

Schools, Resources, and Efficiency

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Getting Down to Facts

A research project designed to provide California's policy-makers and other education stakeholders with comprehensive information about the state's school finance and governance systems, and lay the groundwork for a conversation about needed reforms. The project was made possible by grants from the Bill & Melinda Gates Foundation, the William and Flora Hewlett Foundation, the James Irvine Foundation, and the Stuart Foundation.

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For the full text of the author's research report and the other studies in this project, see: www.irepp.net

For background on California's school finance system, see: www.californiaschoolfinance.org

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These two studies by the American Institutes for Research (AIR) examine relationships among the use of resources, the regulatory environment, and student performance at the school level in California. The first focuses on high-performing schools and the second on charter schools (see page 3).

Successful California Schools in the Context of Educational Adequacy

This study explores the extent to which student outcomes in successful schools can be attributed to the amount or type of resources received or to the use and allocation of resources in those schools. The study focuses on several questions:

1. How can particularly successful and particularly unsuccessful schools be identified in California, and how common are these schools?
2. What resource differences can be observed between successful schools and other schools?
3. What factors appear related to success?

Study Methods

This study analyzes schools that are “beating the odds” (BTO) with regard to student achievement and compares them to low-performing (LP) schools. The authors categorize schools based on four years of test score data for elementary and middle schools and three years of data for high schools. In all cases, the student achievement measures are scaled scores on the California Standards Tests (CSTs) in English language arts and math.

Beating-the-odds schools are those that consistently perform at a higher level than predicted by the types of students that they serve. Schools had to show this higher level for all four years of data and for all student subgroups. The subgroups are defined by eligibility for free/reduced-priced meals, English learner status, Hispanic ethnicity, and African American race. After charter schools were removed from the sample, the BTO schools include 61 elementary schools, seven middle schools, and 35 high schools.

Low-performing schools are those that every year, and for every student subgroup examined, performed at a lower level than

would be expected given the students that they serve. The LP schools included 76 elementary, 32 middle, and five high schools.

The study analyzes resource allocations in the BTO and LP schools, as well as schools statewide. The authors examine statewide data from the 2004–05 California Basic Educational Data System (CBEDS) to compare staff qualifications across schools, including teacher characteristics such as education, experience, and tenure. They use a regression analysis to explore how personnel resources in BTO and LP schools differ in comparison to other public schools. The authors also use an academic-production model to relate resource allocation practices and student demographic characteristics to differences in student academic attainment. For this they used 2004–05 CST scores as the outcome measure.

The study examines financial data from the 2004–05 Standardized Account Code Structure (SACS). Given that these data do not provide school-level expenditure information, the authors use district finance data and school-level staffing information for teachers

and administrators to estimate school-level resources. All of the resource information is presented in per-pupil amounts in order to facilitate comparisons among schools.

The authors also conduct telephone interviews with administrators from a sample of the BTO and LP schools with similar student populations about the resource allocation practices at these schools.

Summary of Key Findings

A definition of successful schools based on consistent high performance yields a small group that beat the odds

The authors find that only 103 schools (out of more than 9,000 in the state) fit their definition of a beating-the-odds school—consistently performing at high levels relative to schools that serve similar student populations. There is considerable instability in test score results: schools outperform one year and the next year perform as expected or underperform. For example, 365 elementary schools beat the odds during 2002, and 307 schools beat the odds during 2003. However, only 61 elementary schools do so every year over the 2002–05 time period. Only 41 of these schools are at or above the state’s accountability target of an 800 Academic Performance Index (API) score. A similar pattern of instability holds true for the low-performing schools.

Statistical analyses show no differences in the number of personnel, but some variations are related to school performance

The authors find no statistical evidence that BTO and LP schools have different *quantities* of certified and classified personnel when compared to other public schools. They did, however, find some differences in staffing and the qualifications of school personnel in BTO and LP schools:

- BTO elementary schools have similar class sizes in grades 1–5 but have fewer students in their kindergarten classes when compared with other public schools.
- Administrators in elementary BTO schools are more experienced when compared with other public schools.
- BTO elementary schools have a higher proportion of staff in administrative positions and have a significantly lower percentage of teachers with tenure when compared with other public schools.
- In elementary LP schools, the average total years of teachers’ experience and the educational attainment of administrators are lower than in either BTO schools or other public schools.
- In LP middle and high schools, teacher education and experience is lower than in other public schools.
- LP schools have significantly lower percentages of teachers holding full credentials, and they have a higher proportion of staff in pupil-support assignments when compared with other public schools.

Data reveal no relationship between school resources and academic success

The study compares the levels of spending between the BTO and LP schools. On average, the beating-the-odds schools spend slightly less than the low-performing schools (\$7,799 per student versus \$8,021, compared to a state average of \$7,523). For both groups, however, high-poverty schools tend to spend more per pupil than the average, and LP schools are more likely to be high-poverty than are BTO schools. When the sample is restricted to only high-poverty schools, BTO schools spend \$266 more per student than LP schools and \$935 more per student, on average, than other schools in the state.

A further analysis indicates that available measures of resources do not

appear to be statistically related to the unusually high academic performance of the BTO schools. The factors that make schools successful are either characteristics that are unobservable or are not measured in current statewide databases. For example, indicators associated with school leadership, teachers’ planning time, and teacher and principal turnover are not uniformly available in California. It is also possible that the schools differ in student outcomes because the analyses did not adequately adjust for differences in the student populations served by the school. Characteristics such as eligibility for subsidized meals, for example, are weak measures of poverty and the resources available to students outside of school.

Interviews reveal some factors related to success but no clear “recipe”

The authors interviewed principals to dig deeper into the factors that make a difference for BTO schools. They find no single key to academic success or even a single combination of relevant factors. In many ways, each school is unique. On the other hand, they identify three common themes in BTO schools:

- High-quality teachers and staff,
- Implementation of a standards-based curriculum, and
- Coherent instruction.

The authors also note several factors mentioned by principals that influence these themes: teacher support and training, control over hiring, effectiveness in removing teachers, teacher collaboration time, and assessment data that informs instruction. In addition, principals mentioned interventions and/or student services, parental involvement, and high expectations for students.

Authors’ Conclusions

An underlying premise of many resource adequacy studies is that reaching a specified set of educational outcomes is directly dependent on the

level of resources. This report suggests that traditional resource measures do not capture the difference in school success. The conclusion is not that resources do not matter but that they only matter in combination with how

they are used. Existing adequacy frameworks, for example, would benefit from considering more broadly the mix of staff attributes needed for school success. The state could further this agenda by collecting more

comprehensive data on these attributes and on student background characteristics and by developing the performance measures needed to better understand the full resource implications of school success.

Charter Schools in California: A Review of Their Autonomy and Resource Allocation Practices

Charter schools are public “schools of choice” not bound by many of the regulations that apply to traditional public schools. This study looks at the extent to which this freedom from regulation affects resource allocation decisions and student performance. It focuses on three questions:

1. To what extent are charter schools operating apart from traditional governing rules and regulations?
2. Are resource allocation practices observed in charter schools substantially different from those in other schools? If so, is there evidence that these differing practices affect academic success?
3. Can individual charter schools be identified to serve as examples of innovative education resource allocation practices?

Summary of Key Findings

Charter schools are designed to provide students with “alternative” educational settings. This freedom to innovate results in a wide range of schooling models. However, one characteristic of all charters is that they are not formally bound by many of the governing rules that apply to traditional schools. Thus, a key distinguishing dimension among charter schools is the extent to which they have regulatory “independence” and the flexibility to determine how they will allocate resources. This study categorizes charter schools based on this independence and assesses differences in resource allocation among groups of charters and between charters and other public schools. It analyzes resource allocation differences both on average and through case studies of charter schools known for the creative use of resources. It finds little difference, on average, in resource allocation based on available data, which only roughly captures true spending

patterns. This study does find substantial variation in schooling approaches across the case-study schools.

Charter schools differ substantially in their independence

In order to better understand the degree of autonomy charter schools exercise, the authors create a typology of independence from traditional governing rules. Classroom-based charter schools are characterized as having a high level of regulatory independence if (1) they receive funds directly from the state, (2) the charter granting agency exercises only minimal oversight but provides no significant services, and (3) teachers are not part of a collective bargaining agreement that would constrain decisions about teacher salaries, hiring, and dismissals. Charters with a low level of independence are those that receive funds or important services through their charter granting agency and have a bargaining agreement with teachers that is aligned with the chartering agency. Based on these

Study Methods

This study focuses on the resource allocation practices and autonomy of California’s 396 classroom-based charter schools.

The authors categorize charter schools based on their degree of independence as indicated by how they are funded, what types of services they receive from their chartering agency, and whether teachers have collective bargaining contracts.

The authors use the same methodology and state data to examine resources as they use in their *Successful California Schools* study. (See page 1 for more details.)

To examine innovative practices in individual charter schools, the authors conducted case studies of six California charter schools selected on the basis of nominations by charter experts and school leaders.

classifications, only about 11% (44 of 396) of the California charter schools in this study are highly independent. The authors use this classification to assess whether independence is associated with the ways in which schools allocate their resources, their models of instruction, the type of students they serve, or their level of academic performance.

State data reveal differences between charters and traditional schools in school size and in the demographics of students served

The average charter school is approximately half the size (335 vs. 787 students) of the average regular public school. On average, charters serve a lower percentage of students eligible for free/reduced-priced meals (44.0% vs. 51.4%) and English learners (19.4% vs. 25.6%). In addition, charters are more likely to enroll African American students and are less likely to enroll Hispanics.

Among charter schools with differing levels of independence, demographic differences are less pronounced. Schools with a relatively high level of independence tend to be smaller and serve a notably higher percentage of African American students in comparison to charters with a low level of independence. These highly independent charters also serve fewer students eligible for free/reduced-priced meals and fewer English learners than do the less independent charters.

State data reveal few significant differences between charter and noncharter schools in resource allocation; teachers in highly independent charters have significantly less experience

Charter schools differ somewhat from regular public schools and among themselves in relation to their degree of independence. The study finds no detectable difference in the numbers of teaching staff per student but does find

that charters tend to have more school-based administrators and fewer school-based pupil support staff.

On average, teachers and administrators in charter schools have substantially fewer years of experience in comparison to their counterparts in regular public schools. This is true even when only traditional and charter schools with five or fewer years of existence are considered in the analysis.

Among charter schools, the authors find that those with a low degree of independence tend to closely resemble traditional public schools in staffing characteristics. But there are significant differences between the most independent charters and other schools. Independent charters employ 65% fewer tenured teachers and, more generally, a higher proportion of new teachers than do traditional public schools.

Based on state data, the authors find few significant differences between charter and noncharter schools on school-level measures of academic performance

Independent charters and regular public schools perform at similar academic levels as measured by the English language arts assessment of the California Standards Test (CST) once adjusted for student background characteristics, but lower on the math CST. Less independent charter schools perform similarly to traditional public schools. However, the data are not available on individual students' performance so researchers cannot be sure whether the differences in student performance are due to selection of students into the school or to differences in school effectiveness.

Individual charter school practices illuminate differences state data obscure

Existing state data show few differences in resource allocation among different groups of charter schools and between charters and traditional public

schools. However, the state data only report broad categories of spending and, thus, may not provide enough nuance to highlight important distinctions. Some charter schools may implement substantially different programs, allocating resources in ways not possible under the system governing traditional public schools. To explore this question in greater depth, the authors conducted site visits to six charter schools selected on the basis of nominations from charter school experts and leaders. These schools were selected because they were considered atypical in terms of their level of independence and they provide examples of unique resource allocation practices not well reflected in state data. For example, several of the charter schools appear extremely lean on administration despite state data showing that, on average, charter schools do not have fewer administrators per pupil than traditional public schools. One school in the sample has no outside support from the district or from a charter management organization. They run the K–8 school of 190 students with one part-time administrator who also teaches a class, another quasi-administrator with a full teaching load, and a clerk—none of whom has an office.

Other observed innovative practices that do not show up in traditional resource allocation data include a full day each week engaged in learning activities in the community, a longer instructional year, and allowing all of the school's students to stay at the school until after 5 p.m. An important resource allocation difference in *all* highly independent schools the authors visited was the ability to easily hire and remove teachers.

Authors' Conclusions

When analyzing charter school academic performance relative to resources and student characteristics, the authors find little difference in academic performance between highly independent

charters and regular public schools. They also find little difference, on average, in resource allocation. The authors caution, however, that charter schools are much more heterogeneous than noncharters, particularly in their exercise of regulatory independence. It is important to develop better approaches for characterizing and analyzing these schools in order to test whether, and under what circumstances, the regulatory flexibility afforded charters leads to different resource allocation patterns and to better outcomes for students.

Thomas Parrish, Ph.D., is a managing director for American Institutes for Research (AIR) in Palo Alto. His major area of expertise is fiscal policy in public education with a specialty in special education. He has directed and participated in numerous cost analysis, education policy, and evaluation projects for federal, state, and local agencies over the past 25 years.

María Pérez has been instrumental in processing and analyzing complex data from national and

state departments of education, school districts, and schools. Her recent work has focused on the achievement and inclusion of English learners and students with special needs in standardized testing. She is currently a research associate of the Institute for Research on Education Policy and Practice at Stanford University.

These studies were completed in January 2007 (Successful Schools) and December 2006 (Charter Schools).