

Charter Schools and Urban Education Improvement: A Comparison of Newark's District and Charter Schools

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This article compares student achievement of fourth graders in charter schools and district public schools in Newark, New Jersey. We find that Newark and New Jersey's charter schools mirror the educational inequalities of the state as a whole, as well as its Abbott Districts. The data indicate that charter schools are similar to district urban public schools, with pockets of excellence and mediocrity. We measure school performance based on two criteria: actual test score performance, and the difference between actual and predicted performance. We find that some charter schools are able to achieve performance above predicted, given their school and student characteristics, while other schools do worse than predicted. Thus charter schools are not simply a magic bullet, but rather they warrant further investigation to see which practices work and which don't, especially in a challenging urban setting such as Newark.

KEY WORDS: charter schools; educational achievement; urban education.

THE PROLIFERATION OF CHARTER SCHOOLS IN THE U.S.

In the wake of widespread dissatisfaction with the perceived failures of our nation's public schools, spearheaded by the 1983 publication of *A Nation at Risk*, attention turned to revitalizing America's schools.

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Alternatives to traditional public schooling based on choice and autonomy became critical to revitalization efforts. As a result, the charter movement vaulted into the spotlight as one of the most controversial and fastest-growing education reform efforts of recent times, with potential to change the course of public schooling in America.

Passage of the first state-legislated charter law in Minnesota in 1991 has spawned enactment of charter laws in a total of 41 states, as well as the District of Columbia and Puerto Rico, and the fledgling movement has produced nearly 3700 charter schools serving 1,076,964 students nationwide (The Center for Education Reform [CER] website, October 2005).¹ Demand for charter schools remains high, as evidenced by the 70% of charter schools with waiting lists for admission (RPP International, 1998, 1999, 2000, 2001). States are responding to this demand by authorizing more charters and amending charter laws to accommodate the desire for growth, while other states without charter laws consider their enactment (CER, 2003; Finn, Manno, & Vanourek, 2000; RPP International, 1998, 1999, 2000, 2001).²

Charter schools are public schools that are free from many of the regulations applied to traditional public schools, and in return are held accountable for student performance. In essence, they “swap red tape for results” (*The New York Times*, 10/1/89), also referred to as an “autonomy-for-accountability” trade within the movement. The “charter” itself is a performance contract that details the school’s mission, program, goals, students served, methods of assessment, and ways to measure success. It is a formal, legal document between those who establish and run a school (“operators”) and the public body that authorizes and monitors such schools (“authorizers”). Charter schools are, in theory, autonomous. They produce the results as they think best, for charter schools are self-governing institutions with wide control over their own curriculum, instruction, staffing, budget, internal organization, calendar, etc. (Finn et al., 2000).

As a public school, a charter school is paid for with tax dollars (no tuition charges) and must be open to all students in the school district. And while charter schools can be started by virtually anyone (teachers, parents, non-profit agencies, for-profit organizations, community members, etc.), charters are supposed to demonstrate results to the public agencies that review and approve their charter, as well as monitor and audit their progress. Authorization may be handled by a single agency, such as the state Department of Education in New Jersey. Or a state may have multiple authorizing agencies, including local school boards, community colleges, state colleges and universities (Hill et al., 2001). Accountability is a critical component of the charter movement; if a charter school fails to meet the provisions of its charter, it can lose its funding and be forced to shut its doors.

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Charter schools are also schools of choice, emulating some of the attributes of private schools (Finn et al., 2000). In 1990, John Chubb and Terry Moe's publication of *Politics, Markets & America's Schools* ignited interest in school choice, arguing that "reformers would do well to entertain the notion that choice *is* a panacea... It has the capacity *all by itself* to bring about the kind of transformation that, for years, reformers have been seeking to engineer in myriad other ways" (Chubb & Moe, 1990; p. 217, emphasis in the original). School choice was touted as a way of forcing the "dead hand" of the "factory model" to compete for students (Schneider, Teske, & Marschall, 2000). The traditional public school system was viewed as an antiquated, bureaucratic, overpriced failure (Chubb & Moe, 1990; Schneider et al., 2000). Choice advocates argued that competition would "create a more efficient system of public schooling in which financial and human resources would focus on maximizing pupil performance" (Finn et al., 2000, p. 21).

THE NEW JERSEY CONTEXT

New Jersey's *Charter School Program Act of 1995* was signed into law by Governor Christine Todd Whitman and became effective January 1996. The state's first 13 charter schools opened in the fall of 1997. As of the 2004 school year, 49 charter schools were in operation in 14 counties, with an enrollment of approximately 14,900 students, and three other charter schools opened in September 2005.³ This represents a leveling off in the number of charter schools operating in New Jersey.

As the Figure 1 indicates, the number of charter schools in operation in New Jersey began to decline in 2001–2002 (until 2005), even while the number of approved applications increased. The slight increase in the number of students attending charter schools means that fewer schools are educating more students. This makes sense as most of the charters begin by serving one or two grades in their first year of operation, then the schools add on one new grade as each year passes. More importantly, the disparity between the number of approved charters and those in operation means that the state has witnessed several charter closures, as well as schools that were never able to open their doors.

By February 2002, for example, New Jersey had experienced 16 charter closures, though the New Jersey Department of Education (NJDOE) lists some charter schools that were never opened as closures. Of the 16 charter schools reported as shutting their doors, three schools were denied final approval of their charters by the NJDOE; four schools voluntarily surrendered their charters; two charter schools never opened after receiving final authorization; and seven schools had their charters revoked by the NJDOE

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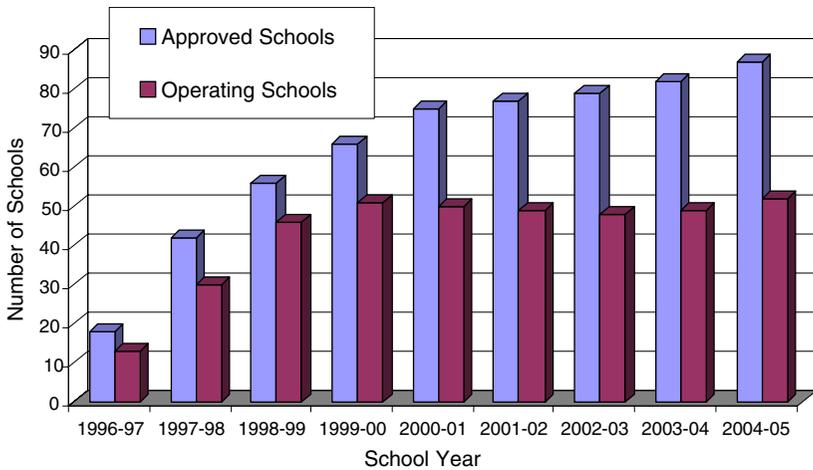


FIG. 1. Growth of Charter Schools in New Jersey.

(New Jersey CHARTER Public Schools Association, February 2002). Between February 2002 and March 2003, no other charter schools closed. By the end of the 2004–2005 school year, there were 51 operating charter schools. The original legislation established a maximum of 75 charter schools to be authorized by the state, though the charter law was amended November 2000 and increased the cap to 135 schools (*Charter School Program Act of 1995*, amended November 2000, N.J.S.A.18A:36A-3). This was based on an assumption that the movement would grow more rapidly than it has.

In October 2001, the first *New Jersey Charter School Evaluation Report* was presented to the Governor, Legislature, and State Board of Education, as mandated by the state's charter law. The state's evaluation found that charter schools enrolled more African-Americans (68%) than their districts of residence (50%); conversely, charters served lower percentages of white, Hispanic, and Asian students than their composition in the population of the district itself, and compared to their school-age community. The percentage of charter students participating in Title I programs was greater than the districts of residence, at 60% and 43%, respectively. However, charter schools had considerably fewer students with educational disabilities (7.7%) than the districts of residence (15.6%), averaging less than half the rate of their district counterparts. Additionally, the percentage of students receiving free and reduced-price lunch in charter schools was lower (63%) than students in the districts of residence (70%) (All demographics from the

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Executive Highlights, New Jersey Charter School Evaluation Report, October 2001).

The report, based on public hearings and an independent study by KPMG had three major findings. Charter schools, “on average, have lower class sizes, lower student–faculty ratios, lower student mobility rates, longer school days and academic years, greater instructional time, and higher faculty attendance rates than their districts of residence. Parental and student demand for and satisfaction with charter schools are all extremely high. And students in charter schools, as a whole, are making substantial progress in *some areas* of the statewide assessment, and in those areas charter schools are outperforming their comparable districts of residence” (NJDOE Commissioner of Education press release, October 2, 2001).

THE NEWARK CONTEXT

As one of New Jersey’s 31 Abbott districts, Newark must implement a variety of State Supreme Court decisions in the 25-year-long *Abbott v. Burke* litigation. A suit brought by the Education Law Center (ELC) on behalf of all low-income children in New Jersey, the first Abbott decision in 1980 required school financing equity. Based on subsequent Abbott decisions, the most important of which was *Abbott V* in 1998, the Supreme Court required equity financing for Abbott districts at the average of the highest income districts in the state; mandatory preschool beginning with 3-year olds; a facilities program to renovate old schools and to build new ones; the implementation of a research-based, national whole-school reform model or its local equivalent; and supplemental funding for health, psychological guidance, and other support services. Under the charter school law, however, charter schools in Abbott districts do not receive the Abbott parity funding from the state. They also do not receive any state monies for facilities, which means that charter schools are responsible for raising the funds for buildings and their maintenance. It also means that charter schools in Newark and the other 30 Abbott districts receive approximately \$5000 less per pupil than their district counterparts. This has been the subject of considerable controversy with the New Jersey Charter School Association lobbying intensively for a change in the law that would provide Abbott funding to students in charter schools in Abbott districts. The ELC has supported their claim arguing that children in charter schools in the Abbott districts are covered by the Court’s mandates and therefore the money should go with the children, whether they are in district or charter schools.

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With 75 district public schools that enroll approximately 50,160 students, Newark is comprised of five zones (Zones 1–5) and is the largest school district in New Jersey. However, Newark is also unique because it is an Abbott district and a state takeover district. The Newark Public Schools were taken over by NJDOE in 1995, one of three districts to be taken over by the state.

Like the other two districts, Jersey City and Paterson, the state found that the Newark Board of Education lacked the capacity to correct significant problems in fiscal mismanagement, board operation, personnel decisions, and student achievement. Since 1995, the Newark district has been operated by a state-appointed superintendent reporting directly to the Commissioner of Education. In June 2002, State Education Commissioner William Librera announced a plan to begin the process of returning all three districts to local control. Based in part on a report commissioned by the DOE and completed by the Rutgers University Institute on Education Law and Policy (Tractenberg, Holzer, Miller, Sadovnik, & Liss, 2002), the Commissioner called for the creation of an advisory group to recommend a plan for return to local control by October 1, 2002, the appointment of four non-voting representatives from the business, higher education and local communities to the elected advisory boards, who would gain greater advisory authority. In 2005, the state legislature passed and Acting Governor Cody signed the *NJ Quality Single Accountability Continuum* (NJQSAC), a law designed to create a single accountability system for all New Jersey districts and to provide for more meaningful state intervention in struggling districts. Most importantly, based largely on the IELP report, it provides more realistic standards for the return to local control in the three takeover districts.

Given this environment, or perhaps because of it, Newark's charter movement has flourished. Newark currently has 10 operating charter schools, the most of any school district in New Jersey.

THE CHARTER SCHOOL DEBATES: DIFFERING PERSPECTIVES ON STUDENT ACHIEVEMENT

Proponents of charter schools have long argued that they provide a more effective and efficient alternative for low-income children, especially in urban areas. Often tied to the school choice and voucher movements, advocates believe that freed from the bureaucratic constraints of traditional urban public schools, charter schools will provide a better education at a lower cost. However, in 2004 the American Federation of Teachers, long a skeptic if not an opponent of charter schools, issued a statistical report that found that district public schools outperformed charter schools nationally

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(Nelson, Rosenberg, & Van Meter, 2004). Immediately following its release, a group of education researchers, some long associated with the school choice and voucher movement, were signatories to a full page advertisement in the New York Times, condemning the AFT study for sloppy research, arguing that the study failed to control sufficiently for student background variables, used 1 year of data rather than multi-year data sets, and did not measure the value-added effects of charter schools on their students, many of whom came to charters far below state proficiency levels (NY Times, 2004).⁴

In 2006, the United States Department of Education released its report on charter schools, whose study design satisfied some of the criteria for acceptable research outlined in the Times ad and concluded that after controlling for student demographic characteristics, students in traditional public schools had higher overall achievement in fourth grade reading and mathematics. These differences were not statistically significant for charter schools affiliated with a public school district, while unaffiliated charter schools scored significantly lower than traditional public schools (United States Department of Education, 2006). These findings were confirmed by a recent comparison of achievement in public, private and charter schools (Lubienski & Lubienski, 2006).

Charter school advocates (see Center for Educational Reform, 2006), however, argue charter schools often admit students who have not performed well in public schools and that it takes time for charter schools to have an impact. Given the lack of statewide student level data, however, the Department of Education and Lubienski studies could not examine the value added effects of district and charter schools when controlling for student background factors. Hoxby (2004), a leading proponent of charter schools and school choice, released studies that compared charter schools nationally with their neighboring district schools (as a way for controlling for student background factors and comparing them to the schools where the charter school students would have remained if they did not have choice) and of students on waiting lists for charter schools who remained in the neighboring district schools. Both studies indicated that students in charter schools had higher achievement than those who remained in the neighboring district schools, even after controlling for student background variables.

Miron and Nelson (2001, 2002) argue that we still do not know enough about student achievement in charter schools and often do not have the type of data needed to effectively evaluate charter school performance. It is in the context of these research debates, that our study compares student achievement in Newark's district public and charter schools. Although we have multi-year data, we do not have the type of student level data necessary to measure the value-added effects of schools.

A COMPARISON OF CHARTER AND DISTRICT PUBLIC SCHOOLS IN NEWARK⁵

In this section we investigate, via regression analysis, the determinants of student performance on fourth grade standardized test scores in the Newark district public and charter schools. This section seeks to answer three related questions: (1) What variables affect school performance? (2) How do charter schools perform relative to their non-charter counterparts? And (3) What is the difference between expected performance, as measured by the regressions, and actual performance? That is to say, what do the regression *residuals* tell us about student performance in charter schools? The aim of this analysis is to investigate which schools are performing above or below expectations to help identify those schools that might be excelling (or failing) due to better organizational and/or institutional characteristics.

These questions are investigated using New Jersey Report Card data collected by the New Jersey Department of Education (see <http://education.state.nj.us/rc/>). We focus on performance in 4th grade using 2 years of data, 2002–2003 and 2003–2004.⁶ This data set contains school-level information about student performance, racial and economic characteristics, and school characteristics.

Clearly, a statistical snapshot of a school district does not tell the whole story, but this type of investigation can shed light on larger patterns and overall outcomes. The main focus of this section is to *identify how charter schools are performing relative to their public school counterparts*. Given the nature of the data—school level data with relatively general variables—we cannot account for many of the underlying causes of this performance. As discussed below, we can identify major factors such as student–faculty ratios, and racial and demographic differences, but to gain better insight into the variables that determine student performance we need to use student level data, which track individual students over time. In addition, to better investigate charter school performance, a study would need to be designed that compares similar types of students who attend charter schools to those that do not to see how performance differs over time for the same set of students.

The Newark District Public and Charter Schools

The Newark school district is the largest school system in New Jersey. There are 76 district public schools; 59 have elementary and/or intermediate grades, 12 have high school grades, and 5 are special education schools. As of June 2005, there are 10 charter schools. During the 2003–2004 school

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year, total student enrollment in public and charter schools was 45,295, of which 2493 students (5.5%) were enrolled in Newark's 10 charter schools.

Newark's school performance has historically lagged behind the state of New Jersey, and this continues to be the case. In the Newark school district for the 2003–2004 school year, only 70.9% of general education fourth graders students scored at or above proficiency on their standardized exams in Language Arts, while across the state the number was 90.3%. For fourth grade math, 59.3% of Newark students were at or above proficiency, while for the state as a whole, 78.4% of students were at or above proficiency. Newark's school district median household income is roughly half that of New Jersey's.⁷

Descriptive Statistics

Table 1 presents the descriptive statistics for schools in Newark with 4th grades, of which there are 55 schools, including six charter schools.⁸ The table presents the averages, the standard deviations, and the minimum and maximum values for each of the schools. The averages give a measure of central tendency, and the standard deviation, minimum and maximum are measures of variation across schools.

The table is divided into five main sections: test scores, student data, faculty data, school data, and data specifically about charter schools. The first section gives the descriptive statistics for each school's performance on the language and mathematics test scores for general education students (the ASK4 exams). The variables are the percentage of students that fall into one of three categories: above proficiency level, at proficiency level, or below proficiency level.⁹ The NJDOE administers the statewide exam and determines the scores for each category.¹⁰

The average school in Newark (both charter and public) has 70.8% of its students at or above proficiency level for Language Arts, but only 59.6% at or above proficiency for Mathematics. Interestingly, for "percent above proficient," the average school only has 1.6% of its students above proficiency in Language Arts, while for Mathematics the average is 21.2%.

In terms of faculty composition, the average school has 70.5% of its faculty having only a Bachelor's degree, and 24.8% also having a Master's degree. In the average school, 43.1% of its teachers are Black, and roughly 58.5% are minority, in general.¹¹

For student characteristics, we see that in the average school 64.3% of its students are Black and 29.0% are Hispanic; 67.9% of students qualify for the federal government's Free Lunch program, which is based on economic need.

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TABLE 1.
Descriptive Statistics Newark District Public and Charter Schools with 4th Graders,
2004

Variable	Mean	St. Dev.	Min.	Max.
Exam Performance				
ASK4 Language Arts (General Education Students)				
# Tested	46.7	20.0	13.0	94.0
% Above Proficient	1.6	3.5	0.0	15.4
% Proficient	69.2	16.5	26.3	97.1
% Below Proficient	29.2	18.1	0.0	73.7
One Year Change (%P + AP)	9.1	13.2	-25.0	43.9
ASK4 Mathematics (General Education Students)				
# Tested	46.6	20.0	13.0	94.0
% Above Proficient	21.2	20.7	0.0	81.3
% Proficient	38.4	13.4	10.5	66.7
% Below Proficient	40.4	24.7	0.0	89.5
One Year Change (%P + AP)	13.8	16.4	-11.2	65.2
Student Variables				
% Asian	0.8	1.8	0.0	9.3
% Black	64.3	35.5	0.5	98.7
% Hispanic	29.0	29.4	1.3	88.1
% Native American	0.1	0.2	0.0	1.2
% White	5.9	15.4	0.0	69.9
% Male	51.4	3.4	43.5	61.2
% Free Lunch	67.9	13.3	30.9	88.8
% Limited English Proficient	8.1	9.7	0.0	37.6
% Student Mobility	27.1	11.6	0.0	50.0
Faculty Variables				
% Teachers Asian	1.8	2.7	0.0	12.5
% Teachers Black	43.1	25.3	0.0	92.3
% Teachers Hispanic	13.5	12.2	0.0	51.1
% Teachers Native American	0.1	0.5	0.0	3.4
% Teachers White	41.5	20.4	0.0	86.6
% Administrators Minority	63.0	35.2	0.0	100.0
% Faculty with Bachelor's Only	70.5	7.6	47.6	86.2
% Faculty with Master's	24.8	7.1	11.9	45.2
% Faculty with PhD/Ed's	4.8	3.6	0.0	14.1
# Teachers	42.5	17.1	5.0	80.0
School Variables				
Enrollment	523.2	244.7	75.0	1067.0
Average Grade 4 Class Size	18.2	4.6	8.7	29.7
Student-Faculty Ratio	10.9	2.6	5.5	18.6
% Average Student Attendance	92.7	1.6	87.8	97.1
% Predominantly Black Schools	49.0			

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TABLE 1.
Continued

Variable	Mean	St. Dev.	Min.	Max.
Charter School Variables ($n = 6$)				
% Schools that are Charters	11.0			
School Year (Days)	194.7	11.3	182.0	210.0
School Day (Hours)	7.7	0.7	7.0	9.0

In terms of school characteristics, 49% of schools are classified as a “Predominantly Black School.” A school is given this designation (by the authors) if at least 50% of the students and at least 50% of the teachers are Black. Student mobility is the percentage of students who either entered or left during the school year. The average school had a mobility rate of 27.1%.

Table 2 compares the average test score performance of district public schools and charters. Overall, we see that charter schools had a slightly higher average performance for Language Arts, but a lower average in Mathematics. However, the difference between these two averages is not statistically significant; thus we cannot conclude based on this that there are large differences (if any) in the average performance. A similar result holds for the 1-year changes in student performance: there is no statistically significant difference. However, charter schools did have slightly higher growth from the 2002–2003 to 2003–2004 school years.

In addition, at the eighth grade level (see Barr, Sadovnik, & Visconti, 2006) a starker contrast exists between district and charter schools. In general, district public schools have higher averages and higher test score growth. These differences are statistically significant for Language and Science growth rates. These data are consistent with recent analyses of charter school performance (Nelson et al., 2004; U.S. Department of Education, 2005). Further, the mean comparisons do not support the claims of charter school advocates that since charters often take students at the early grades who perform significantly below district public school students that the scores in higher grades will more accurately reflect their value added effects. However, it is important to point out that without longitudinal student level data, which is not available in New Jersey, there is insufficient evidence to test this claim.

Regressions

In this section, we attempt to answer the question: What are the determinants of standardized test performance across schools? The average school

TABLE 2.
Fourth Grades Comparisons of Means, 2004

Variable	Public (<i>n</i> = 49)	Charter (<i>n</i> = 6)	Diff	<i>p</i> -value
ASK4 Exam Performance				
ASK4 Lang. % At or Above Proficiency	70.6	73.1	-2.5	0.81
ASK4 Math % At or Above Proficiency	60.8	50.3	10.5	0.47
Lang. 1-year Change	8.8	11.6	-2.8	0.71
Math 1-year Change	13.3	18.3	-5.0	0.65

The *p*-value is the probability with which we can reject the null hypothesis that there is no difference between the means. Because all *p*-values are much larger than the standard cut-off of 0.1, we conclude there are no statistically significant differences.

in Newark has 70.8% of its students passing the Language Arts exam, but the standard deviation is 18.1%, and the range is roughly 73.3%. There is quite a bit of variation in student performance across schools in Newark.

Regression analysis is a statistical procedure that accounts for this variation by looking at the variables that determine student performance. Table 3 presents the results. For each of the two exams, the dependent variable (the variable to be explained) is the percentage of general education students in each school that are at or above proficiency. The first regression for each subject looks only at socio-economic variables for the 2003–2004 school year; the second regression includes not only student information, but also faculty and school characteristics. Furthermore, for the second regression we use 2 years of data; this let us look at performance growth over time, and if it is different for charter and district public schools. Below each coefficient estimate, we present the “probability value,” which is the level of significance at which one can just reject the null hypothesis of no effect for the coefficient.

Discussion of Results

Race, poverty and English proficiency can account for about half of the variation in student performance across schools based on R^2 . The variable *Year 2004* shows that, controlling for the other factors, there was an across-the-board increase in test performance in Newark of 9.1% for Language Arts and 13% for Mathematics. Since this was the second year that the ASK4 exam was administered, the over-all improvement may reflect a better awareness of how to prepare for the exam.

The variable *Charter School* measures the performance of charter schools *controlling for other factors that determine performance*. In general, charter

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TABLE 3.
Regressions—Dependant Variable: % at or above Proficiency ASK4

Variable	Language		Math	
	SES	FULL	SES	FULL
% Students Black	-0.31 <i>0.18</i>	-0.44 <i>0.02***</i>	-0.65 <i>0.06*</i>	-0.66 <i>0.01***</i>
% Students Hispanic	-0.21 <i>0.28</i>	-0.32 <i>0.07*</i>	-0.38 <i>0.20</i>	-0.11 <i>0.65</i>
% Students Nat. Am.	-17.77 <i>0.11</i>	8.75 <i>0.17</i>	-8.96 <i>0.59</i>	1.84 <i>0.85</i>
% Students Asian	3.01 <i>0.01***</i>	2.17 <i>0.00***</i>	2.23 <i>0.22</i>	1.70 <i>0.01***</i>
% Students Male	0.60 <i>0.40</i>	-0.59 <i>0.13</i>	0.87 <i>0.42</i>	-0.11 <i>0.85</i>
% Free Lunch	-0.56 <i>0.04***</i>	-0.07 <i>0.64</i>	-0.31 <i>0.46</i>	-0.06 <i>0.78</i>
% LEP	-0.24 <i>0.55</i>	-0.78 <i>0.02**</i>	-0.35 <i>0.56</i>	-0.38 <i>0.37</i>
% Student Mobility	0.04 <i>0.86</i>	0.01 <i>0.94</i>	0.04 <i>0.90</i>	0.00 <i>1.00</i>
Charter School		-42.22 <i>0.02**</i>		-33.33 <i>0.218</i>
Year 2004		9.11 <i>0.00***</i>		12.99 <i>0.00***</i>
Year2004*Charter		5.14 <i>0.53</i>		6.26 <i>0.61</i>
Enrollment (000)		-0.19 <i>0.82</i>		-1.53 <i>0.25</i>
Avg. % Attendance		1.49 <i>0.12</i>		1.93 <i>0.16</i>
Student-Faculty Ratio		-1.80 <i>0.02**</i>		-0.85 <i>0.41</i>
% Faculty w. Master's		0.30 <i>0.22</i>		0.14 <i>0.68</i>
% Faculty w. PhD/Eds		-0.13 <i>0.77</i>		-0.13 <i>0.84</i>
Length of School Day		10.25 <i>0.23</i>		0.92 <i>0.94</i>
Length of School Year		1.35 <i>0.01***</i>		0.77 <i>0.25</i>
% Teachers Black		-0.36 <i>0.04**</i>		0.06 <i>0.80</i>

TABLE 3.
Continued

Variable	Language		Math	
	SES	FULL	SES	FULL
% Teachers Hispanic		0.11 <i>0.70</i>		-0.59 <i>0.12</i>
% Teachers Native Am.		-6.71 <i>0.00***</i>		-6.63 <i>0.03**</i>
% Teachers Asian		-0.07 <i>0.92</i>		1.15 <i>0.22</i>
% Administration Minority		-0.11 <i>0.03**</i>		-0.16 <i>0.03**</i>
Predom. Black School		8.36 <i>0.19</i>		-2.38 <i>0.78</i>
Constant	103.73 <i>0.01***</i>	-275.89 <i>0.05**</i>	88.68 <i>0.10*</i>	-188.49 <i>0.34</i>
# Obs.	55	110	55	110
R^2	0.498	0.670	0.385	0.646

Note: probability values below estimates. * p -value < 0.1, ** p -value < 0.05, *** p -value < 0.01.

schools show lower performance on test scores. Interestingly, the regressions show that charter schools perform worse on the Language Arts exam relative to Mathematics. In addition, the variable *Year2004*Charter* looks at charter school performance during the 2003–2004 school year, as compared to the 2002–2003 year. The coefficients are positive (but not statistically significant). This indicates that charter performance in the second year improved slightly, if at all.

Though the coefficient for charter schools is negative, there are some mitigating circumstances. Charter schools tend to have longer school days and school years than district public schools, and these have positive effects on performance. For example, the coefficient for *Length of School Day*, shows that, on average, all else equal, an increase in the school day by one hour increases student performance by 10.25% (though this coefficient is not statistically significant). The effect of a longer school year is also positive. For example, for the language exam, an increase in the school year by one day (above the 180 school days for district public schools) is associated with a 1.35% improvement in performance, on average.

So what is the net effect of being a charter school on student performance? If we take the mean difference in *School Day* and *School Year* for

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charter versus public school (1.3 and 14.7, respectively), then we would predict that for language, charter schools in 2003–2004 only have a –3.9% difference as compared to district public schools. For math, we predict a –14.6% difference for the 2003–2004 school year.

While an increase in the number of Black students (relative to White students) is associated with a decline in performance, there is evidence that Black students in predominantly Black schools perform better in schools when a majority of the teachers are also Black. This finding lends evidence to the claim that there are perhaps cultural differences that are better understood by teachers of a similar race.

Measures of Performance and Charter Schools

There are clearly many different ways to assess the performance of a school. The most obvious way is by looking at the percent of students that achieve proficiency or above on standardized exams. But another way to measure performance can be based on the regression results. The regressions show how we can explain the variation in test performance across schools, and each coefficient can be seen as a type of “debit” or “credit.” For example, having longer school hours is a “credit,” i.e., improves student performance, while a larger student–faculty ratio is a “debit.”

Based on the regression, we can generate for each school a “predicted value,” which is the prediction of a school’s score given the information we have about the school. By looking at different predicted values we can compare how schools are performing based on their student, faculty and school characteristics.

In addition we can compare the predicted performance to the actual performance. The difference, called the *residual*, is that part of actual performance that is unaccounted for by the regression. Those schools with large positive residuals, for example, are performing above expectations. The reason for this could be due to better curricula and other unmeasured organizational factors. By definition, though, the residual is that part of performance that we do not have information about and thus why it might be positive or negative requires further investigation.

In Tables 4 and 5 we present information about each school’s performance measures for the 2003–2004 school year for charter schools only, in order to demonstrate that there is wide variation in both actual performance and predicted performance.¹² The first column on the left gives the percent of students in each school that are at or above proficiency. The second column from the left gives the predicted value for the percent at or above proficiency only based on student demographic characteristics (called

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TABLE 4.
ASK4 Language 2004 Charter Schools

% A + AP	Pred. SES	Pred. Full	Resid. SES	Resid. Full	School
98.0	89.9	99.8	8.1	-1.8	ROBERT TREAT ACADEMY CS
93.9	75.4	80.6	18.5	13.3	GRAY CS
84.6	102.5*	88.1	-17.9	-3.5	DISCOVERY CS
66.7	71.3	69.3	-4.6	-2.6	LADY LIBERTY ACADEMY CS
57.6	64.1	72.1	-6.5	-14.5	NEW HORIZONS COMM. CS
37.5	47.9	28.3	-10.4	9.2	MARION P. THOMAS CS

* A linear regression model does not preclude having predicted values greater than 100% or less than 0%. But since there are relatively few schools with an “out-of-bounds” predicted value we do not employ other estimation techniques that restrict the predicted values to lie in the proper intervals.

PRED. SES). The next column (PRED. FULL) gives the predicted scores based on student, faculty and school data, including whether the school is a charter or not. The next columns present the residuals for each of the two

TABLE 5.
ASK4 Mathematics 2004 Charter Schools

% A + AP	Pred. SES	Pred. Full	Resid. SES	Resid. Full	School
81.8	55.3	62.7	26.5	19.1	GRAY CS
24.2	37.0	12.7	-12.8	11.5	MARION P. THOMAS CS
30.3	51.8	31.7	-21.5	-1.4	LADY LIBERTY ACADEMY CS
98.0	78.5	100.9*	19.5	-2.9	ROBERT TREAT ACADEMY CS
46.2	78.1	52.7	-31.9	-6.5	DISCOVERY CS
21.2	46.6	40.9	-25.4	-19.7	NEW HORIZONS COMM. CS

* A linear regression model does not preclude having predicted values greater than 100% or less than 0%. But since there are relatively few schools with an “out-of-bounds” predicted value we do not employ other estimation techniques that restrict the predicted values to lie in the proper intervals.

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regressions. These columns, as discussed above, show the degree to which a school is achieving above or below expectations.¹³

There are two reasons why we present two types of regressions (SES and FULL). The first is simply due to the strong influence that student demographics play in student performance (Sadovnik, Cookson, & Semel, 2006). Whether students have high income, whether their parents have higher education levels, etc., all play a role in students' preparedness. Thus we look at how student characteristics affect school performance.

Secondly, the dummy variable *Charter* in the FULL regression, for example, is meant to capture some features that are common to charter schools that affect performance. It is a summary variable to see whether charter schools in general are performing better or worse than their public school counterparts. But since we don't know what is driving this negative result, we can't say more without additional information. Thus by presenting two regressions we can compare both the predicted values and the residuals to see how they differ when adding more explanatory variables.

In the case of Gray Charter School for Language Arts, for example, in the 2003–2004 school year, we see that its actual performance was 93.9% for students at or above proficiency, yet given the SES variables, we would have predicted that only 75.4% of its students would be at or above proficiency. That is, its actual passing rate is 18.5% points above its predicted value based on student characteristics. Looking at the full regression, we see that Gray performs 13.3% above predicted. Some of the rise in the predicted value is due to having several "positive" elements such as a longer school day, lower student turnover, lower student population with limited English proficiency, and a lower student teacher ratio. Also notice that for Gray, 90% of the student population is African American.

In general, though, the tables demonstrate that charter school performance based on standardized test scores is decidedly mixed. Some schools perform towards the top in Newark, including Robert Treat and Gray, while some perform toward the bottom, such as New Horizons and Marion P. Thomas.

Looking at the residuals shows that for Language Arts for both SES and FULL, four of six charter schools have negative residuals. Only Gray Charter School has positive residuals for both regressions. A similar picture holds for the Mathematics exam. Thus, in general, charter schools are not, on average, performing above predicted.

However, there is a wide range in the residual values. For the FULL Language Arts residuals, the values go from -14.5% to 13.3%, a difference of 27.8% points. This indicates a wide variation in charter school practices. Also note that actual student achievement levels do not give information about the size of the residual. For example, Marion P. Thomas' FULL Mathematics

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residual is 11.5%—indicating that is performing above expectations; yet, its passing rate is only 24.2%. So we see that for Math, the school is “adding value” above what we can measure, but given the student and school characteristics, we would predict only a passing rate of 12.7%, meaning there are many “problems” about the school that we can measure, and these things also need to be addressed in regard to improving student performance.

In general, the factors driving the variation of the residuals can be such things as differently motivated student bodies, implementation or not of innovative curriculum and teaching methods, or whether a school is simply teaching to the test or not. Because a residual is inherently that part of performance that remains unmeasured, a more detailed study of the schools is required. However, we can conclude that charter school performance, *controlling for the measurable variables that affect performance*, shows a wide degree of variability; we cannot conclude without further investigation what are the other factors that determine performance, and we cannot simply conclude that charters are a net benefit to the students or the host districts. Rather, a more detailed approach is needed in regard to what does and does not work in charter schools to see how they can best improve the educational outcomes of students.

CONCLUSION

We found that Newark and New Jersey’s charter schools mirror the educational inequalities of the state as a whole, as well as its Abbott Districts (see Barr, 2004a; Tractenberg, Sadovnik, & Liss, 2004). The data indicate that charter schools are similar to district urban public schools, with pockets of excellence and mediocrity. Visconti’s (2003) study of four Newark charter schools supports these findings with two among the highest performing in the state among district and charter schools, one in the second quartile, and the fourth among the lowest performing in the state. Most importantly, our findings suggest that charter schools are not a magic bullet as many of their proponents argue, and that the NJDOE needs to develop a more effective accountability system and capacity building system to ensure that urban charter schools have the opportunity to succeed and, if they cannot in a reasonable period of time, that they are closed down (Callahan, Sadovnik, & Visconti, 2002; Wells, 2002).

Finally, our data adds to the debates about the differences between charter and district public schools. Though the average passing rate of charter schools in Newark is close to the average performance of district public schools, regression analysis shows that controlling for student and school variables, charter school performance is lower on average. In addition, we compare charter schools’ actual performance to their predicted

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performance and show that most charter schools are performing below predicted. Finally, we found that student demographic data are strong predictors of academic achievement, which supports decades of sociological research on the importance of factors outside of schools.¹⁴

Given the wide disparities in achievement across both charter and district public schools, it is imperative that we learn from successful schools such as Abington and Ann Street (public) and North Star¹⁵ and Robert Treat (charter) in order to replicate these models of success. The ideological character of the charter debates can only detract from this goal: learning from the best district and charter schools to improve all schools and the education of all students.

NOTES

1. In 2003, of the 41 states that passed charter legislation, Iowa, New Hampshire, and Tennessee had no charter schools in operation. They currently have 7, 6 and 12 charter schools, respectively in operation. Indiana and Mississippi had only one charter school in operation in their states. Indiana now has 29, while Mississippi still only has 1 operating charter school. As of October 2005, there were 3625 charter schools in operation nationally, serving 1,076,964 students. As of October 2005, an additional 90 charter schools were approved to open for the 2006–2007 school year around the country. The total number of students in charter schools represents less than 1% of all public school students in the states with open charter schools. Information provided by the website of The Center for Education Reform (CER), October 2005. CER is a resource site listed by the U.S. Department of Education for charter schools.
2. Laws that were significantly amended by the end of the 2002 legislative sessions were California, Colorado, Delaware, Florida, Georgia, Hawaii, Ohio, and Utah. Additionally, Maine, Maryland, and Washington are likely to consider enacting a new charter law in 2003 (CER, January 2003). A pilot program of charter schools was recommended by the Maine State Board of Education in January 2004 (www.mainecharter-schools.org); Maryland passed their charter law in 2003 (www.uscharterschools.org); and in March 2004, Washington became the 41st state to allow charter schools (www.washingtonpolicy.org).
3. This represents roughly 1% of the 1.3 million public school students in New Jersey. NJDOE website, January 2003.
4. Interestingly, these are the same criticisms that school choice and voucher opponents have used to critique studies that argue for the superiority of performance by low-income children in charter and voucher schools.
5. For brevity, we do not discuss 8th grade performance, which closely resembles 4th grade performance. More detailed analyses and data for both 4th and 8th grades can be found in an earlier version of this paper. See Barr et al. (2006).
6. Fourth graders take the Assessment of Skills and Knowledge (ASK4) exams, which has been administered since the 2002–2003 school year.
7. As of the 2000 Census, New Jersey has the highest median household income in the country (source: <http://www.courierpostonline.com/census2000/m080601d.htm>).

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8. Schools with 8th grades generally mirror schools with fourth grades in terms of student and school characteristics. See Barr et al. (2006).
9. The state refers to this category as “partially proficient.”
10. For a historical overview of standardized testing in New Jersey see <http://www.nj.gov/njded/assessment/history.shtml>.
11. The NJDOE designates five racial categories: Asian, Black, Hispanic, Native American and White.
12. See Barr et al. (2006) for the residuals for all schools in Newark.
13. For each of the FULL regressions, we have 2 years of predicted values and residuals, but we only show the latest year for brevity.
14. See A.R. Sadovnik, P.W. Cookson Jr. and S.F. Semel, *Exploring Education: An Introduction to the Social Foundations of Education* (Third Edition). Boston: Allyn and Bacon, 2006, Chapter 9.
15. North Star is a 5–12 school, so its achievement test results do not appear here. A more detailed analysis of North Star’s success is included in A. Thernstrom and S. Thernstrom, *No excuses: Closing the racial gap in learning*. New York: Simon and Schuster, 2003.

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