An Analysis of Poverty and Education in California Public Schools

Executive Summary

Americans depend on public education to socialize and cultivate the minds of each new generation. Discrepancies in the quality of education between public schools undermines the Department of Educations' mission to foster "educational excellence and ensur[e] equal access." This analysis sheds light on the relationship between student poverty levels, school resource access, and school success. Fewer students qualifying for subsidized meals, schools having more fully-qualified teachers, and schools meeting their annual learning targets all correlate with one another. This correlation suggests that poorer students receive a worse education than affluent students on average. This analysis recommends further study to determine causality and subsequent policy intervention as a remedy.

Motivation

Public school education in the United States is often funded by property taxes of surrounding areas. As a result, affluent neighborhoods tend to have better funded public schools. Well-funded schools tend to do better than underfunded schools. This sequence of reasoning suggests that children from affluent families (and thus neighborhoods) will receive a better education from their public schools than children from poorer families, and would have wide-reaching implications for education equity and policy. This paper will analyze California Schools Academic Performance Index (API) data collected by the California Department of Education to examine whether student poverty is correlated with a decrease in resources among public schools. It will also examine these variables in relation to relative school success.

Research Questions

1. Do schools with higher rates of impoverished students have equal access to qualified teaching staff?
2. Do schools with high rates of fully-qualified teachers tend to serve high income students?
3. How do the rates of poverty among students and full qualifications among teachers affect schools' ability to reach their learning improvement targets?

Data

The California Schools API data provides various instruments at the school-level including:

1. The percentage of students who qualify for subsidized meals (i.e. students whose household income is below 185% of the poverty line),
2. The percentage of teachers who are fully qualified (as opposed to emergency certified),
3. Whether a school met its school-wide growth target and comparable improvement target.

This paper will use the percentage of students qualifying for subsidized meals as a relative indicator of a school's affluence. It will use the percentage of teachers who are fully qualified as an indicator for how well-resourced a school is. And lastly, it will estimate a school's success based on whether or not it met its annual targets.

Hypothesis

This analysis hypothesizes that the percentage of students qualifying for subsidized meals correlates with the qualification rates of the teachers. More generally, it predicts that schools with poorer students have access to fewer resources on average.

Analysis

The data show that low levels of student poverty (i.e. fewer students receiving subsidized meals) and higher levels of fully-qualified teachers predict school success. Schools with 90-100% fully qualified teachers met their annual targets at a rate of 74% while schools with 10-20% fully-qualified teachers met theirs at a rate of 43% (see Figure 1). Additionally, schools with 0-10% of students qualifying for subsidized meals met their targets at a rate of 89% while schools with 90-100% subsidized meal-qualifying students met theirs at a rate of 77% (see Figure 2). This data shows the explicit link between (1) teacher qualification rates and school success and (2) student income level and school success.

Furthermore, schools with more students qualifying for subsidized meals did indeed have fewer fully-qualified teachers on average (see Figure 3). Notice in Figure 3 the drastic difference between (high income) schools with 0-10% of students having subsidized meals VS (low income) schools with 90-100% of students having subsidized meals. Over 72% of these high income schools had fully qualified teaching staff (90-100% qualified) compared to only 13.8% of low income schools. The data shows an alarming trend: As the income of students at a school increases, so does the percentage of qualified teaching staff. This finding supports the hypothesis that student family income and school access to resources are not independent of one another.

Limitations and Further Study

This analysis suffers from limitations in data and equity. While the indicators available are helpful, they do not measure income or resource availability precisely and are estimates at best. This analysis also did not account for race and--given that black and brown Americans tend to be poorer--fails to provide information for a discussion regarding racially equitable education.

Additionally, this analysis does not define causal relationships between student family income, school resource access, or school target achievement. For instance, it can not answer whether student family income drives school achievement down. Continued study would benefit from causal analysis of these factors as well as disaggregation by racial and ethnic identities.

Policy Implications

Policymakers seeking to improve school success rates should focus on the dynamic between student poverty, school resources, and school success. First steps may include allocating funding for schools to hire more fully-qualified teachers but, as noted above, further analyses will provide more targeted direction.

Conclusion

This analysis examines the relationship between loosely defined indicators of student family income, school resource access, and school success. While limited in scope, it shows that lower income students more often attend schools with less qualified teachers, that schools serving low income students tend to perform worse, and that schools with fewer qualified teachers also tend to perform worse.

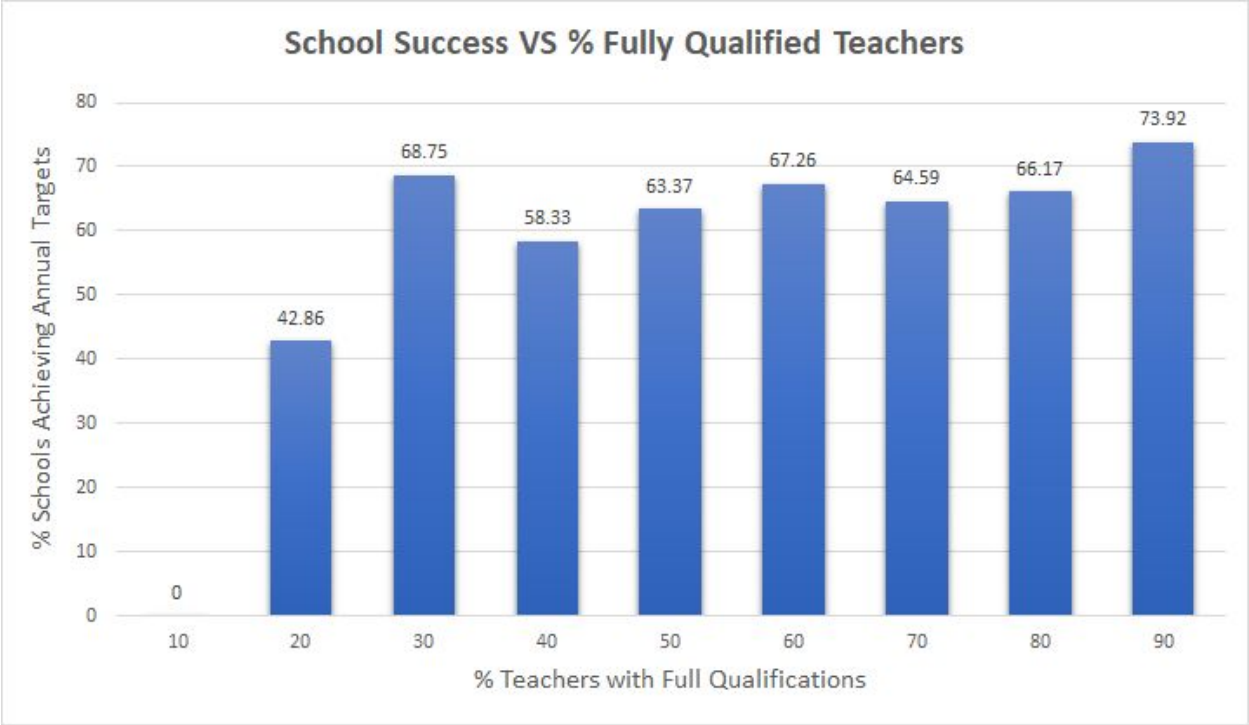

Figure 1

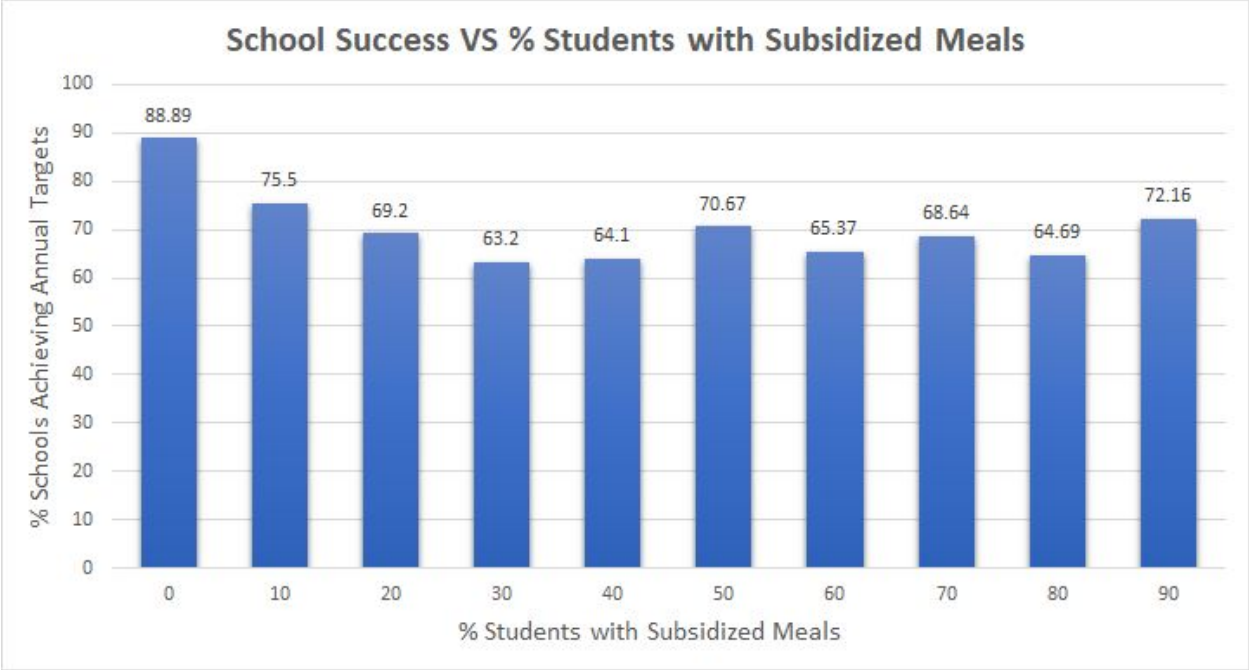

Figure 2

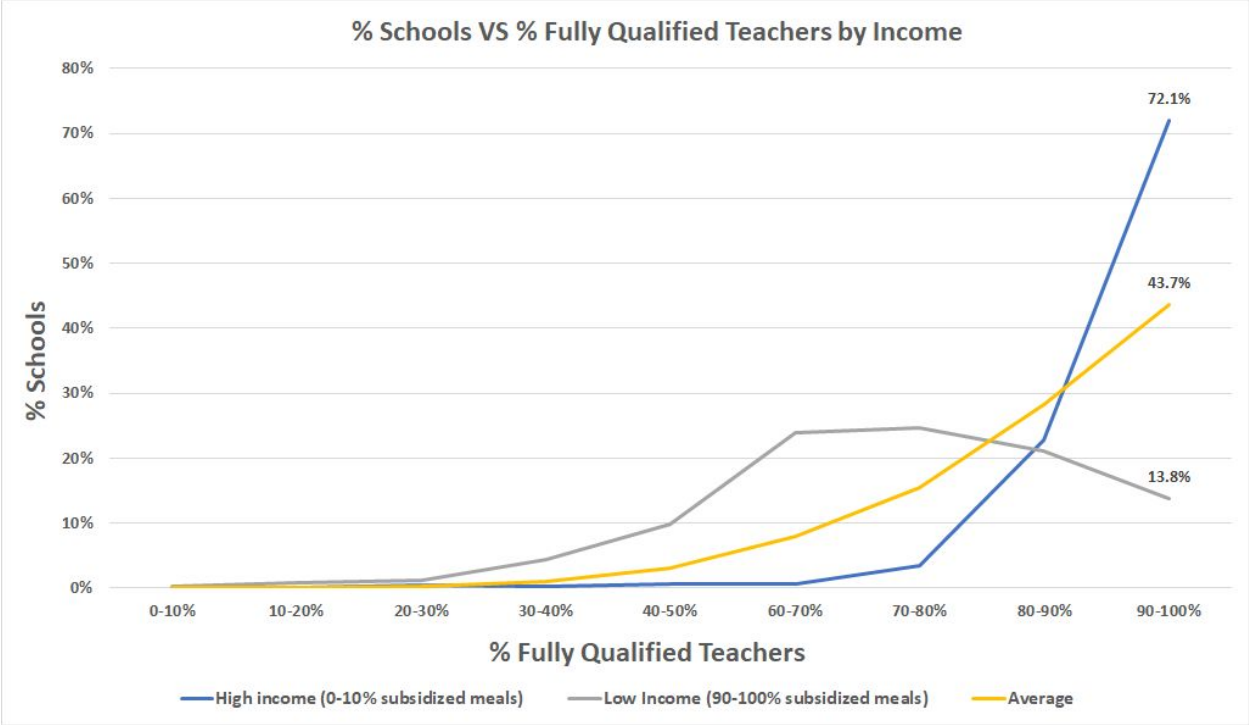
% Schools VS % Fully Qualified Teachers by Income
80%
70%
60%
50%
40%
30%
20%
10%
0%
% Schools
72.1%
43.7%
13.8%
0-10%
10-20%
20-30%
30-40%
40-50%
60-70%
70-80%
80-90%
90-100%
% Fully Qualified Teachers
High income (0-10% subsidized meals)
Low Income (90-100% subsidized meals)
Average

Figure 3