accountability, NCLB intensifies the focus on the achievement of every subgroup of students in a school. In a state with the largest proportion of diversity within its overall student body, this represents a large task. The primary measure of success under NCLB (and California's standards) is that a specific—and gradually increasing—percentage of all subgroups of students scores "proficient" or "advanced" on the California Standards Tests in English and math. Therefore, district leaders in California face the Herculean task of helping students improve in a state where in 2005, 78 percent of students performed below proficient on the 8th grade NAEP math test and 79 percent on the 8th grade NAEP reading test. In addition to producing higher overall test results, according to NCLB, schools must test 95 percent of students in each subgroup and in the school as a whole. Failure to do so results in the same sanctions that occur if student performance is below expectations.

California's stringent guidelines require a school to meet a baseline expectation on the API or improve by one point. Both individual schools and school districts as a whole that meet these expectations have made AYP— Adequate Yearly Progress. Schools and districts that receive funding from the federal Title I program that supports low-income students and fail to make AYP over two or more consecutive years face an escalating set of consequences from allowing students to transfer to other schools (with transportation provided) to shutting the school down all within a process called Program Improvement. With both federal and state accountability programs exacting consequences for schools not meeting set targets and an increasing number of California schools in jeopardy of missing their improvement targets, the AYP indicator is now driving many schools' improvement plans.

Why High Schools?

High schools represent the last chance for students to "make or break" it in their compulsory schooling careers. If students do not finish high school, they are less likely to find work and are in turn marginalized from mainstream society. Yet, after decades of educational reform amid calls for more rigorous assessment and accountability, we see the least amount of gain in high schools, much less than in elementary and middle schools. While gains in achievement and assessment at the lower educational levels are important, if we fail at the high school level, students will more likely be lost and left to face grave challenges in their adult lives.

Over the past fifty years, the high school structure has changed very little. Accommodations have been made to meet the needs of more diverse populations, but overall, the large and often isolating comprehensive high school has remained the norm. High schools have led to great successes for many; however, for others, the statistics are less encouraging. Although considerable controversy surrounds the actual high school graduation rate (percent of students receiving a regular diploma) over the past thirty years (Mishel, 2006), the national average appears not to have increased much from the approximately 80 percent level of the early 1970s. High dropout rates for African American and Latino students as well as English Language Learners add to the complicated and oftentimes disturbing nature of these statistics, a point NCLB attempts to highlight. Ultimately, throughout this nation, a polarization has appeared in the

spectrum in terms of high school education. At one end, college attendance rates for high school graduates have increased, and at the other end, dropout rates have not fallen (Fine, 1991). This apparent crisis in high schools has attracted us to study the possibility of improvement at this level.

Survey Content Areas

The present survey of data use and ELL and literacy programs in California high schools extends our earlier research to try to understand how the internal organizational capacity in a large sample of California high schools relates to the state's external accountability policies. Given our understanding of how schools managed themselves internally and how state and district level policies may influence them, we wanted to find out how externally imposed accountability changes the practice inside schools.

We focused on three areas of change: data use, measures in the area of teaching English to ELLs, and increasing literacy instruction for those in need. All three of these activities—using data on student achievement to guide instructional improvement and curricular focus, improving English language skills for ELL students, and remediating poor reading skills for students entering high school relate to the state's pressure to improve student achievement. Having observed such activities in several of the high schools in an earlier study, we wanted to know how pervasive such data use, ELL programs, and literacy courses and training teachers to teach literacy might be in California high schools.

Many questions emerge from such a study. For example, if a high school implements the capacity to use available data on student performance and this indicates that the high school is responding coherently to improve its API, is such action, in fact, related to school API gains? Furthermore, if putting in place literacy programs also indicates that a school has acted innovatively to help its lowest scoring 9th graders "catch up" and do better academically, how many high schools currently implement these programs? Do the programs relate to rising API scores?

II. Research Questions

Given the importance of the three areas determined in the qualitative study (data use, ELL, and literacy), we constructed the following specific research questions to learn more about how these processes functioned for different personnel within the school environment.

Data Use

1) Do schools actively use data in decision-making processes?
    1a. Within the school, which faculty or staff use these data?
    1b. Who provides the data for faculty or staff to use?
2) In which specific activities or decision-making processes do faculty or staff incorporate data?
    2a. How often do faculty or staff use data in these processes?
    2b. How important do they find data use for these processes?
3) Does the school have software to facilitate data use?
    3a. If so, who provides or funds the purchase of the software?
    3b. How much professional development do teachers receive for using this software?
4) How do specific data use activities affect school decision-making regarding accountability measures such as API?

English Language Learner Programs

5) What processes occur when a student indicates a non-English language on the home language survey?
6) Do teachers with predominantly English Language Learners (ELL) receive professional development for teaching ELL?

Literacy Programs

7) Do English teachers teach reading for students that do not know how to decode text?
8) Do teachers with students that do not know how to decode text receive professional development for teaching these students?

III. Methodology

Survey Development

After determining the three areas of focus for the study, we searched for any relevant questionnaires with similar items that we could use to increase construct validity. However, the dearth of research on high schools and the uniquely tailored topics drawn from the qualitative research provided no suitable prior studies. Therefore, we developed a new survey based on an iterative process of survey design in three stages. First, we conducted interviews with the qualitative researchers to determine more specifically what challenging or important areas emerged during their conversations with school officials. From this round of interviews, we developed a set of questions related to the three topics.

The second phase involved using think-aloud protocols in principal interviews, a process designed to allow the researcher or observer to understand the variations in how a subject reacts to or interprets a question (Ericsson & Simon, 1993). We conducted interviews with eight California high school principals in which they read each question aloud and immediately responded with their thought process about whether the question made sense to them and what material they would use to effectively answer the question. We specifically reworded or eliminated survey questions that demanded principals to spend too much time finding information because that would inevitably lead to lower response rates or incomplete surveys. The third phase included feedback and revisions from researchers familiar with the content areas and California high schools to ensure that the topics were adequately and appropriately covered while, at the same time, maintaining the brevity necessary for a high response rate from already overburdened principals.

The second and third phase occurred concurrently due to scheduling challenges for high school principals to allocate the necessary half hour for the completion of the think-aloud protocol. We placed paramount importance on the sensitivity to the time pressures on principals. Therefore, the estimated time of completion for the survey was 15-20 minutes. We eliminated some more detailed questioning about the programmatic specifics of all three topics areas, but especially within the areas of ELL and literacy. For instance, literacy includes other areas of concern, such as fluency. We focused on decoding as a basic tool and proxy for the more complex topic of literacy. Finally, we produced both a paper questionnaire and an online version. Principals with emails in the California Department of Education (CA DOE) database received both versions, while those without an email received a paper copy. Forty percent of respondents used the web version, while sixty percent returned the paper survey in a pre-stamped envelope.

Data Collection

To draw our sample of schools, we created a high school population by combining lists of CA high schools from two sources: 1) the CA DOE database, which included a list of high schools, principal names, and school addresses; 2) a CA high school database created by the Center for Research on the Context of Teaching at Stanford University (CRC), which included school level statistics for minority populations, free and reduced lunch, and other demographic characteristics. This combination yielded a database with a total of 1197 schools. Because we did not have previous item constructs, we estimated the our sample size using a conservative power estimate of equal responses (50 percent) for Question 8, a dichotomous yes/no item about whether schools have software programs or not. Using this basis and aiming for a 5 percent error level and a 95 percent confidence interval, we needed a sample size of 291 schools. After drawing a sample using the PPS (probability proportional to size) stratified random sampling method described below, we then estimated a 60 percent response rate and sent out 485 surveys.

In drawing the sample, we used a PPS sampling strategy to create strata based on socio-economic and minority differences. We created five strata based on an SES measure that included a combination of the number of free/reduced lunch at a school and the total percentage of minorities in a school (% F+R lunch + % Minority = SES measure). A lower score corresponds to a higher SES stratum for each school and vice

versa. We then calculated the percentage of each stratum within the total population of 1197 schools and multiplied that by 485 (the total number of schools necessary given a 60% response rate). For example, low SES strata schools made up 13.7% of the sample so we sent surveys to 66 schools (485 schools x .137 = 66 schools). Finally, we drew a simple random sample (with replacement) within each stratum for the calculated number of schools using the random number generator.

In addition to data collected from the survey, we also collected assessment and demographic information on the schools from the CA DOE website. The variables (all school level) collected for this analysis include: API base and growth scores from 2005-2006; type of district (High School, Unified, or Other), ELL subgroup API base and growth scores from 2005-2006, 2004-05 dropout rate, 2005 ELL percentage of students, 2006 graduation rate, and the 2006 percentage of students tested. These variables combined with percentage of minority population and the free and reduced lunch and the survey questions comprise the independent variables in this analysis. Table 1 shows the means, sample sizes, and subgroup means for each variable used from the CA DOE website.

Data Analysis

We combined the data from the survey with the additional data from the CA DOE website and performed all analysis using Stata. To properly account for the different weights used during the PPS sampling strategy, we used the survey command, which requires four different commands to account for the sampling method. First, the pweights command represents the proportion of schools in each stratum, equal to 1/(n/N). We sampled "with replacement," meaning that schools were not reinserted into the sample after their selection. Therefore, the analysis requires a finite population correction (fpc) command because the sample size represents a larger fraction of the overall population (which cannot be considered infinite). The formula for the fpc is $((N-n)/(N-1))^{½}$ (Levy & Lemeshow, 1999). However, Stata accepts the population for each subgroup and performs the fpc calculation internally. Third, in this study, the primary sampling units command (PSU) equals the sample size of 296 schools. Finally, the strata command accounts for the stratified sampling described above using 5 different subgroups based on a combination of SES and minority populations.

For the output itself, the Stata survey command does not permit a traditional t-test. Therefore, obtaining significance levels for comparing between variables and for comparing strata within variables involves a three-step process. The first command finds the mean. Then, the adjusted wald test produces the f score. Finally, the lincom command returns the p value for the mean comparison. These analytical steps were used throughout the analysis when comparing subgroups of strata. We calculated all descriptive statistics and regressions using the survey parameters described above that produce the same output as normal regression commands in Stata. Each individual analysis section explains the regression models used for those specific survey items as well as the dependent and independent variables outlined above.

Table 1. ***Means of Dependent and Independent Variables, by Socio-Economic Strata (Standard Deviations in Parentheses).***

Variables	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Average of 2005 & 2006 API Growth	15.88 (0.90)	12.26 (2.09)	13.44 (1.74)	17.99 (1.77)	16.54 (1.98)	20.68 (2.83)	261
High School District	0.29	0.45	0.31	0.27	0.24	0.16	292
Other District	0.03	0.05	0.05	0.03	0.03	0.00	292
Unified District	0.68	0.50	0.64	0.70	0.73	0.84	293
2005 API (Base)	689.97 (3.67)	774.00 (8.63)	727.73 (6.98)	684.96 (7.07)	641.46 (8.12)	600.68 (11.80)	296
Number of 2005 API Scores	1089.45 (37.87)	1066.77 (91.32)	1017.98 (65.17)	1126.63 (72.77)	1102.65 (80.51)	1186.05 (144.74)	290
2005 Percent of Students tested	98.33 (0.10)	98.38 (0.38)	98.55 (0.13)	98.20 (0.22)	98.05 (0.20)	98.46 (0.23)	292
2004-05 Dropout Rate	2.19 (0.31)	0.46 (0.08)	1.46 (0.35)	1.55 (0.25)	3.54 (1.18)	4.79 (1.20)	296
2005 Graduation Rate	91.67 (0.65)	97.55 (0.47)	94.40 (1.17)	91.71 (1.50)	90.27 (1.20)	80.71 (2.77)	293
2005 ELL Percentage	16.35 (0.55)	1.92 (0.28)	7.22 (0.66)	17.13 (1.33)	25.75 (1.31)	35.95 (2.41)	292

Source: California Department of Education Website, http://www.cde.ca.gov/, 2006.

IV. Analysis of Survey Topics

IVa. Data Use

NCLB induces schools to study and interpret data they receive. In using data, schools need to ensure that underperforming groups make academic progress. According to Palaich et al. (2004), data-informed decision-making has only begun to emerge in education practice. Much depends on how well states distribute the data and make it accessible to school level administrators and teachers. Accessibility generally requires improvements and expenditures in the field of educational technology. Yet, information regarding standardized test scores is not enough to inform or drive instructional practice. Districts and schools need more insight into "aligning instructional content to standards, strategies for teaching to individual student differences, and guidance on resources for meeting goals" (Palaich, et al., 2004, p. 4). The authors suggest that supplying more data does not suffice; schools must consider the ways in which they analyze, interpret, and apply data. Considering patterns of individual student growth over time and using a more principled approach to thinking about teaching, learning, data are key to such analysis and interpretation (Palaich et al., 2004).

In a large-scale study of California elementary schools serving low-income students conducted by EdSource (Williams et al. 2005), the authors found that schools with higher API scores use assessment data to improve student achievement and instruction. In this study of 257 schools, including data from approximately 5,500 teachers and 257 principals across the state, results showed that higher API scores correlated with the extensive use of student assessment data by the district and the principal in an effort to improve instruction and student learning. Principals and district administrators used data from multiple sources in order to develop strategies to follow up on the progress of selected students to help them reach their academic goals (p. 3). Palaich et al. (2004) also found that districts using data effectively for decision making and school improvement give frequent informal tests between high stakes tests, helping teachers address gaps in student learning and apply remediation strategies to improve student learning.

In a study conducted by the Wisconsin Center for Educational Research, UCLA's National Center for Research on Evaluation, Standards, and Student Testing, and the Milwaukee Public Schools, in the six urban schools studied, data must become an active part of school planning and improvement processes and must become infused and accepted into the school culture and organization to be effective. Additionally, school staff members must develop the analytical capacity to understand and apply data strategically. Once fully integrated into a school's systems, data can be transformed from mere numbers to useful information, which can then contribute to the staff's knowledge in effective and meaningful ways (Mason, 2002).

In the survey presented here, almost two-thirds of the survey's questions regard data collection, dissemination, and use in California high schools. We asked principals questions regarding four levels of administration and decision-making in their schools: schools, principals and staff, teachers, and finally, district support. The school level information includes information about software for data use as well as specific strategies

schools use to raise their API scores. The principal and staff questions concern how they use data in specific activities (e.g. comparing previous year scores) and how they provide data to faculty and staff. The teacher level questions include similar topics about data use as well as information about teacher professional development regarding data use. Finally, principals respond to a set of questions about the district role in making data accessible to the school. In reporting the results, we divide them into sections based on these four areas of the survey questions: 1) schools, 2) principals and staff, 3) teachers, and 4) the district role.

Schools

Raising API

Because of the accountability mandates discussed in the introduction, many California high schools remain under constant pressure to increase their API scores. Therefore, in addition to inquiring about the specifics of data use in high schools, the survey also asked more general questions about the importance of specific activities for increasing API (Table 2, question 14 in Appendix A). Principals report passage rates on California High School Exit Exam (CAHSEE) as the most important factor for raising their API score. While this result is not surprising given that weighted CAHSEE scores comprise ~40% of the API, principal responses for the CAHSEE do differ significantly from responses for every other subtopic in question 14. Even though almost all principals rate CAHSEE scores as highly important, the means for each of the strata subgroups increase as the SES strata drops, meaning lower SES strata schools find the scores even more important

The trend of lower SES strata having higher averages than higher SES strata intensifies with responses to district and state mandates. Principals in high SES strata schools rate the importance of mandates between low and moderate, while schools in the lower strata rate them between moderate and high, again in increasing order by strata. However, this trend of increasing significance for lower SES strata abates in the measures not directly linked to accountability. For instance, none of the strata differ significantly in the question about staff consensus building, and only two strata (high-middle/middle and middle/low) differ significantly regarding end-of-course exams. These two factors represent more ongoing evaluation and improvement attempts than other factors more directly influenced by accountability measures, probably because high SES strata principals choose to focus on continual improvement instead of responding to external demands. Principals in low SES strata schools reported parent involvement as significantly more important than in any other strata, potentially signaling the pressures of sanctions from NCLB that include school choice.

The steepest trend emerges in principal responses to the importance of the High Priority Schools Grant Program (HPSGP). According to CA DOE website, the HPSGP:

> is intended to assist the lowest performing schools in the state in raising student achievement by offering additional resources targeted at student performance. Participation in Cohort 2 of the HPSGP is prioritized in ascending order to schools in decile ranks one through five based on the 2005 Base Academic Performance Index (API) (CA DOE, 2006)

High schools participating in this program from the top three strata did not differ significantly in their view of the program's importance for raising API scores, rating it on average between "none" and "low." However, high schools in the mid-low strata rated the program significantly more important than the other three strata, with a mean importance between "low" and "moderate." Finally, the lowest strata rated the HPSGP significantly more important than all other strata, averaging between "moderate" and "high."

Table 3 shows the multiple regression results using the highest reported factor and the factor with the largest spread across strata from question 14: CAHSEE passage rates and HPSGP participation, respectively. The dependent variable in this analysis is the average of API growth from 2005 and 2006. The control model includes the independent variables discussed in the methodology section. We divided the strata into five categories with the reference category as the highest SES stratum and the other strata included in the equation (Strata1-4). The variable for the type of district has three categories: Unified districts serve as the reference category while High School and Other districts (mostly county DOEs) comprise the other two categories. Several control variables come from data collected by the CA DOE in 2005: API Base score; Number of API scores; the percent of students tested; the dropout or school leaver rate; and the graduation rate. The final equation is:

(06API-05API)/2 = a + b(QUESTION2A) + c(QUESTION5B) + d(STRATA1) + e(STRATA2) + f(STRATA3) + g(STRATA4) + h(HSD) + i(OTD) + j(05API) + k(NUMAPI) + l(PERTEST) + m(05DROP) + n(05GRAD) + error.

Examining the initial model, significant but small effect sizes occur for the 2005 API base score, the number of 2005 API scores, and the number of dropouts. The dropout variable includes the percentage reported to the CA DOE. The number of dropouts correlates positively with API growth, meaning that schools with more school leavers have higher API growth. The result could show some combination of student frustration with high stakes testing and lack of encouragement from high schools for lower performing students to remain in school. In the second and third regression models, the coefficient for the dropout variable becomes higher, meaning an increase in school leavers in a school correlates with a higher API gain score.

When the CAHSEE passage rate is added to the base model, the variable shows a large significant effect of 4.69 API points. This means that for every increased level of importance a school principal places on the CAHSEE for raising the API, the API scores increases by almost 5 points. This trend continues after adding the HGSGP variable to the model. The CAHSEE passage rate coefficient increases to 5.63 API points and the HGSGP shows a significant effect for over two API points (2.22). Thus, principals reporting that their schools prioritize these two areas show a significant increase in API growth scores averaged over a two-year period. This confirms the results found in the EdSource study that schools focusing on assessment data (such as the CAHSEE) improved their API scores (Williams et al., 2005).

Table 2. ***Means of Independent Variables from Question 14, by Socio-Economic Strata (Standard Deviations in Parentheses).***
(Question 14: Please rate the importance of each factor below in developing strategies for raising the API in your school, 1-4).

Variables	Variable Descriptions	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Question 14e	*Passage rate on California High School Exit Exam (CAHSEE)*	3.84 (0.02)	3.70 (0.09)	3.80 (0.05)	3.87 (0.05)	3.90 (0.04)	3.92 (0.04)	293
Question 14f	*Achievement gap data*	3.57 (0.03)	3.38 (0.11)	3.42 (0.07)	3.60 (0.07)	3.77 (0.06)	3.73 (0.06)	290
Question 14j	*Staff consensus building*	3.45 (0.03)	3.34 (0.11)	3.43 (0.06)	3.53 (0.06)	3.47 (0.08)	3.46 (0.09)	286
Question 14c	*District mandates for raising API scores*	3.43 (0.04)	2.80 (0.17)	3.45 (0.08)	3.47 (0.08)	3.61 (0.08)	3.67 (0.09)	276
Question 14b	*State mandates*	3.39 (0.04)	2.95 (0.16)	3.38 (0.08)	3.49 (0.08)	3.47 (0.10)	3.57 (0.09)	286
Question 14d	*District assessments*	3.26 (0.05)	3.06 (0.16)	3.21 (0.10)	3.13 (0.10)	3.50 (0.10)	3.40 (0.10)	262
Question 14i	*Redesignation of ELLs from California English Language Development Test (CELDT)*	3.26 (0.04)	2.84 (0.16)	3.20 (0.08)	3.29 (0.08)	3.42 (0.09)	3.41 (0.10)	277
Question 14h	*End-of-course exams*	3.24 (0.04)	3.30 (0.10)	3.29 (0.06)	3.09 (0.08)	3.26 (0.07)	3.35 (0.09)	288
Question 14k	*Financial considerations*	3.05 (0.04)	2.97 (0.14)	3.02 (0.09)	3.15 (0.09)	2.93 (0.09)	3.20 (0.11)	282
Question 14l	*Parental Involvement*	2.95 (0.04)	2.92 (0.12)	2.85 (0.06)	2.88 (0.09)	2.97 (0.09)	3.27 (0.09)	289
Question 14g	*California Achievement Test, Sixth Edition (CAT/6) scores*	2.94 (0.06)	2.68 (0.17)	2.85 (0.11)	2.89 (0.13)	3.04 (0.14)	3.34 (0.15)	251
Question 14a	*High Priority Schools Grant Program (HPSGP) Inclusion*	2.02 (0.07)	1.54 (0.17)	1.42 (0.10)	1.85 (0.15)	2.33 (0.18)	3.29 (0.18)	194

Source: CPRE California High School Principal Survey, 2006.

Table 3. ***Coefficients from OLS regression of the Average of 2005 and 2006 API gain scores.***

Independent Variables	Control Model	Model for Question 14e	Model for Question 14a and 14e
Question 14a – CAHSEE Passage Rate			2.22*
Question 14e – HGSGP Inclusion		4.69*	5.63*
Strata 1	-5.52	-4.74	-7.26*
Strata 2	-4.57	-4.62	-5.16
Strata 3	-1.24	-1.14	-2.30
Strata 4	-3.55	-3.50	-2.73
High School District	2.34	2.03	1.44
Other District	6.33	5.32	25.31**
2005 API Base score	-.029*	-.027*	-.011
Number of 2005 API Scores	-.003*	-.004**	-.002
2005 Percent of Students tested	.977	.818	.158
2004-05 Dropout Rate	.793*	.771*	1.02*
2005 Graduation Rate	.162	.166	.309*
Intercept	-70.20	-73.59	-41.90
R^2	.12	.14	.22
Degree of freedom	11, 245	12, 243	13, 219
F Score	4.65***	5.32***	5.86***

Source: California Principal Survey (N=296). *p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

Data Software

One important facet of using data in schools involves the level of technical infrastructure within a school. A major development in this area has come from computer software that stores and analyzes data, thus making data use a potentially more user-friendly endeavor. We asked schools if they had this type of software (Question 8 in Appendix A). Sixty-three percent of the schools in this study report having data software. However, the data disaggregated by strata show that less than half (45%) of high SES strata schools have data software, while over three quarters (76%) of low SES strata schools have data software. T-tests between the high SES strata schools show significant lower differences when compared with schools in every other stratum. The middle-high SES strata group also differs significantly from the lowest SES strata by having less software. Schools from each SES stratum increase incrementally in having data software, with the most software found in the lowest strata schools. The additional resource of data software requires funding in these low SES strata schools, whether or not teachers use it.

Of the different types of software, over half the schools with software report using Edusoft, while others mentioned Aries and Data Cruncher as two other providers (less than 10 percent of schools use each one). Districts supply data software to over three-quarters, while schools themselves and private funding supply a small number of schools. Districts also fund over half of the software for the schools although principals report using general funds, categorical funds, and Title 1 funds as sources for data software. It remains unclear whether the latter funds come directly to the school or filter down from the district. In the majority of cases, however, the district remains an arbiter of resources and provider of data software.

Principals and Staff

Providing and Using Data

To determine who uses data in high schools, we asked principals about their strategies and frequency of collecting, disseminating, and making decisions using data. On average, principals in all strata of schools reported incorporating data for educational decisions often or always (Table 4, Question 1 in Appendix A). However, principals in the high SES strata reported significantly lower frequencies of using data than principals in other strata. Principal responses in other strata did not differ significantly from each other. Similarly, when asked how often they or their staff shared data with faculty or staff, principals also responded on average with "often" or "always" with no significant differences between principals by strata (Table 4, Question 2 in Appendix A).

To find out which other staff were also involved in processes concerning data, we asked principals about the number of different staff in their schools who participate in data interpretation and dissemination (Table 5, Questions 2 and 4 in Appendix A). These types of staff include vice principals, department chairs, coaches or group leaders, and counselors. Principals reported that a significantly higher number of department chairs interpreted and disseminated data than any other group. The means for department chairs in both questions are above 3, meaning that principals who chose the option "4 or more" might have underreported the actual number of department chairs that both interpret and disseminate data. On the other hand, schools have more department chairs than vice principals, so a higher number of department chairs may reflect a hierarchical organizational structure with fewer vice principals and more department chairs. Despite these caveats, the reality remains that more department chairs handle data than members of any other staff group.

Somewhat surprisingly, vice principals represented the lowest mean, significantly lower than coaches or group leaders and counselors for both interpreting and disseminating data. Again, lower means for vice principals probably reflect some artifacts of institutional organization, but this result also demonstrates the spread of data processes outside of the main office. Examining the different strata, principals in the low SES strata report a significantly higher number of vice principals using data than schools from the top two strata for interpreting data (Question 2) and from the top three strata for disseminating data (Question 4). None of the strata different significantly for any other staff groups.

These results show that the school administrators maintain a higher level of involvement in data use in low SES strata schools than at other schools. At least two alternatives exist for explaining this pattern: threats of accountability sanctions require the principal and vice principals to pay regular attention to data; or, low SES strata schools lack the resources in other areas for data use, requiring the vice principals to assume that duty. Because the low SES strata schools do not report a drop-off in other staff groups, the first scenario seems more likely.

After determining who uses the data within schools, we then asked principals about some of the possible uses for assessment data. These questions follow the research by Palaich et al. on faculty accessibility to data and the alignment of data use with instructional practice (2004). Principals in all strata reported high frequencies of using data to compare results to previous years, stating that, on average, they did so "often" or

"always" (Table 4, Question 5a in Appendix A). Principals report that comparing data with scores collected from 7th and 8th grade schools occurs, on average, "sometimes" or "often" (Table 4, Question 5b in Appendix A). However, multivariate regression analysis shows that schools that often compare data with feeder schools have significantly higher API scores than those doing so less frequently.

Table 4. ***Means of Independent Variables from Questions 1, 3, and 5, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Questions on scale of 1-never to 5-always.

Variables	Mean	Mean (High Strata)	Mean (Mid-High Strata)	Mean (Mid Strata)	Mean (Mid-Low Strata)	Mean (Low Strata)	N
Question 1 – Principals incorporate data	4.29 (.03)	4.03 (.12)	4.27 (.06)	4.39 (.06)	4.36 (.07)	4.29 (.09)	287
Question 3 – Principals share data	4.19 (.04)	4.28 (.12)	4.09 (.08)	4.17 (.08)	4.25 (.08)	4.27 (.10)	293
Question 5a – Compare data from previous year	4.33 (.04)	4.43 (.11)	4.29 (.07)	4.40 (.08)	4.31 (.10)	4.24 (.12)	292
Question 5b – Compare 7th and 8th grade data	3.49 (.06)	3.60 (.16)	3.46 (.10)	3.60 (.12)	3.33 (.15)	3.49 (.18)	291

Source: CPRE California High School Principal Survey, 2006.

Table 5. ***Means of Independent Variables from Questions 2 and 4, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Questions on scale of 1 faculty/staff to 4 or more faculty/staff.

Variables	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Question 2a - Vice Principals	2.21 (.07)	2.03 (.18)	1.95 (.12)	2.31 (.15)	2.30 (.15)	2.69 (.20)	262
Question 2b – Department Chairs	3.74 (.05)	3.83 (.10)	3.61 (.10)	3.70 (.10)	3.86 (.08)	3.81 (.08)	257
Question 2c – Coaches or Group Leaders	2.69 (.10)	2.70 (.30)	2.62 (.22)	2.58 (.19)	2.72 (.18)	2.93 (.21)	206
Question 2d - Counselors	2.58 (.08)	2.78 (.22)	2.46 (.14)	2.53 (.17)	2.67 (.17)	2.59 (.20)	258
Question 4a - Vice Principals	1.97 (.07)	1.65 (.18)	1.71 (.12)	2.02 (.16)	2.18 (.15)	2.50 (.19)	253
Question 4b – Department Chairs	3.59 (.06)	3.61 (.18)	3.46 (.14)	3.54 (.13)	3.76 (.11)	3.75 (.11)	238
Question 4c – Coaches or Group Leaders	2.40 (.11)	2.36 (.36)	2.31 (.23)	2.13 (.21)	2.61 (.19)	2.70 (.26)	193
Question 4d - Counselors	1.98 (.09)	1.71 (.26)	1.92 (.18)	2.08 (.21)	2.04 (.19)	2.10 (.24)	218

Source: CPRE California High School Principal Survey, 2006.

Table 6 shows the results of three different regression models. The base model shows the average of the change in API scores for 2005 and 2006 as the dependent variable upon which the control variables discussed above are regressed. We discussed the results of the base model above. The next two models include variables for comparing

feeder school assessment scores (Question 5b) and the number of vice principals analyzing data (Question 2a). The final equation is:
(06API-05API)/2 = a + b(QUESTION2A) + c(QUESTION5B) + d(STRATA1) + e(STRATA2) + f(STRATA3) + g(STRATA4) + h(HSD) + i(OTD) + j(05API) + k(NUMAPI) + l(PERTEST) + m(05DROP) + n(05GRAD) + error.

The second model shows that schools that examine tests from feeder schools have a significant positive relation to higher API gain scores. In fact, the coefficient means that the API growth increases 2.32 points for every point of increasing frequency that principals compare feeder school scores (on a 5 point scale). Model 3 shows an even larger significant effect size for comparing feeder school data. This result combines with a significant negative effect of having more vice principals analyze data, with a -1.62 decrease in average API change for every additional vice principal. Returning to the analysis above, more vice principal involvement appears correlated with lower API growth. This result might confirm the increased intervention of vice principals based on the ever-present threat of accountability sanctions for schools with low or negative API change.

Model 3 also shows a significant effect in API growth for High School districts when compared to Unified districts. When compared to Unified districts, High School districts have an increase of 3.4 points in API growth. This result suggests that, when controlling for main office intervention and the extent to which schools analyze data from feeder schools, schools in High School districts have significantly larger API growth than those in Unified Districts. Schools in "other districts" (mostly District run high schools) show extremely high significant differences from Unified districts; however, only 10 schools of this type participated in the study, making these results less reliable due to a low sample size.

Using Assessment Scores in Different Content Areas

To determine if activities involving assessment scores differed by subject area, we asked principals about the distribution of these data, annual analysis of change, and attempts to adjust curriculum accordingly (Table 7, Questions 5c-5n in Appendix A). Principals responded to each of these three items for four different subject areas: math, language arts, science, and social studies. The majority of principals reported on average always distributing individual student scores to teachers and performing annual comparisons of assessment scores. However, these actions occurred significantly more in math and language arts than in science or social studies.

This result confirms the analysis presented in the introduction that schools focus more on the high stakes content areas of mathematics and language arts. Principals responded that school personnel used data to adjust curriculum less often than for the activities in the other questions. However, the content area preferences for using test scores to adjust curriculum all differed significantly, from highest frequency to lowest: math, language arts, science, and finally, least frequently, social studies. Teachers or departments arguably have more control over curriculum changes, but this metric does confirm differences between departments, something that we continued to try to capture when focusing specifically on questions about teachers in the next section.

Table 6. ***Coefficients from OLS regression of the Average of 2005 and 2006 API gain scores.***

Independent Variables	Control Model	Model for Question 5b	Model for Question 2a and 5b
Question 2a			-1.62^{+}
Question 5b		2.32**	2.86**
Strata 1	-5.52	-5.32	-5.48
Strata 2	-4.57	-4.15	-6.50^{+}
Strata 3	-1.24	-.582	-2.64
Strata 4	-3.55	-2.75	-4.29
High School District	2.34	2.95^{+}	3.44*
Other District	6.33	9.31	21.34**
2005 API Base score	-.029*	-.026*	-.019
Number of 2005 API Scores	-.003*	-.004**	-.002
2005 Percent of Students tested	.977	.777	.796
2004-05 Dropout Rate	.793*	.789*	.955*
2005 Graduation Rate	.162	.116	.166
Intercept	-70.20	-56.22	-66.94
R^2	.12	.15	.22
Degree of freedom	11, 245	12, 241	13, 219
F Score	4.65***	5.43***	5.86***

Source: California Principal Survey (N=296). *p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

Table 7. ***Means of Independent Variables from Questions 1, 3, and 5, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Questions on scale of 1-never to 5-always.

Variables	Mean	Mean (High Strata)	Mean (Mid-High Strata)	Mean (Mid Strata)	Mean (Mid-Low Strata)	Mean (Low Strata)	N
Question 5c – Distribute data to teachers (Math)	4.34 (.04)	4.38 (.13)	4.30 (.09)	4.30 (.09)	4.47 (.08)	4.27 (.13)	295
Question 5d – Distribute data to teachers (L. A.)	4.35 (.04)	4.38 (.13)	4.32 (.08)	4.32 (.09)	4.44 (.08)	4.30 (.12)	295
Question 5e – Distribute data to teachers (Science)	4.20 (.05)	4.25 (.15)	4.15 (.10)	4.12 (.11)	4.31 (.09)	4.22 (.13)	295
Question 5f – Distribute data to teachers (S. S.)	4.19 (.05)	4.23 (.15)	4.16 (.10)	4.10 (.11)	4.33 (.09)	4.14 (.15)	295
Question 5g – Assess yearly gain (Math)	4.43 (.04)	4.53 (.11)	4.44 (.07)	4.49 (.08)	4.38 (.10)	4.32 (.12)	292
Question 5h – Assess yearly gain (L. A.)	4.43 (.04)	4.53 (.11)	4.44 (.07)	4.47 (.08)	4.39 (.10)	4.30 (.13)	293
Question 5i – Assess yearly gain (Science)	4.31 (.05)	4.46 (.13)	4.37 (.08)	4.31 (.10)	4.27 (.11)	4.11 (.13)	290
Question 5j – Assess yearly gain (S. S.)	4.27 (.05)	4.43 (.13)	4.33 (.08)	4.26 (.10)	4.26 (.10)	3.97 (.15)	294
Question 5k – Attempt to adjust curriculum (Math)	4.14 (.04)	4.10 (.12)	4.10 (.07)	4.23 (.08)	4.05 (.10)	4.22 (.12)	294
Question 5l – Attempt to adjust curriculum (L. A.)	4.10 (.04)	4.13 (.13)	4.05 (.07)	4.16 (.09)	4.00 (.10)	4.22 (.12)	293
Question 5m – Attempt to adjust curriculum (Sci,)	3.93 (.05)	4.00 (.14)	3.85 (.09)	4.03 (.10)	3.80 (.11)	4.03 (.13)	295
Question 5n – Attempt to adjust curriculum (S. S.)	3.86 (.05)	3.95 (.14)	3.83 (.09)	3.89 (.11)	3.82 (.10)	3.84 (.15)	294

Source: CPRE California High School Principal Survey, 2006.

Teachers

Analyzing Data

Because we did not administer this survey to teachers, we had to rely on principals for their estimations of teacher practice regarding data use in their schools. However, data use involves a high degree of schoolwide collaboration (training in software use, learning about classroom application, etc.), and we have seen how important data strategies are to raising API scores. Therefore, principals likely have a high degree of knowledge about the data use practices within their schools (Table 8, Question 6 in Appendix A). Principals report that, on average, teachers examine in-class assessments around once a week. Teachers analyze grades from other teachers, data from district assessments, and data from state assessments roughly once a semester, on average.

Within each of these categories, however, the higher SES strata differ from the lower ones. For teachers observing grades from other teachers, teachers in the highest SES strata perform this task significantly less often than teachers from the other strata, signaling a high degree of teacher autonomy. Regarding district assessments, teachers in the two highest strata review these data significantly less often than teachers in the lower three strata. The trend also holds for state tests. Schools in the two highest strata analyzed state test data significantly less than those in the three lower strata. This finding elucidates the increased focus on assessment in schools more likely to face accountability pressure or sanctions.

In the preceding section, we discussed the difference between approaches to data according to content area. Principals considered use of assessment scores to analyze individual student performance, assess year-to-year gains, and adjust curriculum more important for mathematics and language arts than science and social studies. In this section, we asked principals about the importance that teachers place on data-based decision making (Table 9, Question 7 in Appendix A). Principals reported that mathematics teachers placed significantly more importance on data-based decision making than language arts teachers, science teachers, and social studies teachers. Principals reported that language arts teachers were significantly more concerned with data use than science and social studies teachers and science teachers used data significantly more than social studies teachers. These results show a clear hierarchy within content areas about the importance of making curricular and pedagogical decisions that incorporate data, possibly based on the math and Language Arts focus of high-stakes testing.

Table 8. ***Means of Independent Variables from Question 6, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Question on scale of 1-Never to 6-once a week or more.

Variables	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Question 6a: In-Class Assessment	4.99 (.05)	4.75 (.16)	5.06 (.10)	4.97 (.09)	5.06 (.10)	4.97 (.14)	295
Question 6b: Grades from other teachers	3.05 (.07)	2.74 (.15)	2.96 (.11)	3.14 (.13)	3.10 (.15)	3.32 (.24)	293
Question 6c: District test results	3.13 (.05)	2.85 (.10)	2.88 (.10)	3.29 (.10)	3.27 (.13)	3.43 (.13)	288
Question 6d: State test results	3.01 (.05)	2.70 (.11)	2.87 (.09)	3.10 (.10)	3.21 (.10)	3.17 (.14)	295

Source: CPRE California High School Principal Survey, 2006.

Table 9. ***Means of Independent Variables from Question 7, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Question on scale of 1-less important to 10-more important.

Variables	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Question 7a: Mathematics	8.05 (.09)	7.97 (.21)	8.14 (.15)	7.93 (.20)	8.06 (.23)	8.14 (.31)	294
Question 7b: Language Arts	7.76 (.10)	7.38 (.29)	7.52 (.18)	7.74 (.21)	8.11 (.20)	8.19 (.26)	295
Question 7c: Science	7.31 (.10)	7.70 (.26)	7.17 (.19)	7.32 (.20)	7.37 (.23)	7.11 (.31)	295
Question 7d: Social Studies	6.50 (.11)	6.65 (.28)	6.51 (.20)	6.35 (.20)	6.48 (.23)	6.59 (.36)	295

Source: CPRE California High School Principal Survey, 2006.

Professional Development

To better understand the level of training that teachers receive for adopting habits of data use, we asked principals whose schools have software about the types of professional development (PD) provided to teachers for using that software (Table 9, Question 12 in Appendix A). The survey included questions about receiving professional development from teachers, department workshops, school workshops, and district-wide training. The average frequency of professional development for all schools in all categories fell between once a year and once a semester. Among those schools that reported having software, differences also emerged across different strata. The high SES strata schools report significantly lower frequencies of professional development than the lowest three strata regarding teacher peer-to-peer counseling, school-wide workshops, and district training. However, schools did not differ by strata regarding department workshops, which occurred at the same overall frequency as teachers providing PD to other teachers.

In addition to learning about where teachers receive professional development, we also asked about the providers of professional development (Table 10, Question 13 in

Appendix A). Five different sources for PD were included: teachers on staff, district staff, county offices of education, outside consultants, and software training companies. Principals reported that PD for training teachers in using data software came much more frequently from other teachers and the district than from the other three sources. The high strata reported professional development as a less frequent occurrence than all other strata, with each stratum incrementally reporting higher frequencies of PD. Almost three quarters of schools in the lower strata have data software, and among all schools with data software, these schools receive the most frequent professional development. Increased frequency of professional development also does not correlate with API gains in the regression models presented in the previous section. However, these results do show that schools in the lower strata have more PD for data use, meaning that schools spend resources in this area without a significant correlation of PD to growth in API scores.

Table 10. ***Means of Independent Variables from Questions 12 and 13, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Question scale, 1-Never to 6-once a week or more.

Variables	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Question 12a: Teacher coaching	2.79 (.09)	2.59 (.20)	2.35 (.15)	2.96 (.20)	2.95 (.18)	3.18 (.25)	186
Question 12b: Dept. workshops	2.79 (.08)	2.47 (.18)	2.73 (.14)	2.92 (.18)	2.78 (.17)	2.92 (.24)	180
Question 12c: School workshops	2.61 (.07)	2.22 (.14)	2.47 (.11)	2.77 (.14)	2.74 (.16)	2.67 (.19)	186
Question 12d: District workshops	2.23 (.07)	1.89 (.17)	2.08 (.11)	2.31 (.13)	2.33 (.15)	2.41 (.19)	186
Question 13a: Teachers on staff	2.80 (.08)	2.50 (.21)	2.66 (.16)	2.85 (.17)	2.83 (.15)	3.15 (.22)	184
Question 13b: District staff	2.48 (.07)	2.06 (.27)	2.31 (.11)	2.58 (.17)	2.60 (.11)	2.78 (.18)	184
Question 13c: County office	1.51 (.06)	1.33 (.13)	1.53 (.11)	1.50 (.13)	1.55 (.16)	1.54 (.17)	177
Question 13d: Outside consultants	1.61 (.06)	1.32 (.13)	1.66 (.11)	1.64 (.13)	1.55 (.14)	1.78 (.16)	174
Question 13e: Software Co. training	1.74 (.06)	2.00 (.28)	1.68 (.10)	1.74 (.12)	1.78 (.14)	1.60 (.13)	175

Source: CPRE California High School Principal Survey, 2006.

Districts

In this final section regarding data use, we asked about the potential methods through which a district could provide support to a school for data use (Table 11, Question 15 in Appendix A). Schools reported receiving test score data from districts between "frequently" and "always," on average. However, low strata schools received data significantly less than high or middle strata schools. This finding runs contrary to other results presented here in the sense that lower strata schools appear to focus more directly on data through API scores and assessment results. However, if their districts do not provide them with the necessary data, teacher PD for software usage might not have

the intended effect. The frequency of district provision of different types of materials for the lowest strata is lower than that for most other strata for the first five sub-questions. However, districts in the lowest stratum provide more school coaches and more recommendations about test score analysis than districts in other strata, although the differences are only significant between high and low strata for these questions. More generally, it appears that districts in the lower SES stratum provide the details of test data to their schools less often than districts in other strata.

Table 11. ***Means of Independent Variables from Question 15, by Socio-Economic Strata (Standard Deviations in Parentheses).***
Questions on scale of 1-never to 5-always.

Variables	Mean	Mean (High SES)	Mean (Mid-High SES)	Mean (Mid SES)	Mean (Mid-Low SES)	Mean (Low SES)	N
Question 15a: Distribute test data	4.34 (.05)	4.40 (.13)	4.30 (.10)	4.47 (.09)	4.36 (.11)	4.05 (.16)	292
Question 15b: Provide disaggregated data	4.04 (.06)	4.08 (.16)	3.90 (.13)	4.16 (.11)	4.08 (.13)	4.03 (.16)	292
Question 15c: Provide detailed data analysis	3.72 (.07)	3.98 (.17)	3.60 (.14)	3.86 (.12)	3.66 (.14)	3.54 (.19)	292
Question 15d: Provide resources for analysis	3.51 (.06)	3.75 (.16)	3.48 (.13)	3.61 (.11)	3.49 (.13)	3.16 (.19)	292
Question 15e: Provide resources to raise API	3.29 (.06)	3.20 (.17)	3.33 (.11)	3.29 (.12)	3.39 (.12)	3.16 (.17)	292
Question 15f: Provide for school coaches	2.89 (.07)	2.68 (.21)	2.85 (.13)	2.74 (.15)	2.98 (.14)	3.35 (.20)	289
Question 15g: Recommend action based on test analysis	3.14 (.06)	3.00 (.18)	3.07 (.13)	3.20 (.12)	3.16 (.12)	3.30 (.17)	289

Source: CPRE California High School Principal Survey, 2006.

Discussion

One relatively simple, yet quite telling, finding is that sixty-three percent of schools in this study report having data software. However, the data disaggregated by strata show that less than half (45%) of high SES schools have data software, while over three quarters (76%) of low SES schools have data software. This suggests that low-income high schools invest more in technology to support data use than high-income high schools.

Relating the use of data to API scores, schools whose principals report that they develop strategies for API growth based on results from the California High School Exit Exam (CAHSEE) and inclusion in the High Priority Schools Grant Program (HGSGP) have significantly higher API scores. This confirms other results showing that when schools focus on assessment data their API scores improve (Williams et al., 2005). Furthermore, schools that compare test scores from 7th and 8th grade have significantly higher API growth when controlling for demographic characteristics using multivariate regression. Finally, High schools located in High School districts have had significantly higher API growth than high schools in Unified districts. High schools in High School districts may benefit from focused attention by the central office. In Unified districts, high schools may compete with elementary and middle schools for district attention.

Content area also matters to principals in prioritizing data use. School personnel more frequently used mathematics and language arts assessments in distributing individual student data to teachers, assessing yearly gains, and attempting to adjust curriculum. Additionally, principals reported that mathematics teachers placed significantly more importance on data-based decisions regarding curriculum and instruction than language arts teachers, science teachers, and social studies teachers. Principals reported that language arts teachers were significantly more concerned with using data to make decisions regarding curriculum and teaching practices than science and social studies teachers. According to principals, science teachers used data to guide instructional practice significantly more than social studies teachers. These results show a clear hierarchy differentiating content areas concerning the importance of making curricular and pedagogical decisions using student performance data.

IVb. English Language Learners

California has one of the most diverse student populations in the world, with students speaking more than 100 languages at home. Jack O'Connell, Superintendent of Public Instruction, has called the California student population "majority-minority" based on the fact that forty-one percent of students speak a language other than English at home and a quarter of all California public school students are struggling to learn English in school (CA DOE, 2007). Educating these English Language Learners (ELLs) in California is a major challenge for the state – and the stakes are high. California needs to ensure that these students receive equitable educational opportunties not only for the sake of the children, but also to ensure that the state can compete effectively in today's global economy.

Nearly 1.6 million (one in every four) students in the K-12 public educational system in California are ELLs (www.cde.ca.gov). According to the California Department of Education, an ELL is a K-12 student who, based on objective assessment, has not developed listening, speaking, reading, and writing proficiencies in English sufficient for participation in the regular school program.[3] ELLs in California represent almost one-third of all the ELLs in the nation. ELLs are enrolled in almost every district and in the vast majority of schools in the state. Approximately 85 percent of ELLs are Spanish speaking, 2.2 percent are Vietnamese speaking, and 1.5 percent are Hmong speaking (CA DOE, 2007).

The law governing the educational services for ELLs is complex. Educators in California must understand and abide by both state and federal requirements, with federal law taking precedence over state law if there is a conflict. One of the initial (and most difficult) hurdles for schools is designing and implementing an effective decision-making system with respect to ELL classification.[4] Schools have exactly 30 calendar days following a student's enrollment to make the initial identification of him or her as an ELL (CA DOE, 2007).

In California, schools use the California English Language Development Test (CELDT) to meet classification accountability standards. Education Code Section 60810 requires school districts to use individual CELDT results as the primary indicator for the identification of ELLs.[5] School districts must administer CELDT to students who have a primary language other than English listed on their Home Language Survey (HLS) and for whom there is no record of English language proficiency assessment results (CA DOE, 2007). The CELDT is administered throughout the year as new students are enrolled; school districts also are required to administer the CELDT annually to identified English learners until they are reclassified as fluent English proficient (RFEP).

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[3] These students are sometimes referred to as Limited English Proficient (LEP).

[4] The process for identification is described in the California English Language Development Test (CELDT) Assistance Packet for School Districts at http://www.cde.ca.gov/ta/tg/el/assistancepkt.asp.

[5] School districts use annual CELDT results as one of four criteria for considering the reclassification of English learners to fluent English proficient. Additional criteria include performance in basic skills, teacher evaluation, and parent opinion and consultation.

Once a school has CELDT results for a student, it again faces a short timeline: it must inform parents within 30 days, and do so in the native language of the parents if necessary. An AIR/WestEd report (2006) examining the impact of Proposition 227, on which much of California's ELL policies are based, found evidence of additional complexities related to the implementation of ELL laws: 1) insufficient guidance from the state, 2) uncertainties and misunderstandings about what the law requires and allows, and 3) "the lack of clear operational definitions for the various instructional approaches to the education of English learners" (AIR and WestEd 2006, p. 10).

The lack of effective implementation of the laws governing ELLs further exacerbates a system already overwhelmed by the shear number of ELLs, and necessitates a great deal of organization and focus from a wide range of administrators. Recent research (AIR and WestEd, 2006) has substantiated the need for clear and data-driven processes with respect to ELLs in high schools. While the AIR/WestEd 2006 report on the implementation of Proposition 227 revealed that no single model of instruction can be assumed to account for the differing academic success amongst ELLs, the research highlighted school organization and strategy as an important factor.

Based on interviews with administrators from 66 schools and 5 districts among the highest performers statewide relative to other schools and districts with comparable student characteristics, the AIR/WestEd 2006 report established the following results as critical conditions for success among ELLs: "(1) staff capacity to address EL[6] needs; (2) school-wide focus on English Language Development and standards-based instruction; (3) shared priorities and expectations in regard to educating ELs; and (4) systematic, ongoing assessment and data-driven decision-making" (AIR and WestEd, 2006; p. 12).

This report also found that several of the factors that administrators and principals cite as most instrumental to their success are related to *organization and process* at a school level, and not with pedagogical techniques applied in the classroom. For instance, interviewed administrators and principals were more likely to mention factors such as teacher knowledge and skills to support ELLs; adequate plans for the provision of English language instructional services; and the purposeful integration of literacy development across the curriculum. District administrators also stressed the importance of training and professional development, resource allocation, and the effective use of data (AIR and WestEd, 2006; p. 12).

Methodology

We estimate the probability that a high school will have an ELL department or program of using a logistic regression model. We believe that the existence of an ELL department or program serves as an indicator of school organization and effectiveness with respect to ELLs. We have chosen the logit model because of the dichotomous nature of the dependent variable, Y, which means it will take the value 1 with a probability of success q, or the value 0 with probability of failure 1-q.[7] The outcomes on Y are assumed to be mutually exclusive and exhaustive.

[6] EL, meaning English learner, is synonymous with ELL, meaning English language learner.

[7] This type of variable is called a Bernoulli (or binary) variable.

A logit model can be estimated by maximum likelihood methods (making use of the normal cumulative distribution function) on the basis of binary micro-level observations, essentially allowing one to find the effect of explanatory factors on the odds of having (or not having) an ELL department or program. In the logit model, the decision of the *i*th school to have an ELL program (or department) depends on an unobservable utility index—also known as a latent variable—that is determined by one or more explanatory variables.

For the second part of our analysis, we use ordinary least squares (OLS) multiple regression given the continuous nature of the dependent variable, the difference between 2005 and 2006 API scores.[8] The main conceptual difference between OLS and maximum likelihood estimation (MLE) is that OLS is a method of estimating parameters that the best fit between the model of the data (minimizing the sum of squared errors) while MLE gives us the parameter estimates that imply the highest probability, or likelihood, of having obtained the observed sample (Aldrich and Nelson 1984, pp. 51).

In the first model, we regress a dummy variable for ELL department (ELLD) that takes the value 1 when the school has an ELL department, and 0 otherwise. In this model, the independent variables include a vector of strata, as well as a dummy for high school district (HSD) that assumes the value 1 when it is a high school district and 0 otherwise, and a dummy for "other district" (OD) that assumes the value 1 when the school is in a district that is classified as other and 0 otherwise. "Unified" is the reference category for HSD and OD. We also include a categorical variable (DATA) indicating the frequency with which principals incorporate data from state and district tests into their curricular or educational decisions. Controls include the number of scores included in the 2005 API (NUMAPI), the percentage of students tested (PERTEST), and percent of participating students in the API who are designated ELLs (PERELL).

ELLD = a + b(ST1) + c(ST2) + d(ST3) + e(ST4) + f(HSD) + g(OD) + h(NUMAPI) + i(PERTEST) + j(PERELL) + k(DATA) + error

In Model 2, we regress a dummy variable for ELL program (ELLP) that takes the value 1 when the school has an ELL department and, 0 otherwise. The independent variables remain the same.

ELLP = a + b(ST1) + c(ST2) + d(ST3) + e(ST4) + f(HSD) + g(OD) + h(NUMAPI) + i(PERTEST) + j(PERELL) + k(DATA) + error

In Model 3, we regress the difference between 2006 API scores and 2005 API scores on 2005 API scores (05API) and a series of independent variables. We include a dummy variable for ELL department (ELLD) that takes a value of 1 when the school has an ELL department and 0 otherwise, and a dummy variable for ELL program (ELLP) that takes a value of 1 when the school has an ELL program and 0 otherwise. Controls include the number of scores included in the 2005 API (NUMAPI), the percentage of students tested (PERTEST), the number of students receiving free or reduced lunch (FRL), and percent of participating students in the API who are designated ELLs (PERELL).

[8] Logits (log odds) are the natural log of the odds ratio, expressed as ln(odds ratio). The most common way of interpreting a logit is to convert it to an odds ratio using the exp() function.

06API-05API = a + b(05API) + c(ELLD) + d(ELLP) + e(FRL) + f(NUMAPI) + g(PERTEST) + h(FRL) + i(PERELL) +error

In Model 4, we change the dependent variable from the difference between 2005 and 2006 overall API scores to the difference between *ELL* 2005 API scores and *ELL* 2006 API scores, with ELL 2005 API scores as a control. All other independent variables in Model 4 are the same as Model 3.

06EAPI-05EAPI = a + b(05EAPI) + c(ELLD) + d(ELLP) + e(FRL) + f(NUMAPI) + g(PERTEST) + h(FRL) + i(PERELL) +error

Results

Univariate Statistics

Given that most variables, both independent and dependent, have been discussed elsewhere, here we focus on the variables relevant to ELLs (Table 12). Of the schools surveyed, 39 percent have ELL departments and 71 percent have ELL programs. While the difference between 2005 and 2006 overall API scores was 8.46, the difference between 2005 and 2006 ELL API scores was about six. The ELL API scores did not increase as quickly as the overall API scores. Furthermore, the standard deviation of the difference in ELL API scores—about 31—is greater than the standards deviation of the overall API scores, which is 27. Finally, 2005 ELL API scores were much lower than 2005 API overall scores – 596 compared to 690.

The percent of API participants who were classified as ELL in 2005 is about 16 percent, with a standard deviation of 15. The proportion of students receiving free and reduced lunch is about 37 percent, with a standard deviation of approximately 26. We use this variable, instead of a vector of strata, when regressing the difference in 2005 and 2006 ELL API scores because no ELL API scores were reported for strata 1. Indeed, the mean percentage of participants classified as ELLs in strata one was only 1.92. This can be compared to the mean percentages for strata two (7 percent), strata three (17 percent), strata four (26 percent), and strata five (36 percent).

The average principal rating of the importance of ELL re-designation to a school's strategy of raising overall API scores is 3.25 based on a five-point Likert scale, which indicates a moderate to high level of importance. The average response to another indicator of the strength of schools' attitudes and organization with respect to ELLs, the probability that an ELL will be assigned to a CLAD/BLAD certified course, was 4.30 on a five-point Likert scale. This suggests that ELL students almost always get placed in a CLAD/BLAD certified course. Nevertheless, the standard deviation was just over one – which indicates substantial variance.

Table 12. ***Means of Dependent and Independent Variables (Standard Deviations in Parentheses).***

Variables	Mean	N
ELL Department	0.39	294
ELL Program	0.71	294
ELL API (diff 2005-2006)	6.03(31.32)	141
API (diff 2005-2006)	8.46(27.31)	290
Strata 1	0.14	296
Strata 2	0.29	296
Strata 3	0.24	296
Strata 4	0.21	296
High School District	0.29	296
Other District	0.03	296
2005 (Base) ELL API	595.69(60.30)	141
2005 (Base) API	690.01(89.25)	290
Number of 2005 API Scores	1089.24(740.25)	292
2005 Percent of Students tested	98.33(1.91)	292
2005 ELL Percentage	16.34(15.38)	292
Frequency of Data Use by Principal	4.29(0.68)	287
Importance of ELL Re-designation to API	3.26(0.80)	277
Placement of ELLs in CLAD/BLAD Certified Class	4.30(1.02)	286
2005 Percent of Students Receiving FRL	36.58(26.43)	292

Source: California Department of Education Website, http://www.cde.ca.gov/, 2006.

Model 1

Results from the Model 1 indicate that strata two, three, and four are most likely to have an ELL department, even after controlling for the percentage of ELL students taking the 2005 API and all other variables on the right hand side (R.H.S.) (Table 13). More specifically, the coefficient on strata two is 1.63, which indicates an increase in the odds a school has an ELL department by a factor of approximately five. The coefficient on strata three is 1.68, which signifies an increase in the odds that a school has an ELL department by a factor slightly more than five, and the coefficient on strata four is 1.39, indicating that being in this strata will increase the odds of having an ELL department by about four.

The percentage of ELL students participating in the API is significantly and positively correlated with the odds of having an ELL department, but the effect is very small. The effect is an increase in the odds of having an ELL department by a factor only slightly larger than one. The number of scores included in the 2005 API also increases the probability of having an ELL department by a factor slightly larger than one. The percentage of students in school that were tested is negatively related to the odds of

having an ELL department, decreasing them by a factor of 1.13, but this relationship is only significant at p= 0.046.

In our second specification of Model 1 (Model 1b), we include a categorical variable for the frequency with which ELLs are placed in a CLAD/BCLAD certified class (never, rarely, sometimes, often always), as well as a as a categorical variable that rates the principal's perception of the importance of re-designation of ELLs using CELDT to API performance. We include these variables as a means to measure the quality of the ELL classification system in a school or, more generally, the resources a school devotes to ELL students. We find that both variables are significantly and positively related to the odds of having an ELL department. Placement in a CLAD/BCLAD certified class is associated with an odds increase of almost two while the importance of re-designation of ELLs to API performance increases the odds of having an ELL department by just over two.

This result confirms a core finding in the literature that schools placing more importance on the ELL classification system are also more likely to have a more developed, possibly stronger, system. In Model 3 we will test the hypothesis that the existence of an ELL department is correlated with higher ELL achievement.

Model 2

In Model 2, we estimate the odds of having an ELL program and find that our results are approximately consistent with Model 1 (Table 13). Bivariate statistics indicate that there is significant overlap between schools with an ELL program and schools with an ELL department. ELL programs were more common (n=210) compared to ELL departments (n=115); however, there were 110 principals (approximately one third of total) that indicated the existence of both in their schools. In fact, logistic regression results indicate that having an ELL program increases the odds of having an ELL department by a factor of over 17 and vice versa, but we cannot establish causality.

Model 2 results show that there is still a positive and significant relationship between strata three and having an ELL program, with the odds of having an ELL program being increased by approximately six when the school is in strata three. Strata two and strata four are also positively and significantly correlated with having an ELL program, but not significant in the case of strata four.

Similar to Model 1, the percentage of ELL students taking the API is significantly and positively correlated with the odds of having an ELL program and the effect is still very small. The number of scores included in the 2005 API also increases the probability of having an ELL program by a factor slightly larger than one, just as in Model 1. Nonetheless, the percent of students tested is not related to the odds of having an ELL program, as it was related to having an ELL department in Model 1.

In the second specification of this Model 2 (Model 2b), we again add the variables related to the placement of ELLs in certified BLAD/CLAD classes and the importance of ELL re-designation to performance on the API. Here two strata are significantly and positively related to having an ELL program, strata two and three. Being in strata two increases the odds of having an ELL program by a factor of about five and being in strata three increases the odds by slightly more than five. The effect of the importance of re-designation of ELLs to API performance was still significant and positive. Placing high importance on the re-designation of ELLs to API scores increases the odds of having an

ELL program by a factor of almost two. The frequency with which ELLs are placed into BLAD/CLAD classes is not significantly correlated with having an ELL program.

Table 13. ***Estimates for Logistic Regression Model of Effects on Odds of ELL Department and ELL Program.***

Variables	Department (Model 1a)	Department (Model 1b)	Program (Model 2a)	Program (Model 2b)
Data Use, Principal	-.06	-.36	.43*	.41*
Strata 1	-.42	-.64	-.30	-.55
Strata 2	1.63**	1.32**	1.55**	1.53**
Strata 3	1.68**	1.43**	1.85***	1.68**
Strata 4	1.39**	1.09**	.58	.51
HS District	.04	.16	-.39	-.17
Other District	-.48	-.43	-.83	-.80
% Scores Included	.0002***	.0007**	.003***	.002***
% Students Tested	-.13**	-.15**	.002	-.002
% ELLs	.07***	.06***	.06***	.05**
Importance ELL Re-designation to API		.78***		.53**
Placement of ELLs in BLAD, CLAD class		.60**		.21

Source: California Principal Survey (N=296). *p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

Model 3

In Model 3, we use the difference between 2006 and 2005 API scores as the dependent variable (Table 14). In this model, 2005 API scores are significantly and negatively related to the difference between 2005 and 2006 API scores. A one point increase in 2005 API scores is associated with approximately -.07 point decrease in the difference between 2005 and 2006 API scores. This makes sense; schools that have higher scores in 2005 are less likely to see a big gain in 2006. The percent of scores included in the API is also negatively and significantly correlated with the difference in API scores. A one increase in the difference between 2005 and 2006 scores is associated with .003 less scores included. All other independent variables, including the dummies for ELL department and program, are insignificant.

In the second specification of Model 3 (Model 3b), we include an interaction term for ELL program and department we find that the result is significant and negative. The

magnitude of this effect is quite large. The effect of having *both* an ELL program and department on API scores, controlling for the same variables as before, is a 19 point decrease in API score. This suggests that having an ELL department and program (a phenomenon that was mostly likely to occur in Strata 3) might lead to student—or resource—segregation issues that negatively impact the *overall* academic achievement of all students. At the same time, having an ELL department has a significant and positive effect on overall API scores – suggesting that ELL programs are having a negative impact. This is an issue that we continue to explore in Model 4, as well as in the paper's conclusion as an area for future research.

Table 14. ***Estimates for Linear Regression Model of Effects of Change in API Scores 2005-2006 (n = 288)***

Variables	Model 3a	Model 3b
2005 API Scores	-0.074**	-0.075**
% Scores Included	-0.003*	0.003*
% Students Tested	-0.734	-0.795**
% ELLs	-0.037	-0.045
ELL Department	-0.624	16.893**
% Students Receiving FRL	-0.122	-0.123
ELL Program	-1.383	0.806
*ELL Program*ELL Department*		-19.01**

Source: California Principal Survey (N=296). *p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

Model 4

In Model 4, when we use the difference between ELL API scores from 2005 and ELL API scores from 2006, we find results that are dissimilar to those from Model 3 (Table 15). ELL API scores from 2005 are significantly and negatively related to the difference in 2005 and 2006 ELL scores, as are the number of scores included in the API. The magnitude of the latter's effect is very small; increasing the number of scores included on the API by one will decrease the 2006 ELL API score by 0.01. Also negatively related to 2006 ELL API scores is percent of students receiving free and reduced lunch, a finding that is expected given the literature on poverty and student achievement. The magnitude of this effect was also quite small, with one percentage point increase in the percent of free and reduced lunch recipients decreasing the ELL API score by 0.32.

The most interesting results from this specification of the model concern the effect of having an ELL department or program on ELL API scores. Having an ELL department is associated with a significant and large increase in ELL API scores from 2005 to 2006. The coefficients suggest this increase would be approximately 12 points. On the other hand, having an ELL program is negatively related to the difference

between 2005 and 2006 ELL API scores. While this result is significant only at p = 0.079, the magnitude of the effect is quite large at 14 points.

In the next specification (Model 4b), when we include an interaction between ELL program and department, the result is not significant. Furthermore, the correlations between ELL departments and ELL programs and the difference between 2005 and 2006 ELL scores are no longer significant. In this model, the percentage of scores included in the API is still significant, as are the ELL API scores from 2005, and the percentage of students who receive free and reduced lunch.

Overall, the differing impact of ELL programs and departments is curious, and certainly more research needs to be done in understanding the difference between the two organizational units with respect to resources, governance, and size. With these questions in mind, we now turn to the conclusion.

Table 15. ***Estimates for Linear Regression Model of Effects of Change in ELL API Scores 2005-2006 (n = 140)***

Variables	Model 3a	Model 3b
2005 API Scores	-0.154***	-0.154***
% Scores Included	-0.010***	-0.010***
% Students Tested	-1.091	-1.089
% ELLs	0.232	0.233
ELL Department	11.799**	10.343
% Students Receiving FRL	-0.324**	-.324**
ELL Program	-14.292*	-14.747
*ELL Program*ELL Department*		1.570

Source: California Principal Survey (N=296). *p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

Discussion

> "Without clear goals and a plan for implementation, schools and districts cannot provide ELs with the direction they need, regardless of instructional model."
>
> (AIR/WestEd, 2006; p. 19).

More effective school organization and processes with respect to ELLs are essential to improving ELL achievement. This means that a more clearly defined strategy at the school-level may help to increase access to qualified ELL teachers, equitable and meaningful assessment of ELLs, adequate instructional materials, rigorous coursework and access to counselors, more instructional time, and opportunities for the professional development of teachers of ELLs – all of which have been identified as factors that could be addressed to improve equity between ELLs and non-ELLs (Gándara et al., 2003). Thus, it is noteworthy that the majority of schools (90 percent) surveyed in year 2 (2002) of the AIR/WestEd evaluation of Proposition 227 did not have "a clearly defined plan for providing instruction to EL students" (AIR/WestEd, 2006; p. 19). Furthermore, of the

schools that reported having a plan, only 53 percent reported that teachers were implementing it "to a large extent" (AIR/WestEd, 2006; p. 19).

One mechanism that schools might use to affect an adequate plan for ELLs is the creation of an ELL department or program. Having an ELL department or program would most likely create a formal process for earmarking resources for ELLs, such as for the hiring of qualified teachers to teach ELLs and relevant educational materials for ELL learning. Moreover, having an ELL department or program might facilitate better systems of communication between ELL teachers, administrators, and parents. They might also help to create a coherent process for integrating ELLs' needs with respect to curriculum and counseling with those of other students in the school.

In this section we have explored the factors that are likely to be correlated with having an ELL department or department. One of the major finding from our analysis is that certain strata are more likely to have an ELL department and/or ELL program compared to others. It is clear from the results that, generally speaking, strata 2, 3, and 4 are more likely than strata 1 and 5 to have an ELL program or ELL department. In other words, the low SES strata and high SES strata are the least likely to have them. This is an important result that suggests the most advantaged and most disadvantaged schools, controlling for the number of ELLs, might somehow have something in common when in comes to affecting a plan for ELLs. This may be attributable to a resource allocation problem, but this explanation seems less likely in the case of strata 1.

More research needs to be done to determine if there are correlations between school size, funding, and ELL certified teachers and the probability of having an ELL program versus a department. We find that schools in strata 3 are the most likely to have a department *and* the most likely to have a program. We also find that schools in strata 3 are most likely to have both. These correlations and others are likely related to observable and unobservable differences in strata.

The other side of the coin is clearly the *implementation* of an effective plan. This is where the difference in the effect of ELL departments and programs on ELL API scores becomes particularly relevant. Why would an ELL department help to increase ELL API scores while an ELL program would contribute to their decrease? Our hypothesis is that departments might be more integrated into the school structure – similar to math departments, science departments, etc. An ELL program, on the hand, might be seen as a "special needs" or ancillary program that is tracked separately. As a result, ELLs in a program are perhaps more isolated from non-ELLs.

Research on school desegregation has shown that minority students who learn in desegregated settings tend to have better occupational outcomes and overall life chances (Wells & Crain, 1994; Crain & Strauss, 1985). Gándara et al. (2003) suggest that one explanation for this is sociological, and related to the fact that students in segregated environments have less access to non-ELL (mainstream) social networks. However, Gándara et al. (2003) also draw on August & Hakuta (1997) to further suggest that a more immediate impact of segregation is the lack of exposure to the English language, resulting in "reduced opportunities to hear and interact with the language, and fewer opportunities to understand the ways in which the language is actually used in social and academic contexts" (p. 34). The consequence of this segregation is likely to be more poorly developed linguistic skills among ELLs and lower student achievement. We think this is an area of future research with high potential.

IVc. Literacy Programs

Literacy Teaching in California's High Schools

With the adoption and implementation of the No Child Left Behind (NCLB) Act of 2001, education systems across the U.S. are being pressured to raise student achievement scores, particularly in English Language and Mathematics. In California, there is even more pressure to improve literacy achievement among the substantial proportion of immigrants at the high school level; 9th graders who have significant reading deficits. These students in particular face additional challenges when their reading deficiencies limit their full participation in other subject areas. For them, the instruction they receive in literacy is critical for their overall achievement. Increasing diversity in schools increases the diversity of interpretive activities (Heath, 1983; Lee, 1995; Lemke, 1990), and a greater number of California's high schools recognize the need to adopt teaching practices that are more explicit in their purposes to enable the full participation of ELL students (Delpit, 1995). Some California high schools are beginning to require 9th grade students lacking reading skills to take literacy courses simultaneously with freshman English. These literacy courses focus on teaching students traditional reading skills (i.e. to decode text).

Overall, for students to benefit from such literacy courses, they must receive effective instruction from their teachers. The challenge lies in determining what constitutes such effective instruction. Among the possibilities for facilitating students' learning is the teachers' ability to interpret students' thinking (Ball & Cohen, 1999; Cazden & Mehan, 1989). The teacher must also be able to generate student interactions with each other and their text (Darling-Hammond & Sykes, 1999), as well as tap into their language proficiencies, even beyond the classroom (Alvemann, 2002). For adolescents at the high school level, the prior knowledge and experiences that they bring are to provide a foundation upon which teachers can build for teaching literacy (Heath & McLaughlin, 1995; Jimenez, 2000; Lee, 1995; Moll, 1992). To effectively tap into the resources adolescents may have, teachers need to provide explicit instruction in reading and comprehension strategies, as well as access and choices in materials to read (Fielding & Pearson, 1994; Guthrie & Wigfield, 1997; Pressley, 1998; Rycik & Irvin, 2001; Snow, 2002). All the above factors imply the need for effective teacher training and professional development in literacy to improve the achievement of California's diverse high school population.

The needs noted above provide the motivation for this study. Our research questions attempt to highlight the relationships between the state's accountability system, literacy instruction and teacher professional development. How are different types of high schools responding to pressures to improve literacy, and what practices are they adopting? Which ones are working? Specifically:

1. How frequently are high school teachers explicitly teaching students with limited English proficiency how to decode text? How frequently are they teaching literacy skills through other content areas?

2. What criteria are high schools using for selecting English teachers to teach students with limited English proficiency? How frequently are schools providing in-service literacy training and professional development for these English teachers?

3. Finally, which of the practices above are associated with improving student achievement?

In this section of the report we discuss efforts in California's high schools to improve literacy learning among students who do not know how to decode text, and provide professional development for teachers of such students. We also analyze data to show how student achievement, as measured by API growth, is related to the frequency of use of some literacy practices, the professional development that teachers receive in these schools, the types of districts, and the socio-economic make-up of students who attend high schools in our study. The section begins with an overview of the state's accountability system and how it influences schools' literacy teaching and teacher professional development. Next, we analyze our survey responses to see the frequency with which schools in our study employ some literacy teaching practices. We then present the analyses of our survey responses and achievement data. The section concludes by summarizing our findings, discussing the issues that emerge from this study, as well as additional studies that may shed light on some remaining questions.

California's Accountability System and Literacy in High Schools

Overview

California is a state with a "strong accountability" system that seeks to influence teaching practices, including literacy teaching (Carnoy and Loeb, 2004; Gross and Goertz, 2005, p.1). The literacy tests in the state have been aligned with content standards, and students' performance on the tests is used in determining that schools meet accountability measures. The state's system of rewards for high or improved performance and sanctions for low performance is to elicit schools' attention to its standards, and also serves as a basis for directing resources. For example, low-performing schools in the state may receive technical assistance (TA) in the form of additional funds, and in the case of the lowest performing schools, may be taken over by the state.

Since California's Public School Accountability Act was passed in 1999, its accountability policies have been stable, relative to other states (Gross and Goertz, 2005, p. 19). The state uses three tests in calculating high schools' accountability index. High school students take the California Standards Tests (CSTs) in grades 9-11, the California Achievement Test, Sixth Edition Survey (CAT/6) in grades 9-11, and the California's High School Exit Examination (CAHSEE), which they can take beginning in grade 10, until grade 12. The level of accountability has recently increased at the high school level, with the requirement that as of 2006 students must pass the CAHSEE to graduate from high school. Table 16 below summarizes key characteristics of California's accountability measures for English language.

Table 16. Key Characteristics of California Accountability Measures for English Langauge.

Target	Assessment	Measure	Consequences
Students	CAHSEE: Must pass test anytime between grade 10 and graduation. Offered 4 times per year from grades 10-12, for a total of 12 times.	Student must score 60% in ELA.	Graduation: beginning with class of 2006; Scholarship Money
School	CAHSEE: Aligned to 9th and 10th grade standards. ELA multiple choice and writing items. State funds summer school for students in grades 7-12 in danger of failing. LEA must provide remediation and supplemental instruction to students who fail. CA Standards Test (CST) in English in grades 9-11: Aligned to state standards. California Achievement Test, Sixth Edition Survey (CAT/6) in reading/language skills in grade 9-11: Aligned to state standards. Norm-referenced test; becoming smaller part of state assessment system.	Academic Performance Index (API): based on performance and growth.	Monetary rewards for growth. Sanctions for low performers. Technical Assistance; outside intervention; and possible takeover.

Source: Adapted from Gross and Goertz (2005 p. 36) and CDE.

The responsiveness of a school's literacy programs and practices to the state's accountability standards may vary. At the classroom level, the multitude of tests poses a challenge to schools, with teachers being accountable for covering the standards. However, the state provides some guidelines and oversight. For example, there are specific teacher guides to assist in preparing students for the high school exit exam. Despite a high regard for the state's content standards, there has been a mixed implementation of schools' alignment with the state standards. In some schools, there may be loose coupling between the formal standards and the actual practices in classrooms. With such a strong emphasis on state tests, some teachers perceive that students do not care about the Standardized Testing and Reporting (STAR) tests because there are so many of them. Indeed, the strong accountability system may be a demoralizing factor in low-performing schools, which may have the perception that it is impossible to meet the accountability standards. (Gross and Goertz, 2005 p.22-28).

With the differences in responsiveness to state accountability, high schools may adopt a variety of literacy programs and practices for meeting the standards. Some schools develop classroom practices to explicitly teach reading to students who do not know how to decode text. In some schools reading is taught in other content areas classes, where students also learn the applications of reading skills.[9] Other high schools use a number of *remediation strategies* when students fall short of the standards. Some may adopt remediation curricula, such as "High Point" and "Open Court" which employ phonetics. Also, some schools institute extra class sessions, including "zero period" test prep classes (Gross and Goertz, 2005 p. 82, 89). Other high schools place low-performing students, notably 9th and 10th graders, in intensive basic skills classes, which focus on literacy and math (Munzo, 2004; Gross and Goertz, 2005 p. 124).

The state also provides its lowest performing schools with the Immediate Intervention/Underperforming Schools Program (II/USP), in which an external evaluator

[9] See http://www.wested.org/cs/sli/print/docs/sli/researchbase.htm

evaluates the school's needs and works with them to correct the issues they face. The II/USP may be in the form of a literacy specialist or coach, who works with teachers on methods for teaching literacy and reading (Gross and Goertz, 2005 p. 59). Further, in extreme cases, the district or state may implement restructuring, restrict teachers to specific scripts for teaching, or even change the teachers in a failing school. However, practices in failing schools that limit students' pursuit of other academic subjects may introduce other problems, such as increased truancy among students who become bored, leading to increased dropout rates, and reduced graduation rates.

Finally, some high schools employ a number of *pre-emptive strategies* in their attempt to meet the literacy accountability requirements. For example, they may use diagnostic tests for tracking the literacy levels of students before they take the state tests. For example, some schools use the Northwest Regional Educational Laboratory (NWREL)[10] assessments in reading and writing, which students can take at the beginning of the year, mid-year, and year-end, to help place students and measure their growth in anticipation of state tests. Other schools use the Stanford Diagnostic Reading Test (SDRT),[11] which students can also take three times a year, to help place 9th grade students into appropriate classes.

Implications for Teacher Selection and Professional Development

In addition to influencing curricula, California's strong accountability system also has implications for the criteria that schools use in selecting teachers to teach literacy, as well as the professional development they receive. For example, such a high accountability system may focus on training teachers to teach student to prepare for literacy tests, as opposed to enabling them comprehend more broadly. To address the needs of ELL students, schools may select teachers with specific credentials, such as Cross-cultural, Language, and Academic Development (CLAD) and related B-CLAD (for Bilingual),[12] or Special Education certification.

The Challenge of Determining What Works in California

Given the different alternatives that schools may choose, it is difficult to ascertain each school's level of responsiveness to state accountability and the practices they employ, as these depend on local interests and conditions (McLaughlin, 1987; Newmann, King, and Rigdon, 1997; Gross and Goertz, 2005). State accountability may influence districts, and schools on another level. There may be differences in responsiveness to the accountability system across different types of districts and schools. It is also possible that the state's accountability pressures may not translate into school and classroom practices, even where they influence districts. For example, Unified districts may be focusing their attention and resources on improving literacy in elementary and middle schools, with less attention paid to high schools. On the other hand, High School districts may be better able to focus their resources and energies on high schools. Further, schools at the margin of meeting student performance standards in literacy may be most responsive to accountability pressures, whereas high performing schools with high SES

[10] NWREL also administers Math tests. See http://www.nwrel.org/assessment/
[11] See http://harcourtassessment.com/haiweb/cultures/en-us/productdetail.htm?pid=015-883-357
[12] See http://www.edsource.org/pub_bi_edu.cfm

students may be less responsive, together with the lowest performing, low SES schools, which may feel too overwhelmed to be able to respond.

In addition to differences in responsiveness to accountability, differences in literacy teaching practices being used by various types of schools and districts make it even more challenging to measure the effects of California's accountability system on literacy learning. This is further compounded by the difficulty in measuring student achievement in literacy. Gross and Goertz (2005 p. 9) suggest that, compared to mathematics, literacy assessments are less sensitive to differences in schools' instructional programs.

Despite these challenges, a number of efforts exist across the state to ascertain the literacy teaching and professional development practices that may be working in high schools. For example, WestEd's Strategic Literacy Initiative (SLI) has conducted a number of preliminary (non-experimental, non-quasi-experimental) studies on literacy teaching and learning in some California high schools. SLI's studies, which have been conducted on a limited sample of schools and students, suggest that providing training to teachers to enable them teach students to then apply their reading skills in various contexts leads to improved literacy achievement. Case studies of 30 ninth grade students who were low-performing in literacy, from three San Francisco Unified District high schools, indicated that teachers hardly offered instructional support in reading, believing that the students would be unable to understand the materials. However, the case studies, which were conducted from 1995-1997, also indicated that the students had some reading knowledge and problem-solving strategies, which the teachers could have exploited better (WestEd, 2004a).[13]

Over the period 1996-1999, SLI conducted another study of over 200 initially low-performing 9th grade students at Thurgood Marshall Academic High School, a public school in San Francisco. The students participated in a program that used literacy in rigorous academic work, rather than remedial instruction on basic skills, which may be more commonly used. The rigorous program used texts in three content areas: Reading Self and Society, Reading Media, and Reading Media. The results of the study suggested that within the seven month-period of the program, on average, these students gained more than the normal growth in reading, as measured on standardized reading comprehension tests, without controlling for other variables (WestEd, 2004b).[14] The study also employed surveys and case studies to show that over the course of the program, students changed their conception of reading as a set of skills that one may or may not have, to seeing reading as a sense-making activity.

A number of other similar SLI studies suggested that teacher professional development influenced student outcomes (WestEd, 2004c).[15] A three-year study that began in 1997 of teachers who participated in a Strategic Literacy Network (SLN) of over 40 hours of professional development suggested that teachers underwent the following changes. They:

- Became more aware of their reading processes, and how to apply it to instruction.

[13] See http://www.wested.org/cs/sli/print/docs/sli/9casestudies.htm
[14] See http://www.wested.org/cs/sli/print/docs/sli/9course.htm
[15] See http://www.wested.org/cs/sli/print/docs/sli/teacherdev.htm

- Changed their view that students were to blame for their inability to read (due to laziness, lack of motivations), and began to focus students' attention on comprehension of text for classroom inquiry and problem-solving.
- Began listening to students differently to see where students were making sense of text.
- Changed classroom practices. They experimented with different strategies; became explicit in providing guidance, rather than just motivation or summarizing text for students; and used opportunities for using text to teach reading while engaging the students.

Also, in studies of high-school students in the classrooms of teachers who had participated in a number of professional development programs, students gained more than the normal growth in reading, as measured on standardized reading comprehension tests, without controlling for other variables (WestEd 2004c, d, e, f).[16] These studies pointed to the need for further rigorous research on high school literacy in the state.

What our Data Shows about Practices Schools Use

To build on the research of literacy teaching in California, our principals' survey asked some questions about high schools' literacy programs. We wanted to know what literacy programs schools are implementing, and their frequency of using literacy teaching practices. We also wanted to determine if there were patterns among various types of schools that may be responding to accountability differently. We use the survey responses and CDE data in this section for our analyses.

Methodology

We first carry out a descriptive analysis to determine if there are significant differences in the literacy practices in schools of different SES characteristics and school district types. We categorize schools by SES strata, as follows:

- high SES (hses)
- middle-high SES (mhses)
- middle-SES (mses)
- middle-low SES (mlses)
- low SES (lses)

Also, we categorize schools by their different types of school districts, as follows:

- Unified District (UD)
- High School District (HS)
- Other Type of District (OD)

We hypothesize that:

- Middle-SES schools are being more responsive to state accountability, as they are on the margins of meeting the accountability measures.

[16] See http://www.wested.org/cs/sli/print/docs/sli/readinggrowth.htm ; http://www.wested.org/cs/sli/print/docs/sli/classroomstudy.htm ; http://www.wested.org/cs/sli/print/docs/sli/widereading.htm

- High School District administrations are able to focus their resources and attention more on high schools, as compared with Unified School District administrations, which may be focusing more on elementary and middle schools.

We use the mses schools as the reference for our analysis of school SES, determining if schools in other strata are significantly different from such schools. We use the Unified School District schools as the reference for our analysis of school district type, determining if High School District and Other District Type schools are significantly different from the reference. Our analysis of literacy programs is in two parts.

Descriptive Statistics: Survey Responses

In the first, descriptive part, the dependent variables are the survey responses, with the primary independent variables being the school SES strata and district type. The general equation for the models we use is as follows:

Survey Response = constant + a(hses) + b(mhses) + c(mlses) + d(lses) + e(HS) + f(OD) + error

There are two types of models that we use in estimating differences among the various types of schools, depending on the type of question asked. For the survey questions with responses on a 5- or 10-point Likert scale, we estimate ordinary least squares (OLS) multiple regressions (See Appendix for survey questions 24, 26-30). We estimate logistic models for the survey questions which request dichotomous "Yes" or "No" responses (See Appendix for survey question 25).

We also estimate models using additional control variables, including number of scores included in the 2005 API; the percentage of students tested; percent of participating students in the API who are designated ELLs; 2005 Dropout Rate; and 2005 Graduation Rate.

Survey Response = constant + a(hses) + b(mhses) + c(mlses) + d(lses) + e(HS) + f(OD) + g(Number API) + h(Percent Tested) + i(Percent ELL) + j(05 Dropout Rate) + k(05 Graduation Rate) + l(Frequency of Data Use) + error

However, we do not present the models that use this second specification above, as we find that the significant differences between the different types of schools in the simplified specifications persist (except in the case of frequency of different types of professional development (question 28) where significant differences between the different SES strata disappear). Additionally, we should note that the specification above with additional controls finds greater frequency of data use to be significantly and positively related to greater frequency of teaching text decoding, providing in-service training, and providing professional development, consistent with what is found in previous sections of this report.

Models for API Growth

For the second part of our analysis, we estimate a number of OLS models to determine the associations between the different types of literacy practices, as measured by our survey responses, to determine if they are associated with greater growth in API. The dependent variables for our models are 2005-2006 API growth scores (2006 API

score – 2005 API score). We also estimate similar models using 2006 API scores as the dependent variable. For our models, the primary independent variables are the coded variables from the survey responses. Where the survey response is on a 5- or 10-point scale, we use it as a continuous variable, whereas we use it is a binary variable, with a value of 1 for Yes, and 0 for No responses. The independent secondary variables are the SES strata and district type. Other control variables we include are: 2005 API scores; number of scores included in the 2005 API; the percentage of students tested; percent of participating students in the API who are designated ELLs; 2005 Dropout Rate; and 2005 Graduation Rate. Despite estimating several additional models, including some that use the averages of test scores and some of the variables mentioned above, in this paper, we only present the models below, for which we find significant associations for discussing issues that are relevant to literacy programs in California's high schools.

06API-05API = constant + a(Primary Independent Variable) + b(hses) + c(mhses) + d(mlses) + e(lses) + f(HSD) + g(OD) + h(05 API) + i(Number API) + j(Percent Tested) + k(Percent ELL) + l(05 Dropout Rate) + m(05 Graduation Rate) + error

Results

Table 17 below summarizes the average frequency with which schools employ different types of literacy teaching practices and teacher training.

Table 17: ***Frequency of Literacy Teaching and Training (Standard Deviations in Parentheses).***

Variables	All Mean	Mean for SES Strata					N
		hses	mhses	mses	mlses	lses	
Frequency English teachers/Schools use practices below:	*1 = Never* *2 = Rarely* *3 = Sometimes* *4 = Often* *5 = Always*						
Q24. Teach reading/text decoding to teach students who do not know how to decode text	3.25 (0.05)	3.00 (0.14)	3.15 (0.11)	3.36 (0.10)	3.40 (0.12)	3.33 (0.14)	291
Q26. Teach literacy through other content areas students who do not know how to decode text	2.89 (0.05)	2.51 (0.12)	2.93 (0.09)	2.80 (0.11)	3.11 (0.12)	3.06 (0.14)	289
Q27. Provide professional development for teachers that teach reading to students who do not know how to decode text	3.08 (0.05)	3.08 (0.16)	3.01 (0.10)	3.06 (0.12)	3.14 (0.12)	3.17 (0.14)	291
Q25. School uses the following criteria for selecting English teachers that teach reading to students who do not know how to decode text:	*1 = Yes* *0 = No*						
a. Cross-cultural, Language, and Academic Development (CLAD) or similar ELL credential,	0.83 (0.02)	0.81 (0.06)	0.78 (0.04)	0.84 (0.04)	0.86 (0.04)	0.86 (0.05)	282
b. Special Education background	0.41 (0.03)	0.41 (0.08)	0.42 (0.05)	0.42 (0.05)	0.40 (0.06)	0.41 (0.08)	270
c. In-service literacy training;	0.73 (0.02)	0.80 (0.06)	0.67 (0.04)	0.78 (0.04)	0.76 (0.05)	0.68 (0.07)	279

Source: California Principal Survey (N=296).

We also present summary information in Table 18 below, regarding the different types of professional development that schools provide for teachers.

Table 18: ***Frequency of Different Professional Development Activities (Standard Deviations in Parentheses).***

Variables	All Mean	Mean for SES Strata					N
		hses	mhses	mses	mlses	lses	
28. How frequently teachers that teach reading, for students who do not know how to decode text, receive the following types of professional development:	*1 = Never* *2 = Once a year* *3 = Once a Semester* *4 = Once a Month* *5 = Once a Week of More*						
a. Department level workshops or coaching	2.57 (.06)	2.03 (0.17)	2.41 (0.10)	2.56 (0.13)	2.89 (0.13)	2.94 (0.14)	254
b. School-wide workshops or coaching	2.30 (.05)	2.00 (0.13)	2.03 (0.09)	2.39 (0.12)	2.51 (0.13)	2.66 (0.17)	251
c. District-wide training	2.13 (.05)	1.93 (0.14)	1.88 (0.07)	2.15 (0.10)	2.41 (0.10)	2.34 (0.16)	253
29. How frequently the following people provide professional development for teachers that teach reading to students who do not know how to decode text:	*1 = Never* *2 = Once a year* *3 = Once a Semester* *4 = Once a Month* *5 = Once a Week of More*						
a. Teachers on staff	2.50 (.07)	2.22 (0.17)	2.34 (0.10)	2.50 (0.15)	2.74 (0.15)	2.69 (0.20)	251
b. District staff	2.14 (.05)	2.03 (0.17)	1.92 (0.08)	2.04 (0.11)	2.42 (0.11)	2.44 (0.19)	251
c. Non-District Consultants	1.92 (.05)	1.82 (0.10)	1.71 (0.08)	2.05 (0.11)	2.05 (0.11)	1.97 (0.14)	243
Q30. The quality of the professional development provided by the following groups for teachers that teach reading to students who do not know how to decode text:	*Lowest (1) – Highest (10)*						
a. Teachers on staff	7.16 (.14)	7.83 (0.37)	6.75 (0.23)	7.56 (0.31)	7.20 (0.27)	6.70 (0.45)	206
b. District staff	6.83 (.15)	6.91 (0.57)	6.13 (0.27)	7.02 (0.30)	7.32 (0.31)	7.00 (0.41)	196
c. Non-District Consultants	6.97 (.19)	6.61 (0.55)	6.68 (0.37)	7.57 (0.35)	7.10 (0.35)	6.47 (0.66)	167

Source: California Principal Survey (N=296).

In testing the hypotheses on the responsiveness of different school types, we found some differences in the types of literacy teaching practices used by schools. We present details of the patterns that emerged in the rest of this section, with a summary of the statistically significant differences in Table 19 below.

Table 19: ***Summary of Literacy Significant Differences.***

Practice/Measure/Variable	Significant Differences in: SES Strata (S) / District Type (D)		
Frequency English teachers/Schools use practices below:			
Q24. Teach reading/text decoding to teach students who do not know how to decode text	hses <	mses	
		D: None	
Q26. Teach literacy through other content areas students who do not know how to decode text		mses	< mlses
		D: None	
Q27. Provide professional development for teachers that teach reading to students who do not know how to decode text		S: None	
		D: None	
Q25. School uses the following criteria for selecting English teachers that teach reading to students who do not know how to decode text:			
a. Cross-cultural, Language, and Academic Development (CLAD) or similar ELL credential,		S: None	
		D: None	
b. Special Education background		S: None	
		D: None	
c. In-service literacy training;		S: None	
		Unified	< HS
28. How frequently teachers that teach reading, for students who do not know how to decode text, receive the following types of professional development:			
a. Department level workshops or coaching	hses <	mses	< lses
		Unified	< Other
b. School-wide workshops or coaching	hses, mhses <	mses	
		D: None	
c. District-wide training	mhses <	mses	
		Unified	< HS
29. How frequently the following people provide professional development for teachers that teach reading to students who do not know how to decode text:			
a. Teachers on staff		S: None	
		Unified	< HS
b. District staff		mses	< mlses
		D: None	
c. Non-District Consultants	mhses <	mses	
		Unified	< HS
30. The quality of the professional development provided by the following groups for teachers that teach reading to students who do not know how to decode text:			
a. Teachers on staff	mhses <	mses	
		Unified	< Other
b. District staff	mhses <	mses	
		Unified	< Other
c. Non-District Consultants		S: None	
		Unified	< Other

Source: California Principal Survey (N=296).

Teaching Text Decoding and Literacy in Other Content Areas.

As shown above, on average, English teachers *sometimes* teach reading to students who do not know how to decode text. On this measure there is a significant difference between mses and hses schools, with the latter teaching text decoding less frequently than the former, on average. There are no significant differences among schools in the different types of school districts.

Respondents indicated that, on average, literacy for students who do not know how to decode text is *sometimes* taught through other content areas in their schools. We found that relative to mses schools, mlses schools reported a statistically significant greater frequency of teaching literacy through other content areas. There are no significant differences between schools from different types of districts. Further details of the responses are presented in Table 20.

Table 20. ***Frequency of Literacy Teaching Practices.***

	Number of Schools (N)	**Percentage of Respondents**				
		Never	**Rarely**	**Sometimes**	**Often**	**Always**
Frequency of Teaching Text Decoding						
SES Strata						
hses	40	5.00	30.00	30.00	30.00	5.00
mhses	85	7.06	20.00	37.65	21.18	14.12
mses	70	2.86	17.14	32.86	35.71	11.43
mlses	60	6.67	11.67	33.33	31.67	16.67
lses	36	0.00	19.44	41.67	25.00	13.89
Type of District						
High School	85	4.71	22.35	40.00	25.88	7.06
Unified	197	4.57	17.77	34.52	29.44	13.71
Other	9	11.11	11.11	0.00	33.33	44.44
Aggregated	**291**	**4.81**	**18.90**	**35.05**	**28.52**	**12.71**
Frequency of Teaching Literacy in Other Content Areas						
Aggregated	**289**	**7.3**	**28.0**	**39.8**	**17.7**	**7.2**

Source: California Principal Survey (N=296).

Literacy Teacher Credentials, and Professional Development.

Most schools use CLAD or other similar ELL credentials for selecting English teachers that teach reading to students who do not know how to decode text. Most schools also conduct in-service literacy training for such teachers. Less than half the schools in the survey consider a Special Education background for selecting such English teachers. On the use of CLAD or other similar ELL credentials and Special Education background, there are no significant differences between schools of different SES characteristics or district types. Schools in High School districts are significantly more likely to use in-service training for selecting English teachers for ELL students than those in Unified School Districts.

On average, schools *sometimes* provide professional development for teachers that teach reading to students who do not know how to decode text, with no significant differences between the patterns of provision in schools of different SES characteristics or district type. We provide details of the frequency of professional development provision in Table 21.

Table 21. ***Frequency School Provides Professional Development.***

	Number of Schools (N)	Percentage of Respondents				
		Never	Rarely	Sometimes	Often	Always
SES Strata						
hses	38	13.16	10.53	36.84	34.21	5.26
mhses	87	12.64	16.09	37.93	24.14	9.20
mses	69	8.70	21.74	36.23	21.74	11.59
mlses	62	6.45	19.35	38.71	24.19	11.29
lses	35	5.71	11.43	51.43	22.86	8.57
Type of District						
High School	83	10.84	13.25	34.94	31.33	9.64
Unified	198	8.59	18.18	42.42	21.72	9.09
Other	10	20.00	20.00	10.00	30.00	20.00
Aggregated	**291**	**9.6**	**16.8**	**39.2**	**24.8**	**9.6**

Source: California Principal Survey (N=296).

Types of Professional Development.

On average, teachers that teach reading to students who do not know how to decode text receive professional development between once a year and once a semester. Relative to mses schools, lses schools significantly have more frequent department-level workshops or coaching, whereas hses schools have significantly less. Also, districts designated as "other" had significantly more frequent department-level workshops or coaching than Unified Districts. Relative to mses schools, teachers in hses and mhses schools receive school-wide workshops or coaching less frequently. However, there are no significant differences among the different district types. On average, relative to mses schools, teachers in mhses schools receive district-wide training less frequently. Also, schools in High School districts receive training more frequently than Unified Districts. We present details regarding the frequency of teachers receiving different types of professional development in Table 22.

Relative to schools in Unified Districts, teachers on staff in High School districts provided professional development more frequently for other teachers who teach ELL students, on average. There were no differences between schools from different SES strata. On average, relative to mses schools, district staff in mlses schools provided professional development more frequently for teachers who teach ELL students. On this measure there were no significant differences between schools from different district types.

Relative to mses schools, non-district consultants in mhses schools provided professional development less frequently for teachers who teach ELL students. Also, on average, relative to schools in Unified districts, non-district consultants in High School

districts provided professional development more frequently for other teachers who teach ELL students.

Table 22. ***Frequency of Different Types of Professional Development.***

	Number of Schools (N)	Percentage of Respondents				
		Never	Once a year	Once a Semester	Once a Month	Once a Week or More
Department level workshop/coaching						
SES Strata						
hses	31	***38.71%***	32.26%	16.13%	12.90%	0.00%
mhses	73	15.07%	***43.84%***	26.03%	15.07%	0.00%
mses	62	24.19%	22.58%	***27.42%***	24.19%	1.61%
mlses	55	12.73%	21.82%	***34.55%***	25.45%	5.45%
lses	33	3.03%	30.30%	***39.39%***	24.24%	3.03%
Type of District						
High School	70	14.29%	***31.43%***	28.57%	21.43%	4.29%
Unified	176	19.89%	***31.25%***	28.98%	19.32%	0.57%
Other	8	12.50%	12.50%	25.00%	***37.50%***	12.50%
Aggregated	**254**	**18.11%**	**30.71%**	**28.74%**	**20.47%**	**1.97%**
School-wide workshop/coaching						
SES Strata						
hses	31	29.03%	***45.16%***	22.58%	3.23%	0.00%
mhses	73	28.77%	***46.58%***	17.81%	6.85%	0.00%
mses	61	26.23%	22.95%	***36.07%***	14.75%	0.00%
mlses	54	20.37	***33.33%***	22.22%	22.22%	1.85%
lses	32	15.63	28.13%	***34.38%***	18.75%	3.13%
Type of District						
High School	70	20.00%	***31.43%***	***31.43%***	17.14%	0.00%
Unified	173	26.59	***38.15%***	21.97%	12.14%	1.16%
Other	8	25.00%	12.50%	***62.50%***	0.00%	0.00%
Aggregated	**251**	**24.70**	**35.46%**	**25.90%**	**13.15%**	**0.80%**
District-wide training						
SES Strata						
hses	31	35.48%	***38.71%***	22.58%	3.23%	0.00%
mhses	73	31.51%	***50.68%***	16.44%	1.37%	0.00%
mses	61	29.51%	31.15%	***34.43%***	4.92%	0.00%
mlses	56	16.07%	35.71%	***39.29%***	8.93%	0.00%
lses	32	18.75%	***43.75%***	25.00%	9.38%	3.13%
Type of District						
High School	69	18.84%	34.78%	***40.58%***	5.80%	0.00%
Unified	176	30.11%	***42.05%***	22.16%	5.11%	0.57%
Other	8	12.50%	***50.00%***	37.50%	0.00%	0.00%
Aggregated	**253**	**26.48%**	**40.32%**	**27.67%**	**5.14%**	**0.40%**

Source: California Principal Survey (N=296).

Ratings of Professional Development.

On average, principals in mhses schools rated the professional development provided by teachers on their staff to be of lower quality, relative to the ratings of principals in mses schools. Also, on average, principals from "Other" districts rated such professional development to be of higher quality, relative to the ratings by principals of Unified districts. Principals in mhses schools rated the professional development provided by district staff to be of lower quality, relative to the ratings of principals in mses schools. On average, principals from "Other" districts rated such professional development to be of higher quality, relative to the ratings by principals of Unified districts. On average, among schools of different SES strata there were no significant differences in the ratings of the quality of professional development provided by non-district consultants. However, on average, principals from "Other" districts rated the professional development provided by non-district staff to be of higher quality, relative to the ratings by principals of Unified districts.

What emerges from this descriptive analysis is that schools in High School districts are more frequently providing in-service training and professional development to their teachers that those in Unified School districts. The patterns are not as clear regarding the differences in schools from different SES strata. Also we do not find robust statistically significant patterns regarding text decoding. However, generally, the patterns indicate that the middle SES strata schools and schools from High School districts are engaged in more practices for improving the reading of students with weak reading skills. These findings are consistent with a hypothesis that High School District administrations are able to focus their resources and attention more on high schools, as compared with administrators in Unified School districts, who may be focusing more on elementary and middle schools. The findings are also consistent with a hypothesis that middle SES schools are also being more responsive to accountability. In the section that follows, we analyze the effects of these schools' practices on school achievement, measured by API growth.

Survey and Achievement Regressions.

Regression analyses of the survey responses indicate positive associations between API growth and teaching text decoding, as well as providing in-service training to teachers. The differences are especially significant between *always* providing professional development, relative to *never* doing so. We do not find consistent effects on API growth for teaching literacy through other content areas. Also, we find no significant effects on API growth for selecting English teachers with CLAD or similar ELL credentials, or Special Education background.

API Growth and Frequency of Teaching Reading.

At the 10% significance level, every unit increase in frequency of teaching text decoding on the 5-point scale is associated with higher API growth (2.1 points). Schools that *always* teach text decoding had a higher API growth (13.5 points), relative to those that *never* teaching text decoding, controlling for school district type, as well as school characteristics (such as school SES strata, baseline API, number of students included in API, percentage of students included in API, percentage of students who are ELL, and the dropout and graduation rate of the school). Relative to mses schools, mlses schools

are associated with a significantly lower API growth (-10.3 points). Relative to schools from Unified districts, High School districts are significantly associated with higher API growth (6 points) (Table 23).

Table 23. ***API Growth and Frequency of Teaching Reading (Standard Errors in Parentheses).***

Dependent Variable:	**API Growth (2006)**	**API Growth (2006)**	**API Growth (2006)**	**API Score (2006)**	**API Score (2006)**
lit_q24==2	14.183	5.109		5.109	
	(9.578)	(7.422)		(7.422)	
lit_q24==3	10.161	2.440		2.440	
	(9.236)	(7.037)		(7.037)	
lit_q24==4	11.860	3.832		3.832	
	(9.231)	(7.114)		(7.114)	
lit_q24==5	22.785*	13.486+		13.486+	
	(10.657)	(7.757)		(7.757)	
2005 API (Base)		-0.046	-0.043	0.954***	0.957***
		(0.030)	(0.030)	(0.030)	(0.030)
strata1		-6.839	-6.929	-6.839	-6.929
		(4.968)	(4.993)	(4.968)	(4.993)
strata2		-6.729	-6.457	-6.729	-6.457
		(4.246)	(4.241)	(4.246)	(4.241)
strata4		-10.521*	-10.251*	-10.521*	-10.251*
		(4.193)	(4.169)	(4.193)	(4.169)
strata5		-1.507	-0.962	-1.507	-0.962
		(5.271)	(5.214)	(5.271)	(5.214)
dst_high		6.112*	5.904*	6.112*	5.904*
		(2.905)	(2.878)	(2.905)	(2.878)
dst_other		22.005	23.955	22.005	23.955
		(16.913)	(17.570)	(16.913)	(17.570)
# Students in API		-0.003	-0.003	-0.003	-0.003
		(0.002)	(0.002)	(0.002)	(0.002)
% Student Tested		-0.969	-0.938	-0.969	-0.938
		(0.911)	(0.935)	(0.911)	(0.935)
% ELL		-0.110	-0.117	-0.110	-0.117
		(0.164)	(0.164)	(0.164)	(0.164)
04-05 Dropout Rate		1.299+	1.312^{+}	1.299+	1.312+
		(0.681)	(0.690)	(0.681)	(0.690)
04-05 Graduate Rate		0.337+	0.311	0.337+	0.311
		(0.200)	*(0.203)*	*(0.200)*	*(0.203)*
Teach reading			*2.134*$^{+}$		*2.134*$^{+}$
			(1.286)		(1.286)
Constant	-4.073	105.101	100.458	105.101	100.458
	(9.005)	(85.760)	(89.459)	(85.760)	(89.459)
Prob > F	0.1699	0.0483	0.0172	0.0000	0.0000
R-squared	0.0310	0.1365	0.1258	0.9238	0.9229
N	285	282	282	282	282

Source: California Principal Survey (N=296). * p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

API Growth and In-Service Literacy Training.

There was some evidence that provision of in-service literacy training is associated with higher API growth. At the 10% significance level, schools that provide in-service training for English teachers had a higher growth in API (4.9 points), relative

to those did not provide such training, controlling for school district type and school characteristics. Having a higher unit initial mean API was associated with a significant, but small decrease in API growth (-0.1 points). Relative to mses schools, mlses schools are associated with a significantly lower API growth (-11.9 points). Relative to schools from Unified districts, High School districts have significantly higher API growth (6.5 points) (Table 24).

Table 24. ***API Growth and In-Service-Literacy Training, by Dependant Variable (Standard Errors in Parentheses).***

Variables	API Growth (2006)	API Growth (2006)	API Growth (2006)	API Growth (2006)	API Score (2006)
In-service training	3.573	**4.942**+	4.736	5.448	4.942+
	(3.490)	(3.019)	(3.022)	(3.348)	(3.019)
2005 API (Base)		-0.067*	-0.072*	-0.074**	0.933***
		(0.028)	(0.028)	(0.024)	(0.028)
strata1		-7.348	-6.911	-6.132	-7.348
		(4.654)	(4.657)	(4.859)	(4.654)
strata2		-5.551	-5.474	-5.487	-5.551
		(4.040)	(4.053)	(4.141)	(4.040)
strata4		-11.914**	-11.925**	-11.853**	-11.914**
		(4.233)	(4.295)	(4.288)	(4.233)
strata5		0.467	-0.448	-0.410	0.467
		(5.424)	(5.529)	(6.622)	(5.424)
dst_high		6.481*	6.410*	4.577	6.481*
		(2.807)	(2.797)	(3.128)	(2.807)
dst_other		22.299	23.542	20.993	22.299
		(15.845)	(15.412)	(15.965)	(15.845)
+ Students in API		-0.003	-0.003	-0.003	-0.003
		(0.002)	(0.002)	(0.002)	(0.002)
% Student Tested		-0.834		-0.586	-0.834
		(0.883)		(0.867)	(0.883)
% ELL		-0.147	-0.153	-0.182	-0.147
		(0.164)	(0.163)	(0.174)	(0.164)
04-05 Dropout Rate		1.347+	1.326+		1.347+
		(0.802)	(0.788)		(0.802)
04-05 Graduation Rate		0.412+	0.374+		0.412+
		(0.222)	(0.214)		(0.222)
Constant	5.588	101.058	26.248	122.645	101.058
	(3.148)	(84.780)	(25.751)	(81.427)	(84.780)
Prob > F	0.3069	0.0048	0.0037	0.0041	0.0000
R-squared	0.0034	0.1576	0.1545	0.1222	0.9228
N	273	270	270	273	270

Source: California Principal Survey (N=296). * p<.05; **p<.01; ***p<.001 (two-tail); $^{+}$p<.05 (one-tail)

Discussion.

Our study provides evidence of positive associations between growth in API scores, and frequently teaching text decoding and providing in-service training for teachers who teach students who do not know how to decode text. These findings suggest that high schools that require teachers to teach reading to ELL students are doing something right. Our findings also suggest that, beyond requiring that teachers teach text decoding, schools that are providing frequent in-service training to support teachers are effectively doing so to influence their API growth. Also, given the positive associations

between High School districts and API growth, the efforts that such districts are making at improving student achievement are having more of an effect than the efforts by Unified or Other District types.

The findings provide convincing evidence that California's state accountability is working, to the extent that it motivates some types of districts and schools, especially High School districts and middle SES schools, to develop policies and practices supportive of in-service training for high-school teachers whose students have weak reading skills. The evidence indicates that the in-service training that districts and schools are providing to teachers is enabling them facilitate students' learning and thinking. The training may also be improving teachers' abilities to generate student interactions with each other and their text, as well as tap into their language proficiencies outside of the classroom. The positive associations with teaching text decoding and greater API growth also presents policymakers and teacher training institutions with some guidance on the benefits of training teachers to be more intentional and explicit in their attempts to work with California's increasing population of ELL students.

In gauging the effect of the practices studied on student achievement, we must also note that the literacy effects on improving achievement may be attenuated, due to our use of API data. Due to non-literacy subject areas that are used in calculating API, one may obtain larger effects by using ELA test scores exclusively. As shown in Table 25 below, API scores are computed as an index of several measures, including ELA scores. Therefore, finding significant effects of the literacy practices we studied may be indicative that the efforts in literacy may also be affecting student achievement in other areas. As noted previously, comprehension acquired by students who learn how to read may facilitate their learning in other subject areas, including Math, Science, and History-Social Science, which are all used in computing the API index.

Table 25: ***2005-06 API Reporting Cycle Test Weights for Grade Levels 9-11***[17]

Content Area Test Weights	**2005-06**
CST in ELA	0.300
CST in Math	0.200
CST in Science	0.150
CST in History-Social Science	0.225
CAHSEE in ELA	0.300
CAHSEE in Math	0.300

Source: CDE.

Beyond this effort, a number of additional studies could be conducted to determine other factors that improve literacy learning, and student achievement. Gross and Goertz (2005 p. 33) suggest that schools' perceptions of their communities' expectations about academic performance may be an important factor that influences their responsiveness to external accountability. Additional surveys could explore the effects of schools' perceptions on student achievement. Other studies could also explore

[17] See http://www.cde.ca.gov/ta/ac/ap/apidescription.asp
Note: The test weights shown in this table do not reflect the content area weights for a school, which will vary based upon these weights and the number of valid test scores in each content area. Test weights do not total 1.00.

the outreach programs that schools implement to educate immigrant parents about the different aspects of high school, and the resources that may be available for their children (Gross and Goertz, 2005 p. 88). Finally, it would be worthwhile to study in further detail how districts are interacting with high schools to respond to the accountability pressures.

V. Conclusions

This survey of almost three hundred California high schools gathered information about how high schools are responding to pressure from the state to meet higher standards primarily in math and English and to meet higher standards for all groups, including disadvantaged minorities. We focused on three areas: the use of data to improve a school's academic performance index; greater focus on programs for English language learners, and greater focus on literacy programs for students who enter ninth grade with reading difficulties.

We sampled within five strata of California high schools, where the socio-economic class and racial composition of students in the school define each stratum.

These are our main findings.

Data Use

- ✓ Sixty-three percent of schools in this study report having data software. However, the data disaggregated by strata show that less than half (45%) of high SES schools have data software, while over three quarters (76%) of low SES schools have data software. This suggests that low-income high schools are investing more in using data than high income high schools.

- ✓ Schools whose principals report that they place a higher level of importance on the High School Exit Exam (CAHSEE) and the HGSGP have significantly higher API scores. This confirms other results showing that when schools focus on assessment data their API scores improve (Williams et al., 2005).

- ✓ High schools located in High School districts have had significantly higher API growth than high schools in Unified districts. This suggests that High School districts are able to focus more attention on high schools than are Unified districts.

- ✓ Data use of assessment scores to analyze individual student performance, assess year to year gains, and adjust curriculum were considered more important for mathematics and language arts than science and social studies. Additionally, principals reported that mathematics teachers placed significantly more importance on data-based decision making than language arts teachers, science teachers, and social studies teachers. Principals reported that language arts teachers were significantly more concerned than science and social studies teachers and science teachers used data significantly more than social studies teachers. These results show a clear hierarchy within content areas about the

importance of making curricular and pedagogical decisions using student performance data.

English Language Learner Programs

- ✓ High schools in the middle socioeconomic strata are more likely to have an ELL program or department than are high schools with high or low socioeconomic students. Schools in strata 3 (middle level) are the most likely to have an ELL department and the most likely to have an ELL program.

- ✓ Having an ELL *department* in a high school is associated with a significant and large increase in ELL API scores from 2005 to 2006. The coefficients suggest this increase would be approximately 12 points.

- ✓ Having an ELL *program* in a high school is negatively related to the difference between 2005 and 2006 ELL API scores. While this result is significant only at a 10 percent significance level, the magnitude of the effect is quite large at 14 points.

- ✓ Having both an ELL program and department is negatively correlated with the difference in overall API scores between 2005-2006 (non-ELL and ELL). Schools with an ELL program and department experienced a 19 point decrease in overall API scores between 2005 and 2006.

Literacy Programs

- ✓ Schools in High School districts more frequently provide in-service training and professional development to their high school teachers than those in Unified districts. The patterns are not as clear regarding the differences in schools from different SES strata. Nevertheless, the patterns indicate that the middle SES strata schools and schools from high school districts are engaged in more practices for improving the reading of students with weak reading skills.

- ✓ The more time during the week a high school teaches reading skills to its students, the higher its API growth.

- ✓ High schools that provided in-service training for English teachers had a higher growth in API growth.

- ✓ High School districts consistently show higher API growth than Unified districts.

Appendices

Appendix A. California High School Principal Survey Questions

I) Data Analysis and Use:

1) As a principal, how often do you incorporate data from *state or district tests* of students when making curricular or other educational decisions?

□ Never □ Rarely □ Sometimes □ Often □ Always

2) How many staff of the types listed below at your school are involved with analyzing or interpreting data from *state or district tests* of students?

	Number of Staff					
	0	**1**	**2**	**3**	**4+**	**N/A**
Vice Principals……..	□	□	□	□	□	□
Department Chairs……	□	□	□	□	□	□
Coaches or Group Leaders……	□	□	□	□	□	□
Counselors…….……	□	□	□	□	□	□
Other: _____	□	□	□	□	□	□

3) How often do you or your staff actively *share* student test data from state or district tests with department heads or teachers?

□ Never □ Rarely □ Sometimes □ Often □ Always

4) How many staff do you have that are directly involved with making data available from state or district tests to other staff?

	Number of Staff					
	0	**1**	**2**	**3**	**4+**	**N/A**
Vice Principals……..	□	□	□	□	□	□
Department Chairs……	□	□	□	□	□	□
Coaches or Group Leaders……	□	□	□	□	□	□
Counselors…….……	□	□	□	□	□	□
Other: _____	□	□	□	□	□	□

5) California provides standardized assessment scores for 9th, 10th and 11th grade students. How often do you or another person at your school use these scores in the following activities: (Check the corresponding box in the scale below)

Use Assessment Scores to:	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
Compare scores/data with scores/data from previous years..	□	□	□	□	□
(Question 5 Continued) **Use Assessment Scores to:**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
Compare scores/data with scores/ data collected on 7th and 8th grade tests from feeder schools……	□	□	□	□	□
Distribute individual student scores/data to teachers in the					

following content areas:					
Math……	□	□	□	□	□
Language Arts…….	□	□	□	□	□
Science……	□	□	□	□	□
Social Studies……..	□	□	□	□	□
Assess score gains from year					
to year in the following					
content areas:					
Math……	□	□	□	□	□
Language Arts…….	□	□	□	□	□
Science……	□	□	□	□	□
Social Studies……..	□	□	□	□	□
Attempt to adjust curriculum					
based on test results:					
Math……	□	□	□	□	□
Language Arts…….	□	□	□	□	□
Science……	□	□	□	□	□
Social Studies……..	□	□	□	□	□

Teacher Involvement:

6) In your best estimation, how often do you think a typical teacher in your school analyzes the following forms of data?

	Never	**Once a Year**	**Once a Semester**	**Once a Month**	**2/3 Times a Month**	**Once a Week or More**
In-class assessments given by teachers…….	□	□	□	□	□	□
Grades given by other teachers……..	□	□	□	□	□	□
District test results……..	□	□	□	□	□	□
State test results……..	□	□	□	□	□	□

7) How important do you think *teachers* in the following departments rate using data to make decisions regarding curriculum, teaching practice, etc.?

	Less important							**More Important**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Math…….	□	□	□	□	□	□	□	□	□	□
Language Arts..	□	□	□	□	□	□	□	□	□	□
Science…….	□	□	□	□	□	□	□	□	□	□
Social Studies…	□	□	□	□	□	□	□	□	□	□

Professional Development:

8) Does your school have software (e.g. Edusoft, etc.) enabling teachers to download assessment and other data from the district or state?

□ Yes □ No (If no, please move on to question 14.)

9) Please provide the name of this software.

_____

_____

10) Who supplied the software (district, school, private)?

_____

_____

11) Please identify the *sources of funding* for this software.

_____

_____

12) How frequently have teachers received the following types of professional development for using the software designated above during the 2004-2005 academic year (including summer 2005)?

	Never	Once a Year	Once a Semester	Once a Month	2/3 Times a Month	Once a Week or More
Teacher peer-to-peer coaching..	□	□	□	□	□	□
Department level workshops…	□	□	□	□	□	□
School-wide workshops……	□	□	□	□	□	□
District-wide training……	□	□	□	□	□	□

13) How frequently do the following organizations provide the professional development for using the software designated above?

	Never	Once a Year	Once a Semester	Once a Month	2/3 Times a Month	Once a Week or More
Teachers on Staff…….....	□	□	□	□	□	□
District Staff……...	□	□	□	□	□	□
County Office of Education…	□	□	□	□	□	□
Outside Consultants……	□	□	□	□	□	□
Software company training….	□	□	□	□	□	□

14) Please rate the importance of each factor below in developing strategies for raising the API in your school:

Level of Importance:	**None**	**Low**	**Moderate**	**High**	**N/A**
High Priority Schools Grant Program (HPSGP) Inclusion……...	□	□	□	□	□
State mandates……...	□	□	□	□	□
District mandates for raising API scores.....	□	□	□	□	□
District assessments……...	□	□	□	□	□
Passage rate on California High School Exit Exam (CAHSEE)……	□	□	□	□	□
Achievement gap data…….....	□	□	□	□	□

(Question 14 Continued)

Level of Importance:	**None**	**Low**	**Moderate**	**High**	**N/A**
California Achievement Test, Sixth Edition					

(CAT/6) scores…….....	□	□	□	□	□
End-of-course exams…….....	□	□	□	□	□
Redesignation of ELL students from California English Language Development Test (CELDT) …….	□	□	□	□	□
Staff consensus building …….....	□	□	□	□	□
Financial considerations……..	□	□	□	□	□
Parental Involvement……..	□	□	□	□	□
Other sources: _____	□	□	□	□	□

District Role:

15) Does your district office do any of the following?

	Never	**Rarely**	**Sometimes**	**Frequently**	**Always**
Distribute test score data to your school…….....	□	□	□	□	□
Provide disaggregated test score data to your school …..	□	□	□	□	□
Provide detailed analysis of school level data to your school..	□	□	□	□	□
Provide resources for analyzing test data in your school…	□	□	□	□	□
Provide resources for implementing strategies to increase API scores…	□	□	□	□	□
Provide resources for school coaches.....	□	□	□	□	□
Recommend action based on analysis of test scores....	□	□	□	□	□
Other: _____	□	□	□	□	□

II) English Language Learner (ELL) Programs:

16) If a student indicates a non-English language on the home language survey, how likely are the following actions to occur at your school?

	Never	**Rarely**	**Sometimes**	**Frequently**	**Always**
Language proficiency testing...	□	□	□	□	□
Transcript evaluation……	□	□	□	□	□
Transferring student to school with appropriate program….	□	□	□	□	□
Placement in classes with CLAD/ BCLAD certified teachers..	□	□	□	□	□
Following District recommendations for ELL placement….....	□	□	□	□	□
Other: _____	□	□	□	□	□

17) Does your school have a separate *department* for English Language Learners?
□ Yes □ No

18) Does your school have a separate *program* for English Language Learners?
□ Yes □ No (If No for 17 *and* 18, please move on to question 21.)

19) If your school has an ELL department or program, who chooses your school's ELL *curriculum package*? (Check all that apply).
□ District □ School □ Department □ Teacher □ Other: _____

20) If your school has an ELL department or program, who chooses your school's ELL *instructional materials*? (Check all that apply).
□ District □ School □ Department □ Teacher □ Other: _____

21) How frequently do teachers who have predominantly ELL students *receive* the following types of professional development for ELL?

	Never	**Once a Year**	**Once a Semester**	**Once a Month**	**Once a Week or More**
Department level workshops or coaching ……	□	□	□	□	□
School-wide workshops or coaching…….	□	□	□	□	□
District-wide training…….....	□	□	□	□	□

22) How frequently do the following people *provide* professional development for teachers who have predominantly ELL students?

	Never	**Once a Year**	**Once a Semester**	**Once a Month**	**Once a Week or More**
Teachers on Staff…….	□	□	□	□	□
District Staff…….	□	□	□	□	□
Non-District Consultants……	□	□	□	□	□
Other: _____	□	□	□	□	□

23) Please rate the quality of the professional development provided by the following groups for teachers who have predominantly ELL students.

	Lower Quality						**Higher Quality**				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**N/A**
Teachers on Staff……	□	□	□	□	□	□	□	□	□	□	□
District Staff……	□	□	□	□	□	□	□	□	□	□	□
Non-District Consultants	□	□	□	□	□	□	□	□	□	□	□
Other: _____	□	□	□	□	□	□	□	□	□	□	□

III) Literacy Programs:

24) Do English teachers teach reading to students who do not know how to decode text?
□ Never □ Rarely □ Sometimes □ Often □ Always

25) Please indicate if you use any of the following criteria for selecting English teachers that teach reading to students who do not know how to decode text.

	Yes	No
CLAD or similar ELL credential……	□	□
Special Education Background……..	□	□
In-service literacy training…….	□	□

26) Is literacy, for students who do not know how to decode text, taught through other content areas?

□ Never □ Rarely □ Sometimes □ Often □ Always

27) Does your school provide professional development for teachers that teach reading to students who do not know how to decode text?

□ Never □ Rarely □ Sometimes □ Often □ Always

(If Never, please follow the directions at the end of survey).

28) How frequently do teachers that teach reading, for students who do not know how to decode text, *receive* the following types of professional development?

	Never	Once a Year	Once a Semester	Once a Month	Once a Week or More
Department level workshops or coaching ……	□	□	□	□	□
School-wide workshops or coaching…….	□	□	□	□	□
District-wide training……....	□	□	□	□	□

29) How frequently do the following people *provide* professional development for teachers that teach reading to students who do not know how to decode text?

	Never	Once a Year	Once a Semester	Once a Month	Once a Week or More
Teachers on Staff…….	□	□	□	□	□
District Staff…….	□	□	□	□	□
Non-District Consultants…….	□	□	□	□	□
Other: _____	□	□	□	□	□

30) Please rate the quality of the professional development provided by the following groups for teachers that teach reading to students who do not know how to decode text.

	Lower Quality						Higher Quality				
	1	2	3	4	5	6	7	8	9	10	N/A
Teachers on Staff……	□	□	□	□	□	□	□	□	□	□	□
District Staff……	□	□	□	□	□	□	□	□	□	□	□
Non-District Consultants	□	□	□	□	□	□	□	□	□	□	□
Other: _____	□	□	□	□	□	□	□	□	□	□	□

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