



GETTING DOWN — TO FACTS II —

Technical Report

An Update to the 2014 CREDO Study *Charter School Performance in California*

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About: The *Getting Down to Facts* project seeks to create a common evidence base for understanding the current state of California school systems and lay the foundation for substantive conversations about what education policies should be sustained and what might be improved to ensure increased opportunity and success for all students in California in the decades ahead. *Getting Down to Facts II* follows approximately a decade after the first *Getting Down to Facts* effort in 2007. This technical report is one of 36 in the set of *Getting Down to Facts II* studies that cover four main areas related to state education policy: student success, governance, personnel, and funding.

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Policy Analysis for California Education

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Introduction

In 2014, the Center for Research on Education Outcomes at Stanford University released a report *Charter School Performance in California*. The report presented a comprehensive examination of the impact of charter school enrollment on the academic progress of the students who attended them during the school years 2005-2006 through 2010-2011.

This memo recaps the major findings of the 2014 report, addresses the factors that have inhibited a more contemporary view of charter school performance and provides a brief epilog to the former study as a pathway to future investigations.

About the 2014 Report

The 2014 report is included in full in this briefing memorandum as an Appendix. To build the context for the updated analysis that is the key focus of this memorandum, it is helpful to review the approach and major findings of the 2014 report.

CREDO used student-level education records obtained from the California Department of Education under a data sharing Memorandum of Understanding to create statistical models of see how well students in California charter schools are learning compared to the experience they would have otherwise had in their local traditional public schools (TPS). The outcome of interest is the amount of progress a typical charter school student makes in a year's time compared to their TPS peers.

It takes two successive snapshots of academic achievement (status) to build a measure of academic progress from one year to the next (growth). Growth is a preferred measure because it allows school impacts to be separated from other things that might affect a student's achievement at a single point in time, such as maturation or differences in student background. From six years of student data, we are able to create five growth periods, though not all students will be observed the entire time.

CREDO uses a matching method called the Virtual Control Record that identified students in local TPS who exactly match charter school students, including prior academic baseline, to create for each charter student an estimate of what learning they would have gained had they attended their local TPS.¹ That alternative scenario is based on the observed experience of real students which is averaged to build a "virtual twin."

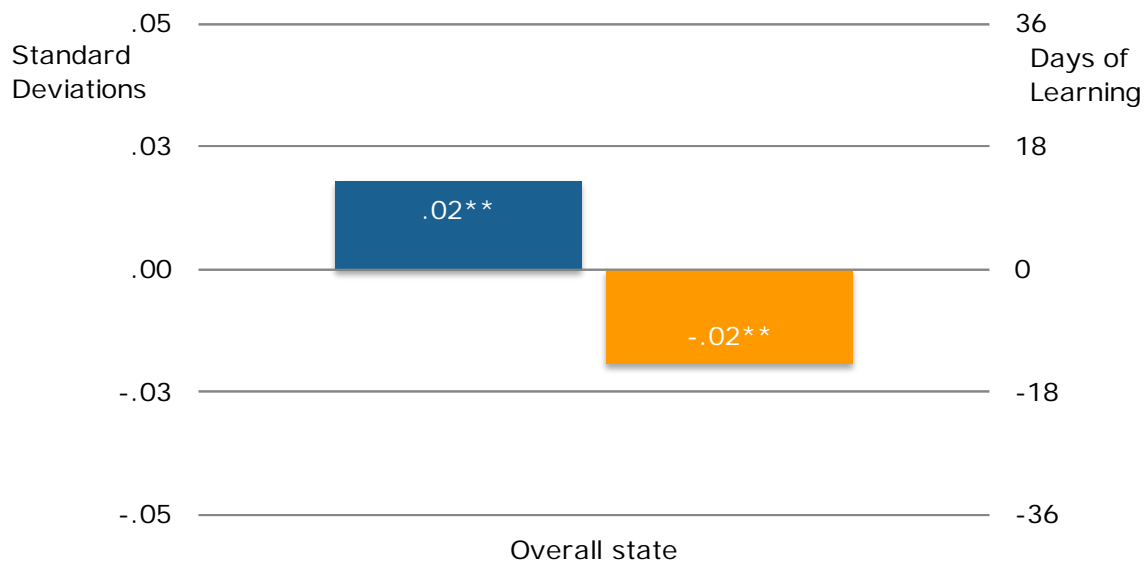
Student performance was examined separately for reading and math based on the students' scores on California's standardized STAR exams. The effect for charter school learning can then be compared to the learning in TPS.

¹ A helpful infographic of how CREDO identifies comparison students can be seen at <http://credo.stanford.edu/virtual-control-records/>.

Summary of Key Findings of 2014 Report

Since the California charter school legislation was passed in 1991, interest in their performance has been keen. The 2014 report is the latest study of performance using student-level data, which provides a highly accurate estimate of their effectiveness. Across the five growth periods covered by this study, CREDO estimated the overall average impact on one-year academic growth for California’s charter school students. The “topline” results are presented in Figure 1, which is copied directly from the 2014 report.

Figure 1: Average Learning Gains in California Charter Schools Compared to Gains for VCR Students in Each Charter Schools’ Feeder TPS



** Significant at $p \leq 0.01$ ■ Reading ■ Math

Before turning to the actual results, a brief discussion of the format used in Table 1 is advisable. The research estimated the one-year academic growth of students of charter school students and their matched comparison peers in traditional public schools (TPS) and then compared them. The results are presented as the marginal performance of charter students, on average, against the average academic gains of TPS students, represented as the “zero” line in the figure. The statistical model used in the calculation controlled for differences in student characteristics, so the results reflect just the effect of school of enrollment and are not influenced by differences in demographics from school to school.

The results are expressed in standard deviation units, which are meaningful to researchers but few others. Those values are presented in the left-hand y-axis in Table 1. Positive values mean that charter students realized more academic progress in a year’s time than their TPS counterparts; negative values mean they made less progress than their TPS peers per year.

To better explain the findings, we transposed the standard deviation units into “days of learning” by considering a typical year of schooling for the average TPS student in this study to be 180 days. If the growth of charter school students was positive, it is as though they attended school for 180 day plus additional days. If negative, the reverse is the case: it is as though they attended fewer days than the 180-day standard.

Figure 1 shows that in California across the five growth periods under study, students enrolled in charter schools realized more academic progress in reading than their matched TPS comparisons, amounting to about 14 additional days of learning. In math, the results were reversed: charter school students made 14 days less progress in a year’s time than their TPS matched cases.

These averages represent the results that a typical student in a typical charter school would realize. Of course, each of these averages has a distribution of results around it. Some students will have gains that are significantly more positive than the average and some will have results that are significantly inferior. The distribution of results around the average raises questions about how similar the patterns are for different types of students.

Table 1: Relative Growth of Student Groups Compared to their TPS Virtual Twins

Student Group	Reading ^a	Reading Days of Learning ^b	Math ^a	Math Days of Learning ^b
Charter Black	.03**	22	.01**	7
Charter Black Poverty	.05**	36	.06**	43
Charter Hispanic	.01**	7	-.02**	-14
Charter Hispanic Poverty	.03**	22	.04**	29
Charter White	-.01**	-7	-.10**	-72
Charter Asian	-.01**	-7	-.04**	-29
Charter Poverty	.02**	14	.04**	29
Charter Special Education	.02**	14	.01**	7
Charter English Learner	.05**	36	.07**	50

^a Value represents effect measured in standard deviation units.

^b Days of learning transforms the growth effect to days gained or lost based on a 180-day school year.

Many California charter schools aim to address students who have historically not fared well in TPS. Looking at learning impacts experienced by different student groups allows us to see if these efforts are succeeding. Table 1 above presents a summary of the marginal impact of charter school enrollment for each of the student sub-groups, relative to their comparison peers in traditional public schools. [This table was created specifically for this briefing memorandum and does not appear in the original report.]

In California, students who are Black or Hispanic or are in poverty made significantly greater progress in charter schools than their TPS peers. The one exception was seen when the learning gains for all Hispanic charter school students were estimated. However, when the group of Hispanic charter school students were further distinguished by their poverty status, Hispanic students in poverty were found to be significantly advantaged by attending charter school students. Even though Black students in general were found to have improved outcomes in charter schools, the academic progress of Black students in poverty was found to be even more positively affected by attending a charter school.

California charter schools provide greater learning gains for students who bring with them attributes that might be expected to adversely impact their academic progress. Students who are identified as needing Special Education supports fare slightly better in charter schools than their matched peers in the TPS the charter students would otherwise have attended. For students who are learning English while attending school, the charter school advantage is large and significant. It also bears noting that this finding is not typical in other states, so there may be an opportunity to learn what approach these schools take with their English learners for possible replication in other schools.

Two student groups did not fare as well by attending charter schools: Asian students and White students. In both cases, their math performance was negatively impacted to a dramatic degree compared to the gains their matched peers made in TPS. These differences are explained in part by the differences in location of charter schools serving significant proportions of Whites and Asians; these schools are found in suburban and rural communities where the absolute achievement of the TPS schools is higher than is found in urban TPS schools.

Student Growth and Achievement

While student academic growth is the preferred way to examine the impact of schools on student performance, achievement is also important as a signal of what students actually know. Both factors provide important signals about the strength of schools, particularly when considered dynamically. By displaying achievement and growth together we can tell the story about schools in a more nuanced way.

We built a graph to display achievement and growth of the California charter schools simultaneously. The Y-axis represents the 50th percentile of achievement in the state; schools that appear above the line are in the top half of achievement in the state, and those below are

achievement below the state average. The X-axis shows average annual growth for the school relative to its local alternatives. Schools in the right half of the charter display greater-than-average growth while those on the left do not produce as much growth as their peer schools.

The separate quadrants of the table tell different stories about the schools that fall within them. The upper right quadrant is the highly desired combination of above average growth and above average achievement. These schools may have at one time been below the state average in achievement but their high rates of growth have moved them upward in the state distribution. The quadrant could also capture schools that enroll students with solid education endowments and also moves them ahead more rapidly than other schools. Working clockwise, the lower right quadrant has high growth and low achievement. Positive growth will improve a school's standing over time and – depending on if they grow more quickly than the schools in the top quadrant -- possibly move it upwards into the upper right. The lower left quadrant holds the schools that are both below average in achievement and produce smaller learning gains than their peer schools. If their results remain stable over time, schools with higher growth will eclipse them, leaving them even lower in the distribution of schools. Finally, schools in the upper left quadrant have above average achievement and growth that lags their local peer school. Many of these schools operate in solidly-performing districts and communities to provide a distinct alternative to students and families. Families are interested in the “something else” and, since the foundation of achievement is already positive, are willing to trade off a bit of growth to get it.

With this guided tour complete, the graphics are populated with actual values in the following tables. Two years of school-wide average achievement, drawn from the 2009/10 and 2010/11 school years, and their associated school-wide average growth were used to locate schools within the four quadrants.

Table 2: Reading Growth and Achievement

Growth (in Standard Deviations)	Low Growth, High Achievement		High Growth, High Achievement		
	-0.15	0	0.15		
		1.3%	8.4%	1.7%	70th Percentile
	0.1%	11.5%	17.6%	6.5%	50th Percentile
	3.5%	15.3%	13.9%	5.1%	30th Percentile
	5.6%	6.2%	3.1%	0.1%	
	Low Growth, Low Achievement		High Growth, Low Achievement		

Quoting from the 2014 report:

In California, 462 of the 819 charter schools that were included in the chart (about 56 percent) had positive average growth in reading, regardless of their average achievement (this percentage is the sum of the squares in the blue and purple quadrants, the right half of the table). About 34 percent of charters had positive growth and average achievement above the 50th percentile of the state (i.e., the total for the blue quadrant on the top right.)

About 53 percent of charters perform below the 50th percentile of achievement (the sum of the gray and purple in the lower portion of the table). Approximately one in five of California charters have positive growth and achievement below the 50th percentile in the state, as seen in the lower right, pink quadrant. If those schools continue their trends of positive academic growth, their achievement would be expected to rise over time.

Of concern, however, are the 31 percent of charters in the lower left gray quadrant, which represents low growth and low achievement.

Table 3: Math Growth and Achievement

<i>Growth (in Standard Deviations)</i>	Low Growth, High Achievement		High Growth, High Achievement		
	-0.15	0	0.15		
	0.3%	1.4%	2.9%	4.0%	70th Percentile
	3.3%	8.2%	10.3%	10.1%	50th Percentile
	12.5%	11.0%	8.9%	6.1%	30th Percentile
	12.8%	5.6%	2.2%	0.4%	
	Low Growth, Low Achievement		High Growth, Low Achievement		

Again quoting from the 2014 report:

For math, 352 of the 783 charter schools included in the chart (45 percent) had positive average growth, as seen in the orange and pink quadrants. Over 27 percent of charters had positive growth and average achievement above the 50th percentile (the top right, orange quadrant). About 60 percent of charters have achievement results below the 50th percentile of the state (the sum of lower half of the table). Of great concern are the 42 percent of schools which are in the lower left brown quadrant, which represents low growth and low achievement.

A school could be in the lower left quadrant for reading or math or both. Taking the union of the schools in either of the two lower left quadrants, a total of 391 schools were identified. This sum will be the focus of the remaining analysis.

Update to the 2014 Report

As noted above, the data for the quadrant charts was drawn from the 2009/10 and 2010/11 school years. The performance of the schools that fell into the lower left quadrant poses risk for the students they enroll. They also cast a pall over other charter schools who are better performing that plays out in public opinion, media attention and political consideration.

Moreover, these are the schools that the fundamental charter bargain – flexibility for accountability – expected to face serious consequences. Either parents would discern the

schools' low performance and move their children to better schools or charter authorizers would intervene and force improvements or close the school.

How well did the charter bargain hold up with these schools? To answer the question we followed the 391 schools from 2010 which was the end of the first year of performance considered in these charts through the 2016-17 school year. For reasons explained more fully at the end of the memorandum, we relied on publicly available school-level data to see if the school continued operations despite posting poor performance in the multi-year review.

Table 4. Number of Low Performing Charter School Closures by School Year

<u>School Year</u>	<u>Number of Closures</u>
2009/10	2
2010/11	11
2011/12	15
2012/13	16
2013/14	16
2014/15	13
2015/16	6
2016/17	11

With the exception of the 2015-16 year, the number of closures appears fairly stable. Nearly half of the closures, 44 schools, occurred before the study had been released. The steady treatment of these low-performing school closures indicates that the majority of closures occur at the end of a charter when the school is reviewed for renewal.

A total of 90 schools were closed, or 23 percent of the 391 schools that had both low academic progress and low achievement. The proportion significantly outpaces the average rate of closure of low performing charters, which in a separate CREDO study² was estimated to be 5.5% over an equivalent number of years. This comparison suggests that California authorizers use school closure more readily than their counterparts in other areas of the country.

² http://credo.stanford.edu/pdfs/Closure_FINAL_Volume_I.pdf

Barriers to Data Access and Evidence Creation

Updating the report proved difficult for a number of reasons. The State Board of Education approved the suspension of annual student testing for federal and state accountability reporting for the Spring 2014 assessment. The rationale rested on a temporal disconnect between adoption of Common Core Standards in 2010, years ahead of the 2015 adoption of the Smarter Balanced assessments, designed to those standards. Additionally, in 2014 a majority of schools lacked the capability to administer the online Common Core-aligned pilot assessments. The decision created a disruption in the time series of student testing in California that affected the ability to discern academic progress from one year to the next.

Second, in 2013, the California legislature passed a bill proposed by the Superintendent of Public Instruction to prohibit comparison of student or school performance across the two testing systems. [EdCode 60641\(a\)\(2\)](#)) says the California Department of Education and local school districts “shall not use a comparison resulting from the scores and results” of the new tests “and the assessment scores and results from assessments that measured previously adopted content standards.” CDE has extended the restriction to include research and bans researchers from employing both test series in any given study. Researcher must choose either a longer, more stable series that is not current or a contemporary short series (currently three years or two growth periods) that by virtue of being both new and short-lived introduces more uncertainty into an analysis.

Third, in March 2015, the State Board of Education terminated the Academic Performance Index – the state’s accountability system. The expectation was that a new accountability system, the Local Control Accountability Plan (LCAP), would take its place in short order. The first release of school performance occurred in Fall 2017 based on 2016-2017 school year performance; several of the indicators were not released pending further refinement or longer /more stable data series. However, based on the indicators that were released, the State Board of Education revised the cut scores after finding that many more schools received Very Low ratings than had been anticipated.

During this protracted period of development for new budgeting and accountability systems, the California Department of Education withheld data – both school-level and student-level. In partial defense of CDE’s action, there was a concern that CDE itself did not have full working knowledge of the Smarter Balanced data and needed time to test and verify the first round of assessments. They also used the time to redesign the data request process and to build a web-based portal to automate much of the required researcher activity. Data requests were considered for historical data using the former testing and accountability systems, but any request for new data was either declined or put on hold. According to correspondence with CDE leadership, only 25 requests for data that involve new personal-level data have been granted to date. As of the middle of June 2018, CREDO’s request for student data from 2015 onwards has yet to be granted, after 2 years of negotiation.

These barriers to evidence are troubling for three reasons. Most important, state and local policy makers are limited in the amount of information at their disposal when faced with decisions. Information gaps push decision makers to rely exclusively on softer factors. Second, by preventing outsiders the chance to examine programs and policies, independent analysis is eliminated from the policy process, resulting in significant harm to policy debate and transparency. Finally, the loss of exchange between independent analysts and decision makers thwarts a vital source of informed dialogue about policy and program improvement that is so critically needed in our public education system.