Strategic School Funding for Results (SSFR)

Assessing the Distribution of Fiscal and Personnel Resources across Schools

A Report Prepared for Pasadena Unified School District
SSFR Research Report #01 (PUSD)

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Acknowledgments

About Strategic School Funding for Results (SSFR)

Purpose

During the 2009-10 school year, the American Institutes for Research (AIR) and Pivot Learning Partners (PLP) formed a partnership with three large California school districts—Los Angeles, Pasadena, and Twin Rivers Unified School Districts—to begin a project to implement and evaluate the impact of a comprehensive approach to local school finance, governance, and human resource management. With the ultimate goal of improving the level and distribution of both teacher effectiveness and student learning opportunities, the *Strategic School Funding for Results (SSFR)* project was designed to (a) develop and implement more **equitable** and **transparent** strategies for allocating resources within each district; (b) link those strategies to policies and processes designed to encourage **innovation, efficiency,** and **teacher effectiveness;** and (c) strengthen **accountability** for improving student outcomes.

What policies underlie SSFR?

The theory of action underlying the project encompasses the following three elements: a culture of innovation and efficiency, increased transparency, and resource equity.

1) *A **culture of innovation and efficiency** can be achieved by:*

   a) *increasing school autonomy linked with accountability for results;*

   b) *creating appropriate incentives for improving the performance of principals, teachers, and other school faculty;*

   c) *ensuring access to a wide range of educational choices by families and children; and*

   d) *providing school leaders with the opportunity to select and purchase various support services from the central office.*

2) ***Increased transparency** can be achieved by:*

   a) *simplifying and clarifying the processes by which resources are allocated to schools; and*

   b) *increasing the participation of a wide range of stakeholders in the design of these processes.*

3) ***Equity** can be improved by allocating dollars to schools based on student needs.*

The results of this evaluation will provide information to help federal, state, and local policymakers in their consideration of policies that will improve learning opportunities for all children.

What are the benefits of participation in the SSFR project?

Within the framework of the SSFR project, the AIR/PLP team provides the districts with data tools and analysis, technical assistance, coaching, and training to implement the funding strategies and evaluate their success. While there are common themes being promoted across the three participating districts, each has adopted its own focus and is adapting the SSFR components to fit its unique culture and context. Each of the three participating districts has committed time on the part of its leadership and staff to participate effectively in this project and has acknowledged that the project represents a collaborative effort between the AIR/PLP and district leadership teams. The formative nature of the project allows for a

mutual learning experience between the participating districts and the AIR/PLP team and the creation of a strong partnership in successfully implementing SSFR.

How is SSFR being funded?

During the 2009-10 school year, the William and Flora Hewlett and Ford Foundations provided grants to the AIR/PLP team to support the first phase of the SSFR work. August 1, 2010 marks the beginning of the second phase of the project. During the spring of 2010, the Institutes for Education Sciences (IES) in the U.S. Department of Education awarded a grant to the AIR/PLP team to support the further development of the SSFR model over the next three years. In addition, the AIR/PLP team submitted proposals to the Hewlett and Ford Foundations to extend their support of the implementation and evaluation components of the project over the same three-year period. Finally, the AIR/PLP team in collaboration with our three district partners has also submitted a proposal for a grant under the Investing in Innovation (I3) program by the U.S. Department of Education to extend the development, implementation, and evaluation of SSFR over the next five years.

The result of this work will provide a guidebook for other districts interested in implementing their own version of the SSFR model and a series of reports describing the changes in the patterns of resource allocation and student outcomes that coincided with the implementation of SSFR in the three districts.

Highlights

As a starting point for our analysis of equity, we begin our work here with an examination of the relationship between student performance, as measured by the California Academic Performance Index (API), and student needs, as measured by the percentage of students from low-income families (i.e., the percent of students eligible for the free and reduced lunch program). Then, using fiscal data provided by the finance office of the school district, and personnel data obtained from the California Basic Education Data System maintained by the California Department of Education (CDE), we present analyses to provide a foundation for local policymakers to assess whether there are inequities in the way fiscal and personnel resources are distributed across schools. We find that:

- Schools with the highest percentage of students from low-income families exhibit the lowest performance on the California Academic Performance Index (API).

- The highest need schools (those serving the highest percent of students from low-income families) generally spend somewhat more than the lowest need schools and most of this difference is driven by categorical or restricted funding.

- In some cases, spending in elementary schools out of unrestricted funding tended to be slightly higher in the highest need schools.

- Schools with the highest percentages of low-income students have on average more FTE teachers per 100 students.

- In terms of the qualifications of teachers, schools with the highest percentages of low-income students have on average less experienced, and hence lower paid, teachers and greater proportions of students exposed to out-of-field teaching.

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Purpose of this Report

The policies we are proposing for implementation under the Strategic School Funding for Results (SSFR) project are designed to promote horizontal and vertical equity for students by developing a funding mechanism that distributes dollars to schools based on student needs. Horizontal equity refers to treating similar students in similar ways (for example, funding students with similar educational needs equally), while vertical equity refers to treating students with differential educational needs in systematically different ways. The differences in treatment are intended to acknowledge the variations in the cost of serving students with different educational needs. Simply stated, high need students cost more to educate. For the purposes of this report, we measure student need based on eligibility for the national school lunch program (under which students from low-income families are eligible for free or reduced price lunches) or whether a student is classified as an English learner (EL).

This report is intended to provide data to help policy makers in the district assess how equitably they have distributed resources in the face of current student performance and student needs. The purpose of this report is to help district decision makers begin to address the following policy question:

Do higher need students have sufficient access to the additional resources they need to achieve the district and state educational goals?

To answer the question properly, several steps are required including formerly defining educational goals of the district, developing programs that will achieve the defined goals, and evaluating whether schools are being provided the appropriate resources to support these programs. While these steps are part of the larger SSFR project, the current report provides baseline information on student outcomes and patterns of resource allocation (e.g. spending, teacher staffing rations, etc.) to help inform this process.

It is commonly accepted that students from relatively low-income families arrive at school with fewer educational experiences than their high-income (HI) counterparts, and continue receiving less support conducive to academic success outside of school throughout their educational career. This deficit in experiences necessitates greater investments of educational resources in order to offer comparable opportunities for success in education, the job market, and life in general. Similarly, students classified as EL in the U.S. arrive at school with deficits in the use of the English language and are, in addition, more likely to come from low-income households. Such students may require more and different kinds of resources to provide them with the same educational opportunities as their non-EL counterparts.

We begin this report by presenting the patterns of variation in student performance across schools serving varying proportions of high need students. We focus our attention on the Academic Performance Index (API) used to assess student outcomes across a broad array of

subject areas in California schools.[1]

With the concepts of vertical and horizontal equity in mind, we follow this analysis of differential student performance by exploring the patterns of variation in the access to educational resources afforded to students with siddweinf needs. Through this analysis, we reveal patterns of resource allocation resulting from a combination of various policies, rules, and regulations that govern how resources are distributed across schools. We measure access to school resources in a variety of ways, including per-pupil spending from different revenue sources and the quantities and qualifications of certified school personnel.[2]

Student Need and Student Performance

▶ *Schools with high proportions of low-income students have the lowest performance levels as measured by their Academic Performance Indexes (APIs).*

Exhibits 1a, b, and c show the negative relationship between the API and the percentage of students from low-income families across all school levels (elementary, middle, and high school). Each dot in these plots represents a

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[1] The API is a single number compiled by the California Department of Education, ranging from a low of 200 to a high of 1,000, which reflects a school's performance level, based on the results of state-wide testing (http://www.cde.ca.gov/ta/ac/ap/documents/infoguide09.pdf).
[2] We have produced a separate **Technical Appendix** to this report that contains a complete set of tables and graphical displays of all of the analyses relevant to this report.

school, and the solid fitted lines represent the average levels of API at different proportions of students from low-income families. For example, based on our analyses of the 2008-09 data for PUSD, an elementary school with 80 percent students from low-income families would be predicted to have an API about 108 points lower than a school with 20 percent students from low-income families. A middle school with 70 percent students from low-income families is estimated to have an API about 42 points lower than a school with 60 percent students from low-income families. A high school with 60 percent students from low-income families is predicted to have an API about 40 points lower than a school with 50 percent students from low-income families.

Obviously, the variations in student performance are not solely due to differences in student need. The variations shown by the spread of student performance, above and below the fitted line at each level of student need, suggest that many other factors play a role in determining student performance. For example, at least some of the variation in student performance ob-served in these diagrams may be associated with differences in resources that have been invested in the children, both in the most recent year and historically. Nevertheless, these negative relationships do suggest the strong role student needs play in determining outcomes, and they further imply that some additional investment in educational and other resources (e.g., health or nutritional services) may be necessary to level the playing field. With that in mind, we now turn to an examination of the variations in school resources and how they are associated with student-need.

Exhibit 1a, 1b, 1c. 2009 Base API by Percent Free and Reduced Price Lunch Students

2009 Base API by Percent Free and Reduced Price Lunch (FRL) Students for PUSD Elementary Schools in 2008-09

2009 Base API by Percent Free and Reduced Price Lunch (FRL) Students for PUSD Middle Schools in 2008-09

2009 Base API by Percent Free and Reduced Price Lunch (FRL) Students for PUSD High Schools in 2008-09
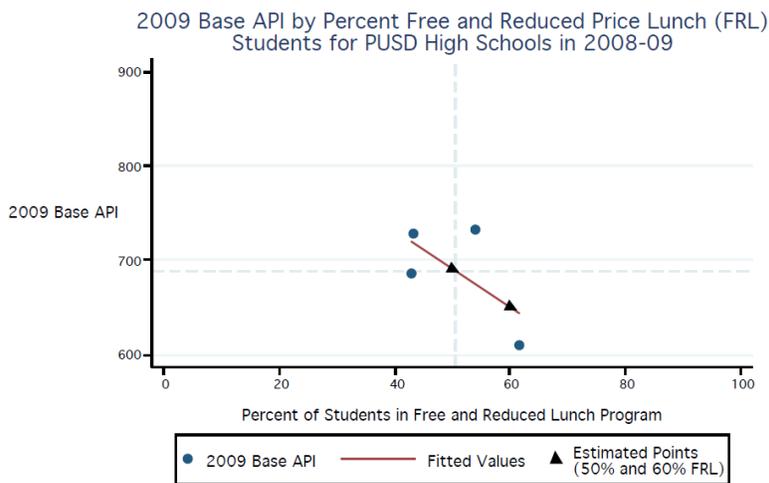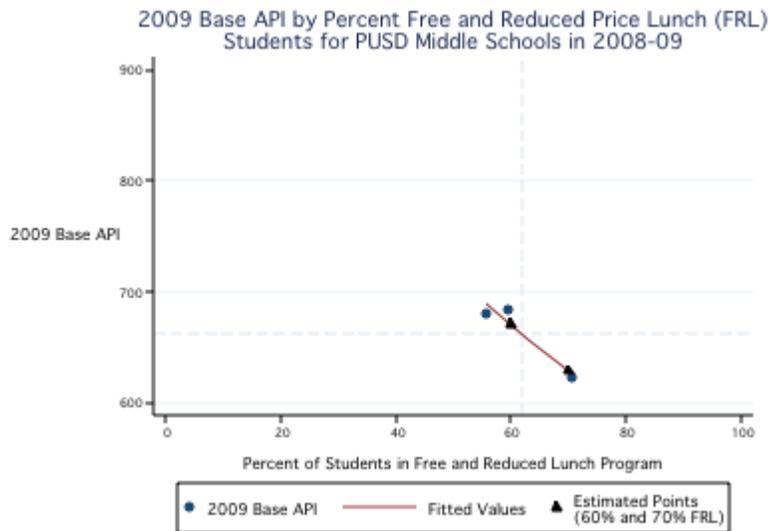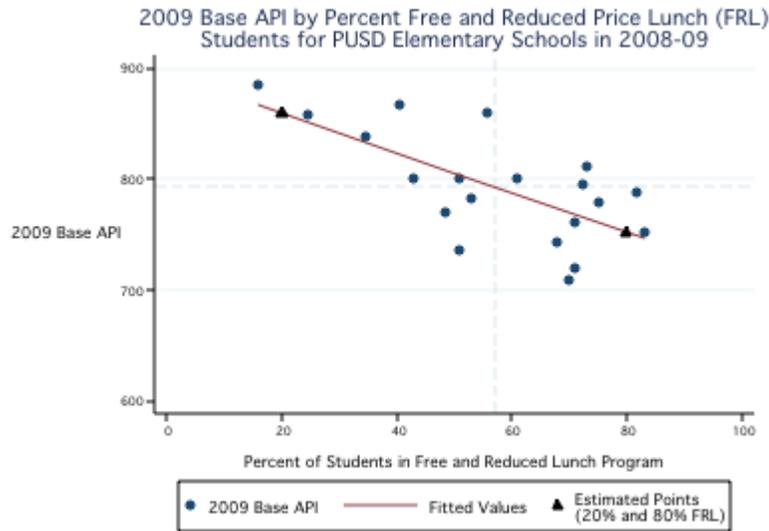
Graph shows plot of 2009 Base API by percent free and reduced price lunch in 2008-09 across PUSD High schools. Dotted lines indicate average levels of API and FRL
Source: California Department of Education

Access to Fiscal Resources

▶ *On average, high need elementary and middle schools (i.e., those with the highest percentages of students from low-income families and with high percentages of EL students) appear to spend more than low need schools. Conversely, low need high schools seem to be spending the same or even slightly more that high need high schools.*

Exhibits 2a and 2b reveal a positive relationship between per-pupil spending and the percentage of students from low-income families for elementary and middle schools for three school years (2006-07, 2007-08, and 2008-09). Conversely, exhibit 2c shows that for high school there seems to be a negative relationship between per-pupil spending and the percentage of students from low-income families for the academic year of 2008-09.

Each dot or square in these plots represents a school. The dots represent schools with low percentages of EL students (i.e., below the district median), while the squares represent schools with high percentages of EL students (i.e., above the district median value). The size of the dots/squares are related to the size of the schools (i.e. the larger schools have a larger symbol).

The *fitted line* shown in each exhibit represents the average predicted spending as it relates to differences in the percentage of students from low-income families. Elementary schools range from about 20 to 80 percent low-income students, and expenditures in the schools with the highest percentages average about $1,400 (30 percent) more than in schools with the lowest percentages ($5,850 versus $4,400 per pupil, respectively). The highest spending schools with the highest percentages of low-income students are also above the median percentage of EL students in the district. The slopes of these gradients do vary somewhat over the 3-year period, but basically show the same pattern of variation.

Exhibits 2b and 2c show that while higher need middle schools appear to spend relatively more than lower need middle schools, higher need high schools exhibit slightly lower levels of spending or no difference in spending, depending on the year. For middle schools in 2008-09, the school with the highest expenditure was the one with the highest percentage of low-income students and the highest percentage of EL students as well.

The variations in spending around the *fitted line* suggest that there may be other factors that influence the level of per-pupil spending at each school site, especially for high schools.

There is also a positive correlation between the percentage of EL students and the percentage of students from low-income families. This high correlation is implied by the concentration of the schools with a higher-than-median percentages of EL students, represented by a square at the right-hand side of the elementary school graphics. (The actual correlation between percentage of ELs and percentage of low-income students is 0.76, 0.89, and -0.30 for elementary, middle, and high schools, respectively.) Thus, to some degree the additional spending associated with higher percentages of low-income students may be picking up some of the effects on spending of high percentages of EL students: that is, we can see from these graphics that the elementary and middle schools with a higher percentage of EL students, tend to have higher spending per pupil than those schools with lower percentages of EL students.

Exhibit 2a. Relationship between Overall Expenditures per Pupil and the Percentage of Students in the Free and Reduced Lunch Program for PUSD Elementary Schools

2007 Overall Expenditures per Pupil by Percentage of Students in Free and Reduced Lunch Program (FRL) Elementary Schools

2008 Overall Expenditures per Pupil by Percentage of Students in Free and Reduced Lunch Program (FRL) Elementary Schools

2009 Overall Expenditures per Pupil by Percentage of Students in Free and Reduced Lunch Program (FRL) Elementary Schools

Legend:
- Per-Pupil Spending High ELL
- Per-Pupil Spending Low ELL
- Fitted Line
- Estimated Points (30% and 80% FRL)

Graph shows plot of overall per-pupil spending by percent of FRL students by each schooling year for PUSD elementary schools.
Solid line indicates estimated relationship between per-pupil spending and percent FRL

Exhibit 2b. Relationship between Overall Expenditures per Pupil and the Percentage of Students in the Free and Reduced Lunch Program for PUSD Middle Schools
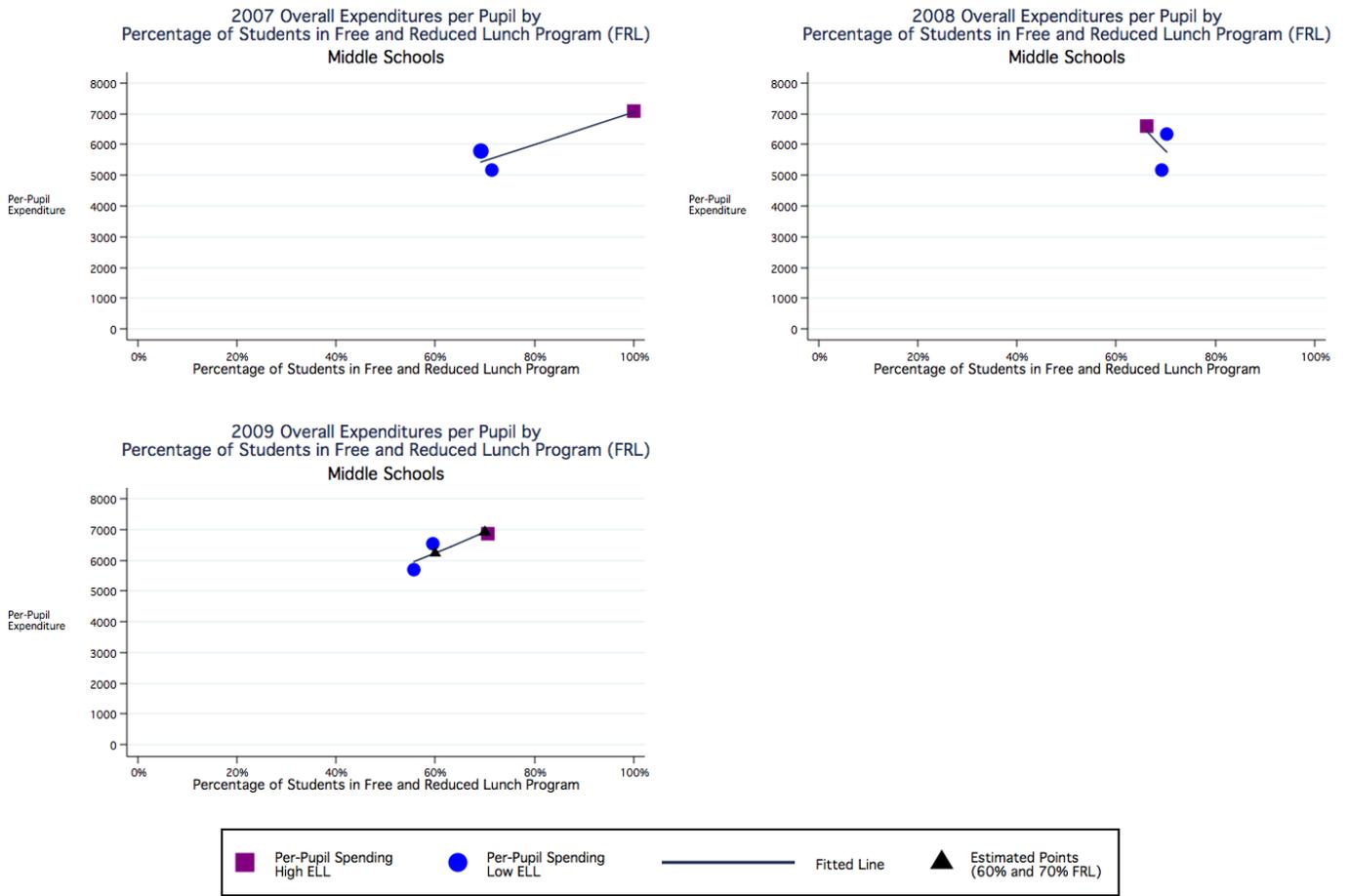
2007 Overall Expenditures per Pupil by Percentage of Students in Free and Reduced Lunch Program (FRL)
Middle Schools

2008 Overall Expenditures per Pupil by Percentage of Students in Free and Reduced Lunch Program (FRL)
Middle Schools

2009 Overall Expenditures per Pupil by Percentage of Students in Free and Reduced Lunch Program (FRL)
Middle Schools

Legend:
- ■ Per-Pupil Spending High ELL
- ● Per-Pupil Spending Low ELL
- —— Fitted Line
- ▲ Estimated Points (60% and 70% FRL)

Graph shows plot of overall per-pupil spending by percent of FRL students by each schooling year for PUSD middle schools.
Solid line indicates estimated relationship between per-pupil spending and percent FRL
Estimated points are only for 2009 which are the ones discussed in the text

Exhibit 2c. Relationship between Overall Expenditures per Pupil and the Percentage of Students in Free and Reduced Lunch Program for PUSD High Schools
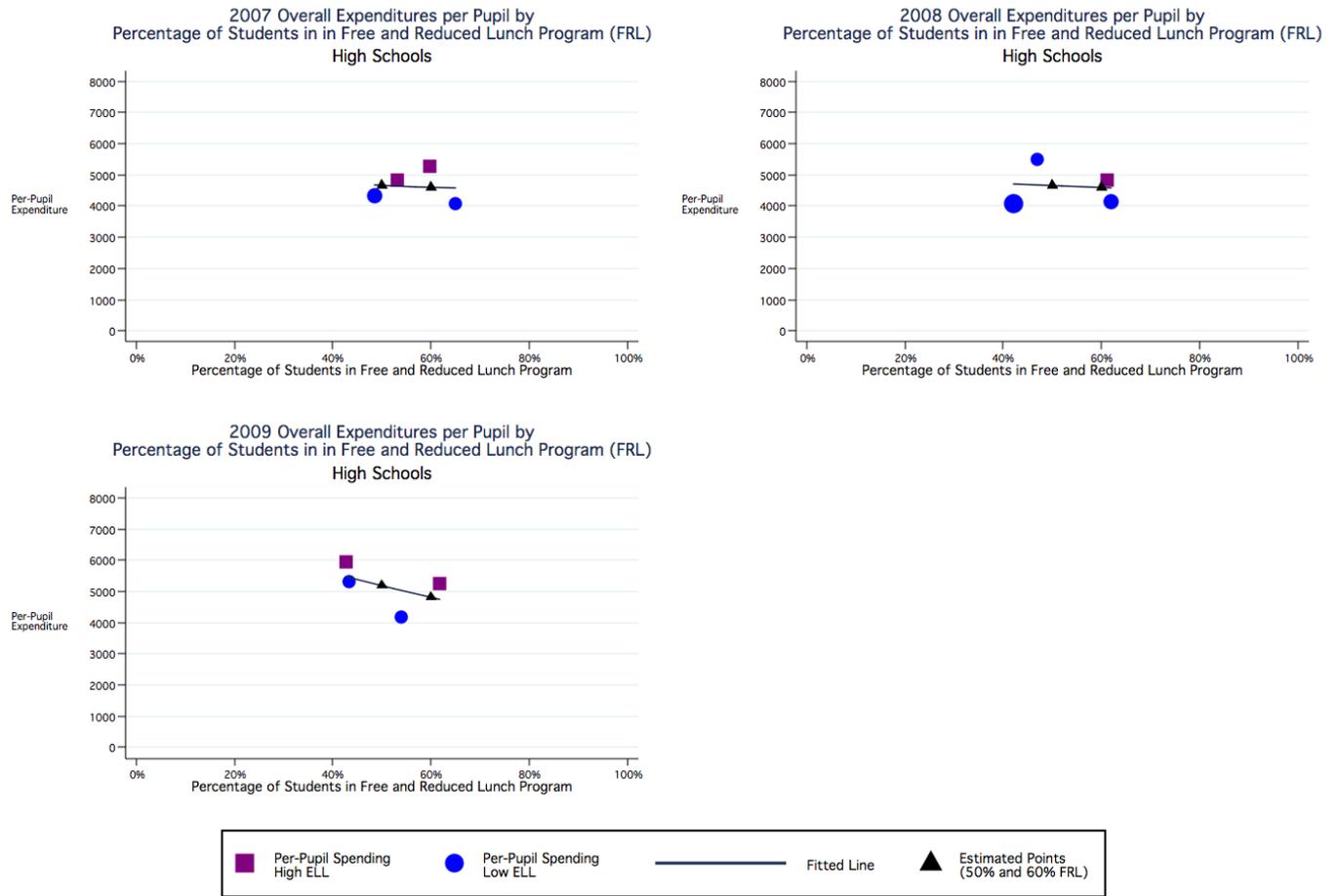
2007 Overall Expenditures per Pupil by
Percentage of Students in in Free and Reduced Lunch Program (FRL)
High Schools

2008 Overall Expenditures per Pupil by
Percentage of Students in in Free and Reduced Lunch Program (FRL)
High Schools

2009 Overall Expenditures per Pupil by
Percentage of Students in in Free and Reduced Lunch Program (FRL)
High Schools

| Per-Pupil Spending High ELL | Per-Pupil Spending Low ELL | Fitted Line | Estimated Points (50% and 60% FRL) |

Graph shows plot of overall per-pupil spending by percent of FRL students by each schooling year for PUSD high schools.
Solid line indicates estimated relationship between per-pupil spending and percent FRL

Average Differences in Per-Pupil Spending from Restricted versus Unrestricted Funds

▶ *Much of the positive difference in per-pupil spending between high and low need schools appears to be driven by differences in access to restricted (or categorical) sources of revenues.*

Exhibits 3a, b, and c provide another perspective on the variation in per-pupil spending across schools serving various percentages of high-need students for the three school years (2006-07 to 2008-09). In addition to the overall per-pupil spending, these exhibits show the amounts of per-pupil spending that come from unrestricted as opposed to restricted use revenues. Restricted revenues include funds derived from federal and state categorical programs directed at particular student populations, such as students from low-income families, EL students, or students eligible for special education services. To make the spending comparisons for the elementary schools in each school year, we arrayed the schools according to the percentage of students from low-income families, from lowest to highest. We divided the schools into three equal groups. We then determined the average percentage of low-income students along with the average percentage of EL students in each group of schools.

Based on this analysis, exhibit 3a shows that in 2008-09 (the last three columns of exhibit 3a) the elementary schools with the highest percentages of low-income students (the top third, which averaged 76 percent low-income stu-

dents) was spending $968 more ($5,740 versus $4,772) than the schools in the lowest third (which averaged 37 percent low-income students). These data show that these schools served more than twice as many low-income students (76 versus 37 percent) and almost three times as many EL students (35 versus 13 percent) students. Schools in the middle third exhibited spending levels comparable to those of the schools in the highest-need third, and served fewer low-income students (61 versus 76 percent) and fewer EL students (27 versus 35 percent) than the schools in the highest need group.

Looking at the differences between spending out of restricted versus unrestricted funds, the overall differential spending between the highest- and lowest-need elementary schools was driven for the most part by differences in spending out of restricted funds; the exhibit shows that the schools in the two highest need groups spent substantially more out of restricted funds than the lowest-need third of schools. For example, the two highest need groups of schools spent $1,190 and $1,428 per pupil respectively, while the schools in the lowest third spent an average of $604 per pupil out of restricted revenues. Differences between these three groups of elementary schools with regard to their average spending out of unrestricted funds amounted to between $144 and $253 per pupil (a 3 to 6 percent difference), favoring the higher-need schools. While there are some differences in magnitude, the same basic patterns of difference appear to hold true in the previous two school years as well, where the unrestricted funds are higher

for the middle-and higher-need groups.

For elementary schools, there has been an overall increase in spending out of restricted revenues averaging about 22 percent from 2006-07 to 2008-09 (from $879 to $1,074 per pupil). However the proportion of restricted expenditures grew only three percentage points, from 17 percent in 2006-07 to 20 percent in 2008-09 of total spending. Overall average spending across the three need categories of schools grew by only 5.5 percent from $5,094 to $5,374 over this same period of time.

For the middle and high schools, we created similar graphics showing the differences in spending, but rather than dividing the schools into thirds, we simply listed each school and arranged them in order according to percentage of students from low-income families from lowest to highest in each exhibit. Once again, we display the percentage of EL students in each school to show how spending patterns relate to percentages of high need students. As can be observed, the range of the proportion of low-income students is fairly small. For the 2008-09 school year, the percentage of low-income students ranged from 56 to 71 percent for middle schools and 43 to 61 percent for high schools. The middle and high schools with the highest percentage of low-income students also had the highest percentage of EL students.

On average, total spending in middle schools tended to be somewhat higher in the highest need schools (Exhibit 3b) as one would expect given the way these funds are targeted. In addition, the schools with the highest percen-

tage of low-income students tend to have larger spending out of restricted funds. For example, focusing on the differences in restricted funds, the two highest need middle schools spent more than $2,400 per pupil versus $1,389 for the lowest need middle school.

However, for high schools in 2008-09, three of the four high schools spent somewhere between $1,476 and $1,861 per pupil out of restricted funds, while one of the schools (Marshall, with the second highest percentage of low-income students) spent about half of that amount ($795). Again with the exception of Marshall, the other three high schools spent within $300 per pupil of each other out of unrestricted funding. The differences in overall per-pupil spending seem to be driven by spending out of restricted funds across high schools.

From 2006-07 to 2008-09, school spending out of restricted revenuees increased substantially for middle and high schools. While overall per upil spending in middle schools increased by about six percent from 2006-07 to 2008-09 (from $6,014 to $6,367), spending out restricted funds more than doubled (from $1,010 per pupil to $2,071), while spending out of unresrticted funding decreased by about 14 percent (from $5,005 to $4,296). In the case of high schools, spending out of restricted funds almost tripled (from an average of $482 per pupil in 2006-07 to $1,414 per pupil in 2008-09), while spending out of unrestricted funding decreased by about nine percent (from $4,148 to $3,764 per pupil).

Average Overall, Restricted and Unrestricted Expenditures Per Pupil for PUSD Elementary Schools by Free and Reduced Price Lunch(FRL) Category (Overall Expenditure in Bold)

Per-Pupil Expenditures in Dollars

Restricted Expenditures
Unrestricted Expenditures

	2006-07			2007-08			2008-09		
	Low FRL (43%)	Middle FRL (68%)	High FRL (97%)	Low FRL (45%)	Middle FRL (65%)	High FRL (74%)	Low FRL (37%)	Middle FRL (61%)	High FRL (76%)
	(ELL 11%)	(ELL 27%)	(ELL 32%)	(ELL 14%)	(ELL 27%)	(ELL 35%)	(ELL 13%)	(ELL 27%)	(ELL 35%)
Overall	$4,416	$5,582	$5,283	$4,725	$5,640	$5,579	$4,772	$5,611	$5,740
Restricted	$580	$938	$1,119	$767	$1,220	$1,382	$604	$1,190	$1,428
Unrestricted	$3,836	$4,644	$4,164	$3,958	$4,420	$4,197	$4,168	$4,421	$4,312

Average Overall, Restricted and Unrestricted Expenditures Per-Pupil for PUSD Middle Schools (Overall Expenditure in Bold)

Per Pupil Expenditures in Dollars

Restricted Expenditures
Unrestricted Expenditures

	Woodrow Wilson (FRL 69%) (ELL 18%)	Charles W. Eliot (FRL 71%) (ELL 16%)	Washington (FRL 100%) (ELL 21%)	Washington (FRL 66%) (ELL 25%)	Charles W. Eliot (FRL 69%) (ELL 17%)	Woodrow Wilson (FRL 70%) (ELL 16%)	Charles W. Eliot (FRL 56%) (ELL 19%)	Woodrow Wilson (FRL 60%) (ELL 18%)	Washington (FRL 71%) (ELL 29%)
Overall	$5,796	$5,169	$7,078	$6,588	$6,871	$6,532	$6,329	$5,700	$5,169
Restricted	$1,089	$364	$1,576	$1,706	$540	$1,365	$1,389	$2,420	$2,403
Unrestricted	$4,707	$4,805	$5,502	$4,882	$4,629	$4,964	$4,311	$4,111	$4,467

Exhibit 3c. Expenditures per Pupil for PUSD High Schools for 2006-07 to 2008-09

Average Overall, Restricted and Unrestricted Expenditures Per-Pupil for PUSD High Schools
(Overall Expenditure in Bold)
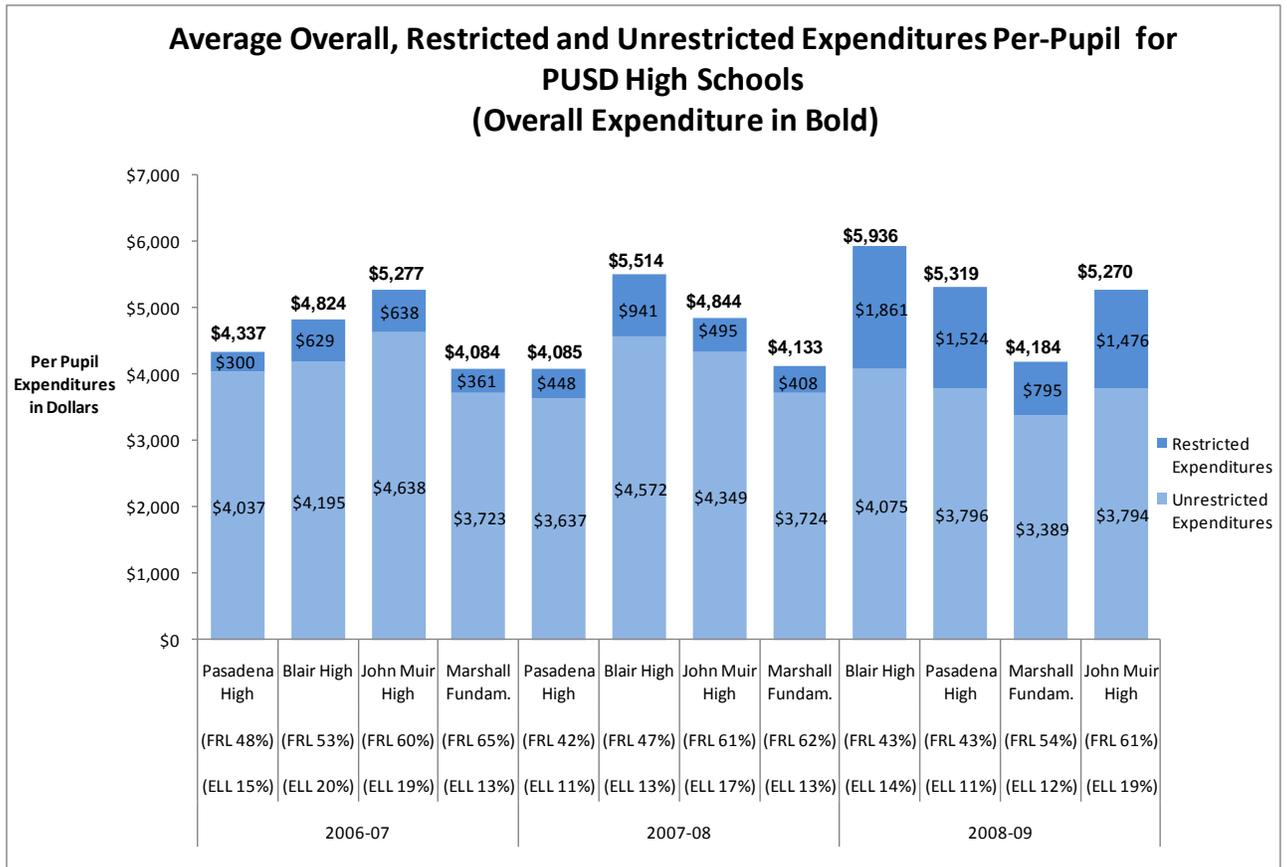
Graphs show the restricted expenditures in the darker color, the light bar represents the unrestricted expenditures, and the dollar amount on top of each bar is the overall restricted per-pupil expenditure by school. The graph shows the expenditures for the school years of 2006-07, 2007-08, and 2008-09

Access to Personnel Resources

▶ *Schools with higher percentages of students from low-income families tend to have lower ratios of pupils per teacher, but also tend to have less experienced teachers and greater proportions of students exposed to teachers in the core subject areas who are teaching outside the subjects they are authorized to teach.*

Underlying the expenditure differences between schools serving varying percentages of high need students are differences in the quantities and qualifications of the staff assigned to the schools. Using data available from the California Department of Education, we analyzed the relationship between the three different personnel resource measures and the percentage of students from low-income families. Specifically, we focused on: the teacher staffing ratio (the number of teachers per 100 students); average teacher experience; and the percentage of students being taught by out-of-field instructors (those that did not have the authorization in the subject area or schooling level they taught).

Our analyses reveal that for the school year of 2008-09, elementary schools serving the highest percentage of low-income students (83 percent) employed roughly one teacher for every 18 students (5.6 full-time-equivalent teachers per 100 students), while the schools with the lowest percentage of low-income students (16 percent) employed about one teacher for every 20 students (5.0 FTE teachers per 100 students, see exhibit 4a). For

the middle schools, these pupil-teacher ratios range from one teacher per 19 students in the schools with the highest percentage of low-income students (71 percent) to one teacher for every 22 students in the schools with the lowest percentage of low-income students (56 percent; exhibit 4b). For high schools, the staff-pupil ratios seem to bear no relationship to the percentage of low-income students (exhibit 4c).

Countering the somewhat more generous teacher staffing in the higher need middle schools, we found that the FTE support personnel is negatively related to pupil need. Exhibit 4b shows that middle schools with the lowest proportion of low-income students employ more support personnel than a middle school with the highest percentage of low-income students, roughly one support staff for every 125 students versus 264, respectively. For high schools, there seems to be no pattern, the schools with the lowest and highest percentage of low-income students tend to have a higher ratio of support staff per pupil, roughly one person per 200 students.

Unlike what is commonly found in many urban districts (see Roza and Hill),[3] Pasadena Unified shows virtually no significant relationship between average experience levels of teachers and the percentage of low-income students at the elementary and middle school levels (exhibit 5a, b). For the high schools, the highest needs schools have the least experienced teaching staff on average (about 11 to

15 years versus about 9 years experience, exhibit 5c).

While one could argue based on previous literature in the field[4] that differences in average teacher experience may not translate directly into differences in teacher quality, it is very clear that such differences in experience do translate into differences in the average compensation levels of teachers between schools serving varying percentages of low-income students. Such differences represent potential funds that could be used in the more disadvantaged schools to employ more qualified teachers under alternative compensation schemes or to provide resources for more or better professional development experiences.

In addition to teacher experience, we also explored the extent of out-of-field teaching across the high schools. We found fairly small differences, with no strong pattern in the relationship to percentage of low-income students. Three of the high schools appear to have about 5 percent of the students exposed to out-of-field teachers in core subject areas, while the fourth school has about 7 percent (exhibit 6).[5]

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[3] See *Roza, Marguerite and Hill, Paul Thomas,-How Within-District Spending Inequities Help Some Schools to Fail, Brookings Papers on Education Policy - 2004, pp. 201-218*

[4] See Marguerite Roza and Sarah Yatsko, *Beyond Teacher Reassignments: Better Ways Districts Can Remedy Salary Inequities Across Schools*" a publication of the Center for Reinventing Public Education, *February 4, 2010:* http://www.crpe.org/cs/crpe/download/csr_files/rr_crpe_salinequ_feb10.pdf .
[5] For more details on how these statistics break down by each of the core subjects, the reader may view the **Technical Appendix** to this report.

Exhibit 4a and 4b. FTE Teachers per 100 Pupils for PUSD Schools in 2008-09

FTE Teachers Per 100 Pupils for PUSD Elementary Schools in 2008-09

School (FRL%, ELL%, SE%)	FTE Teachers Per 100 Pupils
Madison Elementary(83%, 60%, 9%)	5.57
Washington Accelerated Elementary(82%, 42%, 7%)	5.17
Cleveland Elementary(75%, 33%, 11%)	6.13
Franklin Elementary(73%, 23%, 11%)	4.63
Roosevelt Elementary(72%, 30%, 31%)	5.99
Altadena Elementary(71%, 19%, 15%)	6.57
Jefferson Elementary(71%, 41%, 7%)	4.94
Jackson Elementary(70%, 39%, 7%)	5.10
San Rafael Elementary(68%, 23%, 23%)	5.56
Longfellow (Henry W.) Elementary(61%, 25%, 11%)	5.38
Willard Elementary(56%, 22%, 9%)	5.48
Daniel Webster(53%, 21%, 9%)	5.63
Loma Alta Elementary(51%, 17%, 21%)	6.51
Field (Eugene) Elementary(51%, 20%, 14%)	4.88
Burbank Elementary(48%, 21%, 15%)	6.16
McKinley(43%, 18%, 4%)	4.57
Hamilton Elementary(40%, 17%, 7%)	4.93
Norma Coombs Alternative(35%, 7%, 10%)	3.91
Don Benito Fundamental(24%, 7%, 7%)	5.01
Sierra Madre Elementary(16%, 9%, 9%)	4.97

Legend: FTE Teachers Per 100 Pupils; Linear (FTE Teachers Per 100 Pupils)

FTE Teachers and FTE Pupil Support Per 100 Pupils for PUSD Middle Schools in 2008-09

	Charles W. Eliot Middle	Woodrow Wilson Middle	Washington Middle
FTE Teachers Per 100 Pupils	4.57	5.34	5.27
FTE Pupil Support Per 100 Pupils	0.80	0.61	0.38
FRL	56%	60%	71%
ELL	19%	18%	29%
SE	12%	10%	9%

Legend: FTE Teachers Per 100 Pupils; FTE Pupil Support Per 100 Pupils; Linear (FTE Teachers Per 100 Pupils); Linear (FTE Pupil Support Per 100 Pupils)

Graph shows FTE teachers per 100 students represented by the darker column; the light colored column represents the FTE pupil support per 100 pupils; the fitted dark line represents a linear estimation of FTE teachers per 100 pupils; and the light fitted line represents the linear estimation of FTE pupil support per 100 pupils. The graph is only for the school year of 2008-09.

FTE Teachers and FTE Pupil Support Per 100 Pupils for PUSD High Schools in 2008-09
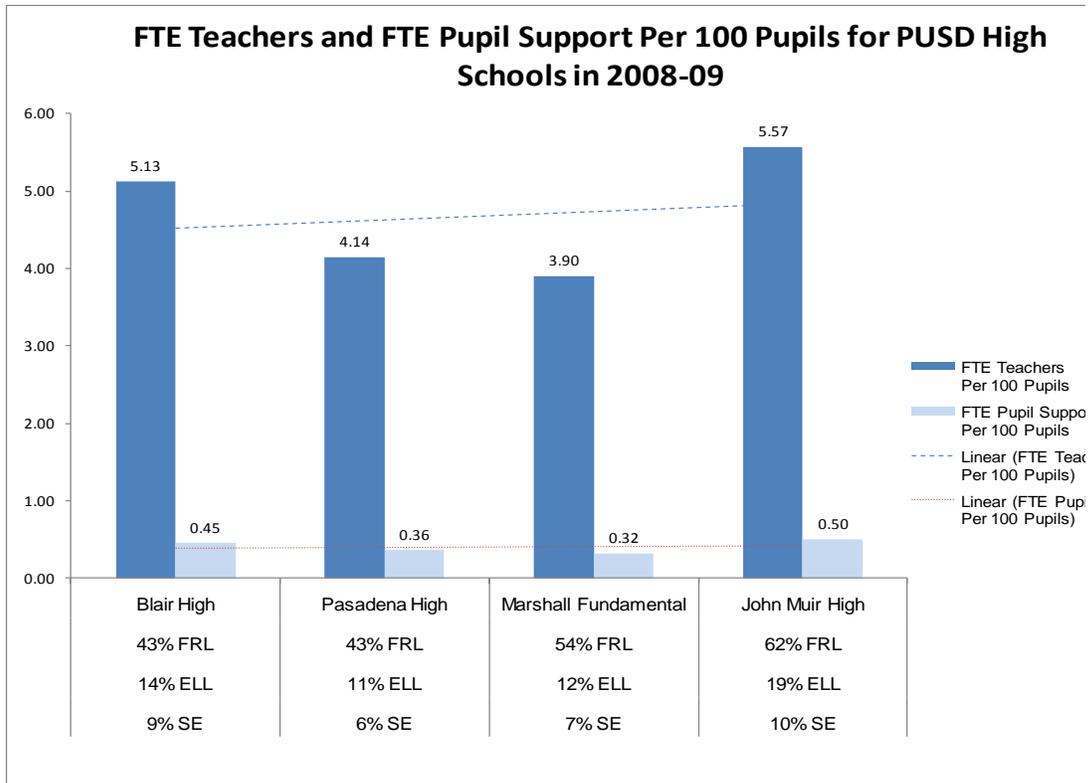
	Blair High	Pasadena High	Marshall Fundamental	John Muir High
	43% FRL	43% FRL	54% FRL	62% FRL
	14% ELL	11% ELL	12% ELL	19% ELL
	9% SE	6% SE	7% SE	10% SE

Graph shows FTE teachers per 100 students represented by the darker column; the light colored column represents the FTE pupil support per 100 pupils; the fitted dark line represents a linear estimation of FTE teachers per 100 pupils; and the light fitted line represents the linear estimation of FTE pupil support per 100 pupils. The graph is only for the school year of 2008-09.

Exhibit 5a. Average Years of Teacher Experience for PUSD Elementary Schools in 2008-09

Average Years of Teacher Experience for PUSD Elementary Schools in 2008-09

School (FRL%, ELL%, SE%)	Average Years of Teacher Experience
Madison Elementary(83%, 60%, 9%)	13.94
Washington Accelerated Elementary(82%, 42%, 7%)	10.76
Cleveland Elementary(75%, 33%, 11%)	10.52
Franklin Elementary(73%, 23%, 11%)	10.95
Roosevelt Elementary(72%, 30%, 31%)	16.00
Altadena Elementary(71%, 19%, 15%)	15.73
Jefferson Elementary(71%, 41%, 7%)	15.52
Jackson Elementary(70%, 39%, 7%)	16.14
San Rafael Elementary(68%, 23%, 23%)	14.26
Longfellow (Henry W.) Elementary(61%, 25%, 11%)	13.70
Willard Elementary(56%, 22%, 9%)	12.62
Daniel Webster(53%, 21%, 9%)	17.37
Loma Alta Elementary(51%, 17%, 21%)	13.13
Field (Eugene) Elementary(51%, 20%, 14%)	15.10
Burbank Elementary(48%, 21%, 15%)	11.50
McKinley(43%, 18%, 4%)	10.39
Hamilton Elementary(40%, 17%, 7%)	13.27
Norma Coombs Alternative(35%, 7%, 10%)	11.96
Don Benito Fundamental(24%, 7%, 7%)	13.34
Sierra Madre Elementary(16%, 9%, 9%)	13.50

Legend: Average Years of Teacher Experience; Linear (Average Years of Teacher Experience)

Graph shows the average years of teacher experience for elementary schools; the fitted line represents a linear estimation of the average years of teacher experience. The graph is only for the school year of 2008-09.

Exhibit 5b, 5c. Average Years of Teacher Experience for PUSD Schools in 2008-09

Average Years of Teacher Experience for PUSD Middle Schools in 2008-09

	Charles W. Eliot Middle	Woodrow Wilson Middle	Washington Middle
	13.71	16.27	13.74
FRL	56% FRL	60% FRL	71% FRL
ELL	19% ELL	18% ELL	29% ELL
SE	12% SE	10% SE	9% SE

- Average Years of Teacher Experience
- Linear (Average Years of Teacher Experience)

Average Years of Teacher Experience for PUSD High Schools in 2008-09

	Blair High	Pasadena High	Marshall Fundamental	John Muir High
	11.23	14.82	13.35	8.75
FRL	43% FRL	43% FRL	54% FRL	62% FRL
ELL	14% ELL	11% ELL	12% ELL	19% ELL
SE	9% SE	6% SE	7% SE	10% SE

- Average Years of Teacher Experience
- Linear (Average Years of Teacher Experience)

Graph shows the average years of teacher experience for middle and high schools;   the fitted line represents a linear estimation of the average years of teacher experience . The graph is only for the school year of 2008-09.

Exhibit 6. Percent of Students Taught by Out-Of-Field Teachers in the Core Six Subjects for PUSD Schools in 2008-09

Core Six Subjects - Percent of Students Taught by Out-of-Field Teachers for PUSD High Schools in 2008-09

	Blair High	Pasadena High	Marshall Fundamental	John Muir High
	43% FRL	43% FRL	54% FRL	62% FRL
	14% ELL	11% ELL	12% ELL	19% ELL
	9% SE	6% SE	7% SE	10% SE
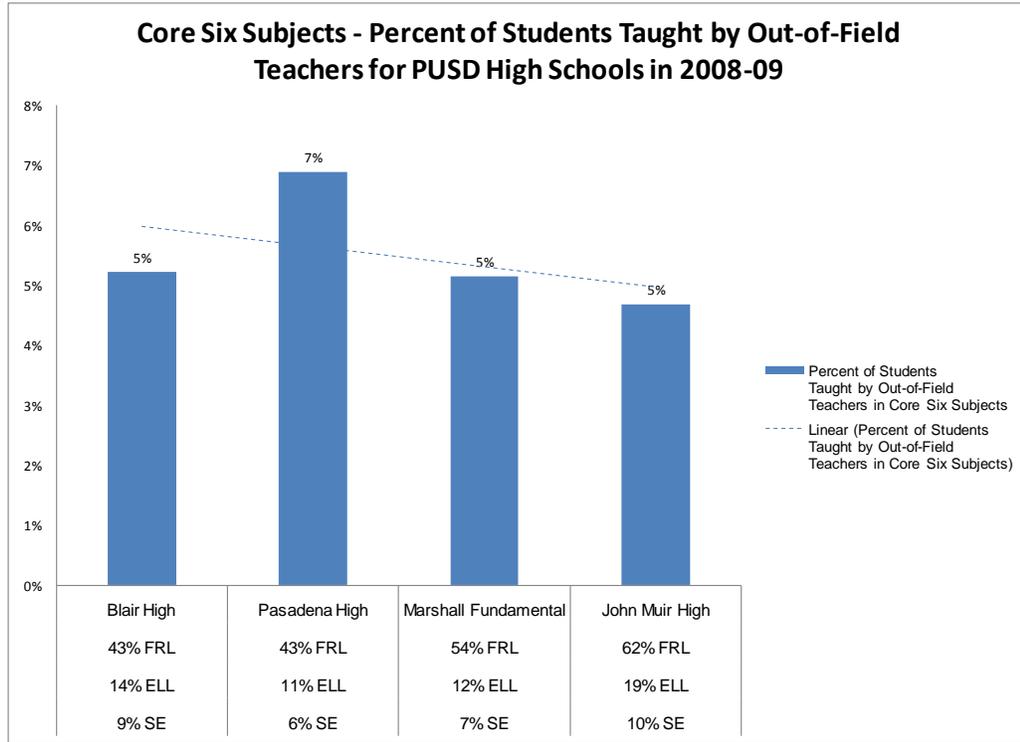
Graph shows the percent of out-of-field teaching for high schools in 2008-09. The solid line represents a linear estimation of the percent of out-of-field teaching and FRL.

Concluding Remarks

Using data on school level performance from the California Department of Education, fiscal data provided by the finance office of the school district, and personnel data obtained from the California Basic Education Data System maintained by the California Department of Education, we have presented analyses that provide a foundation that local policymakers can use to assess whether there are inequities in the way fiscal and personnel resources are distributed across schools. The following points summarize our findings:

- Schools with the highest percentage of students from low-income families exhibited the lowest performance on the California Academic Performance Index (API).
- The highest need elementary and middle schools generally spent somewhat more than the lowest need schools, and most of this difference was driven by categorical or restricted funding.
- In some cases, spending in elementary schools out of unrestricted funding tended to be slightly higher in the highest need schools, but the differences were not as large as for restricted funds.

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- Overall, the schools with the highest spending were middle schools, at about $6,000 overall per pupil per year. Elementary and high schools spent $1,000 and $1,300 less on average per pupil than middle schools.
- For elementary schools, there seemed to be a positive relationship between overall expenditure and student need; elementary schools that had the lowest proportion of students in poverty tended to have the lowest levels of expenditures per pupil. For middle schools in 2008-09, we observe higher per pupil spending in schools serving higher proportions of high need students. The relationship between expenditures per pupil and student need for PUSD high schools was not consistent over the study years.
- Schools with the highest percentages of low-income students had relatively more FTE teachers per 100 students.
- In terms of the qualifications of teachers, we did not observe any significant or systematic variations in experience across high versus low need elementary or middle schools, though we did observe differences favoring the lowest need high schools.

With these findings in mind, we now return to the question we asked at the beginning of this report:

Do higher need students have sufficient access to the additional resources they need to achieve the district and state educational goals?

Put simply, the question comes down to, "*How much is enough?*"

To answer this question, district policy makers must be explicit about the goals that have been set for all students across the spectrum of educational needs. Policy makers must then (1) ascertain what programs and services will be necessary to achieve those goals, (2) cost out the resources necessary to deliver those programs and services across the range of student need populations, (3) create a need-based funding model for allocating funding to schools based on this costing out analysis, and (4) compare the results of the need-based funding model to the actual patterns of spending and resource allocation we have observed in this report. This comparison would provide the district with a way of assessing whether the current patterns of resource allocation are sufficiently equitable or adequate to achieve their goals.