Charter School Performance in Louisiana

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Introduction

Across the country, charter schools occupy a growing position in the public education landscape. Heated debate has accompanied their existence since their start in Minnesota two decades ago. Similar debate has occurred in Louisiana as well, with charter advocates extolling such benefits of the sector as expanding parental choice and introducing market-based competition to education. Little of that debate, however, is grounded in hard evidence about their impact on student outcomes. This report contributes to the discussion by providing evidence for charter students' performance in Louisiana for six years of schooling, beginning with the 2005-06 school year and concluding in 2010-11.

With the cooperation of the Louisiana Department of Education, CREDO obtained the historical sets of student-level administrative records. The support of Louisiana DOE staff was critical to CREDO's understanding of the character and quality of the data we received. However, it bears mention that the entirety of interactions with the Department dealt with technical issues related to the data. CREDO has developed the findings and conclusions independently.

This report provides an in-depth examination of the results for charter schools in Louisiana. It is also an update to CREDO's first analysis of the performance of Louisiana's charter schools, which can be found at our website.[1] This report has three main benefits. First, it provides a rigorous and independent view of the performance of the state's charter schools. Second, the study design is consistent with CREDO's reports on charter school performance in other locations, making the results amenable to being benchmarked against results nationally and in other states. Thirdly, the study includes a section on the charter performance in New Orleans, where much attention has focused lately.

The analysis presented here takes two forms. We first present the findings about the effects of charter schools on student academic performance. These results are expressed in terms of the academic progress that a typical charter school student in Louisiana would realize from a year of enrollment in a charter school. The second set of findings is presented at the school level. Because schools are the instruments on which the legislation and public policy operate, it is important to understand the range of performance for the schools. These findings look at the performance of students by school and present school average results.

[1] CREDO. *Charter School Performance in Louisiana* (2009). http://credo.stanford.edu

Compared to the educational gains that charter students would have had in a traditional public school (TPS), the analysis shows on average that students in Louisiana charter schools make larger learning gains in both reading and mathematics. This amounts to 50 more days of learning in reading and 65 more days in math. Black students, especially Black students in poverty, White students, students receiving special education services, and students repeating a grade all benefit from charter attendance. At the school level, 41 percent of the charter schools have significantly more positive learning gains than their TPS counterparts in reading, while 14 percent of charter schools have significantly lower learning gains. In math, 42 percent of the charter schools studied outperform their TPS peers and 14 percent perform worse.

New Orleans As a result of statewide focus on improving the schools in New Orleans, nearly 80 percent of the public school students in the city attend charter schools, constituting 69 percent of the state's charter school population. As their peers' growth has declined, so have the charter students' scores improved, representing, on average, four months per year of additional learning in reading and five months for math. We observed positive impacts from attending a charter for students in poverty (unlike in the overall state), for Black and Hispanic students, special education students, and students who repeat a grade. Of the 79 Louisiana charter schools included in our school-level study, 52 are in New Orleans, essentially fueling the overall state gains. Half of the New Orleans charter schools perform significantly better in reading than their traditional public school counterparts, and 56 percent had higher growth in math.

Study Approach

This study of charter schools in Louisiana focuses on the academic progress of their enrolled students. Whatever else charter schools may provide their students, their contributions to their students' readiness for secondary education, high school graduation and post-secondary life remains of paramount importance. Indeed, if charter schools do not succeed in forging strong academic futures for their students, other outcomes of interest, such as character development or non-cognitive skills, cannot compensate. Furthermore, current data limitations prevent the inclusion of non-academic outcomes in this analysis.

This statewide analysis uses the Virtual Control Record (VCR) methodology that has been used in previous CREDO publications.[2, 3, 4] The approach is a quasi-

[2] CREDO. *Multiple Choice: Charter School Performance in 16 States* (2009). http://credo.stanford.edu.

experimental study design with matched student records that are followed over time. The current analysis begins with the general question of whether in the aggregate students in charter schools outperform their TPS counterparts. This general question is then extended to consider whether the observed charter school performance is consistent when the charter school population is disaggregated along a number of dimensions, such as race/ethnicity, geographic location and so on. Answers to all these questions require that we ensure that the contribution of the schools – either the charter schools or the TPS schools – is isolated from other potentially confounding influences. For this reason, these analyses include an array of other variables whose purpose is to prevent the estimate of charter schooling to be tainted by other effects. In its most basic form, the analysis included controls for student characteristics: standardized starting score, race/ethnicity, special education and lunch program participation, English proficiency, grade level, and repeating a grade.

To create a reliable comparison group for our study, we attempted to build a VCR for each charter school student. A VCR is a synthesis of the actual academic experience of students who are identical to the charter school students, except for the fact that they attend a TPS that the charter school students would have attended if not enrolled in their charter school. We refer to the VCR as a 'virtual twin' because it takes the experience of multiple 'twins' and creates a single synthesis of their academic performance to use as the counterfactual to the charter school student's performance.

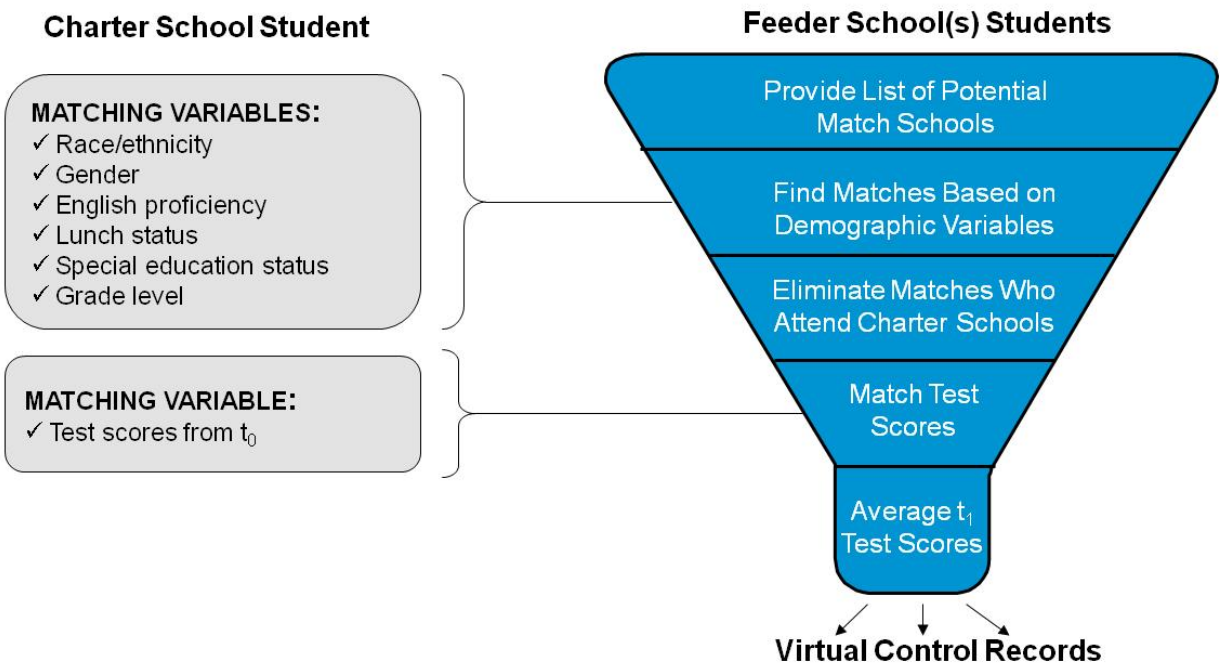
Our approach is displayed in Figure 1. We identify all the traditional public schools whose students transfer to a given charter school; each of these schools is a "feeder school." Once a TPS qualifies as a feeder school, all the students in the school become potential matches for a student in a particular charter school. All the student records from all the feeder schools are pooled – this becomes the source of records for creating the virtual match. Using the records of the students in those schools in the year prior to the test year of interest (t_0), CREDO selects all of the available TPS students that match each charter school student.

[3] Davis, Devora H. and Margaret E. Raymond. Choices for Studying Choice: Assessing Charter School Effectiveness Using Two Quasi-experimental Methods. *Economics of Education Review* 31, no. 2 (2012): 225-236.
[4] Cremata, Edward, D. Davis, K. Dickey, K. Lawyer, Y. Negassi, M. Raymond and J.Woodworth. *National Charter School Study 2013* (2013). http://credo.stanford.edu.

Match factors include:

- Grade-level
- Gender
- Race/Ethnicity
- Free or Reduced Price Lunch Status
- English Language Learner Status
- Special Education Status
- Prior test score on state achievement tests

Figure 1: CREDO Virtual Control Record Methodology



At the point of selection as a VCR-eligible TPS student, all candidates are identical to the individual charter school student on all observable characteristics, including prior academic achievement. The focus then moves to the subsequent year, t_1. The scores from this test year of interest (t_1) for as many as seven VCR-eligible TPS students are then averaged and a Virtual Control Record is produced. The VCR produces a score for the test year of interest that corresponds to the expected gains a charter student would have realized if he or she had attended one of the traditional public schools that would have enrolled the charter school's students. The VCR provides the counterfactual "control" experience for this analysis.

For the purposes of this report, the impact of charter schools on student academic performance is estimated in terms of academic growth from one school year to the next. This increment of academic progress is referred to by policymakers and researchers as a “growth score” or “learning gains” or ”gain scores.” Using

statistical analysis, it is possible to isolate the contributions of schools from other social or programmatic influences on a student's growth. Thus, all the findings that follow are measured as the average one-year growth of charter schools, relative to the VCR-based comparison.

With six years of student records in Louisiana, it is possible to create five periods of academic growth. One growth period needs a "starting score" (i.e., the achievement test result from the spring of one year) and a "subsequent score" (i.e., the test score from the following spring) to create a growth score. To simplify the presentation of results, each growth period is referred to by the year in which the second spring test score is obtained. For example, the growth period denoted "2008" covers academic growth that occurred between the end of the 2006-2007 and the end of the 2007-2008 school years. Similarly, the time period denoted "2011" corresponds to the year of growth between the 2009-2010 and 2010-2011 school years.

With six years of data, and eight tested grades (3rd - 10th), there are 48 different sets of data each for Reading and Math; each subject-grade-year group of scores (or, in the case of End of Course exams, subject-year group) has slightly different mid-point averages and distributions.

The analysis is helped by transforming the test scores for all these separate tests into a common measurement. All test scores have been converted to "bell curve" standardized scores so that year-to-year computations of growth can be made.[5]

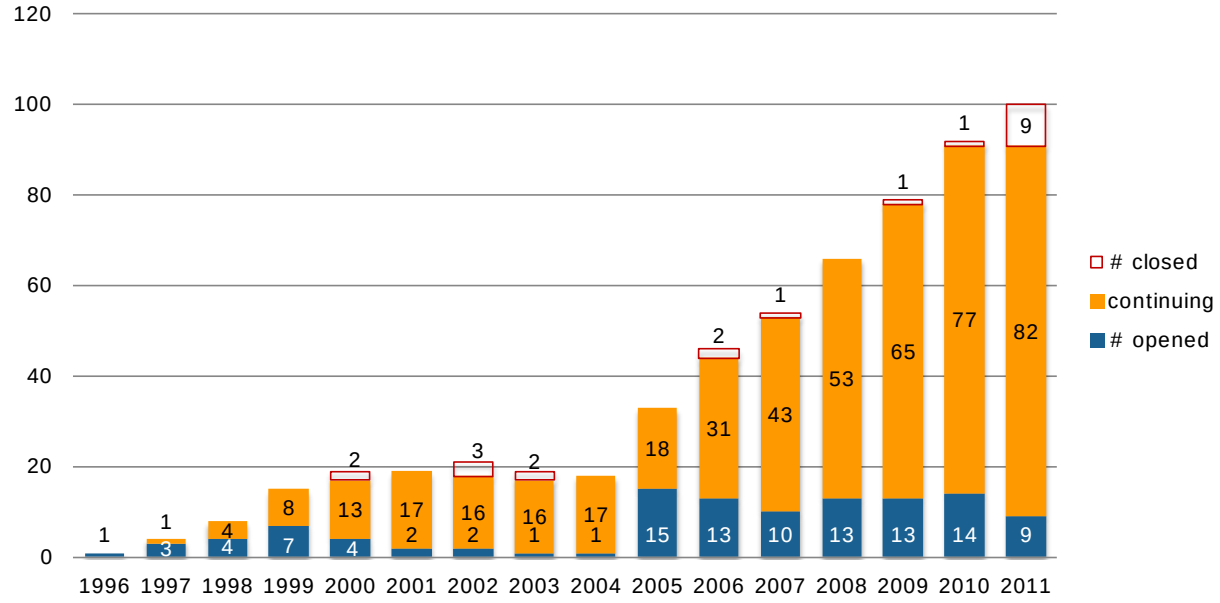
When scores are thus standardized into z-scores, every student is placed relative to his peers in his own state. A z-score of zero, for example, denotes a student at the 50th percentile in that state, while a z-score one standard deviation above that equates to the 84th percentile. Students who maintain their relative place from year to year would have a growth score of zero, while students who make larger gains relative to their peers will have positive growth scores. Conversely, students who make smaller academic gains than their peers will have negative growth scores in that year.

[5] For each subject-grade-year set of scores, scores are centered around a standardized midpoint of zero, which corresponds to the actual average score of the test before transformation. Then each score of the original test is recast as a measure of deviation around that new score of zero, so that scores that fell below the original average score are expressed as negative numbers and those that were larger are given positive values. These new values are assigned so that in every subject-grade-year test, 68 percent of the former scores fall within a given distance, known as the standard deviation.

Louisiana Charter School Demographics

The Louisiana charter school sector has grown markedly since its inception in 1996. Figure 2 below notes the new, continuing and closed charter school campuses from the fall of 1996 to the fall of 2011.

Figure 2: Opened and Closed Charter Campuses, 1996-2011



According to the National Center for Education Statistics (NCES), there were 91 charter schools open in Louisiana in the 2010-11 school year.[6] Because charter schools are able to choose their location, the demographics of the charter sector may not mirror that of the TPS sector as a whole. Further, charter schools create a degree of sorting through their offer of different academic programs and alternate school models. In addition, parents and students who choose to attend charter schools select schools for a variety of reasons such as location, school safety, small school size, academic focus or special interest programs. The cumulative result of all these forces is that the student populations at charters and their TPS feeders may differ. Table 1 below compares the student populations of all Louisiana's traditional public schools, the charters' feeder schools, and the charter schools themselves.

[6] This is the most recent year available from the NCES Common Core of Data Public School Universe.

Table 1: Demographic Comparison of Students in TPS, Feeders and Charters

	TPS	Feeders	Charters
Number of schools	1,381	372	91
Average enrollment per school	477	555	412
Total number of students enrolled	658,720	206,370	37,043
Students in Poverty	65%	72%	81%
English Language Learners	2%	3%	2%
Special Education Students	14%	14%	12%
White Students	51%	34%	13%
Black Students	43%	59%	82%
Hispanic Students	3%	3%	2%
Asian/Pacific Islander Students	1%	2%	2%
Native American Students	1.0%	0.8%	0.3%

Charter schools in Louisiana are concentrated in the state's two major urban areas: New Orleans and Baton Rouge. For this reason alone, one would not expect charter school populations to parallel the demographics of the Louisiana TPS population as a whole. Table 1 bears this out: charter schools have more students in poverty, more Black students and fewer White and Hispanic students. Louisiana charter schools serve slightly more Asian students than the traditional public schools.

The feeder school populations would be expected to more closely align demographically, but even here there are differences. Charter schools enroll greater shares of Black students and a smaller share of students who are Hispanic or White, compared to the feeder schools. Feeder schools have a smaller proportion of students living in poverty than charter schools.

There has been considerable attention paid to the share of students in charter schools who are receiving Special Education services or who are English Language Learners. As shown in Table 1, a slightly lower proportion of Louisiana's charter school population is designated as special education compared to all TPS, and this proportion is also slightly lower than that of the feeder TPS population. The cause of the slight difference is unknown. Parents of children with special needs may believe the TPS sector is better equipped to educate their children and therefore will be less likely to opt for a charter. An alternate possibility is that charter schools and traditional public schools have different criteria for making referrals for assessment or categorizing students as needing special education.

The profile for English Language Learners also shows that, in the aggregate, charter schools enroll a slightly smaller share than the feeder schools, but the same as found statewide in TPS. As with Special Education students, it is not possible to discern the underlying causes for these figures.

Table 2: Demographic Composition of Charter Students in the Study

Student Group	All Charter Students Tested		Matched Charter Students	
	Number	Percent	Number	Percent
Louisiana Charter Students	27,823		24,637	
% Matched	24,637	89%		
New Orleans Charter Students	19,356	70%	17,087	69%
Black Students	22,586	81%	20,940	85%
Hispanic Students	819	3%	398	2%
White Students	3,648	13%	3,027	12%
Students in Poverty	21,806	78%	20,101	82%
Special Education Students	2,068	7%	1,286	5%
English Language Learners	304	1.1%	62	0.3%
Grade Repeating Students	1,688	6%	1,127	5%

NOTE: The appendix includes additional descriptive demographics

For this analysis, a total of 27,823 charter school students (with 48,344 observations across 5 growth periods) from 87 charter schools are followed for as many years as data are available.[7] The students are drawn from Grades 3 – 10, since these are the continuous grades that are covered by the state achievement testing program for reading and math. An identical number of virtual comparison records are included in the analysis. In Louisiana, it was possible to create virtual matches for 89 percent of the tested charter school students in both reading and math. This proportion assures that the results reported here can be considered indicative of the overall performance of charter schools in the state. The total number of observations is large enough to be confident that the tests of effect will be sensitive enough to detect real differences between

A Roadmap to the Graphics

The graphics in this report have a common format.

Each graph presents the average performance of charter students relative to their **pertinent comparison student**. The reference group differs depending on the specific comparison. Where a graph compares student subgroup performance, the pertinent comparison student is the same for both subgroups. Each graph is labeled with the pertinent comparison group for clarity.

The **height** of the bars in each graph reflects the magnitude of difference between traditional public school and charter school performance over the period studied.

Stars are used to reflect the level of statistical significance of the difference between the group represented in the bar and its comparison group of similar students in TPS; the absence of stars means that the schooling effect is not statistically different from zero.

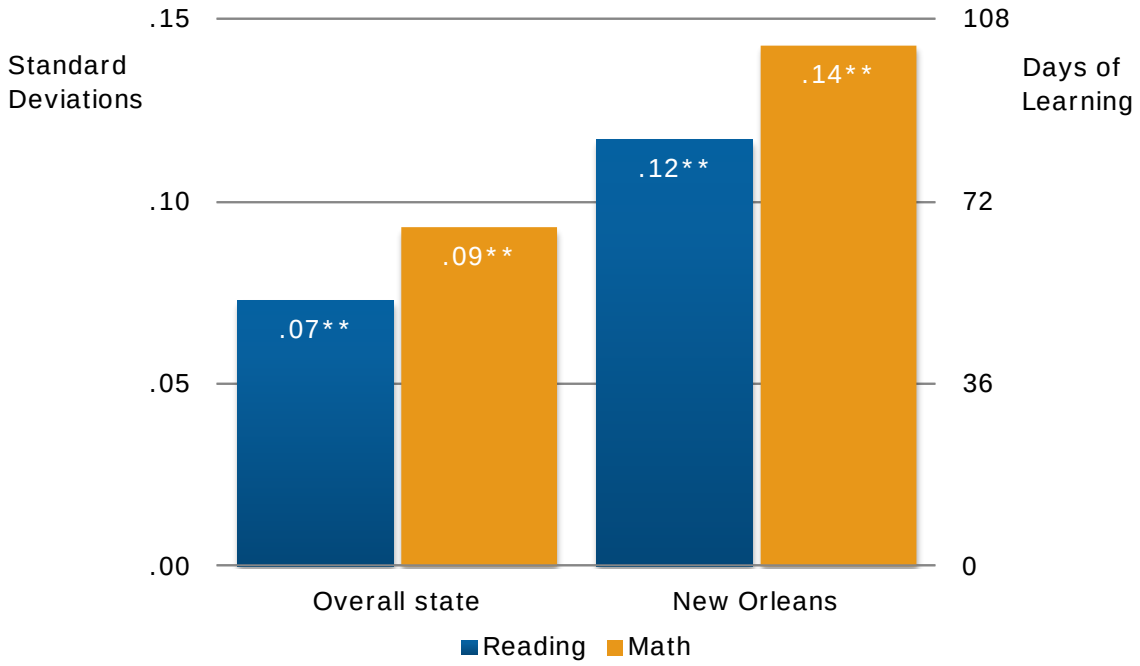
[7] Schools that have opened recently or that have only recently begun serving tested grades will not have five growth periods of experience to include.

charter school and TPS student performance at the statistically acceptable standard of $p<.05$. This is also true for each student subgroup examined except for English Language Learners, as can be seen in Table 2 above.

Overall Charter School Impact

First, we examine whether charter schools differ overall from traditional public schools in how much their students learn, holding other factors constant. To answer this question, we average the pooled performance for all charter school students across all the growth periods and compare it with the same pooled performance of the VCRs. The result is a measure of the typical learning of charter school students in one year compared to their comparison VCR peers from the feeder schools nearby. The results appear in Figure 3. On average, students in Louisiana charter schools learned significantly more than their virtual counterparts in reading and mathematics. The results for the charter students in New Orleans show that they are growing even more by comparison to their TPS counterparts.

Figure 3: Average Learning Gains in Louisiana Charter Schools, 2007-2011 Compared to Gains for VCR Students in Each Charter Schools' Feeder TPS



** *Significant at p ≤ 0.01*

The data is analyzed in units of standard deviations of growth so that the results will be statistically correct. Unfortunately, these units do not have much meaning for the average reader. Transforming the results into more accessible units is challenging and can be done only imprecisely. Therefore, Table 3 below, which presents a translation of various outcomes, should be interpreted cautiously.[8]

Table 3: Transformation of Average Learning Gains

Growth (in standard deviations)	Gain (in days of learning)
0.00	0
0.05	36
0.10	72
0.15	108
0.20	144
0.25	180
0.30	216
0.35	252

Using the results from Figure 4 and the transformations from Table 3, per year of schooling, we can see that, on average, charter students in Louisiana gain an additional 50 days, nearly three months of learning in reading over their TPS counterparts.[9] In math, the advantage for charter students is about 65 days, more than three months of additional learning in one school year. Charter students in New Orleans gain an additional 86 days of learning in reading and 101 days in math over and above their state counterparts.

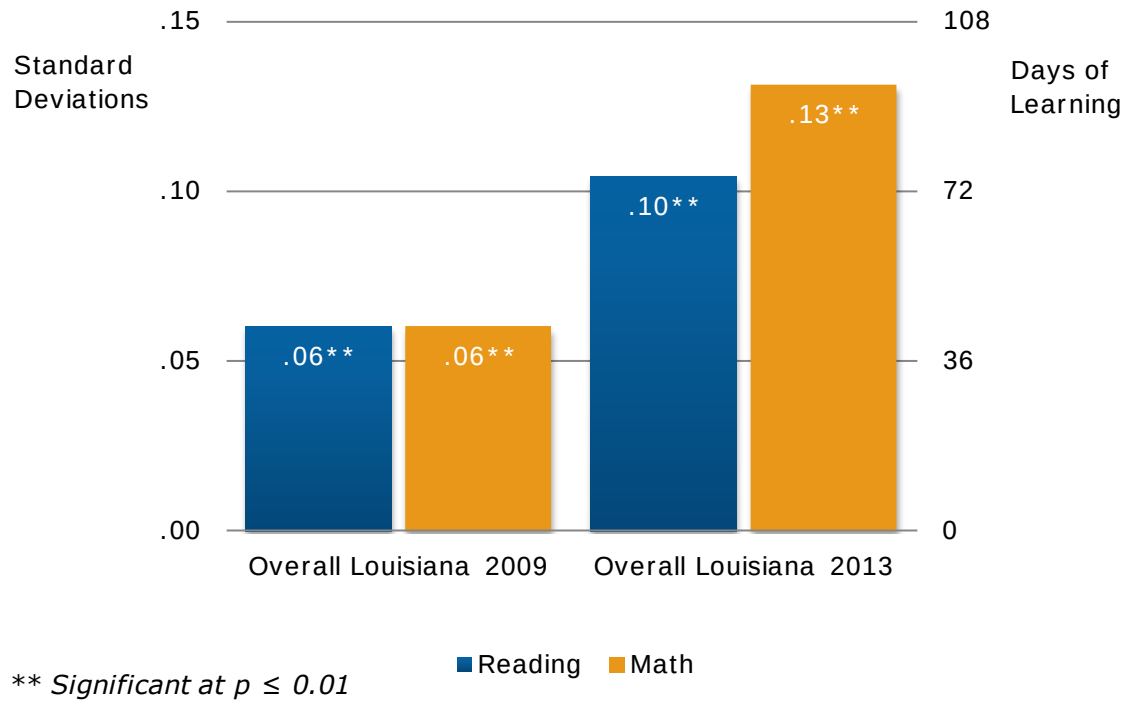
[8] Hanushek, Eric A. and Steven G. Rivkin. Teacher quality. In *Handbook of the Economics of Education*, Vol. 2, ed. EA Hanushek, F Welch, (2006): 1051–1078. Amsterdam: North Holland.

[9] Note: One month of learning constitutes 20 school days of learning.

Charter School Impact with 2009 Cohort

Because the charter school market is dynamic, new schools have opened since the previous report. To create an apples-to-apples comparison between the two reports, the subset of schools from the 2009 report were re-analyzed using only data released since the previous report. Both these and the 2009 results are shown in Figure 4.[10]

Figure 4: Original and Updated Impacts with the 2009 Charter School Cohort



** *Significant at p ≤ 0.01*

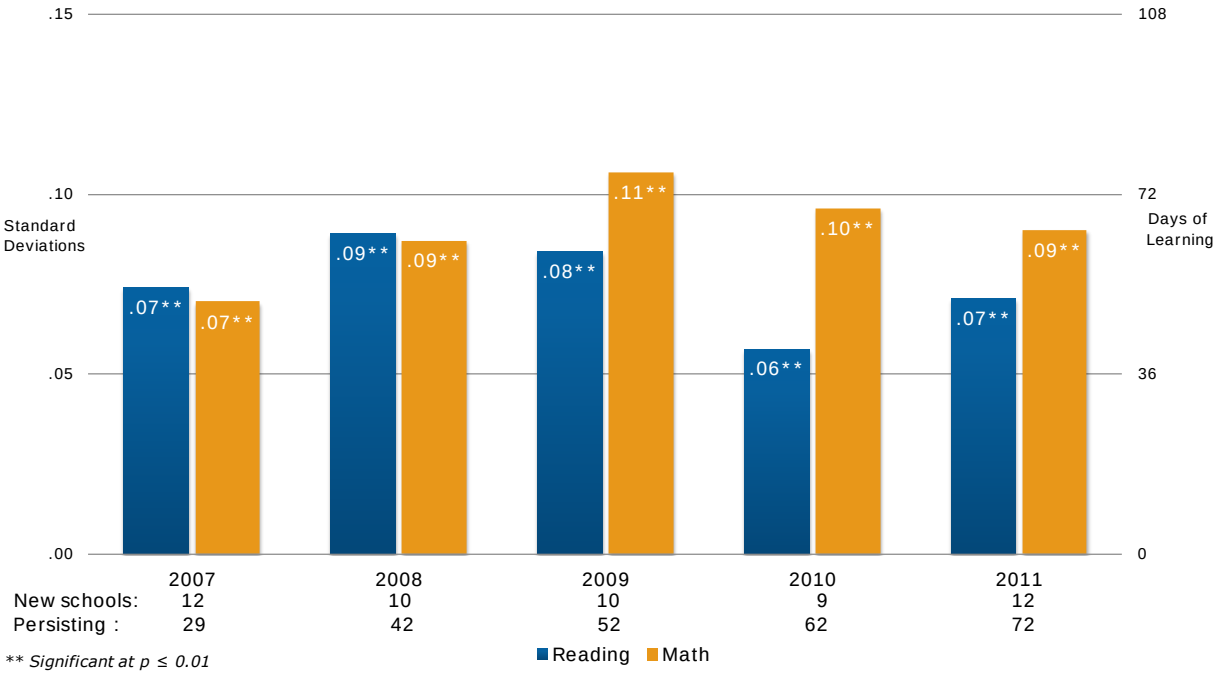
In the previous report, students from the 2009 charter school cohort learned significantly more than their TPS counterparts in reading and math, garnering 43 days of additional learning per year than their virtual twins in each subject. Charter students at Louisiana charters in more recent growth periods are gaining even more – 72 additional days of learning in reading and 94 additional days in math.

[10] The Louisiana report for 2009 covered the school years 2001-02 through 2007-08.

Charter School Impact by Growth Period

To determine whether performance remained consistent over all the periods of this study, the average charter school effects were disaggregated into the five growth periods. Results are shown in Figure 5 along with the number of newly opened and persisting schools for each growth period.[11]

Figure 5: Impact by Growth Period, 2007-2011



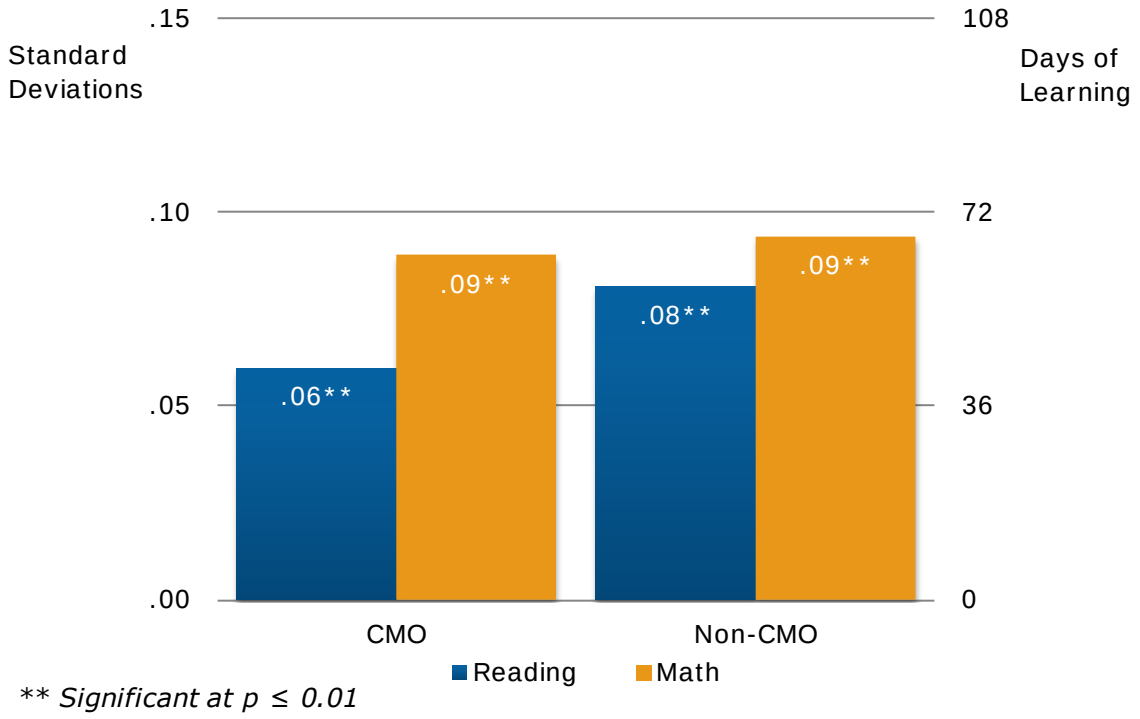
In both reading and math, charter students in Louisiana learned significantly more than their virtual peers in all five periods analyzed. In the most recent growth period, charter students had an additional 50 days of learning in reading and 65 additional days of learning in math compared to their TPS counterparts.

[11] Note: These numbers report only charters with tested students, so they are a subset of the counts on Figure 2, Opened and Closed Charter Campuses.

Charter School Impact by CMO Affiliation

The growth of charter management organizations (CMOs), which directly operate charter schools within a network of affiliated schools, has accelerated in recent years. Figure 6 below shows the charter impacts for students at schools that are part of a CMO and schools with no CMO affiliation.[12]

Figure 6: Impact by CMO Affiliation



** *Significant at p ≤ 0.01*

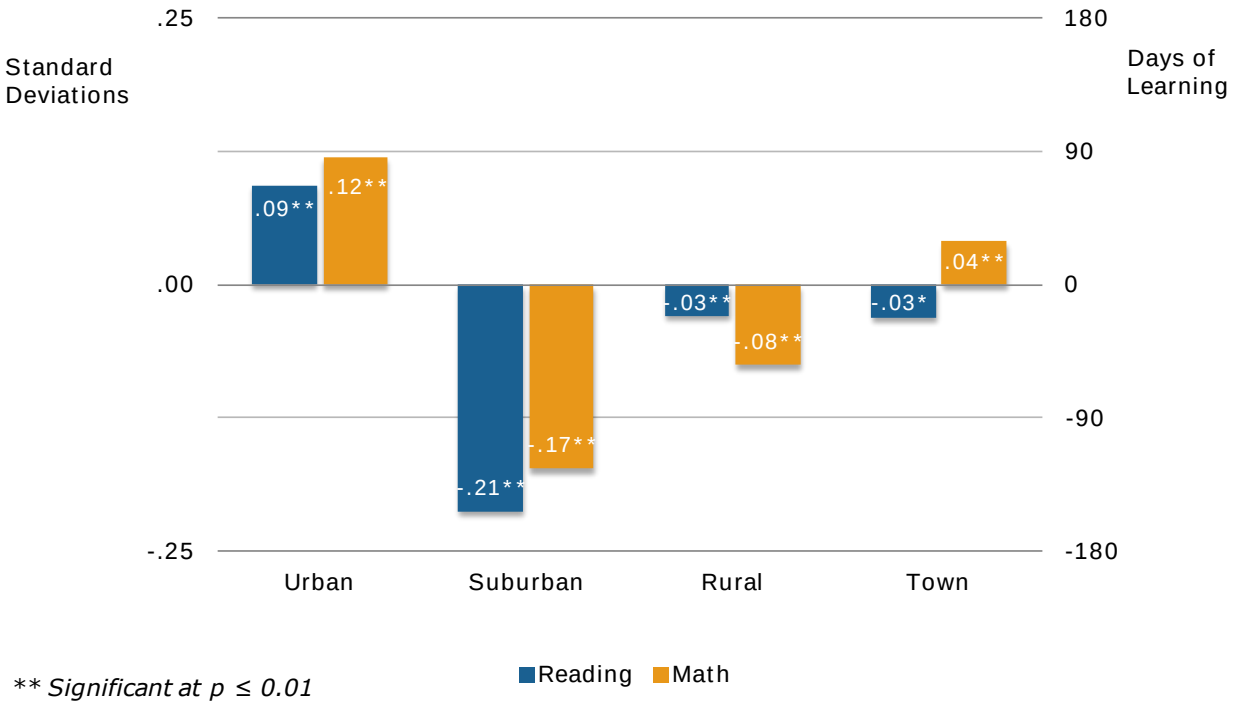
The results show that students in charter schools learn significantly more in reading and math whether or not the charter school is affiliated with a CMO. Students attending CMO-affiliated charter schools in Louisiana have 43 more days of learning in reading than their TPS counterparts. Charter students at non-CMO schools have 58 additional days of learning in reading compared to TPS peers. The growth for CMO-affiliates is significantly smaller in reading than the results for students attending charter schools that are not part of a CMO. Both groups of charter students have 65 more days of learning in math compared to TPS.

[12] About one-third of Louisiana charter school students attend schools managed by CMOs.

Charter School Impact by Location

Although charter schools in urban areas receive the bulk of media attention, charter schools can and do serve other locales. Differences in location may correlate to different average charter school effects. The results in Figure 7 represent the disaggregated impacts for urban, suburban and rural charter schools in Louisiana.

Figure 7: Impact by School Location



** *Significant at p ≤ 0.01*

Charter schools in Louisiana are heavily concentrated in New Orleans and Baton Rouge, making up 85% of the students. Students enrolled in urban charter schools in Louisiana learn significantly more in both math and reading compared to their peers in TPS. Charter students in suburban and rural schools on the other hand, learn significantly less than their counterparts in TPS in both reading and math.[13] Students attending charter schools in towns learn significantly less in reading than their TPS peers. However, charter students in towns have significantly better math gains compared to TPS.

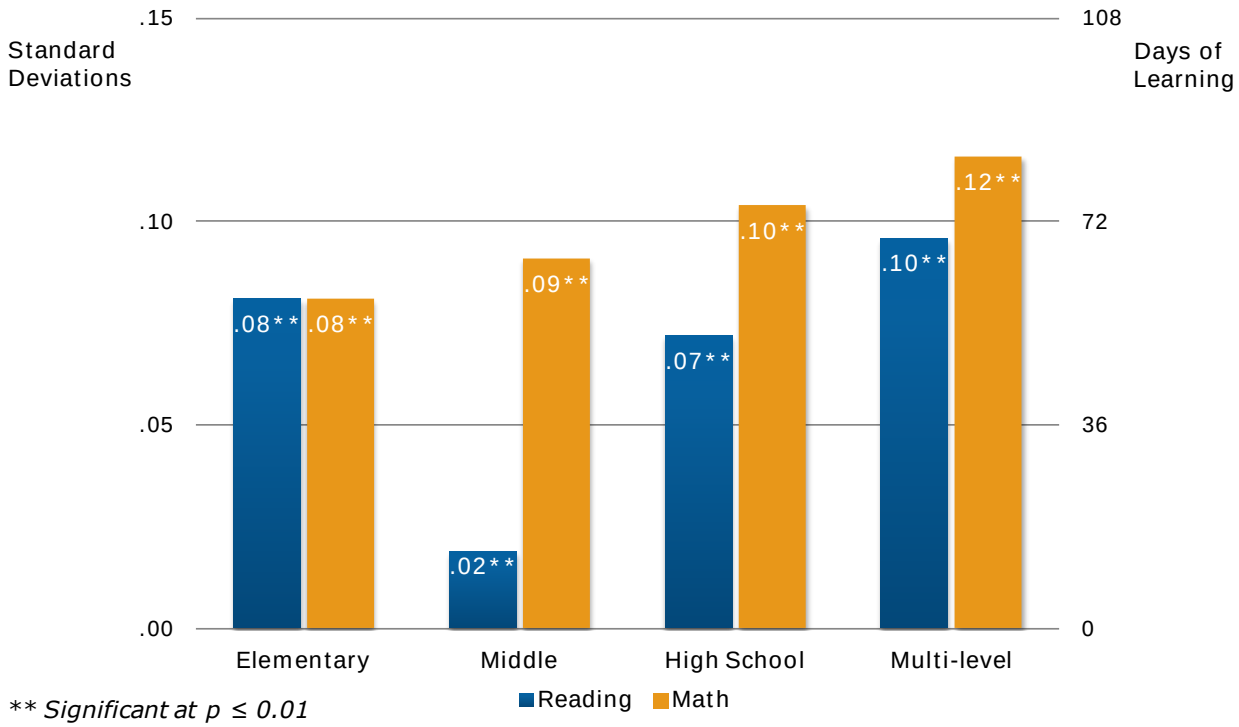
[13] Suburban students constitute 1% of the charter students in Louisiana, while rural students make up 11%.

Charter School Impact by School Level

The flexibility and autonomy enjoyed by charter schools allow them to choose which grade levels to serve, with many charter operators deciding to focus on particular ages while others seek to serve a broader range of students. For example, multi-level charter schools serve grade ranges larger than traditional elementary, middle or high schools, such as a combination of middle and high school grades. The National Center for Education Statistics tracks these school levels, allowing us to disaggregate character school impacts for different grade spans.

This study examined the outcomes of students enrolled in elementary, middle, high and multi-level schools. The results appear in Figure 8.

Figure 8: Impact by School Level



** *Significant at p ≤ 0.01*

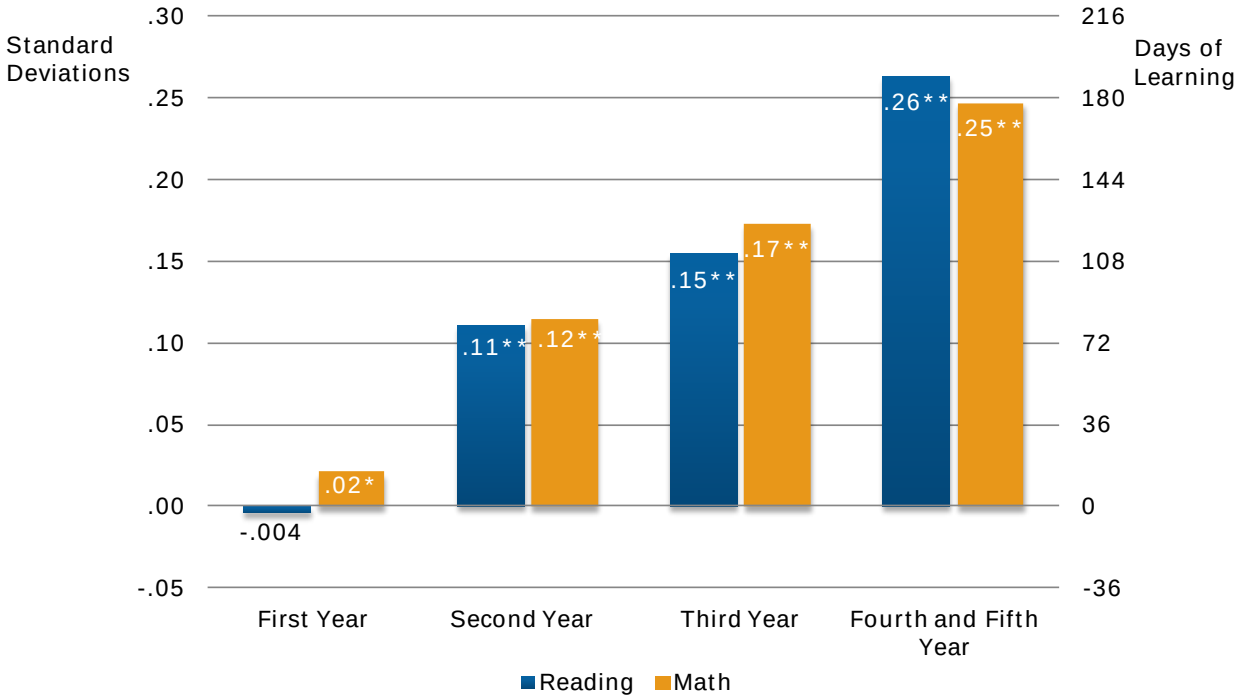
The results show that, on average, charter students learn significantly more than their virtual counterparts in both reading and math regardless of the grade span served by the charter they attend. The smallest gains for charter students are in reading at middle schools with 14 additional days of learning compared to TPS peers. The largest gains for both reading and math were at multi-level charter schools. These students received on average 72 additional days of learning in

reading and 86 more days of learning in math than their counterparts in traditional public schools.

Charter School Impact by Students' Years of Enrollment

Student growth in charter schools may change as students continue their enrollment over time. To test this, students were grouped by the number of consecutive years they were enrolled in charter schools. In this scenario, the analysis is limited to the charter students who enrolled for the first time in a charter school between 2006-2007 and 2010-2011. Although the number of students included will be smaller, it is the only way to make sure that the available test results align with the years of enrollment. For this reason, the results of this analysis should not be contrasted with other findings in this report. This question examines whether the academic success of students who enroll in a charter school changes as they continue their enrollment in a charter school. The results are shown below in Figure 9.

Figure 9: Impact by Students' Years of Enrollment



** *Significant at p ≤ 0.01*

The results suggest that new charter school students have an initial gain in math compared to their counterparts in traditional public schools. This positive finding

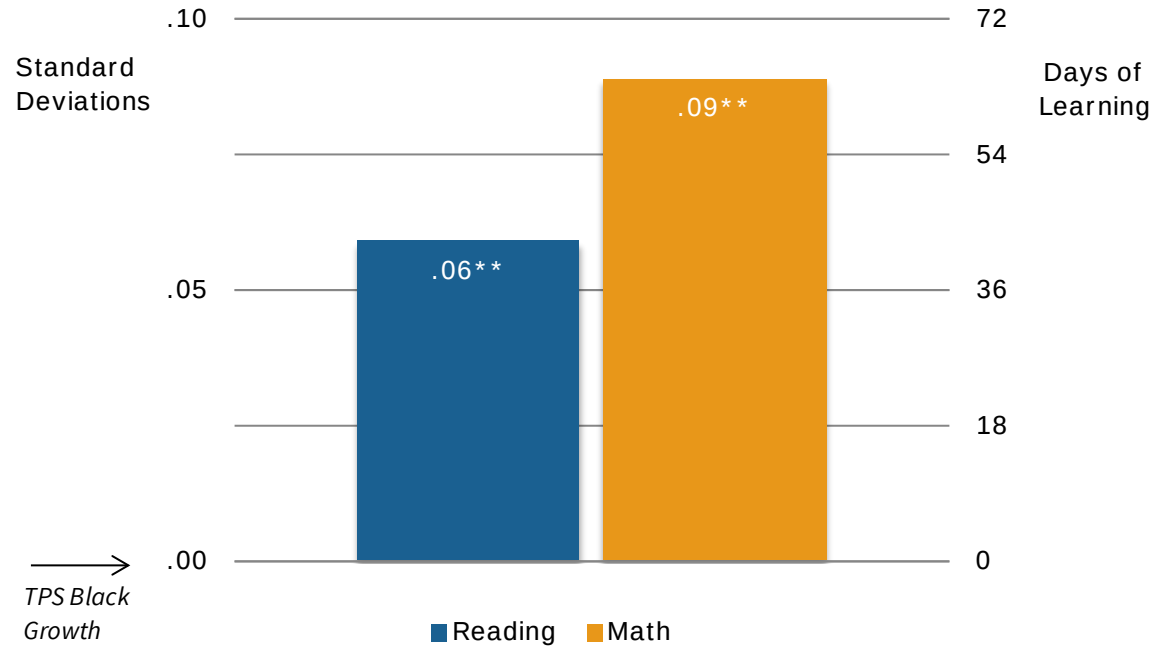
contrasts with the parallel result in the 2013 national study, which showed a negative first-year impact on student learning in both reading and math. Charter students in their second year and beyond have better gains in both reading and math than their TPS counterparts. Further, there is a steady gain in learning the longer the students are enrolled in charter schools.

These findings reinforce the overall charter school impacts, and show that students in Louisiana charter schools reap additional days of learning on a consistent basis as they continue their enrollment.

Charter School Impact by Race/Ethnicity

Attention in US public education to achievement differences by racial and ethnic backgrounds has increased since the passage of the *No Child Left Behind* Act in 2001. The effectiveness of charter schools across ethnic and racial groups is especially important given the proportion of charter schools that are focused on serving historically underserved students. The impacts of charter schools on the academic gains of Black, Hispanic and White students are presented in Figures 10, 11 and 12 below.

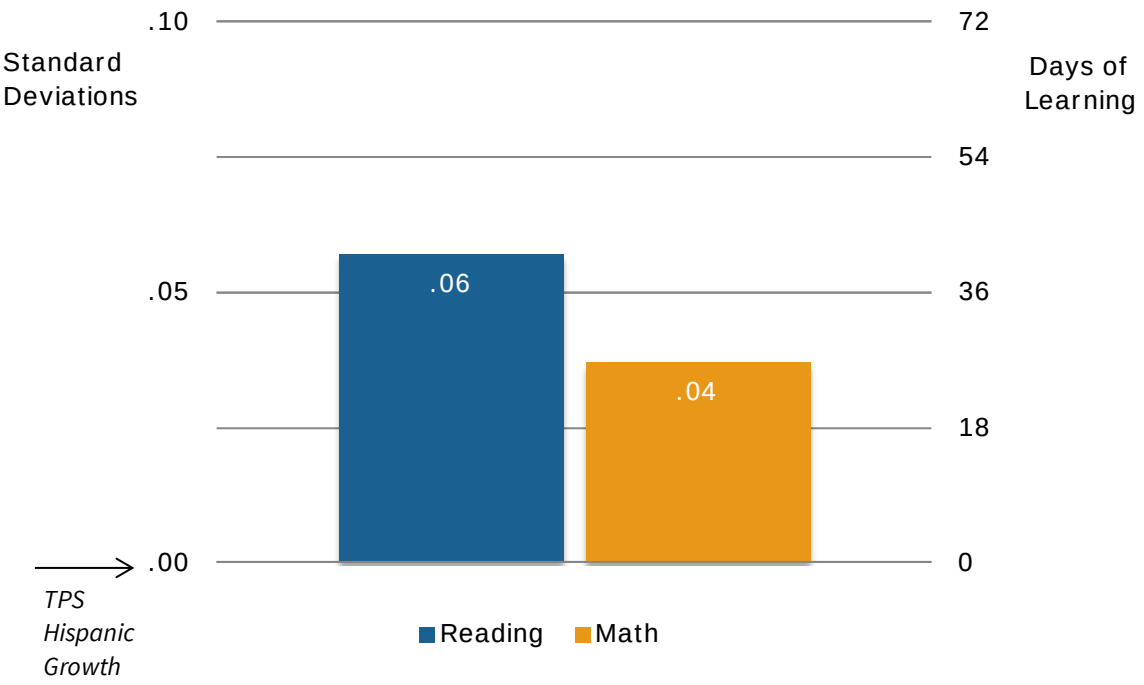
Figure 10: Impact with Black Students



** *Significant at p ≤ 0.01*

On average, Black students in charter schools have significantly better learning gains in reading and math compared to Black students in traditional public schools. Black charter students have 43 more days of learning in reading and 65 additional days of learning in math than their TPS counterparts.

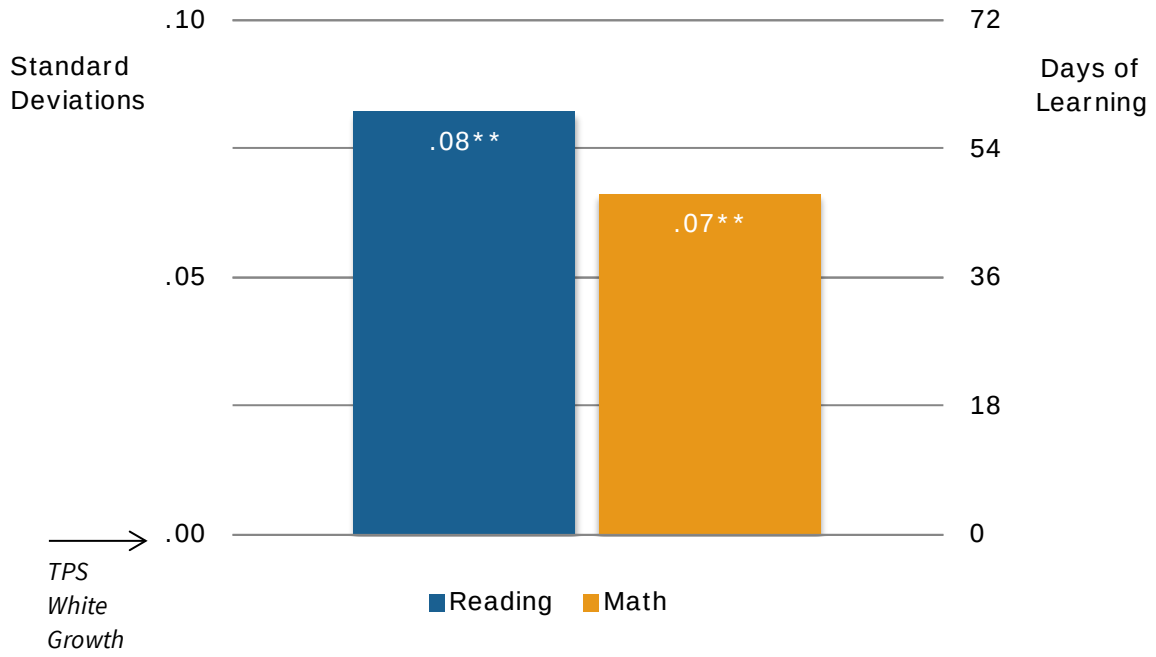
Figure 11: Impact with Hispanic Students



*** Significant at p ≤ 0.01*

In both reading and math, Hispanic students in charter schools perform similarly to Hispanic students in TPS. A closer look at the results for Hispanic charter students revealed wide variation in growth scores. These uneven results are the reason that the charter impact for these students is not statistically significant.

Figure 12: Impact with White Students



*** Significant at p ≤ 0.01*

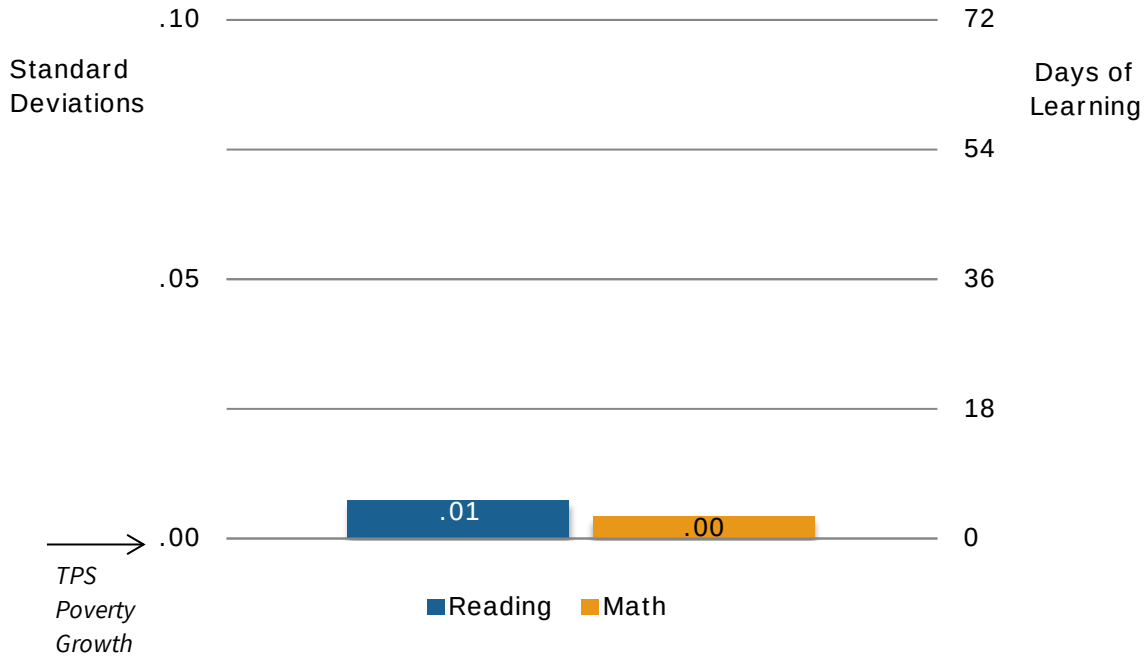
White students attending charter schools in Louisiana have higher learning gains in both reading and math than their TPS counterparts. White charter students have an additional 58 days of learning in reading and 50 days in math compared to White students attending TPS. This finding contrasts with the national results for White charter students, which were significantly lower than that of White TPS students.[14]

[14] Cremata, Edward et al. *National Charter School Study 2013* (2013). http://credo.stanford.edu.

Charter School Impact with Students in Poverty

Much of the motivation for developing charter schools aims at improving education outcomes for students in poverty. The enrollment profiles of charter schools across the country underscore this fact; in Louisiana, 81 percent of charter students are eligible for subsidized school meals, a proxy for low-income households. Thus, the impact of charter schools on the learning of students in poverty is important in terms of student outcomes and as a test of the commitment of charter school leaders and teachers to address the needs of this population. Figure 13 presents the results for charter students in poverty compared to students in poverty attending TPS.

Figure 13: Impact with Students in Poverty



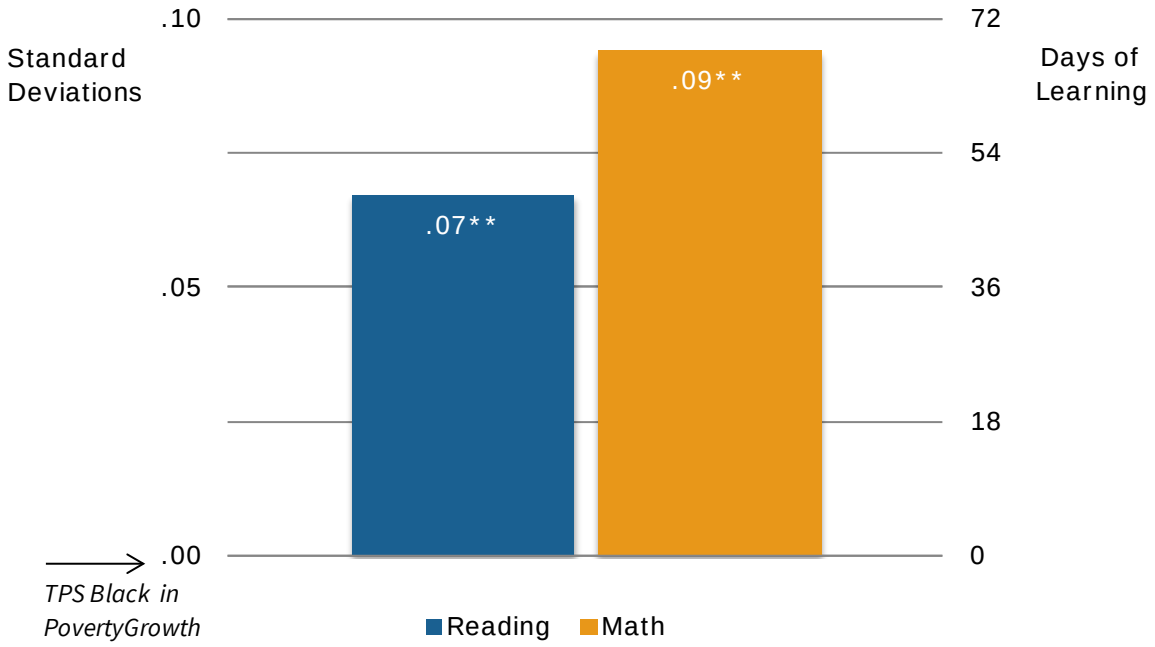
*** Significant at p ≤ 0.01*

Charter students in poverty receive no significant benefit or loss in reading or math gains compared to their TPS peers in poverty. This is in marked contrast to the CREDO 2013 study, where students in poverty had significantly higher gains than their counterparts. This might be explained by the non-black poor students' slower gains; these students comprise about 12 percent of the students receiving free and reduced-priced school meals.

Charter School Impact with Race/Ethnicity and Poverty

The most academically needy students in public education are those who are both living in poverty and are a racial or ethnic minority that has been historically underserved. These students represent the most challenging subgroup, and their case has been the focus of attention for decades. The impact of charter schools on the academic gains of Black students living in poverty and Hispanic students in poverty are presented in Figures 14 and 16 below.

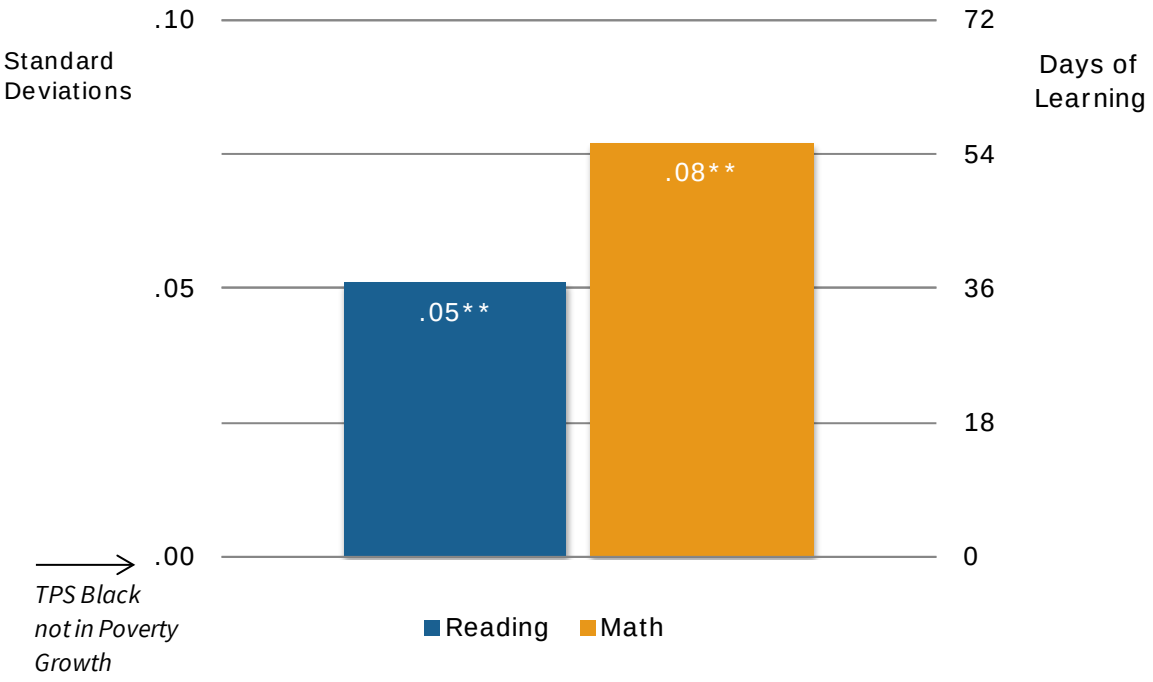
Figure 14: Impact with Black Students in Poverty



** *Significant at p ≤ 0.01*

Black students in poverty who are enrolled in charter schools show significantly better performance in reading and math compared to Black students in poverty in TPS. Black charter students in poverty gain an additional 50 days of learning in reading and 65 more days in math than their peers in TPS.

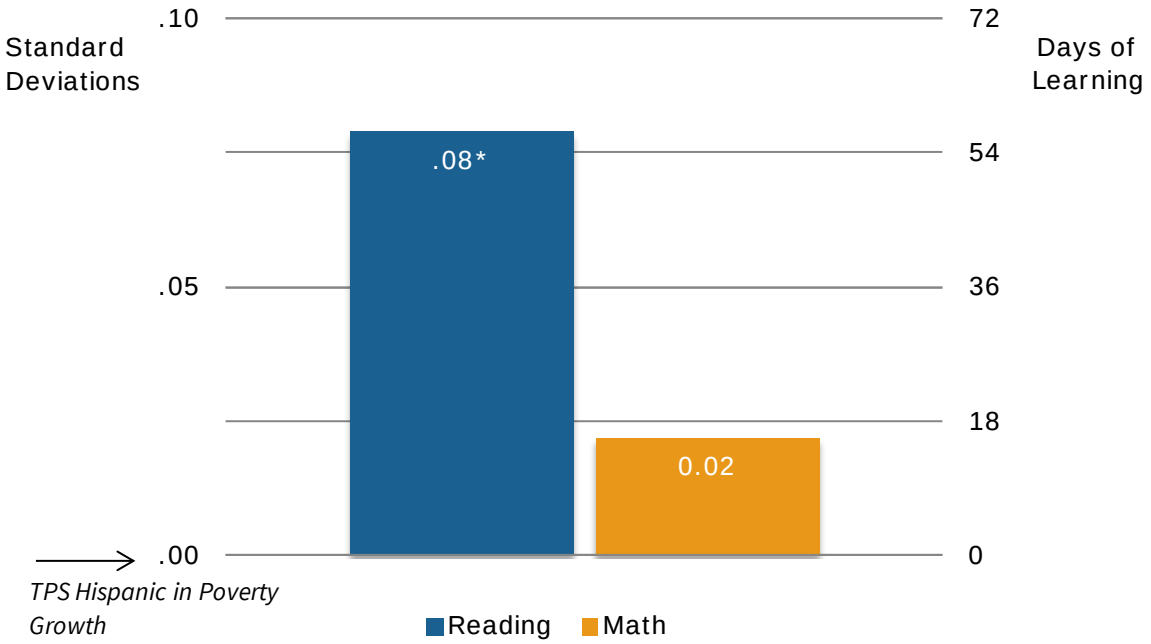
Figure 15: Impact with Black Students Not in Poverty



*** Significant at p ≤ 0.01*

As shown in Figure 15 above, Black students who are not living in poverty have significantly higher learning gains at charter schools than at TPS. Black charter students who are not in poverty have 36 additional days of learning in reading than their TPS counterparts. In math, the benefit is 58 additional days of learning for Black charter students who are not in poverty compared to their peers at TPS.

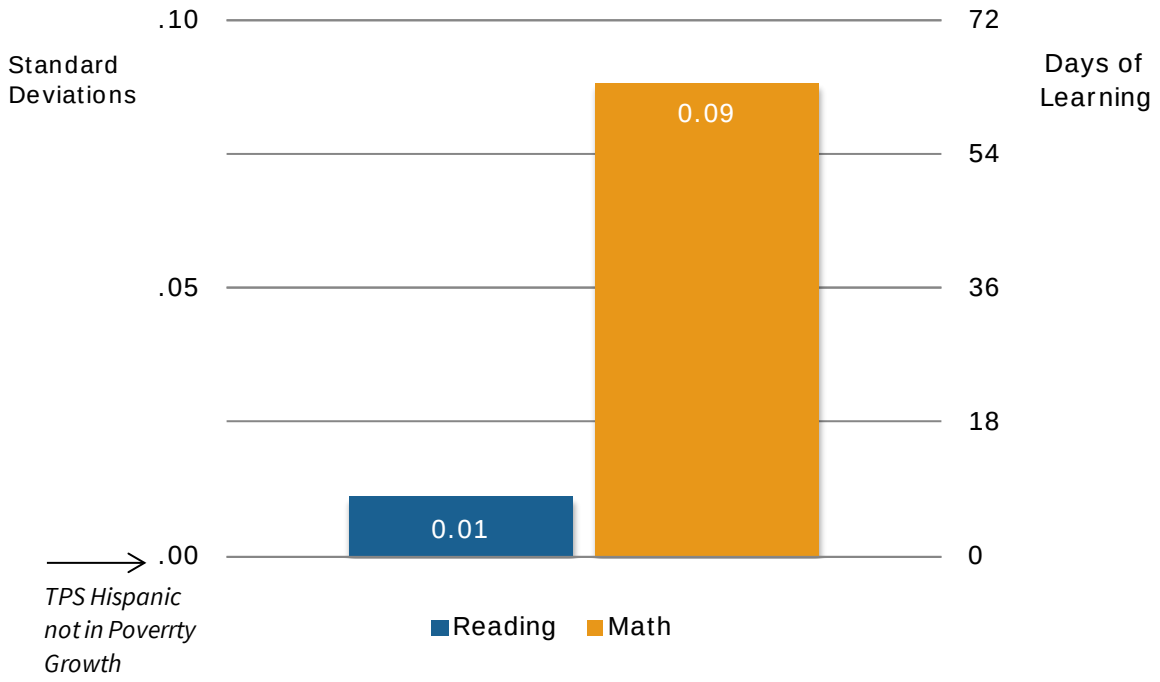
Figure 16: Impact with Hispanic Students in Poverty



** Significant at p ≤ 0.01*

Hispanic students in poverty have significantly better gains in reading at charter schools than at TPS, as shown in Figure 16 above. This gain is equivalent to about 58 additional days of learning in reading. Math gains for Hispanic students in poverty are similar for charter and TPS attendees.

Figure 17: Impact with Hispanic Students Not in Poverty



*** Significant at p ≤ 0.01*

Figure 17 shows the charter impact with Hispanic students who are not living in poverty in Louisiana. The results show that Hispanic students not living in poverty have similar learning gains whether they attend a charter or a traditional public school. These results are not surprising given the wide variation in results across individual students for this student group.

Charter Impacts in Context For many students groups, the impact of attending a charter school in Louisiana is positive. However, these results need to be considered in the context of the academic learning gaps between most student populations and the average white TPS student in the study. For example, Black students in poverty experience positive benefits from attending charter schools. However, even with this boost, Black students in poverty at charters still have lower learning gains than White students at TPS.

Table 4 below displays the relative growth of students in various subgroups compared to White TPS students. A negative number means the student group has fewer days of learning than White students attending TPS. This yearly learning gap increases the achievement gap over time. Positive values in the table represent additional days of learning for the student group compared to the average White TPS student. Over time, these learning gains reduce the achievement gap.

Table 4: Relative Growth of Student Groups Compared to White TPS Students

Student Group	Reading	Reading Days of Learning	Math	Math Days of Learning
TPS Black	-.14**	-102	-.22**	-156
Charter Black	-.08**	-59	-.13**	-91
Charter Black Poverty	-.23**	-166	-.27**	-197
Charter Black Non-Poverty	-.12**	-87	-.20**	-140
TPS Hispanic	.01	0	-.04	0
Charter Hispanic	.07**	50	.00	0
Charter Hispanic Poverty	-.08**	-57	-.17**	-120
Charter Hispanic Non-Poverty	.02	0	-.004	0
TPS White	.00	0	.00	0
Charter White	.08**	59	.07**	48

***Significant at p<.01*

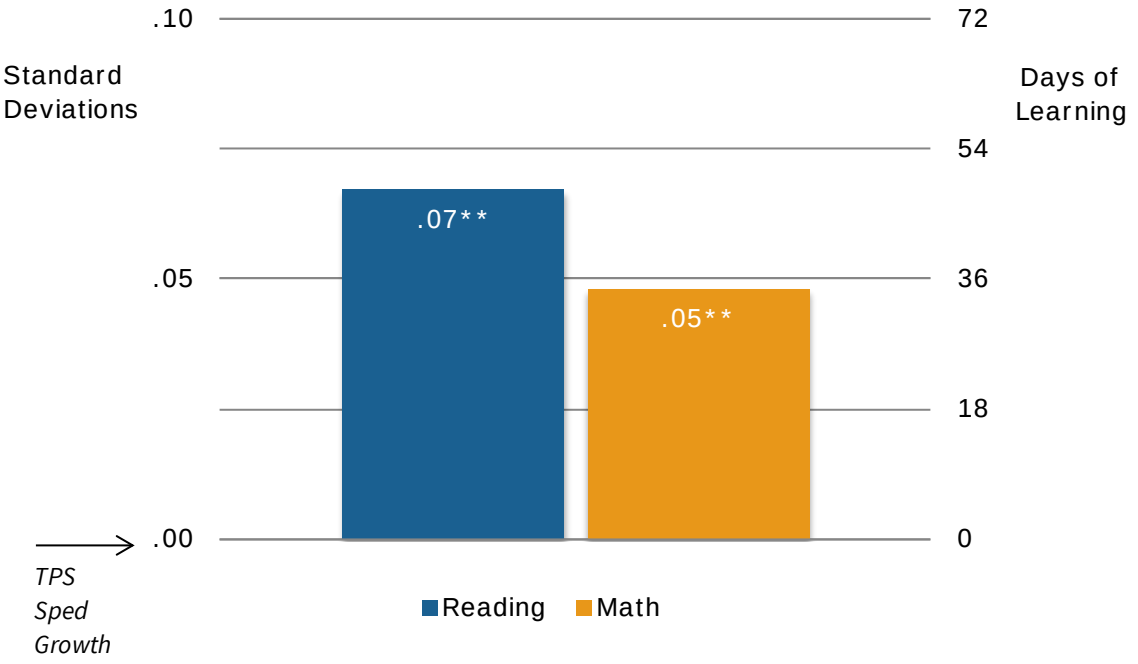
The table shows that both Black students at both TPS and charters have fewer days of learning than White TPS students in both reading and math. Hispanic students and White students at TPS have similar learning gains in both reading and math. Overall, Hispanic students at charter schools have significantly more days of learning in reading than White TPS students. In other words, Hispanic students at charter schools are closing the achievement gap in reading. This positive reading impact does not hold for Hispanic charter students in poverty, however. Hispanic students in poverty at charter schools learn significantly less in both reading and math than White students at TPS.

Charter School Impact with Special Education Students

The demographic comparisons in the CREDO national charter school report released in 2013 indicated that across the charter sector, schools serve fewer Special Education students than the traditional public schools both in number of students and as a proportion of their enrollment. In some cases, this is a deliberate and coordinated response with local districts, based on a balance of meeting the needs of the students and considering cost-effective strategies for doing so. In Louisiana, the overall proportion of charter school students who are Special Education is 12 percent, compared to 14 percent in TPS statewide and in the charter schools' feeder schools. Anecdotal evidence suggests that TPS and charters may differ in their criteria for designating students as needing to be assessed for special education services; this topic has been flagged for future study on student enrollments.

It is especially difficult to compare the outcomes of Special Education students, regardless of where they enroll. The results are presented in Figure 18 below.

Figure 18: Impact with Special Education Students



*** Significant at p ≤ 0.01*

In charter schools in Louisiana, Special Education students receive significant benefit from charter school attendance compared to their counterparts in TPS in both reading and math. This benefit amounts to 50 more days of learning in

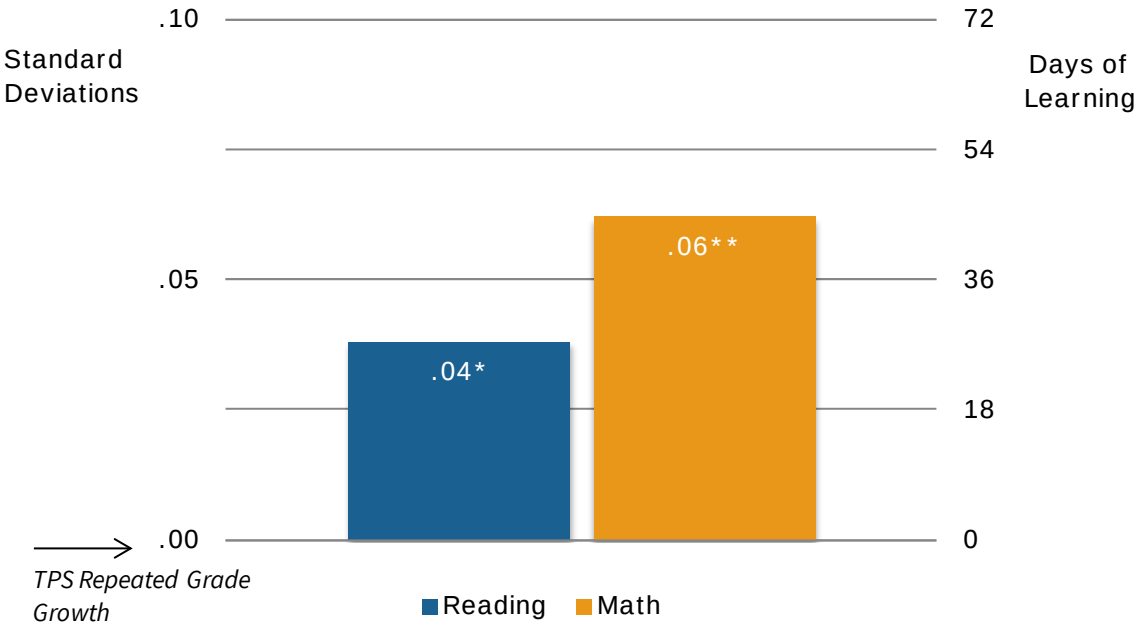
reading and 36 additional days in math for Special Education students at charter schools.

Charter School Impact with Grade-Repeating Students

This study examined the outcomes of students who were retained. Often a highly charged topic, the underlying premise is that additional time in grade can help students by remediating deficits and shoring up grade-level competencies. Existing research on the outcomes of students who have been retained is limited.

Retention practices differ widely across the country and between the charter and TPS sectors. The results of learning gains following retention in Louisiana appear in Figure 19.

Figure 19: Impact with Grade-Repeating Students



*** Significant at p ≤ 0.01*

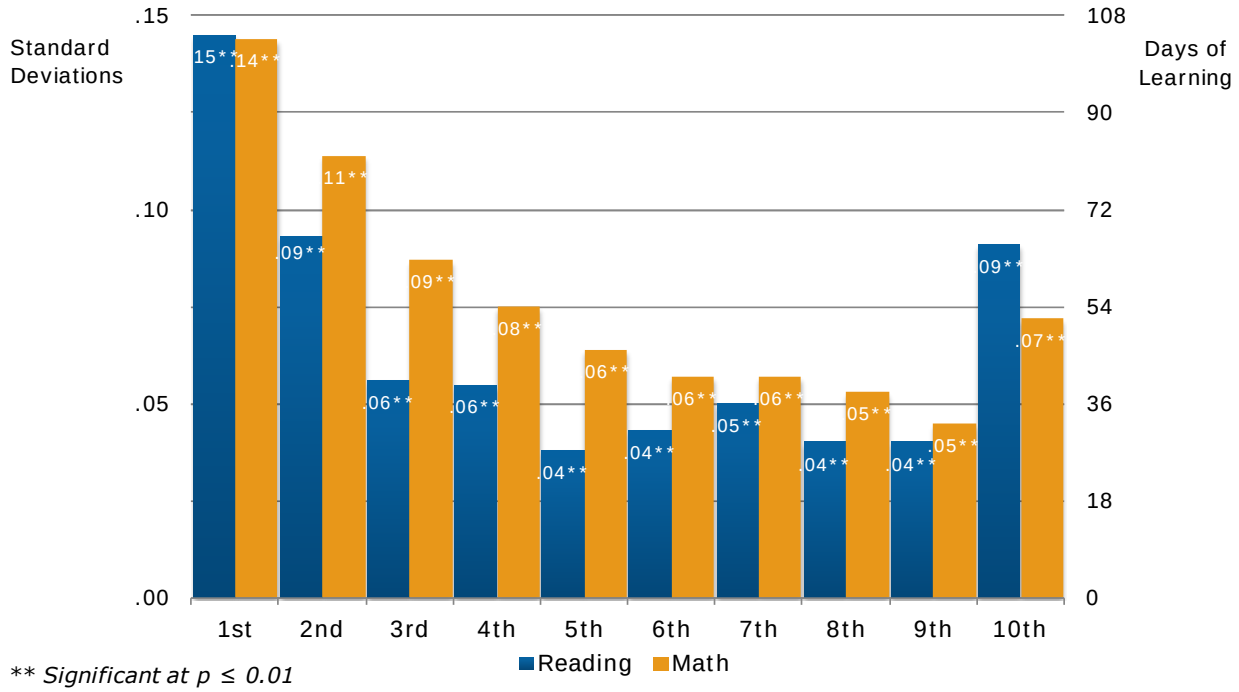
Charter students who repeated a grade show significant learning gains over grade-repeating students in TPS in both reading and math. The benefit for charter students repeating a grade is 29 more days of learning in reading and 43 more days in math than their peers at TPS.

Charter School Impact by Student's Starting Decile

A general tenet of charter schools is a commitment to the education and development of every child. Further, many charter schools, including several in Louisiana, have as part of their mission a specific emphasis on serving students who have not thrived academically in TPS and whose early performance is well below average. To determine whether this emphasis translates into better learning gains, we examined the learning gains for charter students across the spectrum of starting points and in relation to the results observed for equivalent students in TPS.

To do this, for charter school students and their VCRs, their baseline achievement test scores in reading and math were disaggregated into deciles. The 5th decile, for example, corresponds to students in the 40th to 50th percentiles of achievement in the state. In this analysis, the base of comparison for each decile is the average academic growth of the TPS students in that decile. The results appear in Figure20 below.

Figure 20: Impact by Students' Starting Decile



** *Significant at p ≤ 0.01*

In both reading and math, students at each decile of starting achievement benefit from attending a charter school. The largest gains are for students in the first decile, i.e., the bottom 10 percent of starting achievement level. In reading,

charter students in the first decile have 108 more days of learning than their TPS counterparts. Decile 1 charter students have 101 additional days of learning in math compared to their TPS peers. These results suggest that charters are most beneficial for students starting at the lowest levels of achievement, but the sector provides positive learning environments for students across all levels of achievement.

School–level Analysis

Comparative School-level Quality While the numbers reported above represent the average learning gains for charter school students across the state, the pooled average effects tell only part of the story. Parents and policymakers are also interested in school-level performance. In order to determine the current distribution of charter school performance, the average effect of charter schools on student learning over the two most recent growth periods (2010 and 2011) is compared to the experience the students would have realized in their local traditional public schools. [15] The performance of the VCR students associated with each charter school comprises this measure of the local educational market. This analysis provides an average contribution to student learning gains for each charter school. This measure is called the school's effect size; as for the overall and by-year impacts, it is expressed in standard deviations of growth.

As noted in Table 1, charter schools are generally smaller than their corresponding

A Note about Tables 7 and 8

There are four quadrants in each table. We have expanded on the usual quadrant analysis by dividing each quadrant into four sections. The value in each box is the percentage of charter schools with the corresponding combination of growth and achievement. These percentages are generated from the 2010 and 2011 periods.

The uppermost box on the left denotes the percentage of charters with very low average growth but very high average achievement. The box in the bottom left corner is for low-growth, low-achieving schools.

Similarly, the topmost box on the right contains the percentage of charters with very high average growth and very high average achievement, while the bottom right corner contains high-growth, low-achieving schools.

The major quadrants were delineated using national charter school data. We would expect about 46% of schools to have an effect size between -0.15 and 0.15 standard deviations of growth (the two middle columns). Similarly, we would expect about 50% of schools to achieve between the 30th and 70th percentiles. Therefore, if schools were randomly distributed, we would expect about 6% in any small square and about 25% of the schools to appear in the middle four squares.

[15] We chose to include only the two most recent growth periods in this analysis for two reasons. First, we wanted a highly relevant contemporary distribution of charter school performance. Second, using only two periods of data ensured that all schools' effect sizes were measured fairly; they are all based on one or two periods of data instead of one period for some schools and five periods for others.

feeder schools. In addition, some charter schools elect to open with a single grade and mature one grade at a time. Consequently, care is needed when making school-level comparisons to ensure that the number of tested students in a school is sufficient to provide a fair test of the school impact. Our criteria for inclusion was at least 60 matched charter student records over the two years, or, for new schools with only one year of data, at least 30 matched charter records. Of our total sample of 86 schools for reading with reading test scores in 2010 and 2011, seven schools had an insufficient number of individual student records to calculate a representative school-wide average growth score. Of 88 schools with math test scores in 2010 and 2011, 11 had an insufficient number. Table 5 below shows the breakout of performance for the Louisiana charter schools which meet our criteria for inclusion by having a sufficient number of charter student records.

Table 5: Performance of LA Charter Schools Compared to Their Local Markets

	Significantly Worse		Not Significant		Significantly Better	
Subject	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Reading	11	14%	36	46%	32	41%
Math	10	13%	33	42%	36	46%

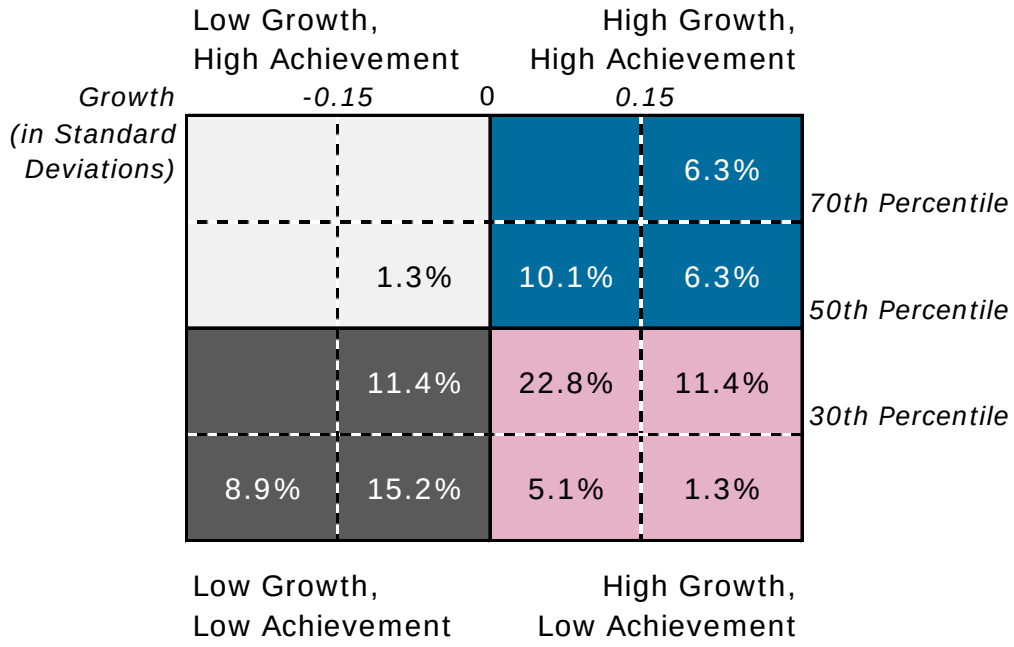
In reading, about 41 percent of charter schools perform significantly better than their traditional public school market, while 46 percent perform significantly better in math. Both of these results are better than the national average proportion of better-performing charters (25% in reading and 29% in math).[16] The lowest school effect size in reading was -0.29 standard deviations of growth, while the highest effect size was 0.36. The gap between the lowest and highest effect sizes was larger in math; they were -0.35 and 0.44, respectively. A larger proportion of charter schools were not significantly different from their market in reading than in math.

Impact of Growth on Achievement While the impacts of charter schools on academic growth relative to their local competitors is instructive, it is necessary to take a wide-angle view to determine how well these students are being prepared. Because many of the students served by charter schools start at low levels of achievement, it is vital to understand how well their academic growth advances them in absolute achievement. To do this, each school's average growth is placed in the context of their average achievement level compared to the rest of the state, as in Tables 6 and 7 below. For growth, we use the effect sizes discussed above.

[16] Cremata, Edward et al. *National Charter School Study 2013* (2013). http://credo.stanford.edu.

The school's average achievement level is the mean achievement of the students over the same two periods covered by the effect size (2010 and 2011).[17] The 50th percentile indicates statewide average performance for all public school students (traditional and charter). A school achievement level above the 50th percentile indicates that the school performs above the statewide average.

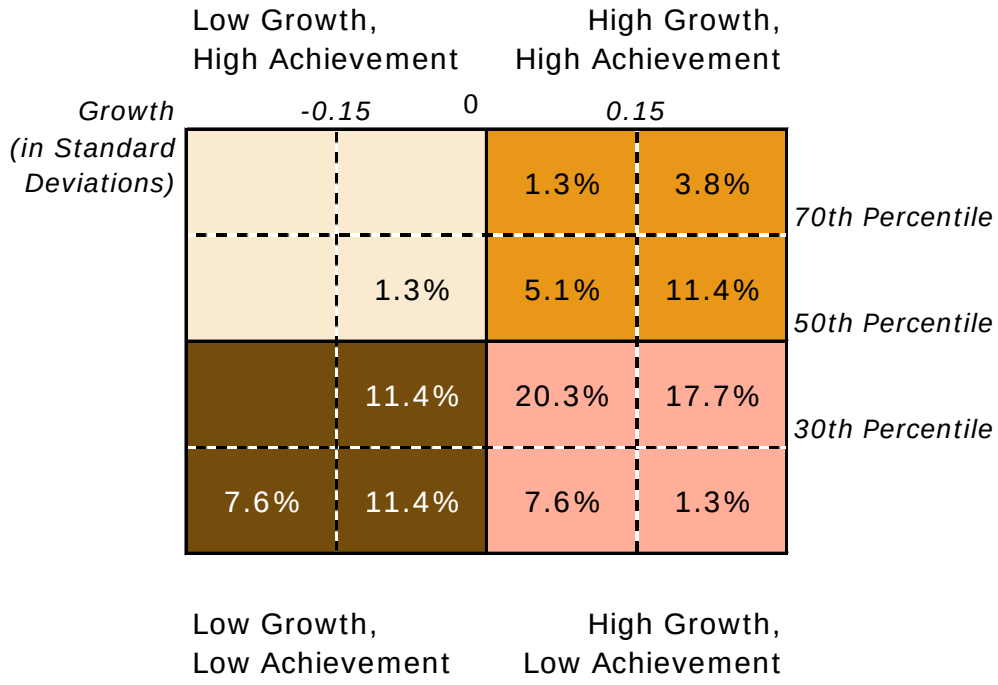
Table 6: Reading Growth and Achievement



In Louisiana, 50 of the 79 charter schools (about 63 percent) had positive growth on average 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 23 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 76 percent of charters perform below the 50th percentile of achievement (the sum of the gray and purple in the lower portion of the table). Of concern is the 35 percent of charters (28 schools) in the lower left gray quadrant, which have both low growth and low achievement.

[17] Average achievement was computed using students' z-scores from the end of the growth period (e.g., spring 2010 and spring 2011), and the resulting school-level mean was then converted into a percentile.

Table 7: Math Growth and Achievement



For math, 54 of the 79 charter schools (about 69 percent) had positive average growth, as seen in the orange and pink quadrants. Nearly 22 percent of charters had positive growth and average achievement above the 50th percentile (the top right, orange quadrant). About 77 percent of charters have achievement results below the 50th percentile of the state (the sum of lower half of the table). As with reading, of concern are the 30 percent of charters (24 schools) in the lower left brown quadrant, which represents low growth and low achievement. However, 47 percent of Louisiana 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.

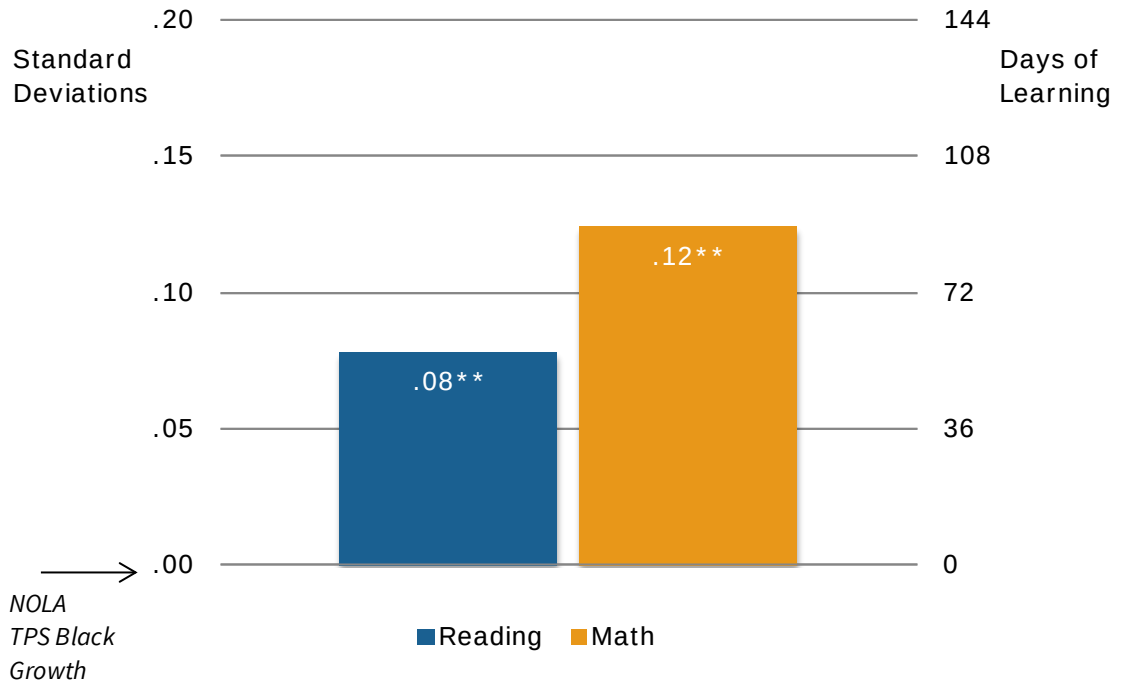
New Orleans

The statewide focus on school quality in New Orleans merits a dedicated look at charter school performance there. More than 69 percent of all Louisiana charter students attend a charter school in New Orleans. Citywide, more than 79 percent of public school students in New Orleans attend a charter school, the largest share of any city in the nation.

This report covers the five growth periods that occurred immediately after Hurricane Katrina. The devastation of the hurricane displaced many residents, some of whom took years to return to New Orleans. Because of this, the feeder school pattern for New Orleans students is unique. Feeder schools for these students contain New Orleans traditional public schools (both Orleans Parish and Recovery School District schools) as well as traditional public schools that educated the students dispersed by Hurricane Katrina. Interestingly, the growth scores for the New Orleans students' VCRs are close to the state average growth even though the starting scores are lower than the state average.

Impact by Race/Ethnicity Eighty-six percent of tested New Orleans charter students are Black and about three percent are Hispanic, making these two historically underserved groups the majority student populations in the city's charter schools. The impact of charter schools on the academic gains for Black and Hispanic students in New Orleans are in Figures 21 and 22 below. For comparison purposes, the charter impact for White students is shown in Figure 23.

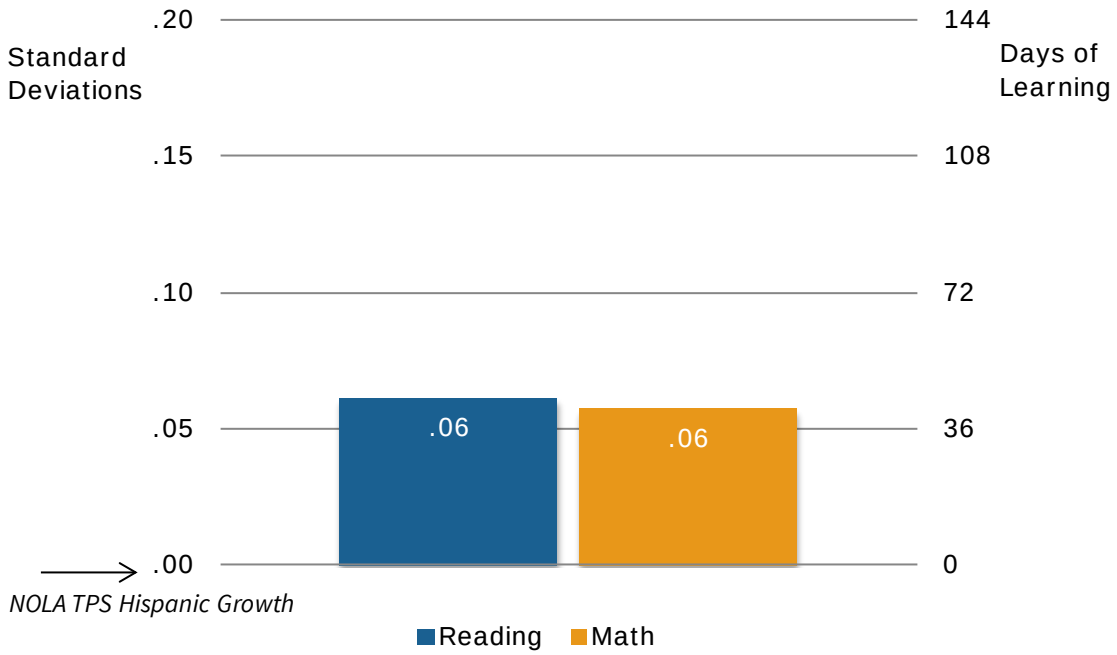
Figure 21: Impact with Black Students in New Orleans



** Significant at p ≤ 0.01*

In both reading and math, Black students in New Orleans charter schools have significantly larger growth compared to their TPS peers. The benefit in reading is equivalent to 58 additional days of learning for Black charter students in New Orleans. In math, Black charter students in New Orleans have about 86 more days of learning than their TPS counterparts.

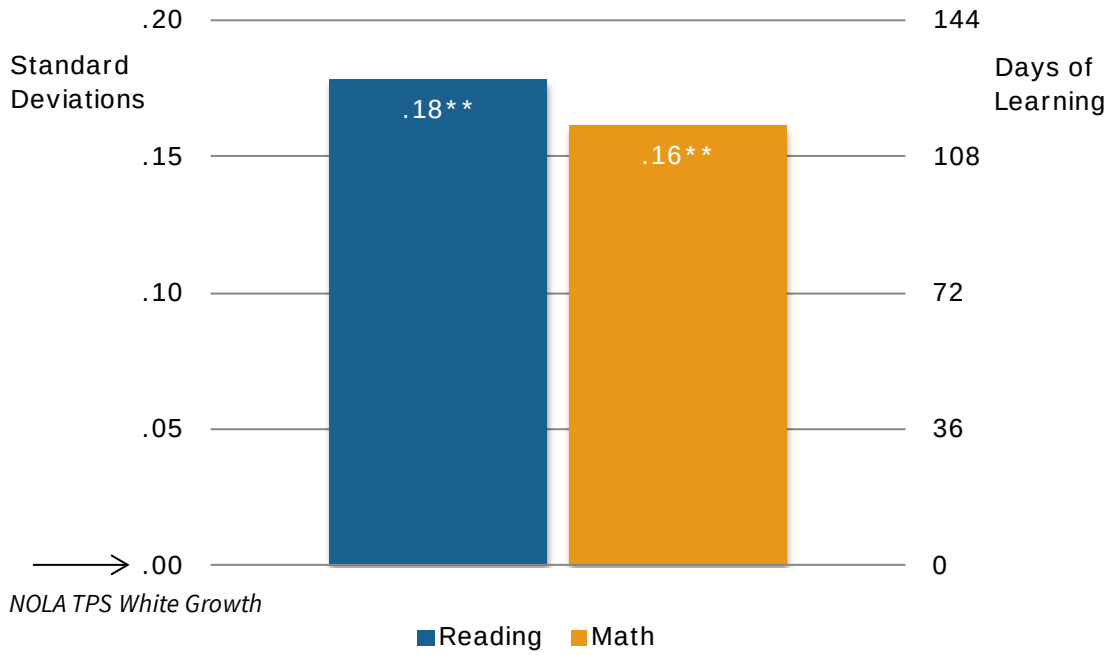
Figure 22: Impact with Hispanic Students in New Orleans



** Significant at p ≤ 0.01*

Hispanic charter students in New Orleans show similar learning gains in both reading and math as their Hispanic TPS counterparts in New Orleans. This is the same as the statewide findings for Hispanic students.

Figure 23: Impact with White Students in New Orleans

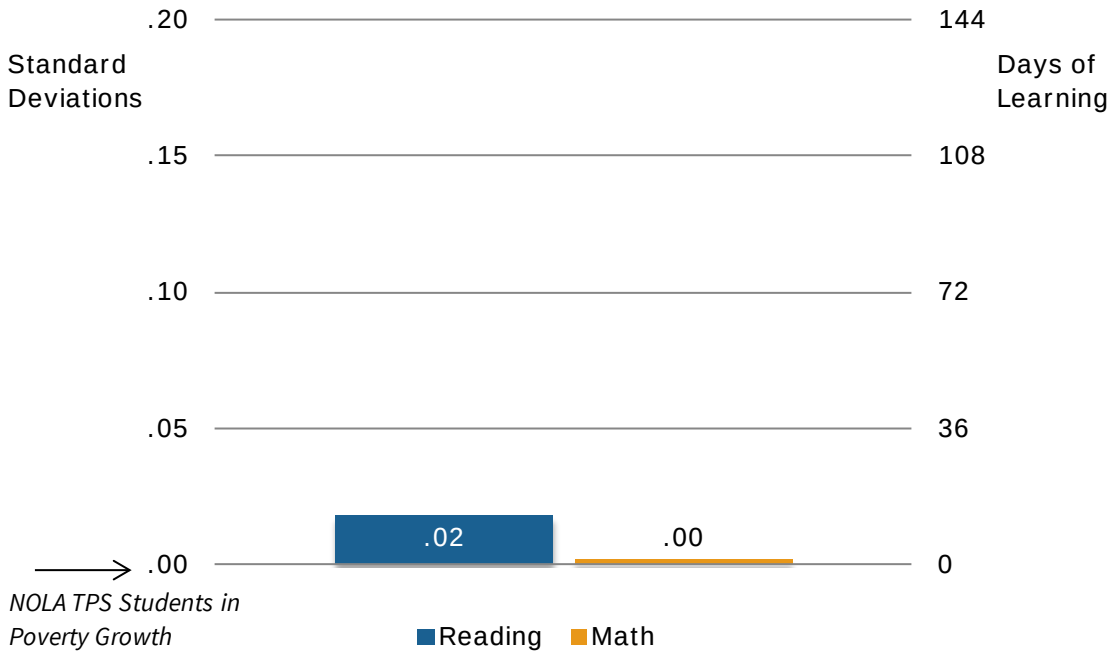


*** Significant at p ≤ 0.01*

As shown in Figure 23 above, White students at charter schools in New Orleans have better learning gains in both reading and math than their TPS peers. In New Orleans, the benefit for White charter students is equal to about 130 days of additional learning in reading and 115 additional days in math compared to White TPS students. Both results are higher than found for White charter students statewide.

Impact with Students in Poverty In addition to Black and Hispanic students, another historically underserved group, students in poverty, comprises 80 percent of the New Orleans charter school population. Results for students in poverty are shown in Figure 24 below.

Figure 24: Impact by Students in Poverty in New Orleans

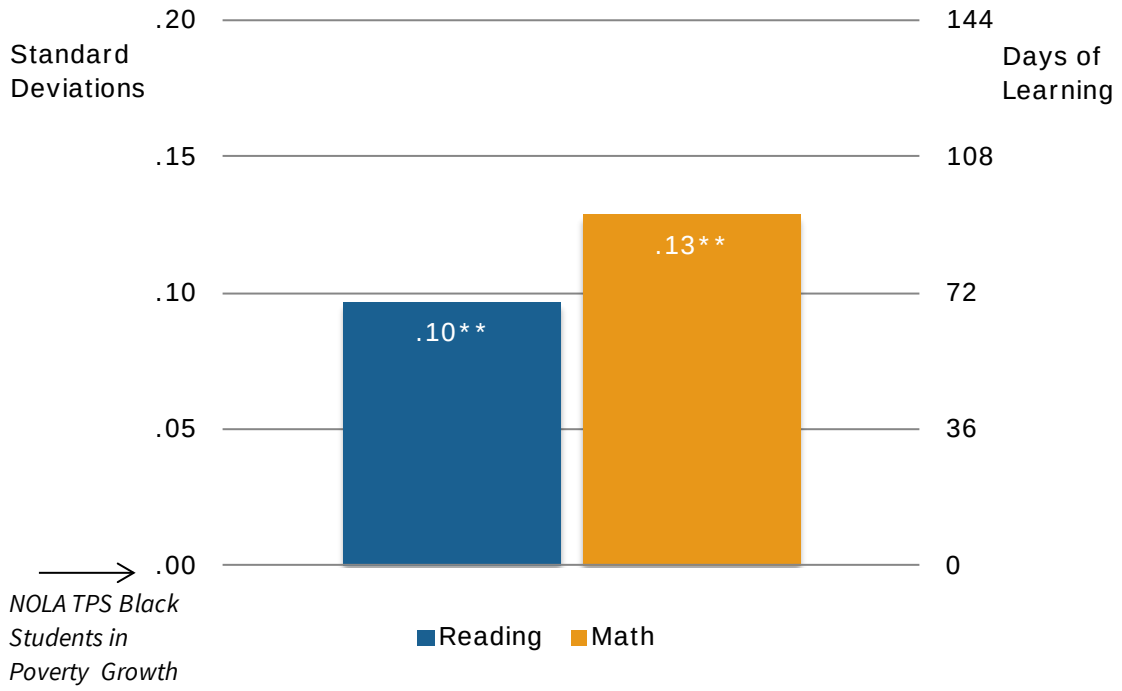


*** Significant at p ≤ 0.01*

As with the statewide results, Figure 24 shows that New Orleans charter students who live in poverty do not gain significantly in reading or math compared to their TPS counterparts.

Impact by Race/Ethnicity and Poverty In New Orleans, 79 percent of charter students are Black and living in poverty, while 2 percent are Hispanic and living in poverty, making charter schools' impact with these students extremely important. The impact of New Orleans charter schools on the academic gains of Black students living in poverty and Hispanic students living in poverty is presented in Figures 25 and 26 below.

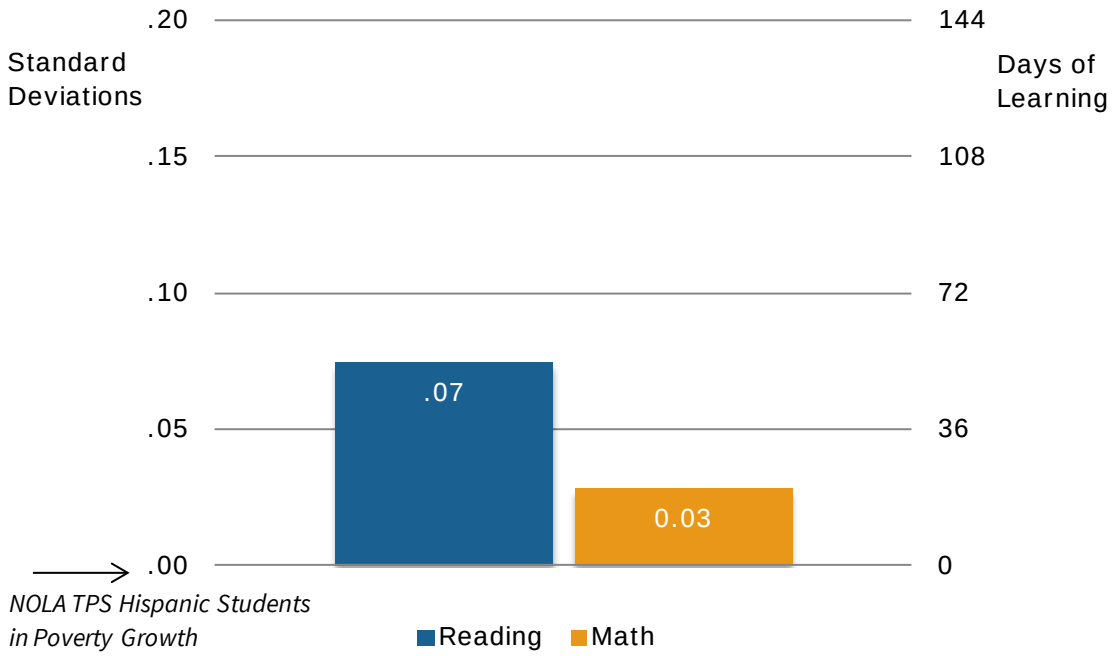
Figure 25: Impact with New Orleans Black Students in Poverty



*** Significant at p ≤ 0.01*

Black students in poverty who are enrolled in New Orleans charter schools show significantly better performance in reading and math compared to Black students in poverty in New Orleans TPS. The advantage is equivalent to about 72 more days of learning in reading and 94 more days of learning in math for Black students in poverty attending New Orleans charter schools than those attending TPS.

Figure 26: Impact with New Orleans Hispanic Students in Poverty

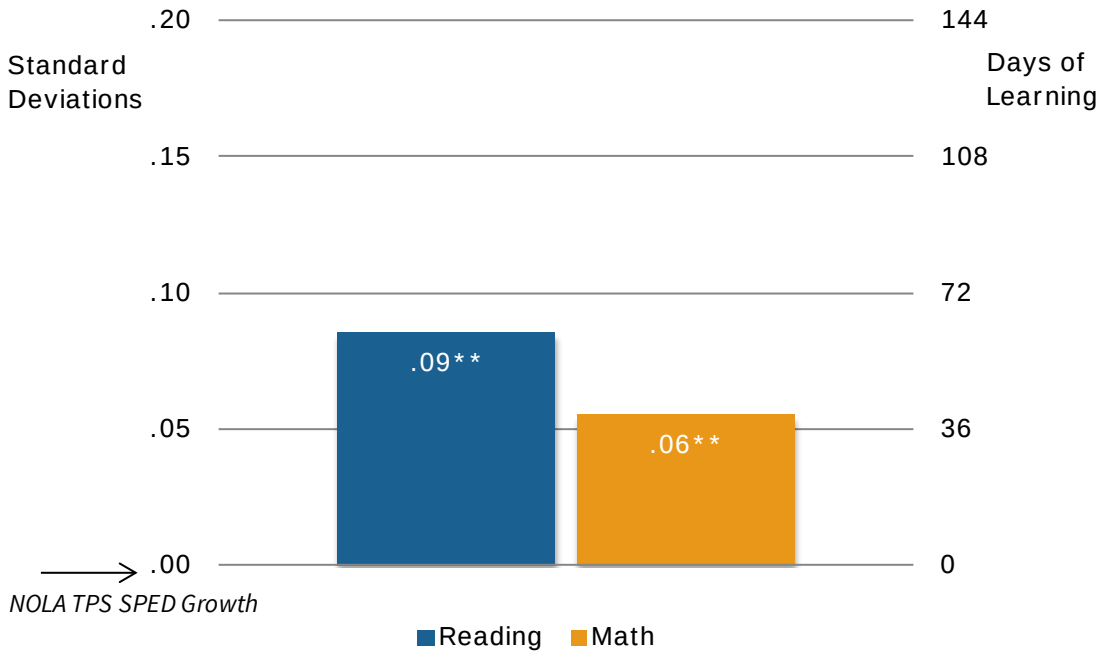


*** Significant at p ≤ 0.01*

In New Orleans, Hispanic charter students in poverty have similar learning gains in reading and math as Hispanic students in New Orleans TPS. In comparison, the statewide results for Hispanic students in poverty at charter schools were positive and significant in reading but not in math.

Impact with Special Education Students The results for New Orleans students who receive special education services are shown in Figure 27 below.

Figure 27: Impact with Special Education Students in New Orleans



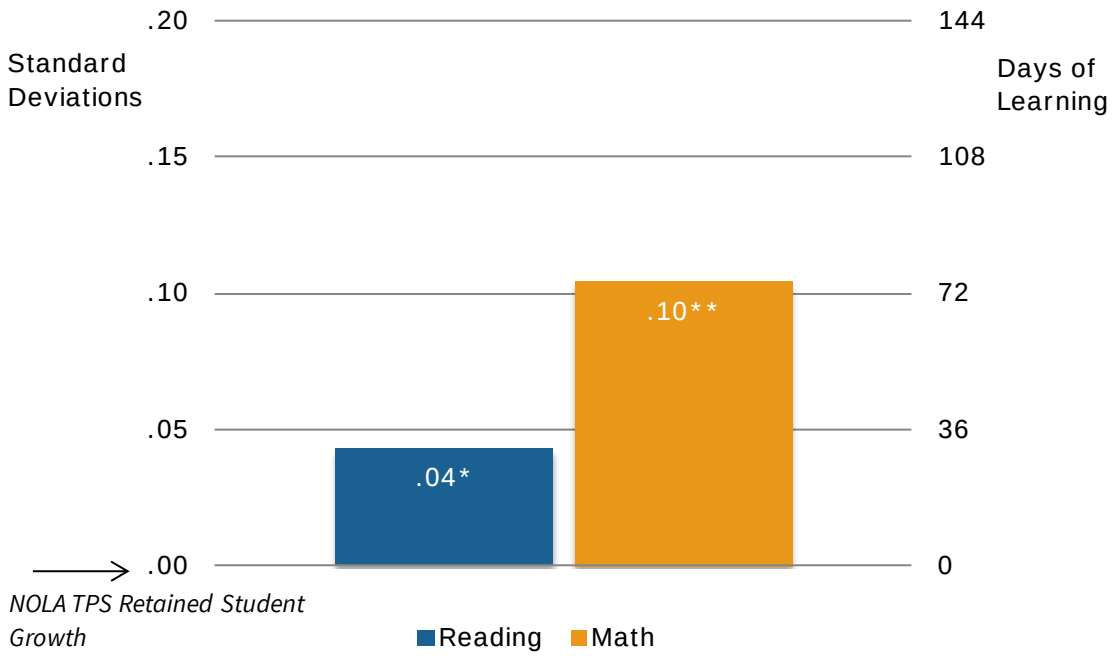
*** Significant at p ≤ 0.01*

Special education students in New Orleans charter schools progress significantly more than their counterparts in New Orleans TPS in both reading and math. This amounts to 65 additional days of learning in reading and 43 more days in math for special education students in New Orleans charter schools. These results are slightly higher than were found statewide.

Impact with Grade-Repeating Students

The results for New Orleans students who are repeating a grade are shown in Figure 28 below.

Figure 28: Impact with New Orleans Grade-Repeating Students



** Significant at p ≤ 0.05*
*** Significant at p ≤ 0.01*

In reading and math, retained students in New Orleans charter schools have significantly better learning gains than their New Orleans TPS counterparts. This benefit is equivalent to about 28 more days of learning in reading and 72 additional days of learning in math.

Comparative School-level Quality As with the statewide results, comparing charter school performance to the local traditional public school alternative in New Orleans can be an informative measure of quality. Using the same criteria that were described in the section above on statewide comparative school-level quality, it was possible to include 52 New Orleans charter schools in reading and math for this analysis. The results for these New Orleans charter schools are shown in Table 8 below.

Table 8: Performance of New Orleans Charter Schools Compared to Their Local Markets

	Significantly Worse		Not Significant		Significantly Better	
Subject	Number	Percent	Number	Percent	Number	Percent
Reading	3	6%	23	44%	26	50%
Math	2	4%	18	35%	32	62%

In reading, 50 percent of charter schools perform significantly better than their traditional public school market, which is more than the 41 percent for Louisiana charter schools as a whole. In math, 62 percent of New Orleans charter schools perform significantly better than their local peers, also higher than the 46 percent of charters statewide. Both of these results are dramatically better than the 2013 national study's proportion of better-performing charters (25 percent in reading and 29 percent in math).[18] Only 6 percent of schools in reading and 4 percent in math had average growth that was significantly lower than their local market.

Synthesis and Conclusions

The charter school landscape in Louisiana is a highly dynamic one, with 58 new charter schools opening across the state since 2007.

Based on the findings presented here, the typical student in a Louisiana charter school gains more learning in a year than his TPS counterpart, resulting in about two months of additional gains in reading and three months in math. These positive patterns are pronounced in New Orleans and other urban settings where historically student academic performance has been poor. The difference in learning in New Orleans charter school equates to four months of additional learning in reading and five more months of learning in math. These outcomes are consistent with the result that charter schools have significantly better results than TPS for Black students who are in poverty.

A substantial share of Louisiana charter schools appear to outpace TPS in how well they support academic learning gains in their students in both reading and math. Forty-one percent of Louisiana charters outpace the learning impacts of TPS in reading, and 42 percent do so in math. Only a few of the schools included in the

[18] Cremata, Edward et al. *National Charter School Study 2013* (2013). http://credo.stanford.edu.

study have academic results that are significantly worse than their TPS counterparts; statewide, 14 percent of charter schools have results that are significantly worse than TPS for both reading and math.

The school results were dramatic in New Orleans. Fifty percent of New Orleans charter schools have significantly better learning gains in reading than their local option, while 62 percent of charters outperform in math. Just 6 percent and 4 percent of New Orleans charter schools have lower learning gains than TPS in reading and math, respectively.

The student-to-student and school-to-school results show charter schools to be performing well relative to the dwindling local alternatives. The larger question of whether charter schools are helping students achieve at high levels is also important. Thirty-five percent of Louisiana charter schools have below-average growth and below-average achievement, and the same is true for 32 percent of the charter schools in math. Students in these schools will not only have inadequate progress in their overall achievement but will fall further and further behind their peers in the state over time.

The share of underperforming charter schools is offset, however, by the fact that the proportion of charter schools that either already achieving at high levels or are in positions to reach those levels. In both reading and math, a majority of charter schools have academic growth that is above the average for their local markets. For reading, the proportion is 63 percent and for math it exceeds 67 percent. Should these trends continue, the share of schools that currently lag the state average for absolute achievement would be expected to decline. These absolute improvements are within sight in Louisiana.

Table 9 presents a summary of the results.

Table 9: Summary of Statistically Significant Findings for Louisiana Charter School Students

	Reading	Math
Louisiana Charter Students	Positive	Positive
Students in New Orleans	Positive	Positive
Charters in 2007	Positive	Positive
Charters in 2008	Positive	Positive
Charters in 2009	Positive	Positive
Charters in 2010	Positive	Positive
Charters in 2011	Positive	Positive
Students in Charters operated by CMOs	Positive	Positive
Urban Students	Positive	Positive
Suburban Students	Negative	Negative
Rural Students	Negative	Negative
Town Students	Negative	Positive
Elementary Charter Schools	Positive	Positive
Middle Charter Schools	Positive	Positive
Charter High Schools	Positive	Positive
Multi-Level Charter Schools	Positive	Positive
First Year Enrolled in Charter School		Positive
Second Year Enrolled in Charter School	Positive	Positive
Third Year Enrolled in Charter School	Positive	Positive
Fourth and Fifth Year Enrolled in Charter School	Positive	Positive
Black Charter School Students	Positive	Positive
White Charter School Students	Positive	Positive
Black Charter School Students in Poverty	Positive	Positive
Black Charter School Students Not in Poverty	Positive	Positive
Hispanic Charter School Students in Poverty	Positive	
Special Education Charter School Students	Positive	Positive
Grade-repeating Charter School Students	Positive	Positive
New Orleans Black Charter Students	Positive	Positive
New Orleans White Charter Students	Positive	Positive
New Orleans Black Charter Students in Poverty	Positive	Positive
New Orleans Special Education Charter Students	Positive	Positive
New Orleans Grade-repeating Charter Students	Positive	Positive

Appendix

The numbers in the table below represent the number of charter observations associated with the corresponding results in the report. An equal number of VCRs were included in each analysis.

Appendix 1: Number of Student Observations For All Results

Student Group	Matched Charter Students	
	Reading	Math
Louisiana Charter Students	48,283	48,405
Students in New Orleans	35,401	35,420
Students in Charters in 2007	4,357	4,424
Students in Charters in 2008	7,834	7,800
Students in Charters in 2009	10,127	10,161
Students in Charters in 2010	12,922	12,799
Students in Charters in 2011	13,043	13,221
Students in Charters operated by CMOs	17,587	17,656
Students in Urban Schools	40,989	41,108
Students in Suburban Schools	438	451
Students in Town Schools	1,448	1,428
Students in Rural Schools	5,408	5,418
Students in Elementary Schools	24,585	24,688
Students in Middle Schools	7,194	7,218
Students in High Schools	6,839	6,865
Students in Multi-level Schools	9,665	9,634
Students First Year Enrolled in Charter School	11,192	11,303
Students Second Year Enrolled in Charter School	4,693	4,688
Students Third Year Enrolled in Charter School	1,465	1,467
Students Fourth Year Enrolled in Charter School	474	466
Black Students	40,597	40,663
Hispanic Students	679	709
White Students	6,494	6,536
Students in Poverty	38,955	39,049
Black Students in Poverty	35,653	35,759
Hispanic Students in Poverty	521	529
Special Education Students	2,279	2,283
English Language Learners	93	89
Grade Repeating Students	1,979	1,987

Appendix Table 2: Number of Observations for All Results in New Orleans

Student Group	Matched Charter Students	
	Reading	Math
New Orleans Charter Students	35,401	35,420
Students in Charters in 2007	3,130	3,203
Students in Charters in 2008	6,404	6,364
Students in Charters in 2009	7,720	7,739
Students in Charters in 2010	8,888	8,768
Students in Charters in 2011	9,259	9,346
Students in Urban Schools	35,349	35,420
Students in Elementary Schools	20,731	20,773
Students in Middle Schools	2,354	2,326
Students in High Schools	6,353	6,352
Students in Multi-level Schools	5,963	5,969
Students First Year Enrolled in Charter School	6,407	6,486
Students Second Year Enrolled in Charter School	2,957	2,961
Students Third Year Enrolled in Charter School	1,111	1,111
Students Fourth Year Enrolled in Charter School	418	405
Black Students	32,201	32,167
Hispanic Students	526	555
White Students	2,209	2,249
Students in Poverty	29,685	29,724
Black Students in Poverty	28,502	28,528
Hispanic Students in Poverty	413	433
Special Education Students	1,715	1,685
English Language Learners	75	78
Grade Repeating Students	1,434	1,428

Appendix Table 3: Starting Deciles in Louisiana

Student Group	Matched Charter Students	
	Reading	Math
Students in Decile 1	4,812	5,285
Students in Decile 2	4,646	5,419
Students in Decile 3	5,651	6,649
Students in Decile 4	5,912	6,524
Students in Decile 5	6,201	6,209
Students in Decile 6	5,953	5,240
Students in Decile 7	5,284	4,682
Students in Decile 8	4,521	3,815
Students in Decile 9	3,425	2,847
Students in Decile 10	1,878	1,735

Appendix Table 4: New Orleans Demographic Composition of Charter Students in the Study

Student Group	All Charter Students Tested		Matched Charter Students	
	Number	Percent	Number	Percent
New Orleans Charter Students	19,356		17,087	
% Matched	17,087	88%		
Black Students	16,746	87%	15,513	91%
Hispanic Students	603	3%	295	2%
White Students	1,356	7%	1,034	6%
Students in Poverty	15,602	81%	14,394	84%
Special Education Students	1,437	7%	904	5%
English Language Learners	251	1%	50	0.3%
Grade Repeating Students	1,076	6%	766	4%