



CHARTER SCHOOL PERFORMANCE IN NEW MEXICO

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INTRODUCTION

This report is the second in a series of reports independently commissioned by the New Mexico Public Education Department's (PED's) Charter School Division to address performance of the state's charter schools. This analysis builds upon the methodology used for the June 2009 New Mexico report as well as that of the 2009 CREDO National Charter School Study *Multiple Choice: Charter School Performance in 16 States*. For the interested reader, the national report is available at credo.stanford.edu. The analysis in this report differs from previous reports in that it compares results from two separate one-year growth periods. This focus informs our understanding of the changing impact of charter schools over the most recent time periods available.

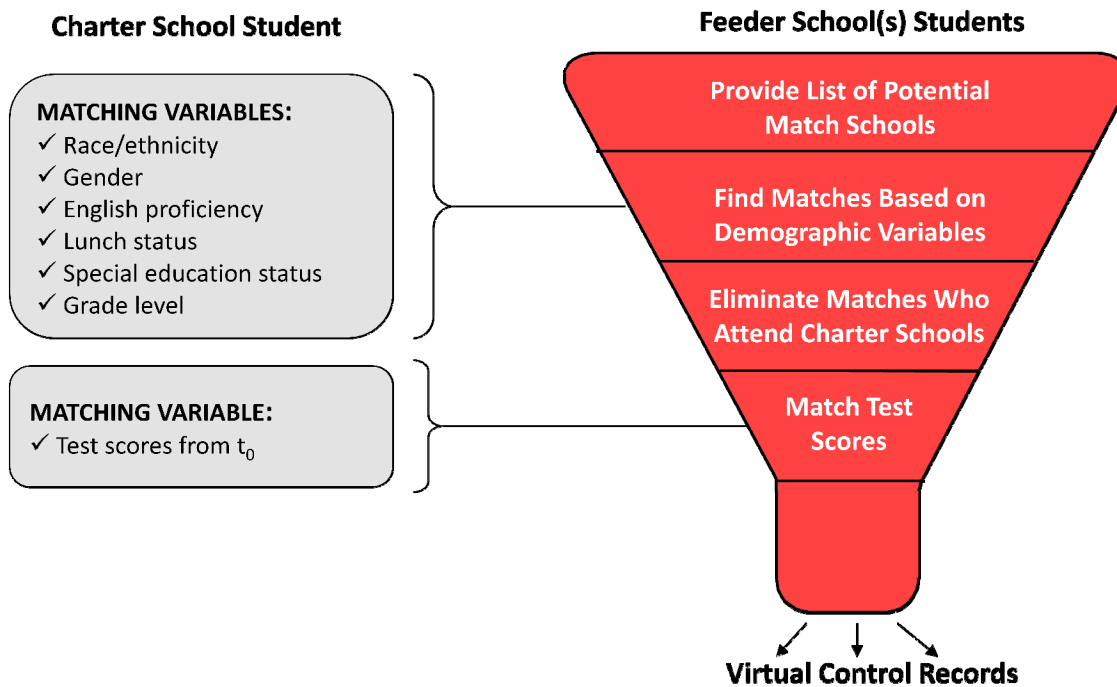
To create a reliable comparison group for our study, we attempted to build a Virtual Control Record (VCR) for each charter school student. Our approach is displayed in Figure 1. We identify all the traditional public schools that have students who transfer to a given charter school; we call each of these schools “feeder schools.” Once a school 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, CREDO selects all of the available records that match each charter school student.

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

The scores from the test year of interest are then averaged and a Virtual Control Record is produced. That record is completely masked, because there is no trace of the specific school that originated the contributing records. The VCR produces a score for the test year of interest that corresponds to the expected value results of matching techniques used in other studies, such as propensity matching. A technical appendix detailing our methodology is available at credo.stanford.edu.

Figure 1: CREDO VCR Methodology



This document reports on the analysis of 3 years of schooling, beginning with the 2006-2007 school year and concluding with the 2008-2009 data. A total of 4,904 charter school students from 68 charter schools are followed for as many years as data are available. The students are drawn from Grades 3 - 8 and 11, since these are the grades that are covered by the state achievement testing program. An identical number of virtual comparison students are included in the analysis. In New Mexico, it was possible to create virtual matches for 76 percent of the charter school students in reading and in 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 charter school and traditional school students at the $p < .05$ level.

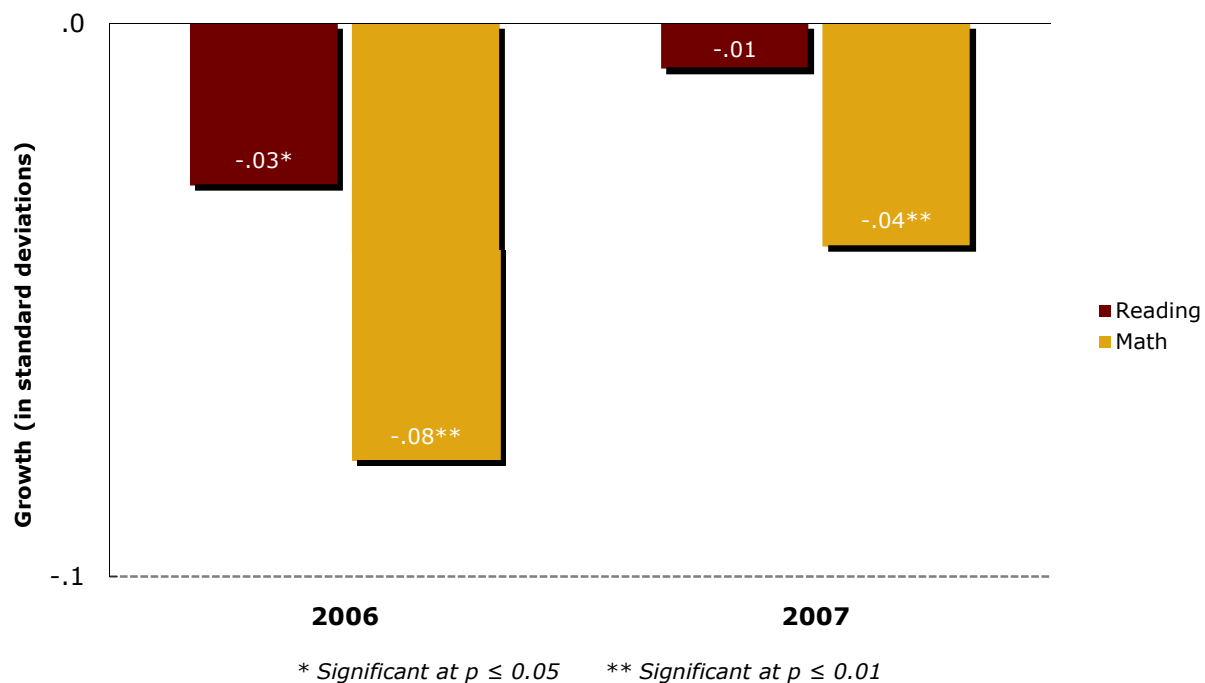
Academic growth on state achievement tests is used as the outcome of interest for two separate time periods. Since achievement testing occurs in the spring in New Mexico, it is necessary to collect two years of test scores to produce a measure of student academic growth. **The time period denoted "2006" covers growth between the 2006-2007 and 2007-2008 school years. The time period denoted "2007" corresponds to the year of growth between the 2007-2008 and 2008-2009 school years.** In other words, the label refers to the first fall term of each growth period. In each case, the analysis examines whether students in charter schools in New Mexico outperform their traditional public school counterparts under a variety of scenarios. In all the scenarios, a number of control factors are applied to the estimation so that the contribution of the schools themselves can be isolated from other potentially confounding influences. Each of the scenarios is presented in the following sections of the report.

In Figure 2, the numbers inside the bars are the result of a test on whether there is a statistically significant difference between traditional public school and charter school performance in the same time period. For Figures 3 through 8, the numbers inside the bars signify that the reported effect is significantly different from our baseline student in that time period. Where a statistically significant

difference between traditional public school and charter school performance is present in Figures 3 through 8, the charter bars have a gradient shade.

First, we examine whether charter schools differ overall from traditional public schools in how much their students learn, while holding all other factors constant. The results appear in Figure 2. The typical student in a New Mexico charter school learned significantly less than their virtual counterparts in both reading and mathematics in 2006. In 2007, there was no significant difference between charter school students and their traditional public school counterparts in reading. Students enrolled in charter schools did significantly worse in math compared to their counterparts in traditional public schools in 2007, although the magnitude of the difference was half that of 2006. Both measures indicate that the overall quality of New Mexico charter schools is improving over time.

Figure 2: Overall New Mexico Charter Effect by Year



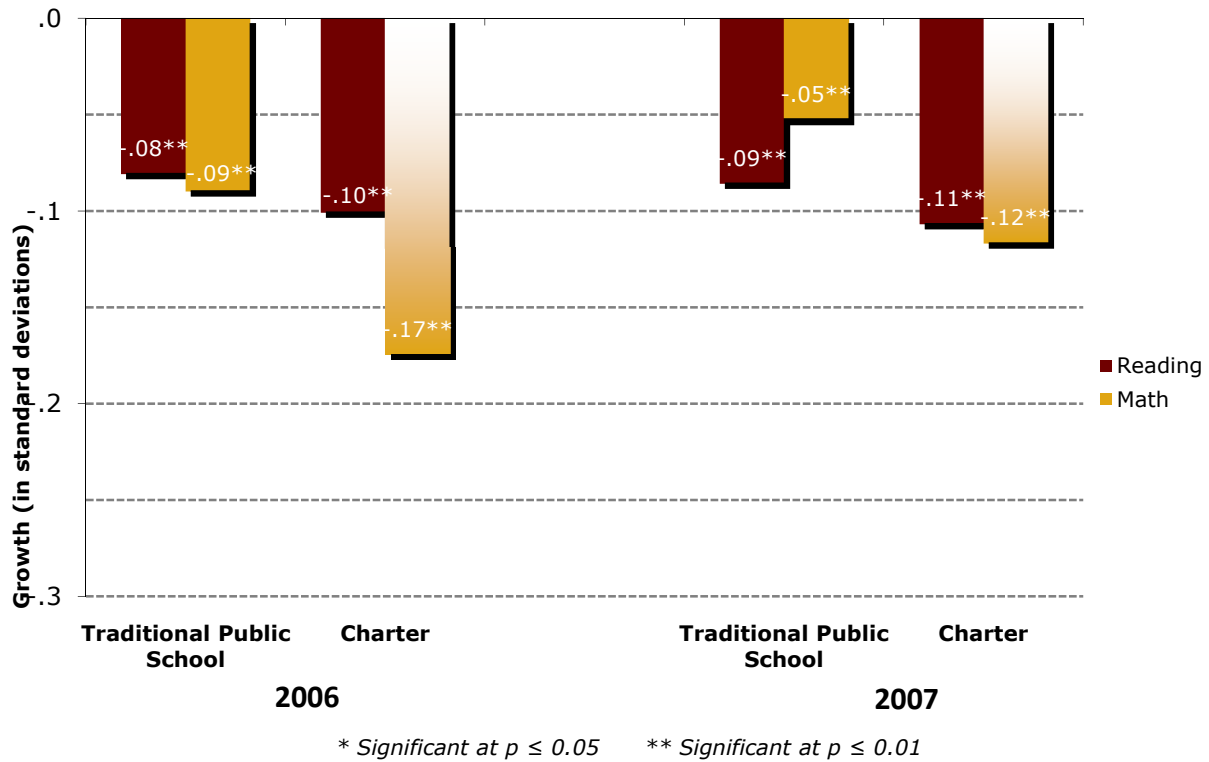
CHARTER SCHOOL IMPACT BY RACE/ETHNICITY

Attention in US public education to achievement differences by racial and ethnic backgrounds has increased in recent years. The effectiveness of charter schools across ethnic and racial dimensions is especially important since so many charter schools are focused on serving historically underserved minority students. The impact of charter schools on academic gains of Hispanic, Native American and Black students is presented in Figures 3, 4 and 5, respectively, below.

Each graph displays four distinct comparisons, described below:

- The first comparison displays the performance of traditional public students in the sub-group of interest (Hispanic students, for example) relative to the **average white student in traditional public schools** who does not qualify for Free or Reduced Price Lunch subsidies, Special Education services or English Language Learner support. The values that appear in each vertical bar indicate the magnitude of difference from the comparison student, with stars indicating the level of statistical significance. Thus, if there is no difference in the learning gains, the bar would be missing entirely; if the learning of the student group in question is not as great as the comparison baseline, the bar is negative and if the learning gains exceed the comparison, the bar is positive.
- The second comparison displays the performance of charter school students in the sub-group of interest (Hispanic students, for example) relative to the **average white student in traditional public schools** who does not qualify for Free or Reduced-Price Lunch subsidies, Special Education services or English Language Learner support. Again, the values that appear in each vertical bar indicate the magnitude of difference from the comparison white student, with stars indicating the level of statistical significance.
- A third comparison tests whether the learning gains in the charter school student sub-group differs significantly from their peers in the same student subgroup in TPS. Where the difference is significant, the charter school bar is shaded.
- The fourth comparison shows whether the student sub-group performance has changed between the two growth periods.

Figure 3: Impact on Hispanic Students



Hispanic students in both traditional schools and charter schools had gains that were smaller than those of white students in traditional public schools, the baseline of comparison. Hispanics enrolled in charter schools did significantly worse as a result of charter school attendance compared to their counterparts in traditional public schools in math in both 2006 and 2007. There was no significant difference between charter school students and their traditional public school peers in reading in 2006 and 2007.

Figure 4: Impact on Native American Students

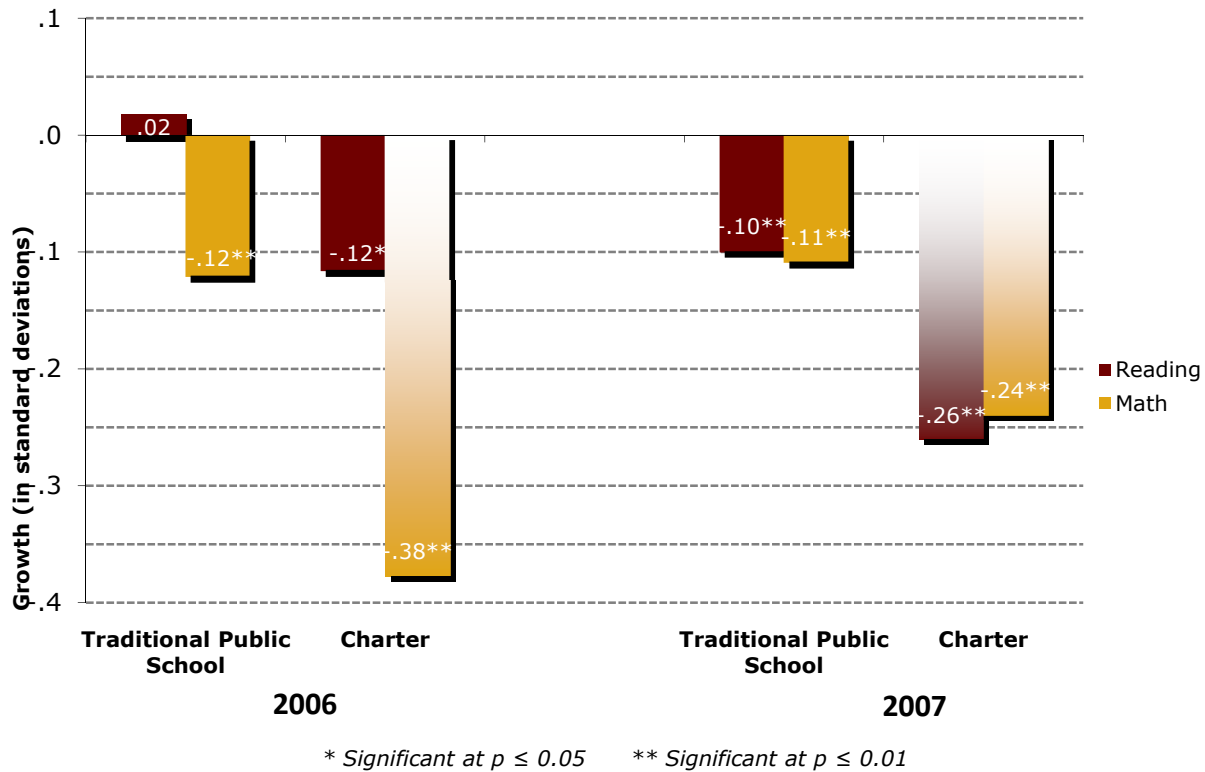
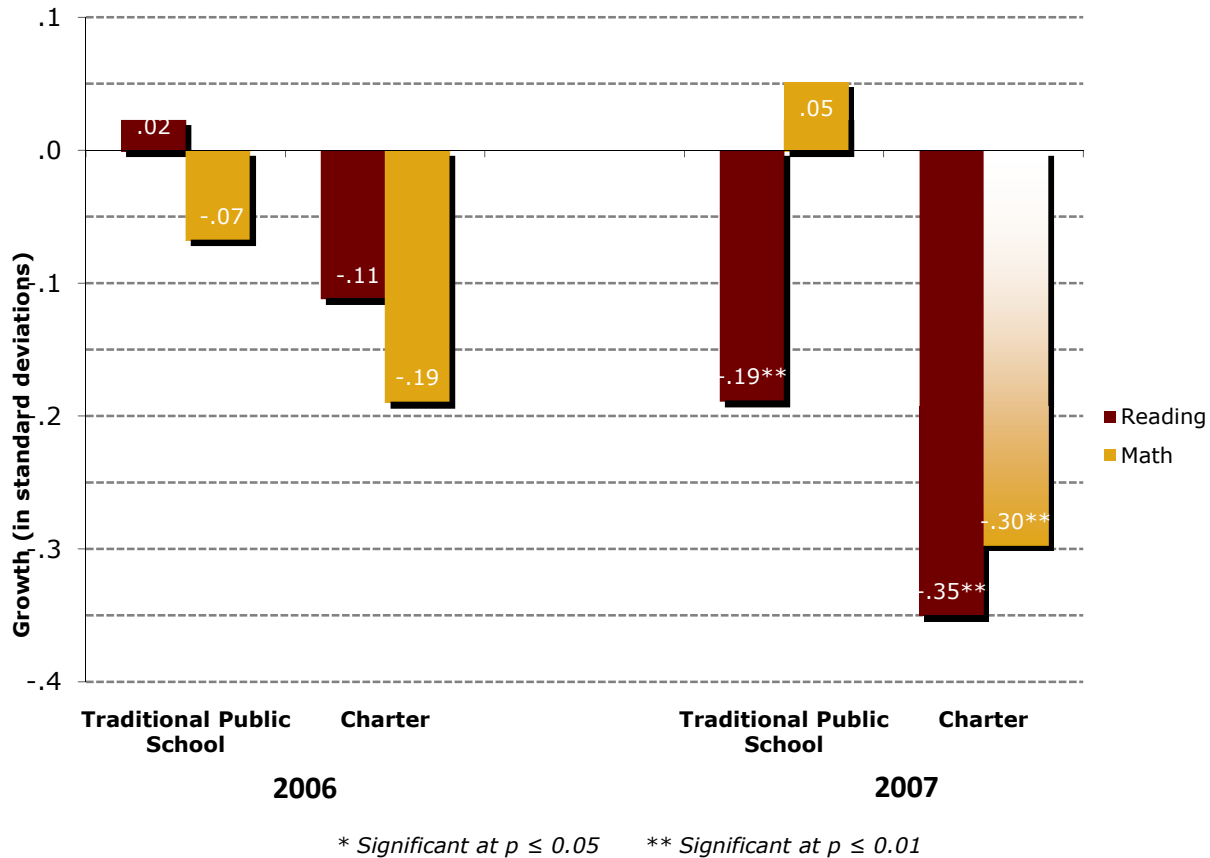


Figure 4 shows that overall, Native American students lag behind their white peers in academic growth in both growth periods of study. Although the initial growth in reading for traditional public school Native American students was not significantly different from their white student peers, the difference was negatively significant in the second growth period. Similar to the Hispanic population, Native Americans enrolled in charter schools did significantly worse as a result of charter school attendance compared to their Native American counterparts in traditional public schools in math in 2006 and 2007. In reading, there was no significant difference between charter school students and their traditional public school peers in 2006. Native American charter school students did significantly worse than their counterparts in traditional public schools in reading in 2007.

Figure 5: Impact on Black Students

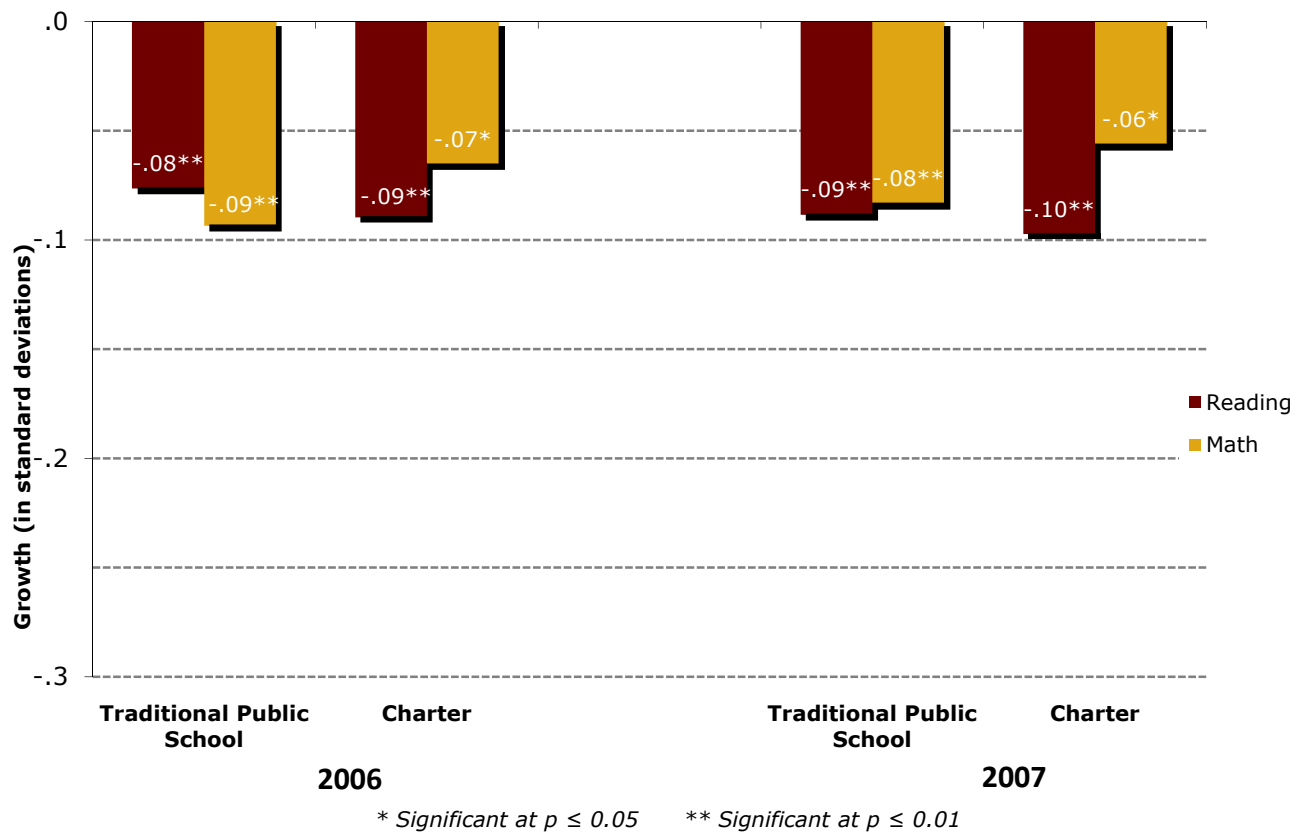


The results in Figure 5 should be viewed with caution, due to small numbers of cases. The figure shows that Blacks in traditional public schools have experienced a mixed pattern of advancement compared to their white peers; in the first growth period (starting in the fall of 2006), there was no significant growth gap for Blacks in reading or math. A similar result is shown for traditional public school Blacks in math in the 2007 growth period, but the reading growth was found to be significantly worse. In the first growth period, Blacks enrolled in New Mexico charter schools had learning gains that were not significantly different from that of students in traditional public schools; despite the apparent size of the difference, it was not statistically significant. Black students received no significant benefit as a result of charter school attendance compared to their Black counterparts in traditional public schools in reading in 2006 and 2007 and math in 2007. Black charter school students performed significantly worse than their peers in traditional public schools in math in 2007.

IMPACT OF CHARTER SCHOOLING ON STUDENTS IN POVERTY

Much of the motivation for developing charter schools aims at improving education outcomes for students who are in poverty. The enrollment profiles of charter schools across the country underscore this fact; in the New Mexico sample 49 percent of the students are eligible for Free or Reduced Price Lunch, a proxy for low income households. Thus, the impact of charter schools on the learning of students in poverty is important both in terms of student outcomes and as a test of the commitment of charter school leaders and teachers to address the needs of the population in better ways than in other settings. Figure 6 presents the results for New Mexico. In this graph, the comparison student is a student who pays full price for lunch, a proxy for not being in poverty.

Figure 6: Impact on Students in Poverty



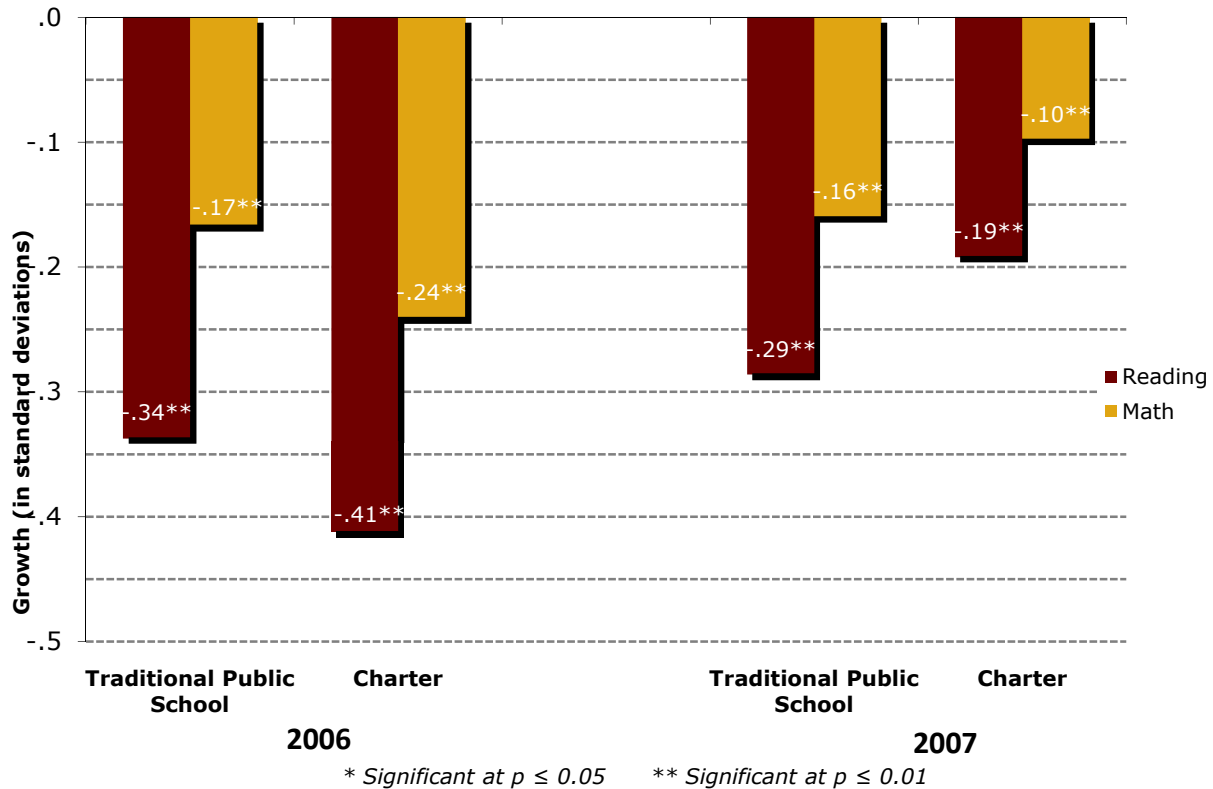
In both periods, students in poverty performed significantly worse than their non-poverty peers. As shown in the figure above, students in poverty enrolled in charter schools received no significant benefit or loss in both reading and math compared to their poverty counterparts in traditional public schools. This was true for both time periods.

CHARTER SCHOOL IMPACTS WITH SPECIAL EDUCATION

The demographic comparisons in the CREDO national charter school report released in 2009 indicated that across the charter sector, schools serve fewer Special Education students and in smaller proportions of their enrollment base than the traditional public schools. In some cases, this result is a deliberate and coordinated response with local districts, based on a balance of meeting the needs of the students and consideration of cost-effective strategies for doing so. In New Mexico, the overall proportion of charter school students who are Special Education is 13 percent, which is equivalent to the 13 percent of students in traditional public schools who are Special Education.

It is especially difficult to compare outcomes of Special Education students, regardless of where they enroll. The most serious problem is caused by small numbers and diverse typologies in use across states; the result is that there is tremendous variation when all categories are aggregated, a necessary and messy requirement. Of all the facets of the study, this one deserves the greatest degree of skepticism. With this cautionary note, the results are presented in Figure 7 below. The comparison baseline is the typical academic growth of a traditional public school student who is not receiving Special Education services.

Figure 7: Impact with Special Education Students



Special Education students in both traditional public schools and charter schools had substantially worse academic growth than the average student. In charter schools in New Mexico, Special Education students received no significant benefit or loss from charter school attendance compared to their

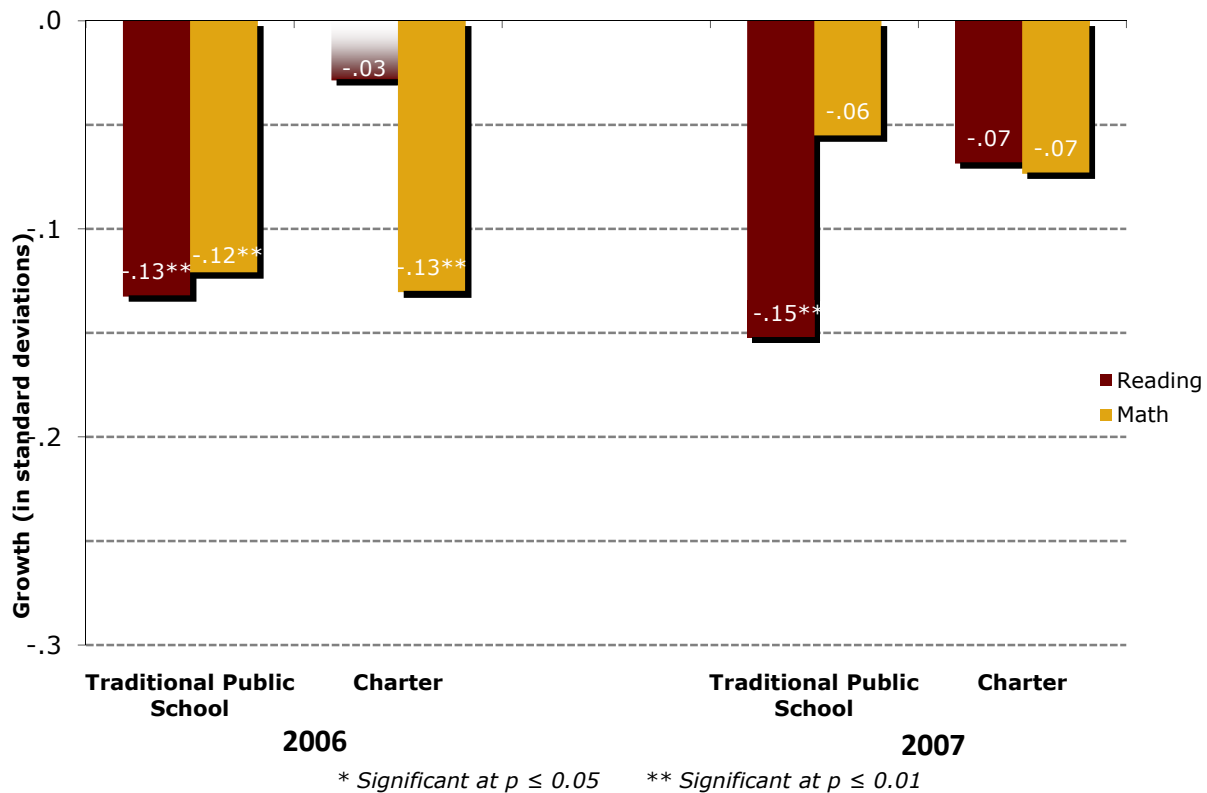
counterparts in traditional public schools in both reading and math. This was the case for both 2006 and 2007.

EFFECTS OF CHARTER SCHOOLING ON ENGLISH LANGUAGE LEARNERS

Students who enroll in school without sufficient English proficiency represent a growing share of public school students. Their success in school today will greatly influence their success in the world a decade from now. Since their performance as reflected by National Assessment of Education Progress has lagged well behind that of their English-proficient peers, their learning gains are a matter of increasing focus and concern.

The comparison of learning gains between charter school English Language Learners and their traditional school counterparts in New Mexico appears in Figure 8. The baseline comparison student in this analysis is the typical traditional public school student who is a native English speaker.

Figure 8: Effect on English Language Learners



English Language Learner students in charter schools in New Mexico did significantly better as a result of charter school attendance compared to their counterparts in traditional public schools in reading in 2006. English Language Learner students in charter schools in New Mexico received no significant benefit or loss as a result of charter school attendance compared to their counterparts in traditional public schools in math in 2006 and 2007 and in reading in 2007. It is also worth noting that the English Language Learner charter student results in 2007 are not significantly different from the native/fluent English speakers in both reading and math.

SUMMARY OF FINDINGS

This report covers academic achievement growth at charter schools over two time periods. This structure makes multiple comparisons possible. First, we look at charter school performance in the 2006 growth period and then in the 2007 growth period. Finally, we view the trends in charter school performance over time. In each of these cases, the performance of the charter school students is grounded in the experience the students would have had at traditional public schools through the use of matched comparison students.

In reading in the first growth period, charter school growth overall was statistically worse than the growth at traditional public schools. There were, however, statistically better results for English Language Learners at charter schools in that year than at traditional public schools.

In the second growth period in reading, charter school growth was equivalent to that of the traditional public schools. This represented an improvement over the previous growth period; charter schools progressed from being significantly worse than traditional public schools to being on par with them. Charter schools also made substantial progress with special education students from 2006 to 2007. For Native American students, however, the pattern was reversed. Charter schools performed about the same as traditional public schools in the first growth period but statistically worse in the second growth period.

There was no significant difference in performance between charter schools and traditional public schools in reading in either time period for Hispanic students, Black students, students in poverty and special education students.

In math in the first growth period, charter school growth overall was statistically worse than the growth at traditional public schools. Hispanic and Native American charter students also lagged behind their traditional public school counterparts in the first growth period.

In the second growth period in math, charter school growth, though still statistically worse than traditional public schools, was greatly improved. This was also the case for Hispanic and Native American charter school students in math; though lagging behind their traditional public school counterparts, these students made strides in performance from the first to the second time period. Charter schools also made progress from the first to the second time period with students in poverty, special education students and English Language Learners. There were small numbers of Black students in both time periods. That said, Black charter school students performed about on par with Black traditional public school students in the first growth period but statistically worse in math in the second growth period.

There was no significant difference in performance between charter schools and traditional public schools in math in either time period for students in poverty, special education students and English Language Learners.

CONCLUSION

Charter schools in New Mexico are improving over time. It is especially noteworthy that charter school growth in reading improved from a deficit when compared with traditional public schools in 2006 to matching their progress in 2007. There was also improvement on the math side; charter schools halved their deficit from 2006 to 2007.

Substantial progress was also made with special education students in both reading and math at the charter schools over the time periods studied. These improvements were larger than those seen at traditional public schools for the same groups of students. Furthermore, nearly all the remaining student subgroups at charter schools made at least some progress in math from 2006 to 2007, including Hispanics, Native Americans, students in poverty and English Language Learners. Gains in these areas were also seen on the traditional public school side in math.

One area that appears to be a singular strength of New Mexico charter schools, however, is with English Language Learners in reading. In both time periods, these students' experienced growth that was on par with that of native English speakers, while their counterparts at traditional public schools had growth significantly below that of native English speakers.

Taken together, the findings from this report suggest that a shift in focus toward improving charter school quality is occurring in New Mexico. Although charter schools still lag behind their traditional public school competitors with some groups of students, they are on par and making progress in many areas. A continued emphasis on charter school quality at the schools, among authorizers and at the Public Education Department should continue these positive trends.