

National Assessment of Educational Progress

The Nation's Report Card

America's Charter Schools

Results From the NAEP 2003 Pilot Study



TABLE OF CONTENTS

| | |
|-----------------------------|----|
| EXECUTIVE SUMMARY | 1 |
| CHARTER SCHOOL PILOT STUDY | 2 |
| READING RESULTS | 4 |
| MATHEMATICS RESULTS | 7 |
| CONCLUSIONS | 10 |
| TECHNICAL AND DATA APPENDIX | 11 |

What is The Nation's Report Card?

The Nation's Report Card, the National Assessment of Educational Progress (NAEP), is a nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields.

By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement is collected under this program. NAEP guarantees the privacy of individual students, their families, and their schools.

NAEP is a congressionally mandated project of the National Center for Education Statistics within the Institute of Education Sciences of the U.S. Department of Education. The

Commissioner of Education Statistics is responsible, by law, for carrying out the NAEP project through competitive awards to qualified organizations.

In 1988, Congress established the National Assessment Governing Board (NAGB) to oversee and set policy for NAEP. The Board is responsible for selecting the subject areas to be assessed; setting appropriate student achievement levels; developing assessment objectives and test specifications; developing a process for the review of the assessment; designing the assessment methodology; developing guidelines for reporting and disseminating NAEP results; developing standards and procedures for interstate, regional, and national comparisons; determining the appropriateness of all assessment items and ensuring the assessment items are free from bias and are secular, neutral, and non-ideological; taking actions to improve the form, content, use, and reporting of results of the National Assessment; and planning and executing the initial public release of NAEP reports.

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Executive Summary

The National Assessment of Educational Progress (NAEP) conducted a pilot study of America's charter schools and their students as part of the 2003 NAEP assessments in reading and mathematics at the fourth-grade level. NAEP also surveyed participating charter schools about their practices, structure, and governance.

Charter schools are public schools of choice. A number of states have few or no charter schools; many charter schools have just recently opened; and some charter schools last only a few years. All of these factors make the selection of a representative sample challenging.

For example, the final sample of 150 charter schools was obtainable only after multiple sources of information were consulted. Information from local school administrators, follow-up interviews, and field staff were used to update and verify the original school questionnaire data.

While charter schools are similar to other public schools in many respects, they differ in several important ways, including the makeup of the student population and their location. For example, in comparison to other public schools, higher percentages of charter school fourth-grade students are Black and attend schools in central cities.

Thus, when comparing the performance of charter and other public school students, it is important to compare students who share a common characteristic. For example, in mathematics, fourth-grade charter school students as a whole did not perform as well as their public school counterparts. However, the mathematics performance of White, Black, and Hispanic fourth-graders in charter schools was not measurably different from the performance of fourth-graders with similar racial/ethnic backgrounds in other public schools.

In reading, there was no measurable difference in performance between charter school students in the fourth grade and their public school counterparts as a whole. This

was true even though, on average, charter schools have higher proportions of students from groups that typically perform lower on NAEP than other public schools have. In reading,

...lower overall charter school mathematics performance, but no measurable differences among students with similar racial/ethnic backgrounds

as in mathematics, the performance of fourth-grade students with similar racial/ethnic backgrounds in charter schools and other public schools was not measurably different.



...no measurable difference in overall reading performance

There are also instances where the performance of students with shared characteristics differed. For example, among students eligible for free or reduced-price lunch, fourth-graders in charter schools did not score as high in reading or mathematics, on average, as fourth-graders in other public schools.

When considering these data, it should be noted that the charter school population is rapidly changing and growing. Future NAEP assessments may reveal different patterns of performance. Further, NAEP does not collect information about students' prior educational experience, which contributes to present performance. Nonetheless, the data in this report do provide a snapshot of charter school students' current performance.

Charter School Pilot Study

As the charter school movement has grown, interest in how charter schools function and how their students perform academically has increased. Motivated by this interest, the National Assessment Governing Board (NAGB), which sets policy for the National Assessment of Educational Progress (NAEP), asked the National Center for Education Statistics (NCES) to conduct a pilot study of charter schools. This pilot study was conducted as part of NAEP's 2003 national assessment of fourth-graders in reading and mathematics.

NAEP, as the nation's report card, has a responsibility to gauge student progress in America's schools. As a new kind of public school, charter schools are an appropriate subject of study. The varied and changing nature of the charter school movement, however, makes such a study a challenge.

This report first describes the pilot study's design and methodology, within the context of a few lessons learned. Some key results are then presented separately for reading and mathematics in the body of the report, while other data are found in the appendix. As indicated in the appendix tables, some of the data presented in the appendix should be interpreted with caution due to the uncertainty of the estimates. Further explanation is provided in the Technical and Data Appendix at the end of this report.

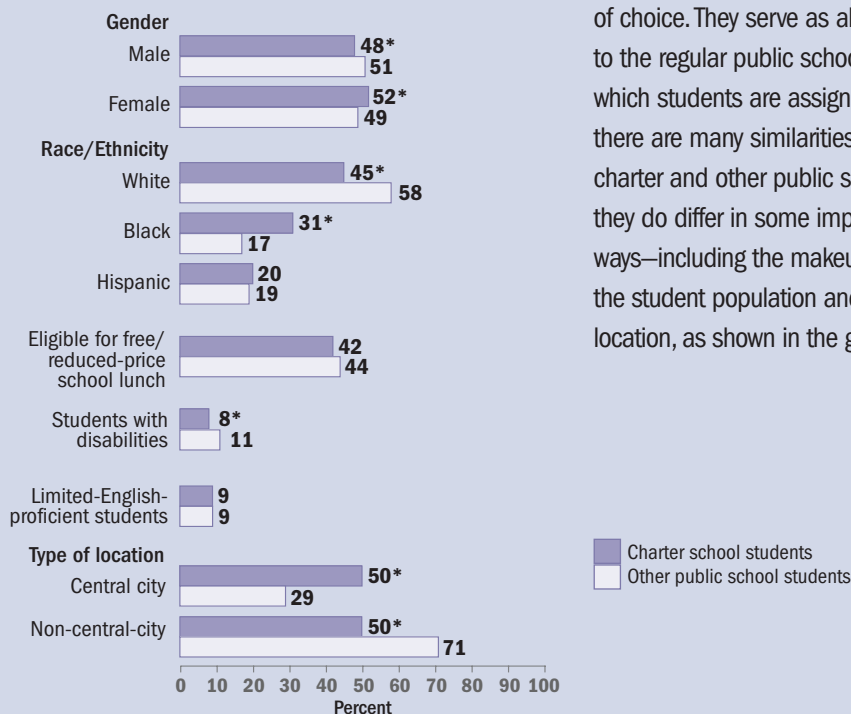


LESSONS LEARNED

- ▶ Until America's charter schools become a more stable entity among educational institutions, multiple sources of information and verification are necessary to accurately identify a representative sample of charter schools.
- ▶ The unique characteristics of charter schools require additional information to be collected, beyond the information obtained from the regular NAEP questionnaires.
- ▶ Since far more charter schools than other public schools are located in central cities, and there are striking differences in their demographic makeup, it is more fair to compare the performance of students that share a common characteristic.
- ▶ Performance results vary for charter schools with different characteristics. There are wide variations in how charter schools are structured, the degree of oversight exerted by external agencies, and the length of time chartered.

Who Attends Charter Schools?

Grade 4: 2003



Charter schools are public schools of choice. They serve as alternatives to the regular public schools to which students are assigned. While there are many similarities between charter and other public schools, they do differ in some important ways—including the makeup of the student population and their location, as shown in the graphic.

*Significantly different from other public schools


SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

Charter school students took the NAEP reading and mathematics assessments at the same time as students in all other schools. After the analyses for the main assessment were completed, different and sometimes conflicting sources of information were examined to confirm which sampled schools were, in fact, charter schools. Achievement results for students in charter schools were produced in the same manner as results for students in other public schools.

Additional procedures were followed to make sure the sample of charter school students was large enough to conduct the necessary analyses. First, charter schools were selected within their state or jurisdiction proportional to their representation in the total population of charter schools. Second, charter schools were oversampled in three states—California, Michigan, and Texas—that together accounted for almost half of all charter school students nationally.

There were a number of sources used to construct the final sample of charter schools. Initially, the 2000–2001 Common Core of Data,¹ updated by state departments of education, was used to sample charter schools. Then, the NAEP state coordinators independently verified the charter status of these schools. Additional charter schools were identified from the NAEP school questionnaire. Finally, in telephone interviews, a few schools were found not to be charter schools or not to have fourth-grade students eligible for the survey. A total of 150 schools were ultimately identified as charter schools, including 12 additional schools not originally identified on the NAEP website at the time of the 2003 NAEP data release. These schools, most of which did not return a school questionnaire, were discovered through the multiple sources of information just described. The results based on the full sample as well as results based on responses to the NAEP school questionnaire may be accessed on the NAEP data tool through the report's Web home page (<http://nces.ed.gov/nationsreportcard/studies/charter/>).

Within each of the 150 participating charter schools, a random sample of students participated in either the reading or mathematics assessment—about half participated in reading and about half participated in mathematics. Table 1 displays the numbers of charter school students sampled for the pilot study as well as the numbers of other public school students sampled for the regular reading and mathematics assessments.



For More Info...

More information about the NAEP Charter School Pilot Study can be found at <http://nces.ed.gov/nationsreportcard/studies/charter/>. The NAEP website (<http://nces.ed.gov/nationsreportcard/>) provides an array of information and results from both the main 2003 assessments and the charter school pilot study, including PDF versions of all NAEP reports, a data tool for exploring the summary results, and a tool for examining released questions from the assessment.

Table 1. Student sample size, by type of public school and subject assessed, grade 4: 2003

| Subject | Student sample size | |
|-------------|---------------------|-------------------------|
| | In charter schools | In other public schools |
| Reading | 3,296 | 188,148 |
| Mathematics | 3,238 | 188,201 |

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading and Mathematics Charter School Pilot Study.

¹ The Common Core of Data (CCD) is a program of the National Center for Education Statistics that annually compiles information about the nation's public schools and school districts, and makes this information available through a public database. For more information, see <http://nces.ed.gov/ccd/>.

Reading Results

The average reading scores are reported on a 0–500 scale and are presented in figure 1 for fourth-grade students in charter schools and other public schools. In addition to the results for all students, results are presented by gender, race/ethnicity, eligibility for free/reduced-price school lunch, and type of school location. Note that results are not presented for students from race/ethnicity groups other than White, Black, and Hispanic, or for students for whom no information is available regarding their eligibility for free or reduced-price school lunch.

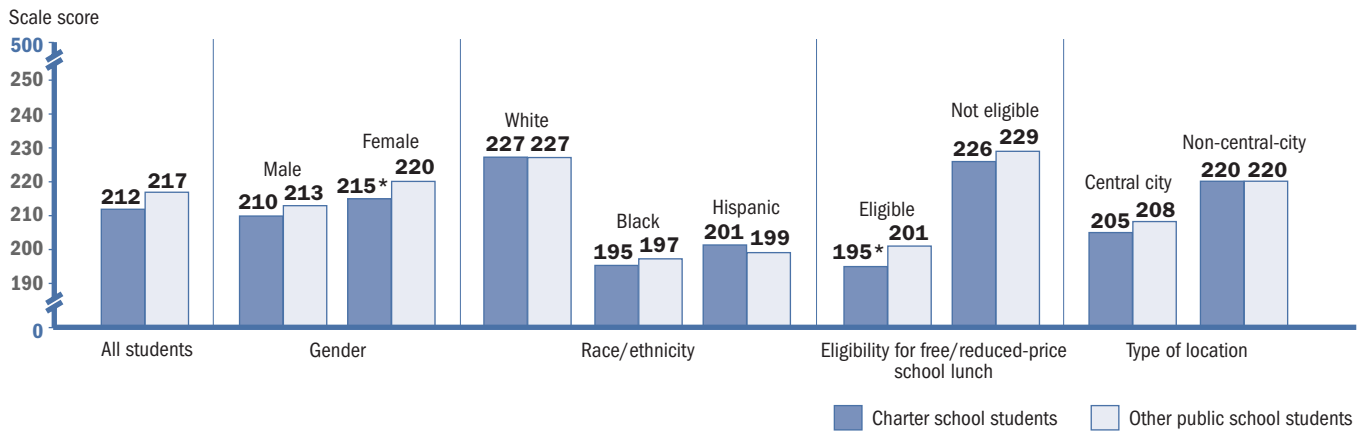
It is important to note that simple cross-tabulations of a variable with measures of educational achievement, like the ones presented in this report, cannot constitute proof that a difference in the variable causes differences in educational achievement. There are many reasons why the performance of one group of students differs from another.

There was no measurable difference between the reading scores of charter school students and other public school students overall, although there were some differences in results for certain

groups of students. Female students in charter schools scored lower, on average, than female students in other public schools. Also, charter school students eligible for free/reduced-price school lunch scored lower than eligible students in other public schools.

On the other hand, the reading scores for White, Black, and Hispanic students in charter schools were not measurably different from those for students with the same racial/ethnic background in other public schools. There were also no measurable differences between average reading scores

Figure 1. Average scale score in reading for charter and other public school students overall, and by student and school characteristics, grade 4: 2003



*Significantly different from other public schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

What are NAEP Achievement Levels?

Achievement levels are performance standards set by the National Assessment Governing Board (NAGB) to help interpret student performance on NAEP. The three NAEP achievement levels, from lowest to highest, are

Basic—denotes partial mastery of the knowledge and skills that are fundamental for proficient work at a given grade.

Proficient—represents solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter.

Advanced—signifies superior performance.

of fourth-grade students in charter schools and other public schools in central cities or in non-central-city locations.

As shown in table 2, the percentages of charter school students performing at or above *Basic* and at or above *Proficient* in reading were not measurably different from the percentages of other public school students when comparing students overall.

The score differences seen between some groups of fourth-grade students in charter schools and other public schools were not evident in the achievement-level results. The observed differences in percentages at or above *Basic* and *Proficient* achievement levels were not significant for any groups defined by gender, race/ethnicity, eligibility for free/reduced-price lunch, or type of school location.

Table 2. Percentage of students at or above *Basic* and *Proficient* in reading for charter and other public school students overall, and by student and school characteristics, grade 4: 2003

| Characteristic | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|--|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools |
| All students | 58 | 62 | 27 | 30 |
| Gender | | | | |
| Male | 55 | 58 | 24 | 26 |
| Female | 60 | 65 | 29 | 33 |
| Race/ethnicity | | | | |
| White | 73 | 74 | 39 | 39 |
| Black | 37 | 39 | 12 | 12 |
| Hispanic | 45 | 43 | 17 | 14 |
| Eligibility for free/reduced-price school lunch | | | | |
| Eligible | 39 | 45 | 12 | 15 |
| Not eligible | 72 | 76 | 38 | 41 |
| Type of location | | | | |
| Central city | 50 | 51 | 21 | 22 |
| Non-central-city | 66 | 66 | 33 | 33 |

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.



Detailed descriptions of the NAEP reading and mathematics achievement levels can be found on the NAGB website (<http://www.nagb.org/pubs/pubs.html>).

As provided by law, NCES, upon review of congressionally mandated evaluations of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted and used with caution. Additional information about the trial status of achievement levels is available on the NAEP website (<http://nces.ed.gov/nationsreportcard/achlevdev.asp>).

Table 3 shows the percentage of students assessed, average reading score, and achievement-level results for charter school students and other public school students who were taught by teachers who differed in type of teaching certificate and years of experience. Proportionally more fourth-graders in charter schools were taught by teachers without regular certification (e.g., with probationary, provisional, temporary, or

emergency certification) and by teachers with four years of teaching experience or less. One limitation is that teachers were not asked whether they had alternative teacher certification, a route now available in many states and districts for teachers in charter and other public schools.

There was no measurable difference in the performance of charter school and other public school fourth-grade

students taught by teachers with regular or other forms of certification.

Among fourth-graders with less experienced teachers, charter school students had a lower average reading score than other public school students. The observed differences in reading performance between students in charter schools and other public schools who had more experienced teachers were not statistically significant.

Table 3. Percentage of students assessed, average scale score, and achievement-level results in reading, by type of public school and teacher characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|-------------------------------------|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Type of teaching certificate | | | | | | | | |
| Regular | 69* | 90 | 215 | 218 | 60 | 63 | 28 | 31 |
| Other ¹ | 22* | 10 | 207 | 209 | 51 | 53 | 23 | 24 |
| Years of teaching experience | | | | | | | | |
| 0 to 4 years | 42* | 23 | 205* | 213 | 48* | 57 | 20 | 26 |
| 5 to 9 years | 29* | 22 | 213 | 215 | 58 | 61 | 26 | 29 |
| 10 years or more | 29* | 55 | 221 | 219 | 68 | 65 | 35 | 32 |

*Significantly different from other public schools.

¹"Other" includes the following types of teaching certificate: probationary, provisional, temporary, and emergency. Results are not shown for students whose teachers reported not having a certificate of any kind.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

Table 4 shows that 55 percent of charter school students in the fourth grade attended a school that was a part of a school district with other public schools. The remaining students attended a charter school that was a school district by itself.

The average reading score for students in charter schools that were a part of a larger public school district was higher than the score for students in charter schools that were their own district, but was not measurably different from that of students in other public schools.

Table 4. Percentage of students assessed, average scale score, and achievement-level results in reading, by type of charter school governance, grade 4: 2003

| Type of governance | Percent of students assessed | Average scale score | Percent at or above <i>Basic</i> | Percent at or above <i>Proficient</i> |
|-----------------------------------|------------------------------|---------------------|----------------------------------|---------------------------------------|
| Other public schools | 100 | 217 | 62 | 30 |
| Charter schools | | | | |
| Part of a public school district | 55 | 218 | 64 | 31 |
| Charter school district by itself | 45 | 208* | 52* | 23* |

*Significantly different from other public schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

Mathematics Results

The average mathematics scores are reported on a 0–500 scale, but because different dimensions define the frameworks for each subject, the mathematics results cannot be compared to those in reading.

Figure 2 shows the average mathematics scores for fourth-grade students in charter schools and other public schools overall, as well as by gender, race/ethnicity, eligibility for free/reduced-price school lunch, and type of school location. Recall that results are not presented for students from some race/ethnicity groups or for students for whom no information is available

regarding their eligibility for free or reduced-price school lunch.

The national results showed a lower average mathematics score overall for fourth-grade students in charter schools. This was true for both male and female students. However, there were no measurable differences when comparisons were made for fourth-graders with similar racial/ethnic backgrounds.

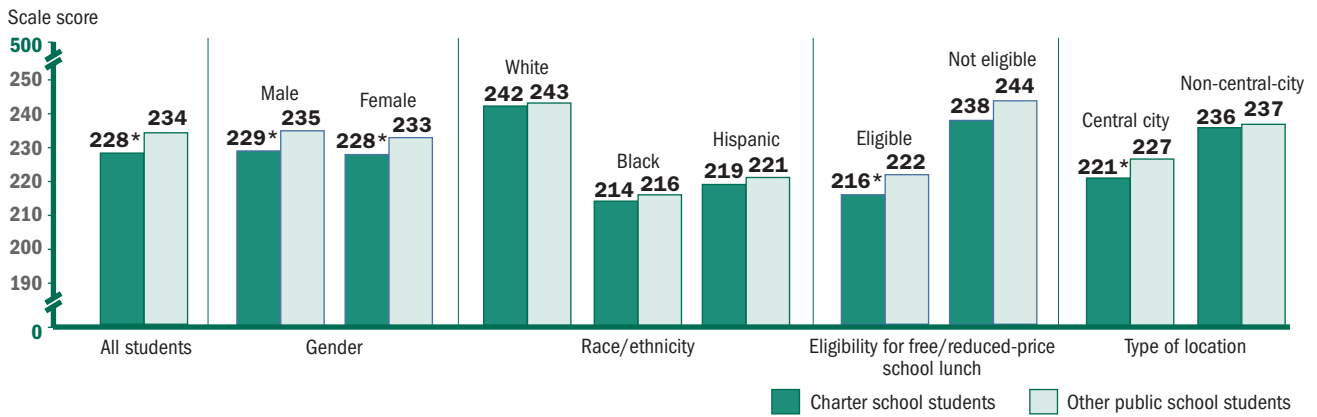
The average score for fourth-grade charter school students who were eligible for free or reduced-price school lunch was lower than that of their

peers in other public schools. In contrast, there was no measurable difference in the scores for students who were not eligible.

Fourth-grade students who attended charter schools in central cities scored lower on average than fourth-grade students who attended other public schools in similar locations. There was no measurable difference, however, in the average mathematics score between charter school and other public school students in non-central-city locations.

MATHEMATICS DATA

Figure 2. Average scale score in mathematics for charter and other public school students overall, and by student and school characteristics, grade 4: 2003



*Significantly different from other public schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

The mathematics achievement-level results presented in table 5 reflect the same general pattern observed in average mathematics scores for students attending charter and other public schools. The percentages of fourth-grade students at or above *Basic* and at or above *Proficient* were lower in charter schools than in other public schools for students overall.

When achievement-level results are examined by student groups, some are significantly different and some are not.

For example, the percentages of male and female fourth-graders in charter schools at or above *Basic* are lower than those for other public schools, but the percentages at or above *Proficient* are not measurably different.

There were no measurable differences in results by achievement levels when comparisons were made for fourth-grade students in charter schools and other public schools with similar racial/ethnic backgrounds.

The percentages of charter school fourth-graders who are and are not eligible for free or reduced-price lunch at or above the *Basic* level are lower than those for other public schools, but the percentages at or above *Proficient* are not measurably different.

For schools in central cities, the percentages of charter school fourth-graders performing at or above the *Basic* and *Proficient* levels were lower than the percentages of other public school fourth-graders.

Table 5. Percentage of students at or above *Basic* and *Proficient* in mathematics for charter and other public school students overall, and by student and school characteristics, grade 4: 2003

| Characteristic | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|--|-------------------------------------|----------------------|--|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools |
| All students | 69* | 76 | 25* | 31 |
| Gender | | | | |
| Male | 69* | 77 | 27 | 34 |
| Female | 68* | 75 | 24 | 29 |
| Race/ethnicity | | | | |
| White | 84 | 87 | 42 | 42 |
| Black | 51 | 54 | 9 | 10 |
| Hispanic | 58 | 62 | 12 | 15 |
| Eligibility for free/reduced-price school lunch | | | | |
| Eligible | 53* | 62 | 12 | 15 |
| Not eligible | 81* | 88 | 37 | 45 |
| Type of location | | | | |
| Central city | 58* | 67 | 16* | 23 |
| Non-central-city | 79 | 80 | 34 | 35 |

*Significantly different from other public schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.



For More Info...

Explanations of how school and student variables are collected and analyzed are available on the NAEP website (<http://nces.ed.gov/nationsreport-card/mathematics/results2003/interpret-results.asp#RepGroups>).

Table 6 shows the percentage of students assessed, average mathematics scores, and achievement-level results for charter and other public school students who had teachers who differed in type of teaching certification and years of teaching experience. As seen in reading, higher percentages of fourth-graders in charter schools were

taught by teachers without regular certification (e.g., with probationary, provisional, temporary, or emergency certification) and by teachers with four years of teaching experience or less. Among fourth-graders whose teachers had taught for four years or less, charter school students scored lower on average in mathematics than other public

school students. There was no measurable difference in the performance of fourth-grade students in charter schools and fourth-grade students in other public schools when taught by teachers with five or more years of experience, with a regular teaching certificate, or with another type of certificate.

Table 6. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by type of public school and teacher characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|-------------------------------------|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Type of teaching certificate | | | | | | | | |
| Regular | 66* | 90 | 230 | 235 | 71 | 78 | 28 | 32 |
| Other ¹ | 22* | 10 | 227 | 228 | 67 | 68 | 22 | 26 |
| Years of teaching experience | | | | | | | | |
| 0 to 4 years | 43* | 23 | 223* | 231 | 61* | 73 | 19* | 28 |
| 5 to 9 years | 29* | 22 | 230 | 233 | 72 | 75 | 28 | 31 |
| 10 years or more | 27* | 54 | 233 | 236 | 74 | 79 | 31 | 34 |

*Significantly different from other public schools.

¹Other¹ includes the following types of teaching certificate: probationary, provisional, temporary, and emergency. Results are not shown for students whose teachers reported not having a certificate of any kind.

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

Table 7 shows that about half the fourth-grade students in charter schools attended a school that was part of a larger public school district and about half attended a school that was a district by itself. As in reading, the average mathematics score for fourth-grade students in charter schools that were part of a public school district was higher than the score for students in charter schools that were their own district, and was not measurably different from the score for students in other public schools.

Table 7. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by type of charter school governance, grade 4: 2003

| Type of governance | Percent of students assessed | Average scale score | Percent at or above <i>Basic</i> | Percent at or above <i>Proficient</i> |
|-----------------------------------|------------------------------|---------------------|----------------------------------|---------------------------------------|
| Other public schools | 100 | 234 | 76 | 31 |
| Charter schools | | | | |
| Part of a public school district | 52 | 234 | 75 | 32 |
| Charter school district by itself | 48 | 225* | 66* | 20* |

*Significantly different from other public schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.



Conclusions

The nature of the NAEP survey design allows for only a snapshot of America's charter schools. And, given the considerable variation in student and school characteristics, that picture is not so easily discerned. For example, for students from the same racial/ethnic backgrounds, reading and mathematics performance in charter schools did not differ from that in other public schools. However, this study found lower overall mathematics performance in charter schools than in other public schools.

On the other hand, in reading there was no measurable difference between the overall performance of charter school fourth-grade students as a whole and their counterparts in other public schools. This is true even though, on average, charter schools have higher proportions of students from groups that typically perform lower on NAEP than other public schools, such as minority students and students in central cities. Such patterns illustrate how important it is to look beyond simple comparisons of the two school types.

NCES will continue its analyses of the 2003 pilot charter school data, using more advanced statistical analysis methods to portray complex relationships related to student performance in charter and other public schools.

This study has provided important lessons for assessing charter schools. As a result, NAEP has improved its procedures for identifying charter schools.

In 2005, NAEP will assess three subjects—reading, mathematics, and science—in fourth and eighth grades at the state level, and will assess more students than ever before. A side benefit of the large assessment is that the NAEP sample will include a representative sample of charter schools without oversampling. NAEP will continue to identify charter schools as a separate category in the data placed on the NAEP website (<http://nces.ed.gov/nationsreportcard>) at the time of the initial release of each assessment, providing educators, researchers, policymakers, and the public with data with which to measure the educational progress of America's students.

Technical and Data Appendix

NAEP Sampling Procedures

The schools and students participating in NAEP assessments are chosen to be nationally representative. Samples of schools and students are drawn from each state and from certain other participating jurisdictions (for example, the District of Columbia). The results from the assessed students are combined and weighted to provide accurate estimates of overall national performance as well as of the performance of individual states and other jurisdictions. The weighting procedure is used to take into account the fact that states, and schools within states, represent different proportions of the overall national population. Since samples in most states are roughly the same (to allow for stable state estimates and administrative efficiencies), the results for students in less populous states are assigned smaller sampling weights than the results for students in more populous states. The sampling weights are also used in estimating percentages of students in various subgroups.

School and Student Participation Rates

The school participation rate for charter schools was 100 percent for both the reading and mathematics assessments (which were conducted in the same schools). The school participation rates for other public schools in both assessments were 100 percent (6,764 schools participating). The weighted student participation rate was 92 percent for charter schools in both the reading and mathematics assessments. For other public schools the weighted student participation rate was 94 percent in both assessments. These rates were well within the NCES standards for ensuring unbiased samples and reporting data.

Assessed Students

Every effort is made to ensure that all sampled students who are capable of participating in the assessment are assessed. A sampled student who is identified by the school as a student with a disability or as a limited-English-proficient student may be tested with accommodations allowed by NAEP; students so identified may be excluded from the assessment if they do not meet criteria for inclusion established by NAEP. The numbers of students assessed in each subject varied somewhat because more students tend to be excluded from reading assessments than mathematics assessments. In 2003, the exclusion rates for reading were 4 percent in charter schools and 6 percent in other public schools, and the rates for mathematics were 2 percent and 4 percent, respectively.

Definitions of Variables

Student race/ethnicity is presented for White, Black, Hispanic, or “Other” racial/ethnic groups based on school records. The “Other” group includes Asian/Pacific Islander students, American Indian/Alaska Native students, and students categorized in school records as another race or ethnicity. The results for the “Other” group are not presented in the body of the report because sample sizes are small but are included in the appendix. School location is categorized as “central city” or “non-central-city” based on information from the U.S. Census Bureau. The term “central city” does not refer to “inner city,” but to the central part of a metropolitan statistical area. Non-central-city locations include urban fringes of metropolitan statistical areas, large towns, small towns, and rural areas.

Interpreting Statistical Significance

The differences between statistics—such as students' average scale scores and percentages of students—that are discussed in this report are determined by using statistical measures known as standard errors. Standard errors for the NAEP scores and percentages presented in this report are available on the NAEP web site (<http://nces.ed.gov/nationsreportcard/naep-data/>). Comparisons are based on statistical tests that consider both the size of the differences and the standard errors of the two statistics being compared. Estimates based on smaller subgroups are likely to have relatively large standard errors. As a consequence, a numerical difference that seems large may not be statistically significant. When this is the case, the term “no measurable difference” is used in the report. Furthermore, differences of the same magnitude may or may not be statistically significant depending upon the size of the standard errors of the statistics. For example, a 5-point difference between male and female students may be statistically significant, while a 5-point difference between White and Black students may not be. The differences described in this report have been determined to be statistically significant at the .05 level with appropriate adjustments for multiple comparisons.

In the tables and charts of this report, the symbol (*) is used to indicate that a charter school score or percentage is significantly different from the comparable measure for other public schools. The symbol (!) is used to indicate that the nature of the sample—its size or its variance—does not allow accurate determination of the variability of the statistics and that any significance tests involving these statistics should be interpreted cautiously.

Statistically significant differences among groups of charter school students—for example, between White students and Black students—are not identified in the table and charts, but they were tested in the same way. Any difference between scores or percentages that is identified as higher, lower, larger, or smaller in this report, including within-group differences not marked in tables and charts, meets the requirements for statistical significance.

Reading Data

Table A-1. Percentage of students assessed, average scale score, and achievement-level results in reading, by type of public school and student characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|--|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Gender | | | | | | | | |
| Male | 51 | 51 | 210 | 213 | 55 | 58 | 24 | 26 |
| Female | 49 | 49 | 215* | 220 | 60 | 65 | 29 | 33 |
| Race/ethnicity | | | | | | | | |
| White | 49 | 59 | 227 | 227 | 73 | 74 | 39 | 39 |
| Black | 29* | 17 | 195 | 197 | 37 | 39 | 12 | 12 |
| Hispanic | 18 | 18 | 201 | 199 | 45 | 43 | 17 | 14 |
| Other ¹ | 4* | 6 | 219 | 219 | 68 | 64 | 33 | 32 |
| Eligibility for free/reduced-price school lunch | | | | | | | | |
| Eligible | 41 | 44 | 195* | 201 | 39 | 45 | 12 | 15 |
| Not eligible | 50 | 52 | 226 | 229 | 72 | 76 | 38 | 41 |
| Information not available | 9 | 4 | 218! | 219 | 63! | 65 | 32! | 33 |
| Students with disabilities | | | | | | | | |
| Yes | 7 | 10 | 180 | 184 | 26 | 29 | 7 | 9 |
| No | 93 | 90 | 215* | 220 | 60 | 65 | 28 | 32 |
| Limited-English-proficient students | | | | | | | | |
| Yes | 8 | 8 | 183 | 186 | 26 | 28 | 4 | 7 |
| No | 92 | 92 | 215 | 219 | 60 | 65 | 29 | 32 |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

*Significantly different from other public schools.

¹Other¹ includes Asian/Pacific Islander students, American Indian/Alaska Native students, and students categorized in school records as another race or ethnicity.

NOTE: The results for students with disabilities and limited-English-proficient students are based on students who were assessed and cannot be generalized to the total population of such students, which also includes students who could not be assessed based on defined exclusion criteria.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

READING DATA

Table A-2. Percentage of students assessed, average scale score, and achievement-level results in reading, by type of public school and school characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|-------------------------------|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Region of the country | | | | | | | | |
| Northeast | 8* | 18 | ‡ | 223 | ‡ | 69 | ‡ | 36 |
| Midwest | 24 | 22 | 205* | 220 | 49* | 66 | 21* | 33 |
| South | 33 | 36 | 215! | 215 | 61! | 60 | 29! | 28 |
| West | 35* | 24 | 214 | 210 | 59 | 55 | 29 | 25 |
| Type of location | | | | | | | | |
| Central city | 51* | 29 | 205 | 208 | 50 | 51 | 21 | 22 |
| Non-central-city ¹ | 49* | 71 | 220 | 220 | 66 | 66 | 33 | 33 |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.

*Significantly different from other public schools.

¹Non-central-city includes students attending schools in urban fringe/large town and rural/small town locations.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

Table A-3. Percentage of students assessed, average scale score, and achievement-level results in reading, by type of public school and teacher characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|-------------------------------------|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Type of teaching certificate | | | | | | | | |
| Regular | 69* | 90 | 215 | 218 | 60 | 63 | 28 | 31 |
| Other ¹ | 22* | 10 | 207 | 209 | 51 | 53 | 23 | 24 |
| None | 9* | # | 200! | ‡ | 44! | ‡ | 17! | ‡ |
| Years of teaching experience | | | | | | | | |
| 0 to 4 years | 42* | 23 | 205* | 213 | 48* | 57 | 20 | 26 |
| 5 to 9 years | 29* | 22 | 213 | 215 | 58 | 61 | 26 | 29 |
| 10 years or more | 29* | 55 | 221 | 219 | 68 | 65 | 35 | 32 |

#The estimate rounds to zero.

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.

*Significantly different from other public schools.

¹"Other" includes the following types of teaching certificate: probationary, provisional, temporary and emergency.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

Table A-4. Percentage of students assessed, average scale score, and achievement-level results in reading, by charter school characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | Average scale score | Percent at or above <i>Basic</i> | Percent at or above <i>Proficient</i> |
|--|------------------------------|---------------------|----------------------------------|---------------------------------------|
| Other public schools | 100 | 217 | 62 | 30 |
| Charter schools | | | | |
| Newly created charter school or pre-existing school | | | | |
| Newly created school | 70 | 213 | 58 | 27 |
| Pre-existing school | 30 | 211 | 56 | 25 |
| Charter-granting agency | | | | |
| School district | 49 | 218 | 65 | 32 |
| State board of education | 27! | 208!* | 52! | 23! |
| Postsecondary institution | 15 | 203* | 45* | 19* |
| State charter-granting agency | 6! | 214! | 60! | 29! |
| Other | 1! | 197!* | 42!* | 14!* |
| Years since the school's charter was granted | | | | |
| 0 to 1 year | 7! | 223! | 70! | 34! |
| 2 to 3 years | 31 | 208 | 53 | 23 |
| 4 to 5 years | 29 | 212 | 57 | 26 |
| 6 years or more | 33! | 215! | 60! | 29! |
| Years providing instruction as a charter school | | | | |
| 0 to 1 year | 8! | 225!* | 72!* | 34! |
| 2 to 3 years | 32! | 214! | 60! | 28! |
| 4 to 5 years | 37 | 212 | 56 | 26 |
| 6 years or more | 23 | 210 | 54 | 25 |
| Type of student population served | | | | |
| General student population | 92 | 214 | 60 | 28 |
| Special student target population ¹ | 8 | 194!* | 36!* | 14!* |
| Type of governance | | | | |
| Part of a public school district | 55 | 218 | 64 | 31 |
| Charter school district by itself | 45 | 208* | 52* | 23* |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

*Significantly different from other public schools.

¹The special student target population includes at-risk students, students with disabilities, gifted/talented students, and other students.

NOTE: Detail may not sum to totals because of rounding or because the "don't know" category was excluded from the table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

Table A-5. Percentage of students assessed, average scale score, and achievement-level results in reading, by waivers or exemptions from state or district policies, grade 4: 2003

| Waivers | Percent of students assessed | Average scale score | Percent at or above <i>Basic</i> | Percent at or above <i>Proficient</i> |
|--|------------------------------|---------------------|----------------------------------|---------------------------------------|
| Other public schools | 100 | 217 | 62 | 30 |
| Charter schools | | | | |
| Teacher certification requirements | | | | |
| Yes | 23! | 214! | 59! | 30! |
| No | 77 | 212 | 57 | 26 |
| Teacher/staff hiring/firing policies | | | | |
| Yes | 30 | 214 | 59 | 29 |
| No | 68 | 211 | 56 | 26 |
| Curriculum requirements | | | | |
| Yes | 37 | 223* | 70* | 36 |
| No | 60 | 205* | 49* | 21* |
| Control of finances/budget | | | | |
| Yes | 33! | 221! | 67! | 33! |
| No | 63 | 209* | 53* | 24* |
| Incentives, rewards, or sanctions due to school performance | | | | |
| Yes | 17! | 221! | 67! | 36! |
| No | 81 | 211 | 56 | 25 |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

*Significantly different from other public schools.

NOTE: Detail may not sum to totals because of rounding or because the "don't know" category was excluded from the table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Charter School Pilot Study.

Mathematics Data

Table A-6. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by type of public school and student characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|--|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Gender | | | | | | | | |
| Male | 48* | 51 | 229* | 235 | 69* | 77 | 27 | 34 |
| Female | 52* | 49 | 228* | 233 | 68* | 75 | 24 | 29 |
| Race/ethnicity | | | | | | | | |
| White | 45* | 58 | 242 | 243 | 84 | 87 | 42 | 42 |
| Black | 31* | 17 | 214 | 216 | 51 | 54 | 9 | 10 |
| Hispanic | 20 | 19 | 219 | 221 | 58 | 62 | 12 | 15 |
| Other ¹ | 4* | 6 | 235 | 241 | 76 | 82 | 33 | 41 |
| Eligibility for free/reduced-price school lunch | | | | | | | | |
| Eligible | 42 | 44 | 216* | 222 | 53* | 62 | 12 | 15 |
| Not eligible | 48 | 52 | 238 | 244 | 81* | 88 | 37 | 45 |
| Information not available | 10 | 4 | 232! | 236 | 74! | 77 | 28! | 34 |
| Students with disabilities | | | | | | | | |
| Yes | 8* | 11 | 209 | 214 | 42 | 50 | 8 | 13 |
| No | 92* | 89 | 230* | 237 | 71* | 80 | 27 | 34 |
| Limited-English-proficient students | | | | | | | | |
| Yes | 9 | 9 | 211 | 214 | 45 | 49 | 5 | 9 |
| No | 91 | 91 | 230* | 236 | 71* | 79 | 27 | 34 |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

*Significantly different from other public schools.

¹"Other" includes Asian/Pacific Islander students, American Indian/Alaska Native students, and students categorized in school records as another race or ethnicity.

NOTE: The results for students with disabilities and limited-English-proficient students are based on students who were assessed and cannot be generalized to the total population of such students, which also includes students who could not be assessed based on defined exclusion criteria.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

Table A-7. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by type of public school and school characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|-------------------------------|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Region of the country | | | | | | | | |
| Northeast | 10* | 17 | ‡ | 238 | ‡ | 80 | ‡ | 36 |
| Midwest | 23 | 22 | 221* | 237 | 59* | 79 | 17* | 35 |
| South | 30 | 36 | 231! | 233 | 72! | 76 | 30! | 29 |
| West | 37* | 24 | 230 | 230 | 71 | 71 | 28 | 27 |
| Type of location | | | | | | | | |
| Central city | 50* | 29 | 221* | 227 | 58* | 67 | 16* | 23 |
| Non-central-city ¹ | 50* | 71 | 236 | 237 | 79 | 80 | 34 | 35 |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.

*Significantly different from other public schools.

¹Non-central-city includes students attending schools in urban fringe/large town and rural/small town locations.

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

Table A-8. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by type of public school and teacher characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | | Average scale score | | Percent at or above <i>Basic</i> | | Percent at or above <i>Proficient</i> | |
|-------------------------------------|------------------------------|----------------------|---------------------|----------------------|----------------------------------|----------------------|---------------------------------------|----------------------|
| | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools | Charter schools | Other public schools |
| Type of teaching certificate | | | | | | | | |
| Regular | 66* | 90 | 230 | 235 | 71 | 78 | 28 | 32 |
| Other ¹ | 22* | 10 | 227 | 228 | 67 | 68 | 22 | 26 |
| None | 12* | # | 218 | ‡ | 57 | ‡ | 15 | ‡ |
| Years of teaching experience | | | | | | | | |
| 0 to 4 years | 43* | 23 | 223* | 231 | 61* | 73 | 19* | 28 |
| 5 to 9 years | 29* | 22 | 230 | 233 | 72 | 75 | 28 | 31 |
| 10 years or more | 27* | 54 | 233 | 236 | 74 | 79 | 31 | 34 |

#The estimate rounds to zero.

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.

*Significantly different from other public schools.

¹"Other" includes the following types of teaching certificate: probationary, provisional, temporary and emergency.

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

Table A-9. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by charter school characteristics, grade 4: 2003

| Characteristic | Percent of students assessed | Average scale score | Percent at or above <i>Basic</i> | Percent at or above <i>Proficient</i> |
|--|------------------------------|---------------------|----------------------------------|---------------------------------------|
| Other public schools | 100 | 234 | 76 | 31 |
| Charter schools | | | | |
| Newly created charter school or pre-existing school | | | | |
| Newly created school | 68 | 229 | 69* | 26 |
| Pre-existing school | 32 | 228!* | 68!* | 24!* |
| Charter-granting agency | | | | |
| School district | 45 | 235 | 77 | 33 |
| State board of education | 30 | 222!* | 61!* | 18!* |
| Postsecondary institution | 15 | 222* | 60* | 17* |
| State charter-granting agency | 6 | 225! | 65! | 24! |
| Other | 2 | 224! | 65! | 23! |
| Years since the school's charter was granted | | | | |
| 0 to 1 year | 8 | 234! | 76! | 30! |
| 2 to 3 years | 28 | 224 | 63 | 20 |
| 4 to 5 years | 33 | 226 | 66 | 22 |
| 6 years or more | 31 | 233! | 74! | 31! |
| Years providing instruction as a charter school | | | | |
| 0 to 1 year | 10 | 235! | 80! | 28! |
| 2 to 3 years | 27 | 232! | 72! | 32! |
| 4 to 5 years | 40 | 227 | 67 | 23 |
| 6 years or more | 24 | 228* | 69* | 23* |
| Type of student population served | | | | |
| General student population | 91 | 230 | 70* | 27 |
| Special student target population ¹ | 9 | 219!* | 57!* | 12!* |
| Type of governance | | | | |
| Part of a public school district | 52 | 234 | 75 | 32 |
| Charter school district by itself | 48 | 225* | 66* | 20* |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

*Significantly different from other public schools.

¹The special student target population includes at-risk students, students with disabilities, gifted/talented students, and other students.

NOTE: Detail may not sum to totals because of rounding or because the "don't know" category was excluded from the table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

Table A-10. Percentage of students assessed, average scale score, and achievement-level results in mathematics, by waivers or exemptions from state or district policies, grade 4: 2003

| Waivers | Percent of students assessed | Average scale score | Percent at or above <i>Basic</i> | Percent at or above <i>Proficient</i> |
|--|------------------------------|---------------------|----------------------------------|---------------------------------------|
| Other public schools | 100 | 234 | 76 | 31 |
| Charter schools | | | | |
| Teacher certification requirements | | | | |
| Yes | 21 | 229 | 69 | 27 |
| No | 79 | 228 | 69* | 25 |
| Teacher/staff hiring/firing policies | | | | |
| Yes | 28 | 231 | 73 | 28 |
| No | 70 | 227 | 67 | 24 |
| Curriculum requirements | | | | |
| Yes | 35 | 238 | 79 | 37 |
| No | 64 | 223* | 63* | 19* |
| Control of finances/budget | | | | |
| Yes | 30 | 236! | 78! | 34! |
| No | 67 | 225* | 65* | 22* |
| Incentives, rewards, or sanctions due to school performance | | | | |
| Yes | 16 | 237! | 79! | 35! |
| No | 81 | 227 | 67* | 23 |

!Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.

*Significantly different from other public schools.

NOTE: Detail may not sum to totals because of rounding or because the "don't know" category was excluded from the table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Charter School Pilot Study.

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