

Letter Report

**Test Score Data for Pupils
in the Milwaukee Parental
Choice Program**
(Report 2 of 5)

August 2009



Legislative Audit Bureau

22 E. Mifflin St., Ste. 500, Madison, Wisconsin 53703-4225 ■ (608) 266-2818

Fax: (608) 267-0410 ■ Web site: www.legis.wisconsin.gov/lab



STATE OF WISCONSIN
Legislative Audit Bureau

22 East Mifflin Street, Suite 500
Madison, Wisconsin 53703
(608) 266-2818
Fax (608) 267-0410
www.legis.wisconsin.gov/lab

Janice Mueller
State Auditor

August 26, 2009

Senator Kathleen Vinehout and
Representative Peter Barca, Co-chairpersons
Joint Legislative Audit Committee
State Capitol
Madison, Wisconsin 53702

Dear Senator Vinehout and Representative Barca:

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 who were in the third through ninth grades in fall 2006. 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 2007-08 school year, which is the second year the researchers arranged for the Wisconsin Knowledge and Concepts Examination to be administered to Choice pupils. We analyzed and generally confirmed the test score averages and related analyses that they reported in March 2009. However, as we discussed in our September 2008 report, we are unable to review average pupil test scores at individual Choice schools because the project, citing confidentiality concerns, has not provided us with this type of information. As a result, we cannot provide legislators and other policymakers with information about academic performance specific to each of the 120 Choice schools that operated in the 2007-08 school year. 2009 Wisconsin Act 28 made several changes to the testing requirements for Choice schools, and Wisconsin Knowledge and Concepts Examination scores for each school will be available to the public after the 2010-11 school year.

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

Sincerely,

Janice Mueller
State Auditor

JM/DS/ss

Enclosure

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 creating the program, the Legislature:

- 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.

2005 Wisconsin Act 125, which was enacted in March 2006, made several changes to the Choice program. For example, it requires each private school participating in the Choice program to annually administer a nationally normed standardized test in reading, mathematics, and science to fourth-, eighth-, and tenth-grade pupils who attend under the program. Beginning in 2006 and annually until 2011, participating schools must also 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.

2005 Wisconsin Act 125 directs the Legislative Audit Bureau to review and analyze the standardized test score data received from the project. In 2007 and annually thereafter until 2011, the Audit Bureau is directed to 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 each year to public school pupils statewide in the third through eighth grades, as well as to those in the tenth grade. It measures pupil achievement in reading and mathematics at each of those grade levels, as well as pupil achievement in science, language applications, and social studies at the fourth-, eighth-, and tenth-grade levels only. DPI has incorporated the Wisconsin Reading Comprehension Test, which no longer exists as a separate test, into the Wisconsin Knowledge and Concepts Examination that is given to third-grade pupils.

In March 2009, the School Choice Demonstration Project released eight reports on the second year of its study. One report presents test scores from the expected five-year longitudinal study of samples of Choice and MPS pupils who took the Wisconsin Knowledge and Concepts Examination in the 2006-07 and 2007-08 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 2007-08 school year.

On December 30, 2008, and January 6, 2009, the project provided us with test score data from the Wisconsin Knowledge and Concepts Examinations and nationally normed standardized tests that were administered to Choice and MPS pupils in the 2007-08 school year. We received additional data on April 7, 2009. The project's sharing of these data was delayed for several reasons, including the time it needed to identify and correct errors and inconsistencies in the test score data. Because similar delays will likely occur in future years, 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.

To complete this second 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 that the 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. Two of the principal researchers are nationally recognized, experienced researchers of voucher programs.

While the project is designed to answer several academic research questions, there are limitations to its usefulness for policymakers, in part because of redactions to the data provided to us. Although we understand that individual pupils cannot be identified, we had initially believed that the project would provide us with data that identified the school attended by each Choice pupil who took the tests. However, citing confidentiality concerns, the project did not provide information on these pupils' schools. Federal law generally requires written permission from parents or guardians before information about individual pupils can be released. In addition, project researchers signed agreements with their universities stipulating that they would not release information that identified pupils or the schools they attended, and they signed similar confidentiality agreements with Choice schools and the parents and guardians of Choice pupils.

Because the data available to us do not identify the Choice pupils and schools, we are limited in what we can report and confirm. For example, these data do not allow us to provide legislators and other policymakers with information about academic performance specific to each of the 120 Choice schools that operated in the 2007-08 school year.

Pupil and Private School Participation

To participate in the Choice program, statutes require 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 does not exceed 175 percent of the federal poverty guidelines established by the Office of Management and Budget. In the 2007-08 school year, 175 percent of the federal poverty guidelines for a family of four was approximately \$36,600. 2005 Wisconsin Act 125 specifies that

beginning in the 2006-07 school year, a pupil already attending a Choice school may continue to participate in the program, and his or her siblings may enter the program, if the family's income increases but does not exceed 220 percent of the federal poverty guidelines, which in the 2007-08 school year was approximately \$46,000 for a family of four.

Statutes require the parent or guardian to submit an application to the participating Choice school a pupil wishes to attend. Each participating school must admit all eligible applicants unless the number of applications exceeds the number of spaces the school has designated for Choice pupils. In that case, the school must select randomly among eligible applicants. Total program enrollment is statutorily limited to 22,500 full-time equivalent pupils.

As shown in Table 1, 19,233 pupils participated in the Choice program in the 2007-08 school year. DPI reports they were enrolled at 120 schools. That number varies slightly from the number reported by the project because DPI considers schools with multiple campuses to be the same school, while the project considers them to be separate schools.

Table 1

**Participation in the Milwaukee Parental Choice Program
2007-08 School Year**

Grade Level	Number of Pupils ¹	Percentage of Total
4-Year-Old Kindergarten	1,576	8.2%
5-Year-Old Kindergarten	1,856	9.8
1	1,815	9.4
2	1,713	8.9
3	1,586	8.2
4	1,508	7.8
5	1,452	7.5
6	1,511	7.9
7	1,414	7.4
8	1,369	7.1
9	1,125	5.8
10	1,007	5.2
11	726	3.8
12	575	3.0
Total	19,233	100.0%

¹ As of the third Friday in September.

To participate in the Choice program, schools must be private schools as defined in s. 118.165(1), Wis. Stats., which requires them to have sequentially progressive curricula of instruction in reading, language arts, mathematics, social studies, science, and health. In addition, each participating school must:

- notify the State Superintendent of Public Instruction by February 1 of the preceding school year of its intent to participate in the program and specify the number of Choice pupils for whom it has space;
- comply with federal laws prohibiting discrimination on the grounds of race, color, or national origin; and
- meet all health and safety laws or codes that apply to public schools.

Choice schools are statutorily required either to work toward achieving 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, which is a nonprofit organization that supports school choice for low-income families in Milwaukee. Statutes include a number of other requirements, including those intended to ensure participating schools are financially viable.

In addition, each Choice school has been statutorily required since the program's inception to meet at least one of the following performance standards:

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

By October 15, each Choice school must indicate to DPI which performance standard it intends to meet during the school 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 child participating in the Choice program through the 2008-09 school year, DPI paid a private school the lesser of its per pupil operating and debt service cost related to educational programming, as determined by DPI, or the amount paid per pupil in the prior year adjusted by the percentage change in the general pupil aid appropriation from the previous to the current school year. Statutes direct DPI to pay Choice schools in four equal installments throughout the school year. DPI makes checks payable to the families but mails them to the schools. There, parents or guardians restrictively endorse the checks to the schools. If a school cannot obtain a signature because, for example, a pupil is no longer enrolled, the school is required to return the check to DPI.

2009 Wisconsin Act 28, the 2009-11 Biennial Budget Act, made a number of changes to the Choice program. In the 2009-10 and 2010-11 school years, DPI will pay the lesser of either a Choice school's per pupil operating and debt service cost related to educational programming or \$6,442. Act 28 also requires:

- private schools that are first-time participants in the program to obtain preaccreditation from the Institute for the Transformation of Learning at Marquette University, if they are not already accredited;
- Choice schools to provide at least 1,050 hours of instruction each school year to pupils in the first through sixth grades, and at least 1,137 hours to pupils in the seventh through twelfth grades; and
- Choice school teachers, by July 2010, to have or to be working toward a bachelor's degree.

Before enactment of 2009 Wisconsin Act 28, Choice schools were required to provide at least 875 hours of instruction each school year, regardless of grade level, and teachers at Choice schools were required either to have graduated from high school or to have been granted a declaration of equivalency of high school graduation.

Longitudinal Test Data

As noted, 2005 Wisconsin Act 125 requires the Legislative Audit Bureau to report on the test score data from 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 changes in academic achievement. In addition, it is collecting Wisconsin Knowledge and Concepts Examination scores of pupils in its samples who progress to the tenth grade.

The project's longitudinal study includes pupils in two groups:

- a sample of 2,727 Choice pupils in the third through ninth grades that comprises 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
- a matched sample of 2,727 MPS pupils in the third through ninth grades who were selected based on their similarity to the random sample of Choice pupils on factors such as neighborhood, test scores, gender, and race/ethnicity.

The project's sample of Choice pupils was selected from the list of pupils who were expected to participate in the program in the 2006-07 school year. The researchers arranged for the Wisconsin Knowledge and Concepts Examination to be administered to the Choice pupils.

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 in the 2006-07 school year. 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 the Choice pupils on the Wisconsin Knowledge and Concepts Examination in the 2006-07 school year. 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 each of its two samples contained the same number of pupils in each grade level in the 2006-07 school year. As shown in Table 2, there were considerably more pupils in the ninth grade than in other grades because, as noted, the project included all ninth-grade Choice pupils and a matched sample of the same number of MPS pupils.

Table 2
Pupils in the Demonstration Project's Two Samples¹
 2006-07 School Year

Grade Level	Number	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 include the same number of pupils in each grade level.

Pupil Demographics

Table 3 shows 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 36 more Hispanic pupils. Comprehensive demographic information for Choice pupils is not available from all schools. For example, the data do not indicate the race/ethnicity for 222 pupils in the Choice sample, or 8.1 percent of the total, and information on the disability status of 1,635 Choice pupils, or 60.0 percent of the Choice sample, is missing. The project is attempting to obtain additional demographic information.

Table 3

Demographic Characteristics of Pupils in the Demonstration Project's Samples

	Choice Sample	MPS Matched Sample
Race/Ethnicity		
African-American	1,646	1,831
Hispanic	574	538
White	216	246
Asian	64	89
American Indian	5	15
Other	0	8
Missing Data	222	0
Total	2,727	2,727
Gender		
Female	1,381	1,456
Male	1,128	1,271
Missing Data	218	0
Total	2,727	2,727
Disability		
Yes	90	458
No	1,002	2,269
Missing Data	1,635	0
Total	2,727	2,727
English Not Primary Language		
Yes	257	263
No	2,057	2,464
Missing Data	413	0
Total	2,727	2,727
Free or Reduced-Price Lunch¹		
Yes	1,847	2,355
No	267	372
Missing Data	613	0
Total	2,727	2,727

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

Enrollment by School Type

Because some pupils in the project's two samples will change schools throughout the five-year longitudinal study, the project is tracking their locations and determining whether they are attending schools different from the ones attended in the prior school year. Data provided to us by the project indicate whether the school attended by a pupil in the 2007-08 school year:

- remained the same as in the prior school year;
- was different from the prior school year because the pupil had transferred between Choice schools;
- was different from the prior school year because the pupil had transferred between MPS schools;
- was different from the prior school year because the pupil had transferred from a Choice to an MPS school, or vice versa; or
- was unknown because, for example, the pupil left the Milwaukee school district or complete pupil information was unavailable.

As shown in Table 4, most pupils either remained in the same school in the 2006-07 and 2007-08 school years or transferred between Choice schools or between MPS schools. However, 430 pupils from the Choice sample in the 2006-07 school year transferred to an MPS school in the 2007-08 school year, and 71 pupils from the MPS matched sample transferred to a Choice school during the same time period. The project was unable to determine the schools that 201 Choice pupils and 290 MPS matched sample pupils attended in the 2007-08 school year.

Table 4

School Attended in the 2007-08 School Year by Pupils in the Demonstration Project's Two Samples

	Choice Sample		MPS Matched Sample	
	Number	Percentage of Total	Number	Percentage of Total
Same as in the prior school year	1,898	69.5%	1,510	55.4%
Different from the prior school year because of a transfer:				
Between Choice schools	198	7.3	–	–
Between MPS schools	–	–	856	31.4
From a Choice to an MPS school	430	15.8	–	–
From an MPS to a Choice school	–	–	71	2.6
Unknown	201	7.4	290	10.6
Total	2,727	100.0%	2,727	100.0%

Pupil Test Scores

To track the academic achievement of samples of Choice and MPS pupils, the project analyzed scores on the Wisconsin Knowledge and Concepts Examination reading and mathematics sections, which are scored separately, for pupils who were in grades four through eight in the 2007-08 school year and who also took the test in the 2006-07 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 2009 report. However, our results in some instances differed slightly from those reported because the project used a statistical weighting procedure that adjusted pupils' test scores in order to account for missing scores in either the 2006-07 or the 2007-08 school year. The researchers provided us with summary information showing that the unadjusted and adjusted test results for the first two years of the project's longitudinal study were similar.

In addition, the project's reported calculations of pupils' average test scores included the 430 Choice pupils who attended Choice schools in the 2006-07 school year but transferred to MPS schools in the 2007-08 school year. The researchers believe that because the Wisconsin Knowledge and Concepts Examination is administered in the fall, the test scores of those pupils largely reflect academic achievement that occurred before the transfers. We excluded the 430 pupils from our test score analysis because we believe their test scores likely reflect the academic achievement that occurred in both Choice and MPS schools. For example, pupils may change schools not only at the end of a school year but also at any time during the school year, including shortly after the test was administered in the 2006-07 school year.

It should be noted that because the project did not have sufficient time to administer the test to the 71 pupils in the MPS matched sample who transferred to Choice schools in the 2007-08 school year, these pupils are not included in the project's calculations or in our own.

Table 5 shows the number of pupils at each grade level of the project's two samples and the number who completed the reading section of the Wisconsin Knowledge and Concepts Examination in both the 2006-07 and 2007-08 school years. In total, 1,044 pupils in the Choice sample had reading scores in both school years, while 1,361 pupils in the MPS matched sample had reading scores in both school years.

Table 5

**Pupils with Scores on the
Wisconsin Knowledge and Concepts Examination: Reading
2006-07 and 2007-08 School Years**

Grade Level in 2007-08	Choice Sample		MPS Matched Sample	
	Number of Pupils	Pupils with Test Scores	Number of Pupils	Pupils with Test Scores
4	341	228	291	282
5	320	204	270	254
6	343	221	286	280
7	329	208	294	288
8	301	183	259	257
Total	1,634	1,044	1,400	1,361

The same number of pupils are not included in both sample groups for several reasons. The project was unable to locate some pupils in the samples or to determine their grade levels in the 2007-08 school year, possibly because the pupils changed schools or did not take the Wisconsin Knowledge and Concepts Examination. At each grade level, the project had grade-level information for fewer pupils in the MPS matched sample than in the Choice sample. In addition, some pupils did not advance a grade level from one school year to the next. For example, four pupils who were in the fourth-grade Choice sample for the 2006-07 school year remained in fourth grade in the 2007-08 school year, and seven pupils in the MPS matched sample did likewise.

The project compared average test scores for pupils in the two samples at each grade level in order to determine whether the differences were statistically significant. Statistical significance can be determined at any level of confidence but 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.

Table 6 shows average scores on the reading section of the Wisconsin Knowledge and Concepts Examination for pupils in both samples for the 2006-07 and 2007-08 school years. The researchers reported and we confirmed that no differences for pupils in the Choice and MPS matched samples were statistically significant at any grade level in the 2006-07 school year. However, the researchers reported and we confirmed that eighth-grade pupils in the Choice sample scored higher in the 2007-08 school year, on average, than those in the MPS matched sample, and this difference was statistically significant.

Table 6

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

Grade Level in 2007-08	2006-07 School Year			2007-08 School Year		
	Choice Sample	MPS Matched Sample	Difference from Choice Sample ¹	Choice Sample	MPS Matched Sample	Difference from Choice Sample ¹
4	430.4	433.5	3.1	439.8	438.6	(1.2)
5	436.4	439.8	3.4	439.1	448.4	9.3
6	442.3	440.6	(1.7)	457.2	453.8	(3.4)
7	468.1	467.5	(0.6)	477.7	475.8	(1.9)
8	477.1	468.2	(8.9)	491.4	480.9	(10.5)

¹ A shaded cell indicates that the difference is statistically significant at the 95 percent confidence level.

The minimum and maximum possible scores on the Wisconsin Knowledge and Concepts Examination increase at every grade level. Therefore, pupils' tests scores tend to increase as they progress to higher grade levels, regardless of any changes in their performance.

Comparing average pupil scores is one evaluation measure, while reviewing percentile rankings is another. The performance of pupils in the Choice sample and 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. We used DPI's information to determine the statewide percentile rankings of the average scores shown in Table 6. As shown in Appendix 1, the statewide percentile rankings of pupils in both the Choice sample and the MPS matched sample generally remained the same or decreased from the 2006-07 to the 2007-08 school year, and both groups of pupils ranked generally between the 10th and 20th percentiles. This means that in both school years, from 80 to 90 percent of all pupils statewide scored higher than pupils in the Choice and MPS matched samples.

Table 7 shows the number of pupils at each grade level of the project's two samples and the number who completed the mathematics section of the Wisconsin Knowledge and Concepts Examination in both the 2006-07 and 2007-08 school years. A total of 1,039 pupils in the Choice sample had scores in both school years, compared to 1,376 pupils in the MPS matched sample.

Table 7

**Pupils with Scores on the
Wisconsin Knowledge and Concepts Examination: Mathematics
2006-07 and 2007-08 School Years**

Grade Level in 2007-08	Choice Sample		MPS Matched Sample	
	Number of Pupils	Pupils with Test Scores	Number of Pupils	Pupils with Test Scores
4	341	225	291	287
5	320	202	270	262
6	343	220	286	281
7	329	207	294	289
8	301	185	259	257
Total	1,634	1,039	1,400	1,376

Table 8 shows the average scores on the mathematics section of the Wisconsin Knowledge and Concepts Examination for pupils in both samples in the 2006-07 and 2007-08 school years. The researchers reported and we confirmed that in the 2007-08 school year, fourth-grade pupils in the MPS matched sample scored higher, on average, than fourth-grade pupils in the Choice sample, and the differences were statistically significant in both that school year and the prior one.

Table 8

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

Grade Level In 2007-08	2006-07 School Year			2007-08 School Year		
	Choice Sample	MPS Matched Sample	Difference from Choice Sample ¹	Choice Sample	MPS Matched Sample	Difference from Choice Sample ¹
4	383.6	393.1	9.5	418.1	429.6	11.5
5	420.1	425.9	5.8	438.8	444.3	5.5
6	440.9	446.1	5.2	460.8	466.0	5.2
7	469.6	473.8	4.2	492.3	491.5	(0.8)
8	493.7	494.6	0.9	492.6	488.1	(4.5)

¹ A shaded cell indicates that the difference is statistically significant at the 95 percent confidence level.

Appendix 2 shows the statewide percentile rankings of the average scores of pupils in the Choice sample and the MPS matched sample on the mathematics section of the test. Like the statewide percentile rankings for the reading section, percentile rankings for the mathematics section generally remained the same or decreased from the 2006-07 to the 2007-08 school year, and both groups of pupils ranked generally between the 10th and 20th percentiles.

Changes in Test Scores

To begin assessing whether participation in the Choice program affects academic achievement, the project compared the average changes in test scores from the 2006-07 to the 2007-08 school years for pupils in the Choice sample and the MPS matched sample. For the most part, the researchers did not find statistically significant differences in test score changes. However, they reported that the changes in the test scores of seventh- and eighth-grade pupils in the Choice sample differed, on average, from those in the MPS matched sample on the mathematics section, and these differences were statistically significant.

As shown in Table 9, we did not find any significant differences in the average changes in reading or mathematics scores between the 2006-07 and 2007-08 school years. As noted, we excluded from our calculations the 430 pupils who had transferred from Choice to MPS schools.

Table 9

**Average Changes in Pupil Scores on the
Wisconsin Knowledge and Concepts Examination
2006-07 to 2007-08 School Year**

Grade Level in 2007-08	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
4	9.4	5.1	(4.3)	34.5	36.5	2.0
5	2.7	8.6	5.9	18.7	18.4	(0.3)
6	14.9	13.2	(1.7)	19.9	19.9	0.0
7	9.6	8.3	(1.3)	22.7	17.7	(5.0)
8	14.3	12.7	(1.6)	(1.1)	(6.5)	(5.4)

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

Other Test Scores

In addition to compiling and analyzing Wisconsin Knowledge and Concepts Examination scores for Choice sample and MPS matched sample pupils who were in the fourth through eighth grades in the 2007-08 school year and also took the test in the 2006-07 school year, the project is collecting the test scores of those pupils who progress to the tenth grade.

In the second year of its longitudinal study, the project also selected a new random sample of 446 Choice pupils who were in third grade in the 2007-08 school year, as well as a sample of 446 MPS pupils matched in the same manner used to select the initial MPS matched sample. Appendix 3 provides demographic information on these pupils.

The project analyzed the test scores of third- and tenth-grade pupils in the 2007-08 school year. Only one year of test scores was available for those pupils because the Wisconsin Knowledge and Concepts Examination is not administered in grades two and nine. We were generally able to confirm the average test scores the project reported. However, we did not find the difference between average mathematics scores for tenth-grade pupils in the Choice and MPS matched samples to be statistically significant because, as noted, our analysis excluded the 430 pupils who had transferred from Choice to MPS schools. These pupils were included in the project's analysis. Appendix 4 shows the average test scores of third- and tenth-grade pupils on the reading and mathematics sections in the 2007-08 school year.

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 10 shows the number of pupils who took the Wisconsin Knowledge and Concepts Examination and several other tests in the 2007-08 school year. The Wisconsin Knowledge and Concepts Examination is administered only in Wisconsin and is not a nationally normed standardized test. Although Choice schools that administered it technically did not adhere to statutes, it seems reasonable that they chose to administer the test that all public schools statewide are required to administer. We are unable to determine from the project's data the type of test administered to 20 pupils, including 8 fourth-grade and 12 eighth-grade pupils.

In March 2009, the project reported that 110 of the 120 Choice schools provided test scores, and 9 of the remaining 10 did not enroll fourth-, eighth-, or tenth-grade pupils throughout the 2007-08 school year. One Choice school—Blyden Delany Academy—reportedly enrolled pupils in those grade levels but did not provide test scores and did not participate in the Choice program in the 2008-09 school year. Because the data provided to us do not identify Choice pupils and schools, we cannot confirm this information.

Table 10

Tests Administered to Choice Pupils
2007-08 School Year

Test	Number of Pupils		
	4 th Grade	8 th Grade	10 th Grade
Nationally Normed Standardized Tests			
Iowa Test of Basic Skills	417	232	9
Terra Nova	277	241	87
PLAN	0	0	342
Stanford Achievement Test	25	22	68
Other ¹	9	1	40
Unknown	8	12	0
Subtotal	736	508	546
Wisconsin Knowledge and Concepts Examination			
	479	608	114
Total	1,215	1,116	660

¹ Includes the Iowa Test of Educational Development, Preliminary SAT/National Merit Scholarship Qualifying Test, and Logramos.

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. In addition, tests may have different ranges of possible scores. The project therefore used pupils' national percentile rankings to compare pupil performance on different tests. It separately analyzed pupils' scores on the Wisconsin Knowledge and Concepts Examination, for which national percentile rankings cannot be calculated because the test is administered only in Wisconsin.

Some of the test score results that we report differ slightly from those reported by the project in March 2009 because our analysis excluded 20 pupils for whom we could not identify the test administered. The project's analysis included these pupils.

Table 11 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 37th percentile of all pupils nationwide, eighth-grade pupils scored in the 36th percentile of all pupils nationwide, and tenth-grade pupils scored in the 40th percentile of all pupils nationwide. This means that approximately three-fifths of all pupils nationwide scored higher than Choice pupils.

Table 11

Choice Pupil Results on Nationally Normed Standardized Tests: Reading¹
2007-08 School Year

Grade Level	Number of Pupils			Choice Pupils' Average National Percentile Ranking
	Total	Without Test Scores	With Test Scores	
4	728	75	653	37.9
8	496	53	443	36.3
10	565	57	508	40.7

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 mathematics section of the nationally normed standardized tests.

Table 12

Choice Pupil Results on Nationally Normed Standardized Tests: Mathematics¹
2007-08 School Year

Grade Level	Number of Pupils			Choice Pupils' Average National Percentile Ranking
	Total	Without Test Scores	With Test Scores	
4	728	81	647	35.0
8	496	60	436	36.1
10	565	34	531	35.1

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

Table 13 shows the average national percentile rankings of Choice pupils on the science section of the nationally normed standardized tests.

Table 13

Choice Pupil Results on Nationally Normed Standardized Tests: Science¹
2007-08 School Year

Grade Level	Number of Pupils			Choice Pupils' Average National Percentile Ranking
	Total	Without Test Scores	With Test Scores	
4	728	35	693	33.0
8	496	23	473	34.2
10	565	47	518	35.2

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 5 shows the Choice pupils' rankings on the reading, mathematics, and science sections of the test.

Wisconsin Knowledge and Concepts Examination

As noted, some Choice schools chose to administer the Wisconsin Knowledge and Concepts Examination to comply with testing requirements in 2005 Wisconsin Act 125. In March 2009, the project reported the test scores of fourth- and eighth-grade pupils in the 2007-08 school year, but it did not report information about tenth-grade pupils because only 103 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-, eighth-, and tenth-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 2007-08 school year. We used DPI's data to determine the corresponding percentages for MPS pupils and all pupils statewide.

We found that lower percentages of Choice than MPS pupils in the fourth, eighth, and tenth grades scored in the proficient or advanced levels on each section of the Wisconsin Knowledge and Concepts Examination. However, the scores of other pupils statewide were uniformly higher than those of either Choice or MPS pupils. Appendix 6 shows the percentages of Choice, MPS, and statewide pupils who scored in the proficient or advanced levels by test section and grade level.

Testing in Future Years

2009 Wisconsin Act 28 made several changes to the testing requirements for Choice schools. Beginning in the 2010-11 school year, Choice schools will be required to administer the Wisconsin Knowledge and Concepts Examination to all pupils in third through eighth grades, as well as to those in tenth grade, and to annually report pupils' scores to DPI. However, if the State Superintendent notifies the Joint Committee on Finance before January 2010 that the Wisconsin Knowledge and Concepts Examination will be substantially redesigned for the 2011-12 school year, Choice schools will not be required to administer the examination until that school year.

The project's longitudinal study generally shows no significant difference in the performance of Choice and similar MPS pupils after two years of participation. Although the researchers have acknowledged future challenges for the longitudinal study, such as taking into account missing data and pupils who transfer between Choice and MPS schools, they believe the project will use an appropriate methodology to determine the extent to which attending a Choice school affects academic achievement. However, we believe that in order to do so, the project will need to address several analytical challenges.

First, without test scores from sufficient numbers of Choice and MPS pupils, it may be challenging to conclude that any differences in scores from one year to the next are statistically significant. In general, the more test scores included in an analysis, the more it is likely that any differences in average scores are statistically significant. However, the number of pupils in the project's sample groups is likely to continue to decline because pupils in both sample groups are likely to continue to transfer to other school districts. The researchers are confident that the project's pupil samples are large enough to provide meaningful results in future years, and their March 2009 report indicated that more pupils in the sample groups could be located during the 2007-08 school year than had originally been anticipated.

Second, the project's longitudinal study will need to use the most appropriate methodology for analyzing and comparing pupils' test scores. As noted, the scores of pupils who transferred from a Choice to an MPS school have been included in the project's analysis because the researchers believe those test scores reflect academic achievement that occurred primarily

before the transfers. However, including pupils who transfer between Choice and MPS schools in future analyses will be more challenging because their academic achievement likely reflects attendance at both Choice and MPS schools. The project believes it will develop an appropriate methodology for correctly interpreting these pupils' test scores.

Finally, because not all pupils in the project's samples took the reading or mathematics sections of the Wisconsin Knowledge and Concepts Examination in both the 2006-07 and 2007-08 school years, the number of pupils for whom test score data are available throughout the project's longitudinal study will be limited. The researchers will need to develop a methodology that will allow them to analyze changes in test scores of pupils who may, for example, have scores for the 2006-07 and 2008-09 school years but not 2007-08, 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.

■ ■ ■ ■

Appendix 1

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

Grade Level in 2007-08	2006-07 School Year				2007-08 School Year			
	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking
4	430.4	19	433.5	21	439.8	18	438.6	17
5	436.4	15	439.8	17	439.1	13	448.4	17
6	442.3	15	440.6	14	457.2	14	453.8	13
7	468.1	20	467.5	19	477.7	20	475.8	18
8	477.1	20	468.2	15	491.4	20	480.9	15

Appendix 2

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

Grade Level in 2007-08	2006-07 School Year				2007-08 School Year			
	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking
4	383.6	13	393.1	18	418.1	12	429.6	18
5	420.1	13	425.9	16	438.8	12	444.3	14
6	440.9	12	446.1	15	460.8	12	466.0	14
7	469.6	15	473.8	17	492.3	16	491.5	16
8	493.7	15	494.6	15	492.6	15	488.1	13

Appendix 3

**Demographic Characteristics of the Demonstration Project's
Supplemental 3rd Grade Pupil Sample**
2007-08 School Year

	Choice Sample	MPS Matched Sample	
Race/Ethnicity	African-American	214	316
	Hispanic	59	83
	White	26	23
	Asian	13	17
	American Indian	1	1
	Other	0	6
	Missing Data	133	0
	Total	446	446
Gender	Female	168	211
	Male	145	235
	Missing Data	133	0
	Total	446	446
Disability	Yes	0	87
	No	326	359
	Missing Data	120	0
	Total	446	446
English Not Primary Language	Yes	0	18
	No	326	428
	Missing Data	120	0
	Total	446	446
Free or Reduced-Price Lunch¹	Yes	7	380
	No	319	66
	Missing Data	120	0
	Total	446	446

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

Appendix 4

**Average Pupil Scores on the Wisconsin
Knowledge and Concepts Examination**
2007-08 School Year

Grade Level	Section	Choice Sample		MPS Matched Sample		Difference from Choice Sample ¹
		Pupils with Test Scores	Average Score	Pupils with Test Scores	Average Score	
3	Reading	374	416.0	440	420.0	4.0
	Mathematics	374	376.3	446	387.0	10.7
10	Reading	383	495.3	501	493.5	(1.8)
	Mathematics	377	513.6	506	517.8	4.2

¹ A shaded cell indicates that the difference is statistically significant at the 95 percent confidence level.

Appendix 5

**Choice Pupil Percentile Rankings on
Nationally Normed Standardized Tests**
2007-08 School Year

Reading¹

Percentile	Fourth-Grade Pupils		Eighth-Grade Pupils		Tenth-Grade Pupils	
	Number	Percentage of Total	Number	Percentage of Total	Number	Percentage of Total
1 to 9	85	13.0%	69	15.6%	58	11.4%
10 to 19	113	17.3	74	16.7	73	14.4
20 to 29	88	13.5	68	15.3	64	12.6
30 to 39	86	13.2	56	12.6	46	9.1
40 to 49	78	11.9	47	10.6	93	18.2
50 to 59	60	9.2	39	8.8	46	9.1
60 to 69	44	6.7	31	7.0	41	8.1
70 to 79	43	6.6	31	7.0	44	8.7
80 to 89	38	5.8	18	4.1	25	4.9
90 to 99	18	2.8	10	2.3	18	3.5
Total	653	100.0%	443	100.0%	508	100.0%

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

Mathematics¹

Percentile	Fourth-Grade Pupils		Eighth-Grade Pupils		Tenth-Grade Pupils	
	Number	Percentage of Total	Number	Percentage of Total	Number	Percentage of Total
1 to 9	105	16.2%	69	15.8%	65	12.2%
10 to 19	115	17.8	81	18.6	91	17.1
20 to 29	104	16.1	54	12.4	93	17.5
30 to 39	76	11.8	62	14.2	86	16.2
40 to 49	68	10.5	44	10.1	63	11.9
50 to 59	52	8.0	40	9.2	53	10.0
60 to 69	54	8.3	31	7.1	33	6.2
70 to 79	37	5.7	14	3.2	20	3.8
80 to 89	23	3.6	25	5.7	19	3.6
90 to 99	13	2.0	16	3.7	8	1.5
Total	647	100.0%	436	100.0%	531	100.0%

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

Science¹

Percentile	Fourth-Grade Pupils		Eighth-Grade Pupils		Tenth-Grade Pupils	
	Number	Percentage of Total	Number	Percentage of Total	Number	Percentage of Total
1 to 9	131	18.9%	65	13.7%	90	17.4%
10 to 19	125	18.0	84	17.8	70	13.5
20 to 29	108	15.6	79	16.7	71	13.7
30 to 39	99	14.3	68	14.4	96	18.5
40 to 49	64	9.2	56	11.8	44	8.5
50 to 59	49	7.1	46	9.7	55	10.6
60 to 69	52	7.5	34	7.2	35	6.8
70 to 79	27	3.9	24	5.1	19	3.7
80 to 89	18	2.6	13	2.8	21	4.0
90 to 99	20	2.9	4	0.8	17	3.3
Total	693	100.0%	473	100.0%	518	100.0%

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

Appendix 6

**Percentage of Pupils Scoring in the Proficient
or Advanced Levels on the Wisconsin Knowledge
and Concepts Examination**
2007-08 School Year

	Choice	MPS	Statewide
Fourth Grade			
Reading	43.0%	60.8%	80.4%
Mathematics	27.9	51.7	75.7
Science	27.9	49.3	74.4
Eighth Grade			
Reading	56.8	60.1	83.6
Mathematics	31.7	39.9	74.4
Science	33.3	41.2	73.6
Tenth Grade			
Reading	17.7	39.0	73.9
Mathematics	7.1	28.7	68.7
Science	14.2	30.9	71.7