

Letter Report

**Test Score Data for Pupils
in the Milwaukee Parental
Choice Program**
(Report 4 of 5)

August 2011



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Joe Chrisman
Interim State Auditor

August 17, 2011

Senator Robert Cowles and
Representative Samantha Kerkman, Co-chairpersons
Joint Legislative Audit Committee
State Capitol
Madison, Wisconsin 53702

Dear Senator Cowles and Representative Kerkman:

As required by 2005 Wisconsin Act 125, we have reviewed the pupil test score data provided to us by the School Choice Demonstration Project, which is a group of privately funded education researchers who are studying the Milwaukee Parental Choice Program. The Choice program provides publicly funded private school tuition for low-income children in Milwaukee.

Project researchers are conducting a five-year longitudinal study of Choice and Milwaukee Public Schools (MPS) pupils first selected in the 2006-07 school year. The representative sample includes 2,727 Choice pupils who were in the third through ninth grades in fall 2006 and a comparable group of 2,727 MPS pupils. The researchers are tracking changes in Wisconsin Knowledge and Concepts Examination scores and determining how participation in the Choice program affects changes in academic achievement.

We reviewed the project's data for the 2009-10 school year, which is the fourth year the researchers arranged for the Wisconsin Knowledge and Concepts Examination to be administered to Choice pupils. We analyzed and generally confirmed the analyses that they reported in March 2011, which show no significant difference in the performance of Choice pupils and similar MPS pupils after four years. However, we note that only 41.3 percent of the 2,727 Choice pupils in the researchers' sample remained in Choice schools in the 2009-10 school year.

As we discussed in our prior reports, we cannot provide legislators with information about academic performance specific to each of the 111 Choice schools that operated in the 2009-10 school year because the project, citing confidentiality concerns, has not provided us with average pupil test scores at individual Choice schools. However, 2009 Wisconsin Act 28 made several changes to testing requirements, including requiring Choice schools to administer the Wisconsin Knowledge and Concepts Examination during the 2010-11 school year and report the results to the Department of Public Instruction.

We appreciate the courtesy and cooperation extended to us by project researchers as we conducted this review.

Sincerely,

Joe Chrisman
Interim State Auditor

JC/DS/ss

TEST SCORE DATA FOR PUPILS IN THE MILWAUKEE PARENTAL CHOICE PROGRAM

The Milwaukee Parental Choice Program was established by 1989 Wisconsin Act 336. Under the program, parents and guardians may enroll their children in private secular or religious schools that have been approved for participation by the Department of Public Instruction (DPI), based on statutory and administrative rule requirements. In the 2009-10 school year, statutes:

- limited participation to low-income pupils residing in the City of Milwaukee;
- established participation criteria for schools and authorized DPI to set certain administrative requirements; and
- required participating schools to accept the amount provided by the program as full payment for Choice pupils.

Each participating private school has been required by 2005 Wisconsin Act 125 to annually administer a nationally normed standardized test in reading, mathematics, and science to fourth-, eighth-, and tenth-grade Choice pupils. Beginning in 2006 and annually until 2011, participating schools must provide the scores of all standardized tests they administer to the School Choice Demonstration Project, which is a group of privately funded education researchers who are based at the University of Arkansas but who include researchers from throughout the nation, including the University of Wisconsin-Madison and the University of Kentucky.

2005 Wisconsin Act 125 also directs the Legislative Audit Bureau to review and analyze the test score data provided by the project and report to the Legislature on:

- the scores of a representative sample of fourth-, eighth-, and tenth-grade pupils in the Choice program who took the Wisconsin Knowledge and Concepts Examination, and third-grade pupils in the Choice program who took the Wisconsin Reading Comprehension Test;
- the scores of a comparable group of pupils enrolled in Milwaukee Public Schools (MPS) who took the Wisconsin Knowledge and Concepts Examination and the Wisconsin Reading Comprehension Test; and
- the results of the nationally normed standardized tests that Act 125 requires schools to administer annually to fourth-, eighth-, and tenth-grade pupils in the Choice program.

The Wisconsin Knowledge and Concepts Examination is administered annually to public school pupils statewide in the third through eighth grades and in the tenth grade. It measures pupil achievement in reading and mathematics at each of those grade levels, as well as in science, language applications, and social studies at the fourth-, eighth-, and tenth-grade levels. The Wisconsin Reading Comprehension Test no longer exists as a separate test and is now part of the Wisconsin Knowledge and Concepts Examination given to third-grade pupils.

In March 2011, the School Choice Demonstration Project released several reports on the fourth year of its five-year study. One report presents the longitudinal change in test scores of samples of Choice and MPS pupils who took the Wisconsin Knowledge and Concepts Examination in the 2006-07 and 2009-10 school years. Another report presents the results of a variety of nationally normed standardized tests that were administered to fourth-, eighth-, and tenth-grade pupils in the Choice program in the 2009-10 school year.

On December 21, 2010, and June 14, 2011, the project provided us with test score data from the Wisconsin Knowledge and Concepts Examination and nationally normed standardized tests that were administered to Choice and MPS pupils in the 2009-10 school year. Sharing of these data was delayed for several reasons, including time the project needed to compile the test score data and identify and correct inconsistencies. We continue to expect that our reports will be released one year later than the time line specified by 2005 Wisconsin Act 125, which is 2007 through 2011. We released our first report in September 2008, our second in August 2009, and our third in August 2010.

To complete this fourth report, we reviewed and analyzed the test score data provided by the project and interviewed project researchers and others familiar with the Choice program. The researchers have indicated their project is the largest effort to date to compare the academic performance of pupils in voucher schools and public schools and that their sampling techniques are innovative and rigorous. However, there are limitations to its usefulness for policymakers because of restrictions on the availability of academic performance information for individual Choice schools, of which there were 111 in the 2009-10 school year. The project researchers have signed confidentiality agreements with their universities, the Choice schools, and the parents and guardians of Choice pupils stipulating that information identifying pupils or their schools will not be released. The data available to us have therefore been redacted, and we are limited in what we can report and confirm.

It should be noted that beginning in the 2010-11 school year, 2009 Wisconsin Act 28 required Choice schools to administer the Wisconsin Knowledge and Concepts Examination to all pupils in the third through the eighth grades and in the tenth grade, and to annually report pupils' scores to DPI. In March 2011, DPI publicly reported information on the Choice pupils' scores for the 2010-11 school year.

Our report assesses test score data for the 2009-10 school year. A number of changes to the Choice program were recently enacted in 2011 Wisconsin Act 32, the 2011-13 Biennial Budget Act, but they will take effect in the 2011-12 school year, after the researchers' project has been completed. We expect to complete our fifth and final review and analyses in 2012, after the researchers provide us with test score data for the 2010-11 school year.

Pupil and Private School Participation

To participate in the Choice program during the 2009-10 school year, statutes required that a child be in kindergarten through twelfth grade; reside in the City of Milwaukee; and be a member of a family whose total income did not exceed 175 percent of the federal poverty guidelines established by the Office of Management and Budget. This income limit for a family of four in the 2009-10 school year was approximately \$38,200, according to DPI. Pupils already

attending a Choice school could continue to participate and their siblings could enter the program if the family's income increased but did not exceed 220 percent of the federal poverty guidelines, or approximately \$48,000 for a family of four in the 2009-10 school year.

Program enrollment was statutorily limited to 22,500 full-time equivalent pupils in the 2009-10 school year. As shown in Table 1, 21,062 pupils participated in that year.

Table 1

**Participation in the Milwaukee Parental Choice Program
2009-10 School Year**

| Grade Level | Pupils ¹ | Percentage of Total |
|-------------------------|---------------------|---------------------|
| 4-Year-Old Kindergarten | 1,721 | 8.2% |
| 5-Year-Old Kindergarten | 1,852 | 8.9 |
| 1 | 1,837 | 8.7 |
| 2 | 1,838 | 8.7 |
| 3 | 1,725 | 8.2 |
| 4 | 1,729 | 8.2 |
| 5 | 1,652 | 7.8 |
| 6 | 1,629 | 7.7 |
| 7 | 1,587 | 7.5 |
| 8 | 1,487 | 7.1 |
| 9 | 1,278 | 6.1 |
| 10 | 1,104 | 5.2 |
| 11 | 888 | 4.2 |
| 12 | 735 | 3.5 |
| Total | 21,062 | 100.0% |

¹ As of the third Friday in September 2009.

Schools that participate in the Choice program must be private schools as defined in s. 118.165(1), Wis. Stats., which requires a sequentially progressive curriculum of instruction in reading, language arts, mathematics, social studies, science, and health. Each participating school was required in the 2009-10 school year to:

- notify the State Superintendent of Public Instruction by February 1, 2009, of its intent to participate in the program and specify the number of Choice pupils for whom it had space;

- comply with federal laws prohibiting discrimination on the grounds of race, color, or national origin;
- meet all health and safety laws or codes that apply to public schools; and
- admit all eligible applicants, unless the number of applications exceeded the number of spaces the school had designated for Choice pupils. In that case, the school was required to select randomly among eligible applicants.

Participating schools were also required by statutes to either have or be working toward accreditation from one of several statutorily designated organizations, or to have been approved for scholarship funding in the 2005-06 school year by Partners Advancing Values in Education, a nonprofit organization that supports private education for low-income families in Milwaukee. Nonaccredited schools that were new to the Choice program in the 2009-10 school year were required to obtain preaccreditation from the Institute for the Transformation of Learning at Marquette University.

Statutes include a number of other requirements for participating schools, including some to ensure they are financially viable. Each Choice school has also been statutorily required since the program's inception to meet at least one of the following performance standards:

- at least 70 percent of pupils participating in the Choice program are to advance one grade level each year;
- the average attendance rate for participating pupils is to be at least 90 percent;
- at least 80 percent of participating pupils are to demonstrate significant academic progress; or
- at least 70 percent of the families of participating pupils are to meet parental involvement criteria established by the school.

By October 15 of each school year, each Choice school must indicate to DPI which performance standard it intends to meet during that year. By June 30 of the following year, it must provide DPI with information indicating whether it met the standard. DPI reviews this information but does not independently confirm its accuracy.

For each participating pupil in the 2009-10 school year, private Choice schools received public funding equal to the lesser of \$6,442 or their per pupil operating and debt service costs related to educational programming as determined by DPI. As required by statutes, DPI made the payments in four equal installments, in the form of checks payable to pupils' families but mailed to their schools, where parents or guardians were required to restrictively endorse them. If a school could not obtain a signature because, for example, a pupil was no longer enrolled, it was required to return the check to DPI.

Longitudinal Test Data

As noted, 2005 Wisconsin Act 125 requires the Legislative Audit Bureau to report on the test score data provided by the project for a sample of fourth-, eighth-, and tenth-grade Choice and MPS pupils who took the Wisconsin Knowledge and Concepts Examination. However, to provide more comprehensive information, the project is compiling and analyzing Wisconsin Knowledge and Concepts Examination scores from samples of Choice and of MPS pupils who were in the third through eighth grades in the 2006-07 school year. It plans to use the test results to track changes in their scores over a five-year period and determine how participation in the Choice program affects academic achievement. In addition, it is following pupils who were in the ninth grade in the 2006-07 school year in order to analyze rates of high school graduation, college enrollment, and employment.

The project's five-year longitudinal study includes:

- 2,727 Choice pupils, who constitute a random sample of third- through eighth-grade pupils and all ninth-grade pupils enrolled in the program in the 2006-07 school year; and
- 2,727 MPS pupils in the third through ninth grades who were matched to the random sample of Choice pupils based on factors such as neighborhood, test scores, and demographic characteristics.

The MPS matched sample was selected using criteria that were designed to identify MPS pupils who were comparable in several respects to pupils in the Choice sample. First, for each Choice pupil, the project identified all MPS pupils in the same grade level. From that group, the project then identified those MPS pupils who lived in the same City of Milwaukee census tract as the Choice pupils and who scored similarly to them on the Wisconsin Knowledge and Concepts Examination. If there were multiple MPS pupils who could possibly be matched with a given Choice pupil, the project selected the most similar MPS pupil based on such factors as gender, race/ethnicity, and whether or not English was the pupil's primary language.

The project's methodology ensured that the Choice and MPS samples contained the same number of pupils in each grade level in the initial school year. As shown in Table 2, there were considerably more pupils in the ninth grade than in other grades because the project included all ninth-grade Choice pupils in the 2006-07 school year.

Table 2

Pupils in the Demonstration Project's Two Samples¹
2006-07 School Year

| Grade Level | Pupils | Percentage of Total |
|--------------|--------------|---------------------|
| 3 | 341 | 12.5% |
| 4 | 324 | 11.9 |
| 5 | 338 | 12.4 |
| 6 | 330 | 12.1 |
| 7 | 303 | 11.1 |
| 8 | 290 | 10.6 |
| 9 | 801 | 29.4 |
| Total | 2,727 | 100.0% |

¹ Both samples included the same number of pupils in each grade level during the 2006-07 school year.

Pupil Demographics

Table 3 shows available demographic characteristics of pupils in both samples. Compared to the MPS matched sample, the Choice sample includes fewer African-American, white, and Asian pupils, but 47 more Hispanic pupils. Comprehensive demographic information is not available for all pupils because the project is no longer able to locate some pupils in its original samples, such as those who no longer attend schools in Milwaukee. In addition, some Choice schools do not record all demographic information. For example, information on the disability status of 1,152 Choice pupils and 460 MPS matched sample pupils is missing.

Table 3

Demographic Characteristics of Pupils in the Demonstration Project's Samples

| | Choice Sample | MPS Matched Sample | |
|--|------------------|--------------------|--------------|
| Race/Ethnicity | African-American | 1,747 | 1,831 |
| | Hispanic | 585 | 538 |
| | White | 218 | 246 |
| | Asian | 65 | 89 |
| | American Indian | 5 | 15 |
| | Other | 0 | 8 |
| | Missing Data | 107 | 0 |
| | Total | 2,727 | 2,727 |
| Gender | Female | 1,431 | 1,456 |
| | Male | 1,177 | 1,271 |
| | Missing Data | 119 | 0 |
| | Total | 2,727 | 2,727 |
| Disability | Yes | 120 | 402 |
| | No | 1,455 | 1,865 |
| | Missing Data | 1,152 | 460 |
| | Total | 2,727 | 2,727 |
| English Not Primary Language | Yes | 165 | 259 |
| | No | 1,552 | 1,981 |
| | Missing Data | 1,010 | 487 |
| | Total | 2,727 | 2,727 |
| Free or Reduced-Price Lunch¹ | Yes | 1,573 | 1,770 |
| | No | 926 | 499 |
| | Missing Data | 228 | 458 |
| | Total | 2,727 | 2,727 |

¹ Choice sample indicates eligibility for the free or reduced-price lunch program; MPS matched sample indicates participation in the free or reduced-price lunch program.

Enrollment by School Type

Because some pupils in the project’s two samples will change schools during the longitudinal study, the project is attempting to track their locations. Data provided by the project for the four-year period from the 2006-07 through the 2009-10 school years allowed us to determine whether a pupil:

- remained in a Choice school for all four years;
- remained in MPS for all four years;
- transferred from a Choice school to MPS, or vice versa, during the four-year period; or
- attended an unknown school in the 2009-10 school year because, for example, the pupil left the district or complete pupil information was unavailable.

As shown in Table 4, we determined that 41.3 percent of the Choice sample remained in Choice schools for the entire four-year period we reviewed, compared to 71.6 percent of the MPS matched sample who remained in MPS. In addition, 32.8 percent of the Choice sample transferred to an MPS school during the four-year period, while 6.8 percent of the MPS matched sample transferred to a Choice school during that period. In the fourth year of the longitudinal study, the location of 25.9 percent of the Choice sample and 21.6 percent of the MPS matched sample was unknown. However, the project continues to attempt to track these pupils and may have information on their locations in the study’s final year.

Table 4

**Location of Pupils in the Demonstration Project’s Two Samples
2006-07 through 2009-10 School Years**

| | Choice Sample | | MPS Matched Sample | |
|---|---------------|---------------|--------------------|---------------|
| | Pupils | Percentage | Pupils | Percentage |
| Remained in Choice Schools | 1,127 | 41.3% | – | – |
| Remained in MPS | – | – | 1,952 | 71.6% |
| Transferred from a Choice School to MPS | 894 | 32.8 | – | – |
| Transferred from MPS to a Choice School | – | – | 185 | 6.8 |
| Unknown | 706 | 25.9 | 590 | 21.6 |
| Total | 2,727 | 100.0% | 2,727 | 100.0% |

Pupil Test Scores

To track the academic achievement of Choice and MPS pupils, the project analyzed average changes in test scores on the Wisconsin Knowledge and Concepts Examination reading and mathematics sections, which are scored separately, for a sample of pupils who were in the sixth through eighth grades or the tenth grade in the 2009-10 school year. The project did not report on scores for the Wisconsin Knowledge and Concepts Examination's three other sections—science, language applications, and social studies—because those sections are not administered to pupils at all grade levels.

We analyzed the project's data and were generally able to confirm the results presented in its March 2011 report. However, our results differed slightly from those reported because the project used statistical techniques to attempt to compensate for missing test score data. For example, the project used a weighting procedure that adjusted pupils' test scores in order to account for missing scores in the 2009-10 school year. In addition, the project estimated 196 Choice pupils' and 21 MPS matched sample pupils' missing test scores in the 2006-07 school year. We found that some errors appear to have been made because four of the estimated scores were outside of the range of possible scores. The project declined to provide us with detailed information on how the test scores were estimated because it relied on a proprietary methodology. We note that the project's March 2011 report did not disclose that some 2006-07 school year test scores had been estimated.

In addition, the project's reported calculations of average changes in Choice pupils' test scores included pupils who started the study in a Choice school but later transferred to MPS. Similarly, its calculations for the MPS matched sample included pupils who started the study in MPS but transferred to a Choice school. The researchers note that including pupils who made such transfers is similar to the methodology used in medical and pharmaceutical clinical trials. We excluded from our calculations all pupils who transferred from a Choice school to MPS, or vice versa, because we cannot determine whether their academic achievement should be attributed to attendance at Choice schools, MPS, or both.

Table 5 shows the number of pupils who completed the reading and mathematics sections of the Wisconsin Knowledge and Concepts Examination in both the 2006-07 and the 2009-10 school years. In total, 511 Choice sample pupils, or 39.1 percent, had reading scores in both school years, while 512 pupils had mathematics scores. In comparison, approximately 64.0 percent of MPS matched sample pupils had reading and mathematics scores in both school years.

Table 5

**Pupils with Scores on the Wisconsin Knowledge and Concepts Examination
2006-07 and 2009-10 School Years**

| Grade Level in 2009-10 | Pupils in the Project's Two Samples | Reading | | Mathematics | |
|---------------------------|---|------------------|--------------------------|------------------|--------------------------|
| | | Choice Sample | MPS Matched Sample | Choice Sample | MPS Matched Sample |
| 6 | 341 | 151 | 216 | 151 | 221 |
| 7 | 324 | 135 | 214 | 135 | 219 |
| 8 | 338 | 148 | 231 | 147 | 231 |
| 10 | 303 | 77 | 174 | 79 | 173 |
| Total | 1,306 | 511 | 835 | 512 | 844 |

Table 6 shows the average scores on the reading section and Table 7 shows the average scores on the mathematics section of the Wisconsin Knowledge and Concepts Examination for pupils in the Choice sample and the MPS matched sample in the 2006-07 and 2009-10 school years.

Table 6

Average Pupil Scores on the Wisconsin Knowledge and Concepts Examination: Reading

| Grade Level in 2009-10 | Choice Sample | | MPS Matched Sample | |
|---------------------------|------------------------|------------------------|------------------------|------------------------|
| | 2006-07 School Year | 2009-10 School Year | 2006-07 School Year | 2009-10 School Year |
| 6 | 435.5 | 467.5 | 435.1 | 466.1 |
| 7 | 443.6 | 483.5 | 436.7 | 475.0 |
| 8 | 450.8 | 493.1 | 441.5 | 483.1 |
| 10 | 480.1 | 495.8 | 478.8 | 487.1 |

Table 7

Average Pupil Scores on the Wisconsin Knowledge and Concepts Examination: Mathematics

| Grade Level in 2009-10 | Choice Sample | | MPS Matched Sample | |
|---------------------------|------------------------|------------------------|------------------------|------------------------|
| | 2006-07 School Year | 2009-10 School Year | 2006-07 School Year | 2009-10 School Year |
| 6 | 388.3 | 471.2 | 395.8 | 481.3 |
| 7 | 425.7 | 499.2 | 424.1 | 498.1 |
| 8 | 446.4 | 502.1 | 447.2 | 502.8 |
| 10 | 498.4 | 514.5 | 502.2 | 511.0 |

It should be noted that minimum and maximum possible test scores increase on both sections at every grade level, so pupils' scores at higher grade levels do not necessarily reflect changes in their performance over time. However, the performance of pupils in the Choice sample and the MPS matched sample can be compared to statewide pupil performance, because DPI annually reports percentile rankings for the reading and mathematics sections of the Wisconsin Knowledge and Concepts Examination based on all public school pupils statewide who took these test sections in a given school year. As shown in Appendix 1, the pupils in both the Choice sample and the MPS matched sample ranked between the 10th and 25th statewide percentiles. This means that in both the 2006-07 and the 2009-10 school years, from 75 to 90 percent of all public school pupils statewide scored higher than pupils in the Choice sample and the MPS matched sample.

Changes in Test Scores

To assess whether participation in the Choice program affects academic achievement, the project calculated the average changes in test scores between the 2006-07 and the 2009-10 school years for pupils in the Choice sample and the MPS matched sample, and it determined whether any of the differences were statistically significant. Statistical significance can be determined at any level of confidence, but it is typically reported at a 95 percent confidence level or higher. While the project reported its results at three levels of confidence, we chose the 95 percent confidence level, which is a common level used by researchers.

As shown in Table 8, we did not find any statistically significant differences in the average changes in reading or mathematics scores between the 2006-07 and the 2009-10 school years. The researchers also did not find statistically significant differences in average changes in test scores.

Table 8

**Average Changes in Pupil Scores on the Wisconsin Knowledge and Concepts Examination
2006-07 to 2009-10 School Years**

| Grade Level in 2009-10 | Reading | | | Mathematics | | |
|---------------------------|---------------------------------|---|---|---------------------------------|---|---|
| | Choice Sample Average Change | MPS Matched Sample Average Change | Difference from Choice Sample ¹ | Choice Sample Average Change | MPS Matched Sample Average Change | Difference from Choice Sample ¹ |
| 6 | 32.0 | 31.0 | (1.0) | 82.9 | 85.5 | 2.6 |
| 7 | 39.9 | 38.3 | (1.6) | 73.5 | 74.0 | 0.5 |
| 8 | 42.3 | 41.6 | (0.7) | 55.7 | 55.6 | (0.1) |
| 10 | 15.7 | 8.3 | (7.4) | 16.1 | 8.8 | (7.3) |

¹ No cells are shaded because none of the differences is statistically significant at the 95 percent confidence level.

Other Test Data

2005 Wisconsin Act 125 requires all private schools participating in the Choice program to annually administer a nationally normed standardized test in reading, mathematics, and science to all fourth-, eighth-, and tenth-grade pupils attending school under the program. Act 125 also requires the schools to provide the pupils' scores to the project. These scores are analyzed separately from the project's longitudinal study and therefore provide only a snapshot of Choice pupils' academic achievement in a given school year.

Table 9 shows the number of pupils who took the Wisconsin Knowledge and Concepts Examination and several other tests in the 2009-10 school year.

Table 9

Tests Administered to Choice Pupils
2009-10 School Year

| Test | Number of Pupils | | |
|---|-----------------------|-----------------------|------------------------|
| | 4 th Grade | 8 th Grade | 10 th Grade |
| Nationally Normed Standardized Tests | | | |
| Iowa Test of Basic Skills | 390 | 290 | 14 |
| Terra Nova | 301 | 259 | 122 |
| PLAN | 0 | 0 | 380 |
| Stanford Achievement Test | 11 | 11 | 39 |
| Other ¹ | 0 | 0 | 16 |
| Subtotal | 702 | 560 | 571 |
| Wisconsin Knowledge and Concepts Examination | 336 | 374 | 65 |
| Total | 1,038 | 934 | 636 |

¹ Includes the Basic Achievement Skills Inventory and Preliminary SAT/National Merit Scholarship Qualifying Test.

In March 2011, the project reported that three Choice schools—Garden Homes Community Montessori School, Inc., Outlook University Independent School Network, and Tuskegee Aviation Academy—had enrolled pupils in fourth, eighth, or tenth grade but did not provide test scores for the 2009-10 school year. Because the data provided to us do not identify Choice pupils and schools, we cannot confirm this information. According to DPI, Tuskegee Aviation Academy became ineligible to receive payments from the Choice program during the 2009-10 school year because it lacked the required insurance coverage, and the school did not participate in the Choice program in the 2010-11 school year. Garden Homes Community Montessori School and Outlook University Independent School Network also did not participate in the Choice program in the 2010-11 school year.

While the project indicated that only three Choice schools did not provide it with test scores for the 2009-10 school year, the data it provided us included test scores for only 60.4 percent of the 4,320 Choice pupils enrolled in the fourth, eighth, or tenth grades as of the third Friday in September 2009. On any given day that tests are administered, some pupils will be absent, and individual schools likely make different levels of effort to ensure as many pupils as possible take the test. We were unable to determine which schools had more or fewer missing scores because, as noted, the data provided to us did not include test information by Choice school.

Nationally Normed Standardized Tests

It is difficult to directly compare the scores of pupils who took different nationally normed standardized tests, which may not measure the same types of knowledge and academic skills and may have different ranges of possible scores. The project therefore used pupils' national percentile rankings and a statistical procedure to compare performance on different tests.

Table 10 shows the average national percentile rankings of Choice pupils on the reading section of the nationally normed standardized tests. Fourth-grade pupils attending Choice schools scored in the 30th percentile of all pupils nationwide, eighth-grade pupils scored in the 34th percentile of all pupils nationwide, and tenth-grade pupils scored in the 35th percentile of all pupils nationwide. This means that approximately two-thirds of all pupils nationwide scored higher than Choice pupils.

Table 10

Choice Pupil Results on Nationally Normed Standardized Tests: Reading¹ 2009-10 School Year

| Grade Level | Number of Pupils | | | Choice Pupils' Average National Percentile Ranking |
|-------------|------------------|---------------------|------------------|--|
| | Total | Without Test Scores | With Test Scores | |
| 4 | 702 | 28 | 674 | 30.6 |
| 8 | 560 | 27 | 533 | 34.9 |
| 10 | 571 | 42 | 529 | 35.9 |

¹ Does not include pupil results on the Wisconsin Knowledge and Concepts Examination.

Table 11 shows the average national percentile rankings of Choice pupils on the mathematics section of the nationally normed standardized tests.

Table 11

Choice Pupil Results on Nationally Normed Standardized Tests: Mathematics¹
2009-10 School Year

| Grade Level | Number of Pupils | | | Choice Pupils' Average National Percentile Ranking |
|-------------|------------------|---------------------|------------------|--|
| | Total | Without Test Scores | With Test Scores | |
| 4 | 702 | 31 | 671 | 25.6 |
| 8 | 560 | 29 | 531 | 35.7 |
| 10 | 571 | 33 | 538 | 30.2 |

¹ Does not include pupil results on the Wisconsin Knowledge and Concepts Examination.

Table 12 shows the average national percentile rankings of Choice pupils on the science section of the nationally normed standardized tests.

Table 12

Choice Pupil Results on Nationally Normed Standardized Tests: Science¹
2009-10 School Year

| Grade Level | Number of Pupils | | | Choice Pupils' Average National Percentile Ranking |
|-------------|------------------|---------------------|------------------|--|
| | Total | Without Test Scores | With Test Scores | |
| 4 | 702 | 27 | 675 | 20.4 |
| 8 | 560 | 31 | 529 | 27.8 |
| 10 | 571 | 51 | 520 | 32.4 |

¹ Does not include pupil results on the Wisconsin Knowledge and Concepts Examination.

Although the data that the project provided us did not identify the schools attended by the Choice pupils, we did analyze the national percentile rankings of all Choice pupils, regardless of the specific schools they attended. Appendix 2 shows the distribution of Choice pupils' national percentile rankings on the reading, mathematics, and science sections of nationally normed standardized tests.

Wisconsin Knowledge and Concepts Examination

The project separately analyzed pupils' scores on the Wisconsin Knowledge and Concepts Examination because that test is administered only in Wisconsin, and national percentile rankings cannot be calculated. Although Choice schools that administered the Wisconsin Knowledge and Concepts Examination technically did not adhere to the statutory requirement to administer a nationally normed standardized test, it seems reasonable that they chose to administer the test that all public schools statewide are required to administer. In March 2011, the project reported the test scores of fourth- and eighth-grade pupils in the 2009-10 school year, but it did not report information about tenth-grade pupils because only 80 took the test.

To help analyze pupil performance on each section of the Wisconsin Knowledge and Concepts Examination, DPI annually determines the percentages of pupils in each grade level who scored in four proficiency categories:

- advanced, which indicates a pupil has an in-depth understanding of the academic knowledge and skills that were tested;
- proficient, which indicates a pupil has competency in the academic knowledge and skills that were tested;
- basic, which indicates a pupil has some understanding of the academic knowledge and skills that were tested; and
- minimal performance, which indicates a pupil has very limited understanding of the academic knowledge and skills that were tested.

According to DPI, the advanced and proficient levels are the long-term educational goals for all pupils. Therefore, we used the project's data to determine the percentages of fourth- and eighth-grade Choice pupils who scored in those two levels on the reading, mathematics, and science sections of the Wisconsin Knowledge and Concepts Examination in the 2009-10 school year. We used DPI's data to determine the corresponding percentages for MPS pupils and all pupils statewide.

We compared the performance of Choice pupils and MPS pupils on the Wisconsin Knowledge and Concepts Examination and found that:

- among fourth-grade pupils, smaller percentages of Choice pupils than MPS pupils scored in the proficient and advanced levels on the reading, mathematics, and science sections; and
- among eighth-grade pupils, the same percentage of Choice pupils and MPS pupils scored in the proficient and advanced levels on the reading section, while smaller percentages of Choice pupils than MPS pupils scored in those two levels on the mathematics and science sections.

The scores of other pupils statewide were uniformly higher than those of both Choice pupils and MPS pupils. Appendix 3 shows the percentages of Choice, MPS, and statewide pupils who scored in the proficient or advanced levels on each test section and at each grade level.

Testing in the Longitudinal Study's Final Year

The project's five-year longitudinal study shows no significant difference in the performance of Choice and similar MPS pupils after four years of participation, and only one year remains to determine whether participation in the Choice program affects academic achievement. As they complete their study, the researchers will continue to face two challenges. First, they must take into account pupils who transfer between Choice schools and MPS. As noted, the researchers' reported calculations of average changes in pupils' test scores include the scores of pupils who transferred either from a Choice school to MPS or vice versa and are based on the results of statistical procedures that concluded academic achievement was similar whether those transferring pupils were included or excluded from the analysis. However, we maintain that as time passes, it becomes increasingly difficult to determine whether the academic achievement of pupils who transferred can be attributed to attendance at Choice schools, MPS, or both.

Finally, the number of pupils included in the researchers' analysis is likely to continue to decline because some pupils in each sample group are likely to continue to transfer to other school districts or drop out of school. The researchers believe that the pupil samples are large enough to provide meaningful results, and their March 2011 report indicated that more pupils in the samples could be located during the 2009-10 school year than they had originally anticipated. However, to keep their sample sizes as large as possible, the researchers have estimated some pupils' 2006-07 test scores. While doing so did not result in any differences in achievement between Choice and MPS matched sample pupils after four years of the study, it is possible that the study's final year could yield different results. Therefore, we believe it will be important for the project to use the most appropriate methodology for analyzing and comparing pupil tests scores and to present information in a manner that allows policymakers, parents, and others who may not be familiar with statistical analyses to interpret the information correctly and with appropriate caution.

■ ■ ■ ■

Appendix 1

**Average Pupil Scores and Percentile Rankings on the
Wisconsin Knowledge and Concepts Examination**

2006-07 and 2009-10 School Years

Reading

| Grade Level in 2009-10 | 2006-07 School Year | | | | 2009-10 School Year | | | |
|------------------------|---------------------|------------------------------|--------------------|------------------------------|---------------------|------------------------------|--------------------|------------------------------|
| | Choice Sample | Statewide Percentile Ranking | MPS Matched Sample | Statewide Percentile Ranking | Choice Sample | Statewide Percentile Ranking | MPS Matched Sample | Statewide Percentile Ranking |
| 6 | 435.5 | 23 | 435.1 | 22 | 467.5 | 20 | 466.1 | 20 |
| 7 | 443.6 | 19 | 436.7 | 15 | 483.5 | 21 | 475.0 | 17 |
| 8 | 450.8 | 19 | 441.5 | 14 | 493.1 | 23 | 483.1 | 17 |
| 10 | 480.1 | 22 | 478.8 | 21 | 495.8 | 20 | 487.1 | 17 |

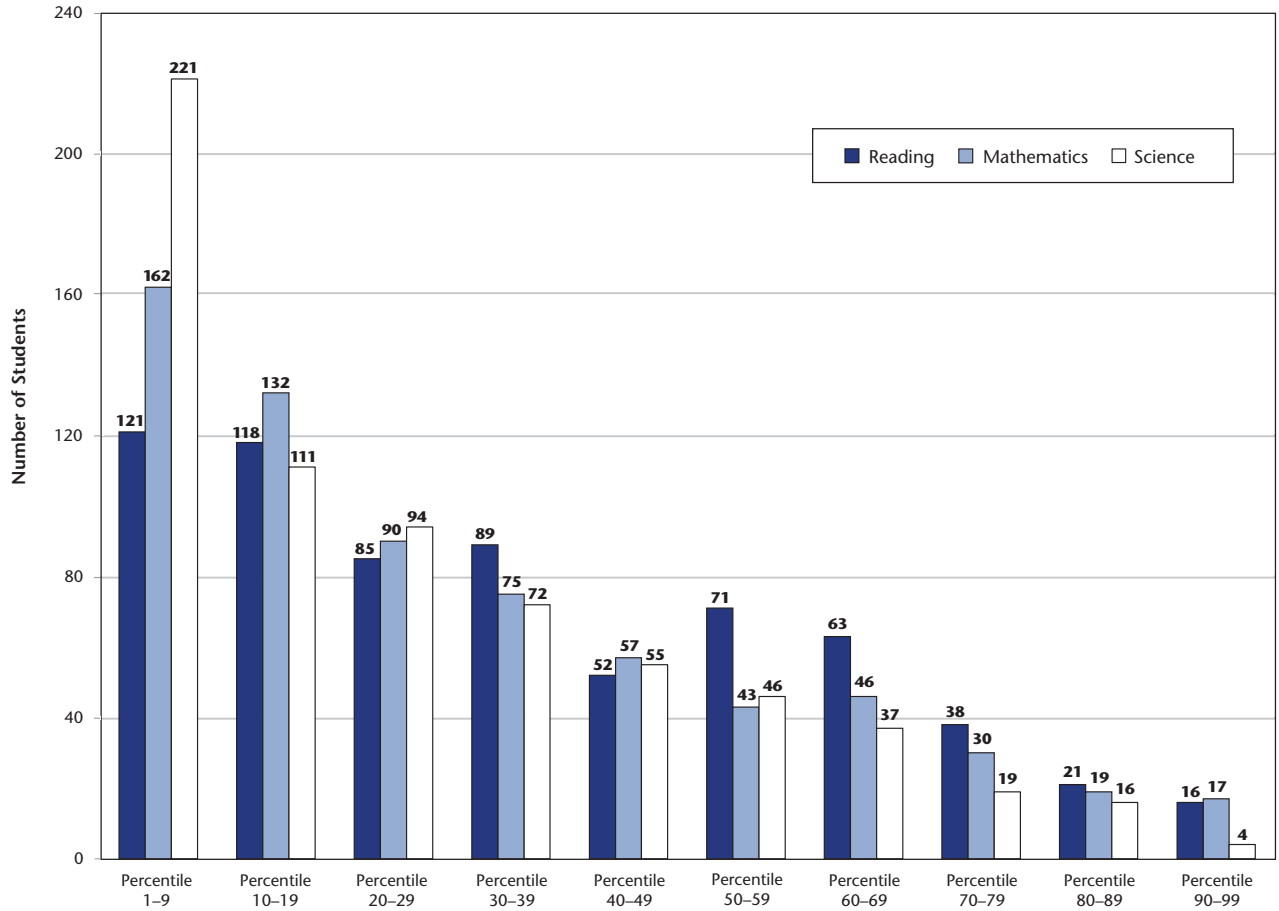
Mathematics

| Grade Level in 2009-10 | 2006-07 School Year | | | | 2009-10 School Year | | | |
|------------------------|---------------------|------------------------------|--------------------|------------------------------|---------------------|------------------------------|--------------------|------------------------------|
| | Choice Sample | Statewide Percentile Ranking | MPS Matched Sample | Statewide Percentile Ranking | Choice Sample | Statewide Percentile Ranking | MPS Matched Sample | Statewide Percentile Ranking |
| 6 | 388.3 | 15 | 395.8 | 19 | 471.2 | 15 | 481.3 | 20 |
| 7 | 425.7 | 16 | 424.1 | 15 | 499.2 | 16 | 498.1 | 16 |
| 8 | 446.4 | 15 | 447.2 | 15 | 502.1 | 16 | 502.8 | 16 |
| 10 | 498.4 | 17 | 502.2 | 20 | 514.5 | 15 | 511.0 | 13 |

Appendix 2

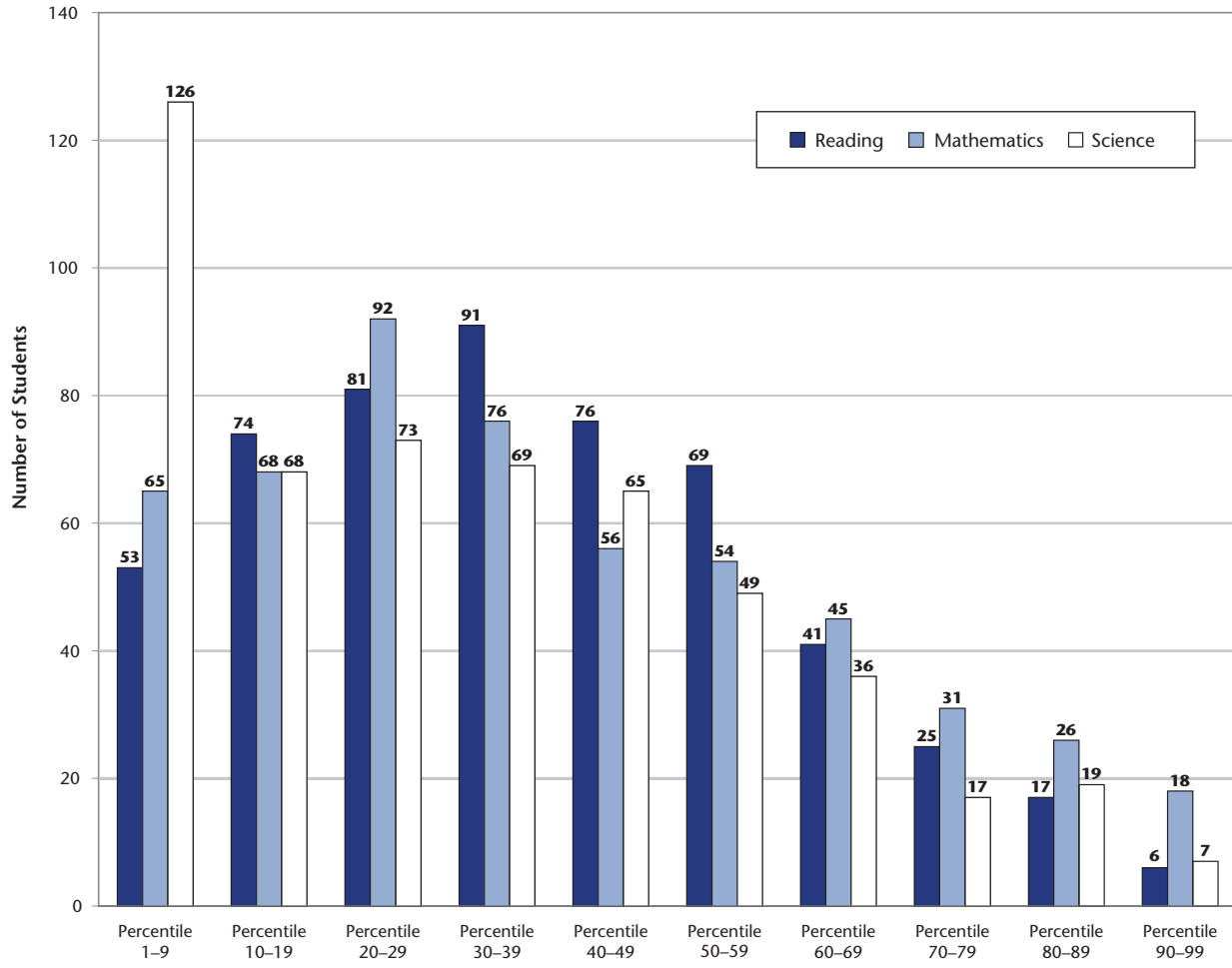
**Choice Pupil Percentile Rankings on
Nationally Normed Standardized Tests**
2009-10 School Year

Fourth Grade¹



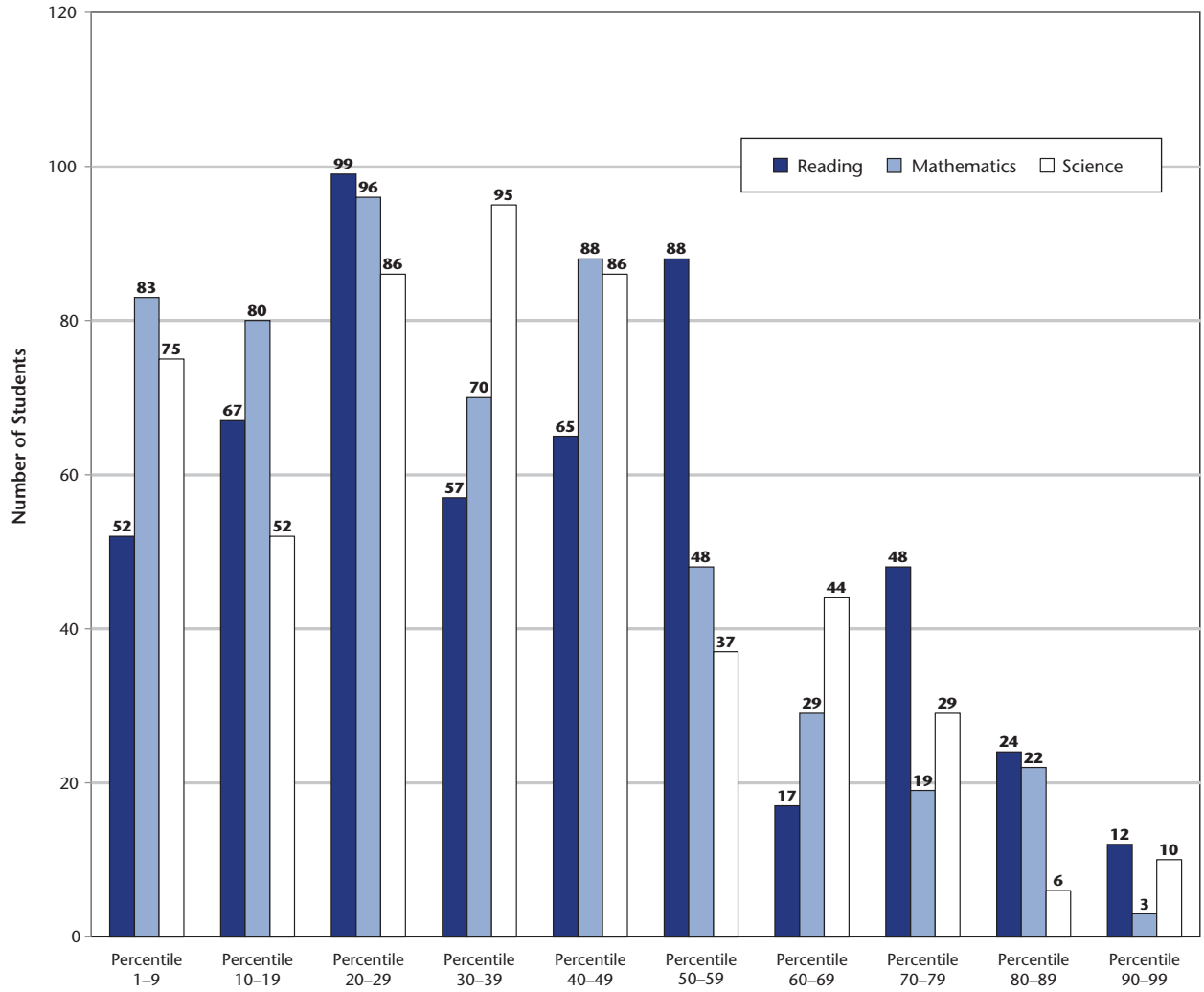
¹ Does not include pupil results on the Wisconsin Knowledge and Concepts Examination.

Eighth Grade¹



¹ Does not include pupil results on the Wisconsin Knowledge and Concepts Examination.

Tenth Grade¹



¹ Does not include pupil results on the Wisconsin Knowledge and Concepts Examination.

Appendix 3

**Percentage of Pupils Scoring in the Proficient or Advanced Levels
on the Wisconsin Knowledge and Concepts Examination**
2009-10 School Year

| | Choice | MPS | Statewide |
|--------------------------------|--------|-------|-----------|
| Fourth Grade | | | |
| Reading | 39.2% | 61.4% | 81.4% |
| Mathematics | 26.5 | 58.5 | 80.6 |
| Science | 30.2 | 51.3 | 77.0 |
| Eighth Grade | | | |
| Reading | 64.2 | 64.2 | 84.0 |
| Mathematics | 37.8 | 52.1 | 77.9 |
| Science | 47.1 | 51.6 | 80.0 |
| Tenth Grade¹ | | | |
| Reading | – | 41.7 | 76.3 |
| Mathematics | – | 30.4 | 69.9 |
| Science | – | 29.8 | 71.5 |

¹ Too few tenth-grade Choice pupils have scores to report on their test results.