

LOS ANGELES UNIFIED SCHOOL DISTRICT
Program Evaluation and Research Branch

TO: Members, Board of Education

DATE: June 8, 2005

FROM: Ted Bartell

SUBJECT: TEACHER RETENTION IN YEAR 5 PROGRAM IMPROVEMENT SCHOOLS

The attached report is a response to a Human Resources Committee request to investigate teacher retention within Year 5 Program Improvement schools. This report examines teacher retention in the nine PI-5 schools in comparison to schools with similar background characteristics. Three research questions are examined:

1. Do teacher characteristics in the PI-5 schools differ from comparable schools?
2. Does teacher stability at the PI-5 schools differ from comparable schools?
3. Does teacher vacancy at the PI-5 schools differ from comparable schools?

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**TEACHER RETENTION IN YEAR FIVE PROGRAM
IMPROVEMENT SCHOOLS**

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Overview

At the request of the Board of Education's Human Resources Committee, the Program Evaluation and Research Branch examined teacher retention within Year 5 Program Improvement (PI-5) schools. NCLB requires that schools meet annually Adequate Yearly Progress (AYP) goals. Schools that receive Title I, Part A, funds are identified for Program Improvement if they do not meet AYP criteria for two consecutive years in specific areas. A school that begins the school year in PI status and does not meet all AYP criteria for that school year advances to the next year of PI status. Schools that do not meet AYP criteria for seven years are designated as PI-5 schools.¹

By the 2004-05 school year, 176 LAUSD schools were identified for Program Improvement. Of those schools, nine were designated as PI-5 schools: four middle schools and five senior high schools. This report examines teacher retention in the nine PI-5 schools in comparison to schools with similar background characteristics. Three research questions are examined:

1. Do teacher characteristics in the PI-5 schools differ from comparable schools?
2. Does teacher stability at the PI-5 schools differ from comparable schools?
3. Does teacher vacancy at the PI-5 schools differ from comparable schools?

Throughout the report, separate analyses are conducted for the middle schools and senior high schools.

Methodology

To address the above research questions we utilized annual data extracts from the LAUSD Human Resources database, which provides demographic and teaching status information on teachers in the district. To estimate teacher vacancies, we rely on a list of vacancies as of May 11, 2005 produced by the Human Resources Division. Unfortunately, we are not able to track vacancies over time because the Human Resources Division does not keep historical data files on teacher vacancies.

We identified comparison schools by matching each of the nine PI-5 schools with a school of the same level (i.e., middle or senior high) and a similar School Characteristics Index (SCI). The SCI can be interpreted as representing that part of performance attributed to background

¹ For more information on AYP and Program Improvement see, "2004 Accountability Progress Report: Information Guide," Prepared by the California Department of Education, August 2004: <http://www.cde.ca.gov/ta/ac/ay/>

characteristics. Thus, schools with a SCI close in numerical value are described as facing similar overall educational challenges and opportunities.² Table 1 lists the PI-5 schools and comparison schools identified for the analysis. In addition to the PI-5 and comparison schools, we also included all PI-4 and non-PI middle and senior high schools in the analysis. To adequately assess teacher retention, we restricted the analysis to schools in operation for at least five years (as of 2004-05).

Table 1: PI-5 Schools and Comparison Schools

PI-5 Schools			Comparison Schools		
School	PI	SCI	School	PI	SCI
<i>Middle Schools</i>					
Gompers Middle School	5	136.1	Carver Middle School	4	136.2
Mann Middle School	5	131.7	Curtiss Middle School	1	133.1
Mount Vernon Middle School	5	134.9	Emerson Middle School	2	134.7
Sun Valley Middle School	5	143.5	Mulholland Middle School	4	143.8
<i>Senior High Schools</i>					
Fremont Senior High	5	138.5	Manual Arts Senior High	4	140.0
Jefferson Senior High	5	135.4	Washington Prep Senior High	4	137.5
Locke Senior High	5	141.4	Crenshaw Senior High	4	141.4
Roosevelt Senior High	5	141.7	Dorsey Senior High	4	141.8
Wilson Senior High	5	148.7	Canoga Park Senior High	none	148.5

Notes: PI=Program Improvement; SCI = School Characteristics Index.

Teacher Characteristics

Approximately 350 LAUSD teachers work at PI-5 middle schools, which serve about 8,200 students. At the senior high school level, about 800 teachers work at PI-5 schools, which serve about 15,600 students. The student-teacher ratios at the PI-5 schools are similar to the ratios at the comparison schools. In fact, the non-PI schools have a higher student-teacher ratio (31.5 for middle schools and 23.5 for senior high schools), on average, than comparison schools. Table 2 provides a profile of LAUSD middle school teachers by PI status and Table 3 contains the profile of LAUSD senior high school teachers.

²Technical Design Group of the Advisory Committee for the Public Schools Accountability Act of 1999. *Construction of California's 1999 School Characteristics Index and Similar Schools Ranks*, April 2000.

Table 2: Profile of Middle School Teachers by PI Status

	PI-5 Schools	Comparison Schools	All Non-PI Schools	All PI-4 Schools
Total Number of Teachers	347	296	1,002	2,622
Student-Teacher Ratio	23.7	25.8	31.5	26.0
Gender (%):				
Female	53.6	52.0	61.6	54.5
Male	46.4	48.0	38.4	45.5
Race/Ethnicity (%):				
African American	26.2	21.4	9.3	17.5
Asian	5.8	8.2	9.3	7.7
Hispanic	17.2	17.0	12.5	21.9
White	45.4	50.0	65.5	49.0
Other	5.5	3.4	3.5	4.0
Highest Degree (%):				
Doctorate	1.7	3.7	1.7	2.4
Masters	23.7	31.4	26.5	22.2
Bachelors	74.6	64.9	71.8	75.4
Years Experience (%):				
Less than 2	40.6	21.1	20.0	25.4
2 to 5	27.7	32.0	22.6	26.4
5 to 10	16.1	16.7	23.4	22.1
Ten or more	15.6	30.3	34.1	26.1
Mean Years Experience	5.1	8.0	9.4	7.6
Credential Status (%):				
Credentialed	73.8	80.6	89.9	80.1
Intern	18.6	12.7	7.0	14.0
Emergency/Temporary	7.6	6.7	3.2	6.0
Type of Credential (%):				
Single - Core Dept.	39.5	48.0	41.1	42.1
Single - Other Dept.	13.3	12.5	18.9	15.0
Multiple Subject	27.1	24.7	25.1	25.0
Special Ed.	11.0	8.5	8.4	9.4
Other	9.2	6.4	6.6	8.6
% with CLAD	5.2	10.8	12.0	8.6

Notes: Years experience refers to years of service in LAUSD; Core departments include English, math, science, and social science.

Source: TASS 2004-05 Extract, Human Resources Division, LAUSD.

Middle School Teachers

Just over half of the teachers at PI-5 schools are female and almost half are white. About a quarter of the teachers are African American. The gender and race/ethnicity breakdowns are

similar to the comparison school faculty, but somewhat different from the PI-4 and non-PI faculties. In particular, PI-5 schools are more likely to have African American teachers than PI-4 and non-PI schools.

PI-5 teachers have less education and experience. About one-quarter of PI-5 teachers possess a masters or doctorate degree, while just over one-third of the comparison school teachers hold a masters or doctoral degree. However, the comparison school teachers also had more education, on average, than teachers at the PI-4 and non-PI schools. Twice as many teachers in PI-5 schools have less than two years of experience in LAUSD as comparison schools. Similarly, PI-5 teachers are half as likely to have ten or more years of experience as comparison school teachers. The faculty at PI-5 schools averaged five years of experience compared to eight years of experience at the comparison schools. PI-5 teachers also had less experience than teachers at the PI-4 and non-PI schools.

Credential status mirrors the differences in teaching experience. PI-5 schools are somewhat more dependent on intern and emergency/temporary teachers than the comparison schools, PI-4 schools, and non-PI schools. Proportionally fewer teachers in PI-5 schools hold a single-subject credential in one of the four core departments (English, math, science, and social science) and half as many have a CLAD authorization.

Senior High School Teachers

Teachers at the PI-5 senior high schools and comparison schools are more similar than at the middle school level. PI-5 teachers are more likely to be male and hispanic than teachers at the comparison schools, but the gender and racial/ethnic distributions are similar to those in PI-4 schools. More importantly, the education and experience discrepancy between the PI-5 and comparison schools is not as large at the senior high school level. About 30% of PI-5 teachers have a masters or doctorate degree compared to 33% for the comparison schools, 30% for the non-PI schools, and 32% for the PI-4 schools. Additionally, the PI-5 faculty averages about one year less experience than the comparison school faculty (8.4 years compared to 9.3 years).

Like PI-5 middle schools, the PI-5 senior high schools are somewhat more dependent on intern teachers than the comparison schools, PI-4 schools, and non-PI schools. However, PI-5 and the comparison schools have a similar percent of emergency/temporary teachers. Additionally, the percent of PI-5 teachers who hold a single-subject credential in one of the four

core departments is slightly higher than at the comparison schools. The same is true for the percent of teachers with CLAD authorization.

Table 3: Profile of Senior High School Teachers by PI Status

	PI-5 Schools	Comparison Schools	All Non-PI Schools	All PI-4 Schools
Total Number of Teachers	805	517	1,652	1,949
Student-Teacher Ratio	19.4	21.9	23.5	20.8
Gender (%):				
Female	44.6	51.6	50.2	45.6
Male	55.4	48.4	49.8	54.4
Race/Ethnicity (%):				
African American	17.7	41.7	9.5	17.9
Asian	9.2	2.5	7.7	6.9
Hispanic	34.5	14.4	16.8	28.8
White	36.0	39.8	62.6	43.4
Other	2.6	1.6	3.5	3.0
Highest Degree (%):				
Doctorate	2.2	3.7	2.8	2.8
Masters	27.6	29.5	27.4	29.1
Bachelors	70.3	66.8	69.8	67.9
Years Experience (%):				
Less than 2	28.2	20.2	16.8	21.2
2 to 5	22.3	23.9	20.6	19.4
5 to 10	18.0	21.9	24.5	21.6
Ten or more	31.6	34.1	38.1	37.8
Mean Years Experience	8.4	9.3	10.5	10.0
Credential Status (%):				
Credentialed	77.2	83.0	87.9	83.4
Intern	15.2	9.5	7.2	10.7
Emergency/Temporary	7.6	7.5	4.9	5.9
Type of Credential (%):				
Single - Core Dept.	58.3	53.2	60.9	57.9
Single - Other Dept.	22.2	27.1	22.9	23.9
Multiple Subject	2.0	2.7	3.3	2.2
Special Ed.	9.2	8.7	6.4	8.1
Other	8.3	8.3	6.5	8.0
% with CLAD	8.1	7.7	8.1	7.3

Notes: Years experience refers to years of service in LAUSD; Core departments include English, math, science, and social science.

Source: TASS 2004-05 Extract, Human Resources Division, LAUSD.

Teacher Stability

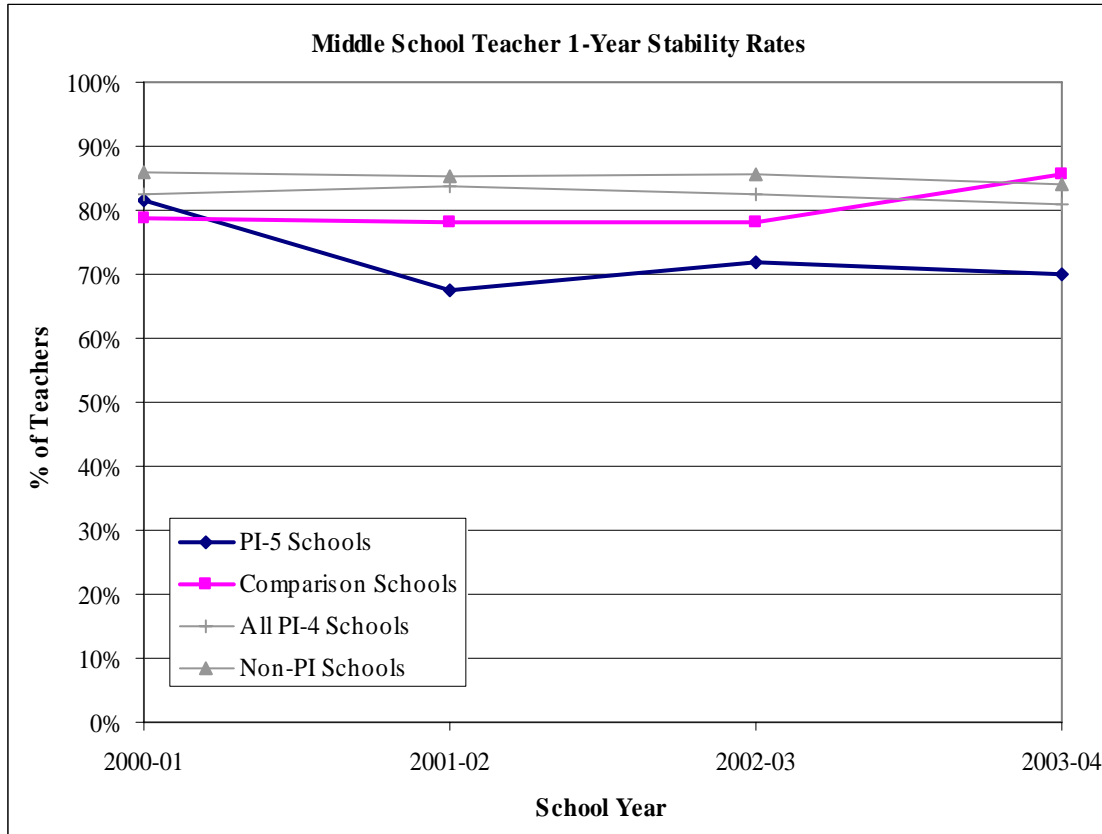
Teacher stability is perhaps the most straightforward way to estimate teacher retention. We employ two measures of teacher stability for this analysis. The first is an annual, cross-sectional, one-year stability rate.³ A higher stability rate indicates that more teachers return to teach at the same school from year to year. Figures 1 and 3 display the annual stability rates from the 2000-01 to the 2003-04 school years for the middle schools and senior high schools, respectively. The second measure uses longitudinally matched data to track a cohort of teachers over time. To calculate the longitudinal measure we identified teachers who taught in LAUSD during the 2000-01 school year and followed them over four years to see how many remained with the same school. Figures 2 and 4 display this four-year stability rate from the 2000-01 to the 2004-05 school year for the middle schools and senior high schools, respectively.

Middle School Stability

In the 2000-01 school year, the PI-5 and comparison schools had one-year stability rates around 80%, which means about 80 of every 100 teachers returned to teach at the same school the following year. By the 2003-04 school year, however, the average stability rate for PI-5 schools was about ten percentage points lower than three years earlier because of a significant decrease between the 2000-01 and 2001-02 school years. In contrast, the average stability rate for the comparison schools was about five percentage points higher than three years earlier because of a significant increase between the 2002-03 and 2003-04 school years. As a result, the 2003-04 stability rate is significantly lower for PI-5 middle schools than for the comparison schools. The annual teacher stability rate for PI-4 and non-PI schools remained fairly constant, between 80-85%, during this period of time.

³ The one-year stability rate reflects the percentage of a school's faculty that remains at the school for the entire year, and equals the number of teachers at a school minus the number of teachers who do not return to the school the following year, divided by the total number of teachers at the school.

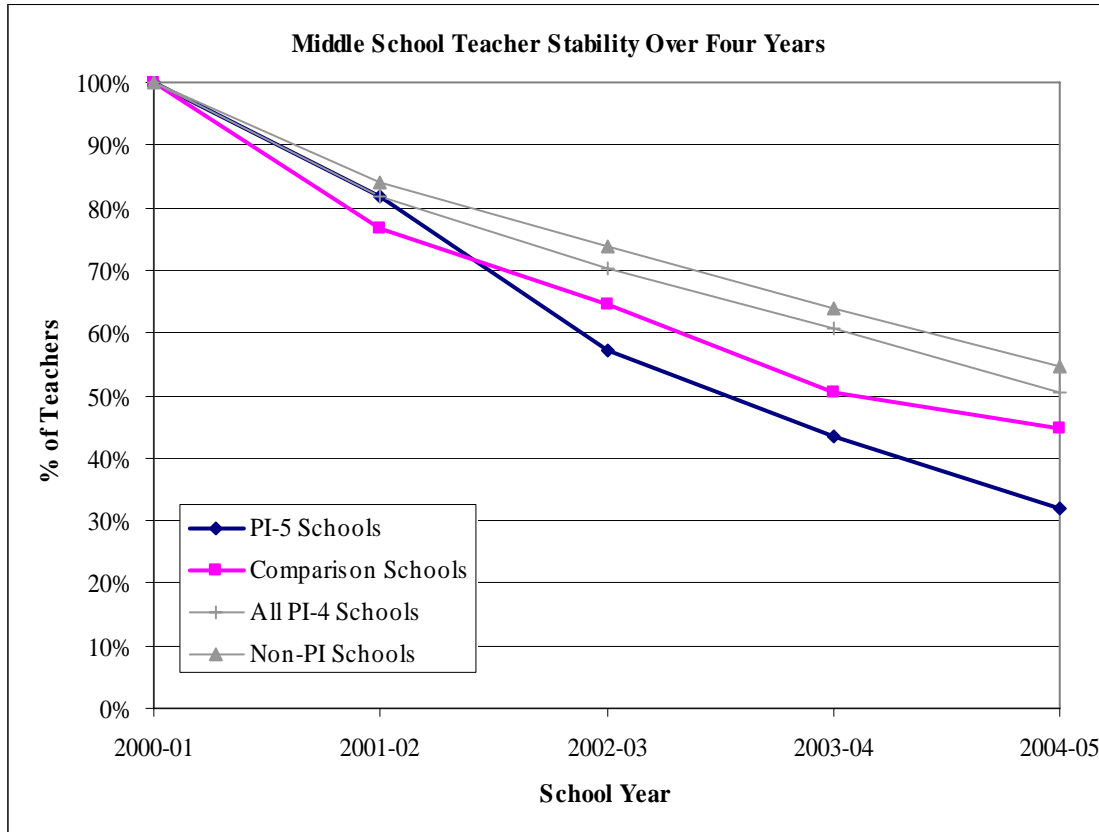
Figure 1: Middle School Teacher Stability Rates by PI Status



Source: TASS Annual Extract, Human Resources Division, LAUSD.

The four-year picture of stability reveals a more pronounced pattern of decreased stability at PI-5 schools over time. Of the teachers employed at PI-5 schools in the 2000-01 school year, 82% were still at the same school the following year (2001-02), which is slightly higher than the 77% rate for the comparison schools. Two years later, however, only 57% of the PI-5 2000-01 teacher cohort remained with the same school compared to 65% for the comparison schools. By the 2004-05 school year, only 32% of the PI-5 teacher cohort remained with the same school compared to 45% for the comparison schools. While the percent of teachers returning to PI-5 schools was similar to the percent at PI-4 and non-PI schools after one year, beyond one year the percent at PI-5 schools decreased at a faster rate. If we restrict the analysis of stability to credentialed teachers the general pattern remains the same.

Figure 2: Middle School Teacher Stability over Time by PI Status

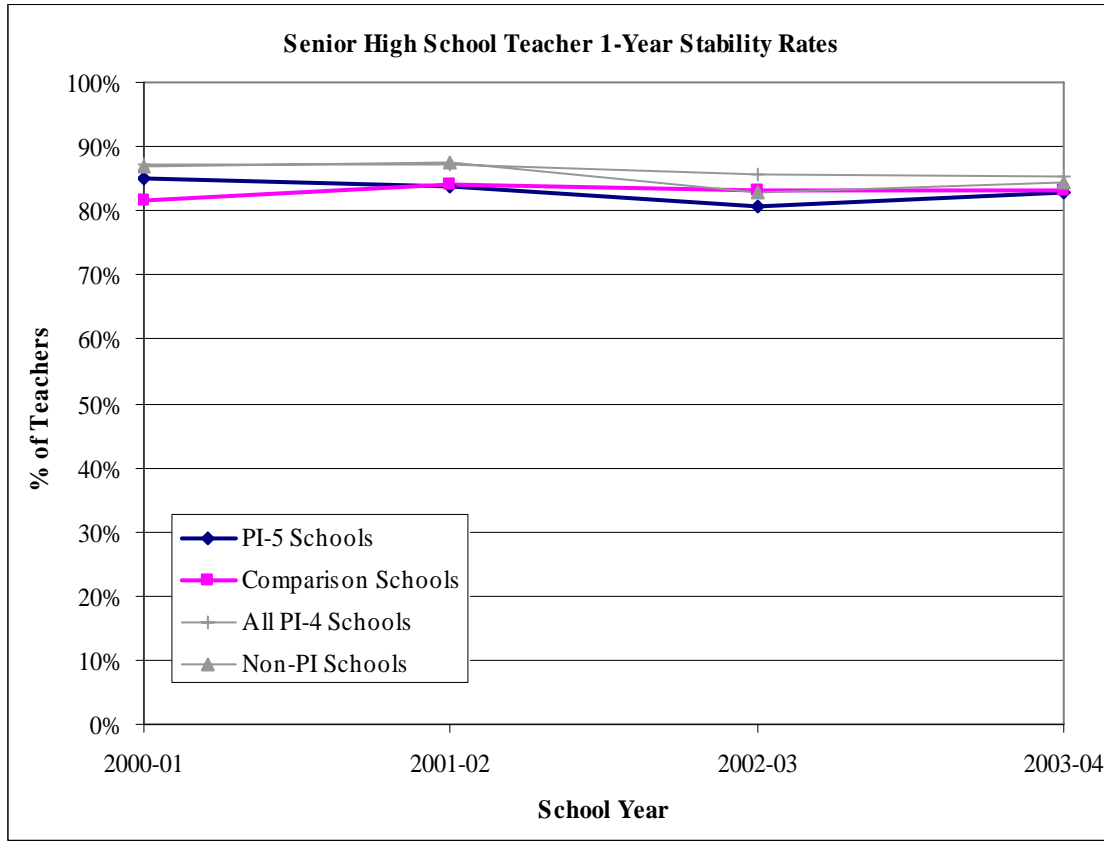


Source: TASS Annual Extract, Human Resources Division, LAUSD.

Senior High School Stability

One-year stability rates for PI-5 senior high schools did not fluctuate as much over time as the rates for PI-5 middle schools. The annual rates for the PI-5 and comparison senior high schools remained between 80% and 85% from the 2000-01 to 2003-04 school year. Even compared to PI-4 and non-PI schools, annual stability rates for the PI-5 schools did not differ significantly.

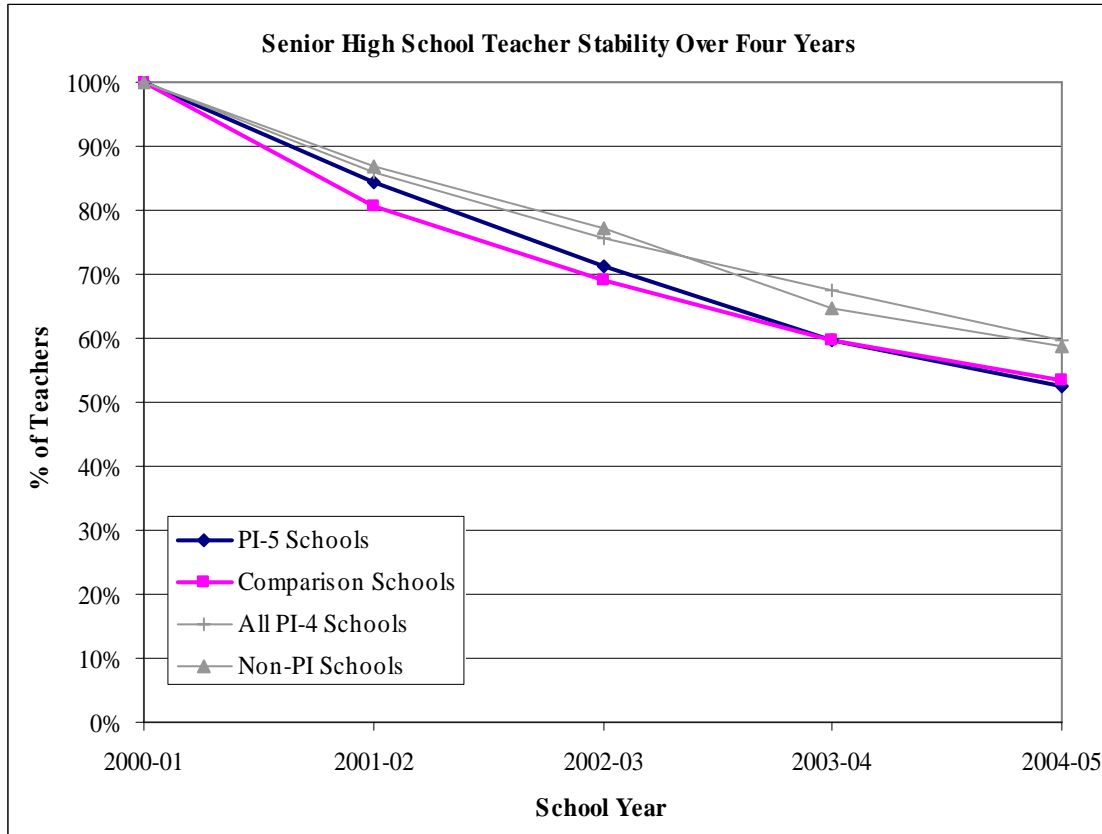
Figure 3: Senior High School Teacher Stability Rates by PI Status



Source: TASS Annual Extract, Human Resources Division, LAUSD.

The four-year trend of stability also suggests little difference between PI-5 senior high schools and the comparison schools. Of the teachers employed at PI-5 senior high schools in the 2000-01 school year, 84% were still at the same school the following year (2001-02), which is slightly higher than the 81% rate for the comparison schools. Two years later 71% of the PI-5 2000-01 teacher cohort remained with the same school compared to 69% for the comparison schools. By the 2004-05 school year, about 53% of the PI-5 and comparison school teacher cohort remained with the same school. Over this period the percent of teachers returning to PI-5 schools was slightly lower than the percent returning to PI-4 and non-PI schools. Again, if the analysis of stability is restricted to credentialed teachers the general pattern remains the same.

Figure 4: Senior High School Teacher Stability over Time by PI Status



Source: TASS Annual Extract, Human Resources Division, LAUSD.

Teacher Vacancies

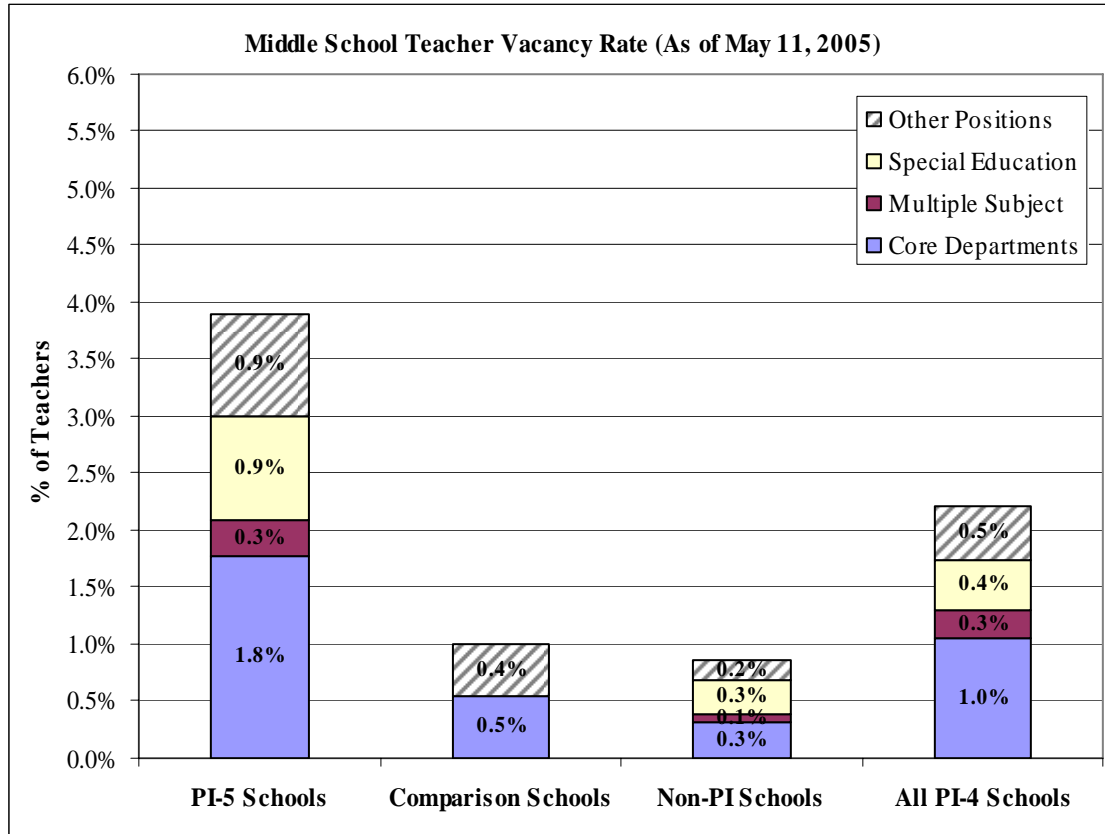
Vacant teaching positions are a reflection of teacher retention, recruitment, and supply. We calculated a vacancy rate for each school by dividing the number of vacancies at a school on May 11, 2005 by the number of teachers at the school at the beginning of the 2004-05 school year. Ideally, we would like to calculate a vacancy rate based on the number of teacher vacancies at the start of the school year, but the May 2005 vacancy counts were the only school-level data available for this analysis. Figures 5 and 6 display the vacancy rates by PI status for the middle schools and senior high schools, respectively.

Middle School Vacancies

On May 11, 2005, there were 13 vacant positions at the PI-5 middle schools, an average of about three vacancies at each school. In contrast, the comparison schools only had four vacant positions—or an average of one vacancy at each school. As a result, the vacancy rate for PI-5

middle schools was about four times higher than at the comparison schools (4% compared to 1%). The teacher vacancy rate for PI-5 schools was also higher than at PI-4 and non-PI schools. Almost half of the vacancy rate for PI-5 schools was from vacancies in the core single-subject departments, which is also true for the comparison schools. Unlike the comparison schools, however, a significant proportion of the vacancies are for special education teachers.

Figure 5: Middle School Teacher Vacancy Rates by PI Status



Source: Teacher Vacancy Database Extract, Human Resources Division, LAUSD, May 11, 2005.

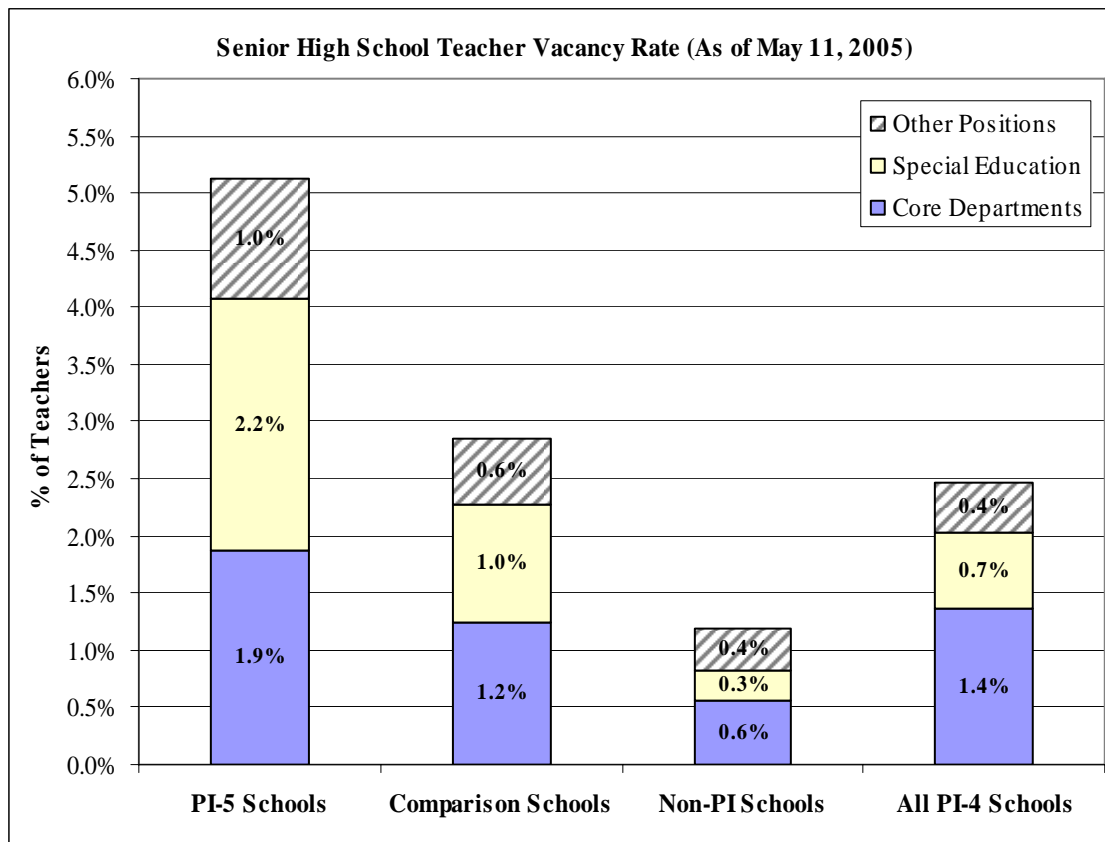
Note: Core departments include English, math, science, and social science.

Senior High School Vacancies

Teacher vacancies were slightly more prevalent at the senior high school level than at the middle school level. There were 39 vacant positions at the PI-5 senior high schools, an average of almost eight vacancies at each school. In contrast, the comparison schools had 17 vacant positions—or an average of three to four vacancies at each school. As a result, the vacancy rate for PI-5 senior high schools was almost two times higher than at the comparison schools (5.1% compared to 2.8%). The teacher vacancy rate for PI-5 schools was also higher than at PI-4 and

non-PI schools. Special education vacancies accounted for the largest discrepancy between vacancies at PI-5 and comparison schools. Proportionally, PI-5 schools had over twice as many special education vacancies than the comparison schools. As a result, if the vacancy rate is restricted to the four core departments, the difference between the PI-5 and the comparison schools is not as large (1.9% compared to 1.2%) as the overall difference in vacancy rates, however.

Figure 6: Senior High School Teacher Vacancy Rates by PI Status



Source: Teacher Vacancy Database Extract, Human Resources Division, LAUSD, May 11, 2005.

Note: Core departments include English, math, science, and social science.

Conclusions

Overall, middle schools designated for Year 5 Program Improvement retain teachers at a lower rate than similar schools. First, PI-5 teachers have lower levels of educational attainment and fewer years of experience, on average, than teachers at the comparison schools. This discrepancy is partially because PI-5 schools are slightly more dependent on intern and emergency/temporary teachers. Second, teacher turnover is more pronounced at PI-5 schools as

exhibited by lower stability rates. These rates were similar to those at the comparison schools in the 2000-01 school year but diverged in more recent years. Lastly, teacher vacancy rates are higher at PI-5 middle schools compared to other schools. This suggests that the PI-5 schools not only have more trouble retaining teachers, but also have more difficulty recruiting them.

Senior high schools designated as PI-5 also have higher teacher vacancy rates than other schools, but do not appear to suffer lower teacher retention than comparable schools. PI-5 teachers have slightly lower levels of educational attainment and years of experience, on average, than teachers at comparison schools. They are also slightly more dependent on intern teachers. However, the teacher stability rates at PI-5 senior high schools and comparison schools were not significantly different. This suggests that the relatively high vacancy rates at PI-5 senior high schools may result more from difficulties in teacher recruitment (particularly for special education teachers) than teacher retention.