

Letter Report

**Test Score Data for Pupils
in the Milwaukee Parental
Choice Program**
(Report 3 of 5)

August 2010



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Janice Mueller
State Auditor

August 12, 2010

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. 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 2008-09 school year, which is the third 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 April 2010, which show no significant difference in the performance of Choice pupils and similar MPS pupils after three years. However, we note that only 1,097 of the 2,727 Choice pupils in the researchers' sample, or 40.2 percent, remained in Choice schools in the 2008-09 school year.

As we discussed in our September 2008 and August 2009 reports, 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 127 Choice schools that operated in the 2008-09 school year. 2009 Wisconsin Act 28 made several changes to the testing requirements for Choice schools, and the Wisconsin Knowledge and Concepts Examination will be administered in Choice schools beginning with 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

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, 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 also directs the Legislative Audit Bureau to review and analyze the standardized test score data received from 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 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 in science, language applications, and social studies at the fourth-, eighth-, and tenth-grade levels. 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 April 2010, the School Choice Demonstration Project released several reports on the third year of its study. One report presents the change in test scores of samples of Choice and MPS pupils who took the Wisconsin Knowledge and Concepts Examination in the 2006-07, 2007-08, and 2008-09 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 2008-09 school year.

On December 30, 2009, and March 25, 2010, 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 2008-09 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. 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 and our second report in August 2009.

To complete this third 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.

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 may 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 127 Choice schools that operated in the 2008-09 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 2008-09 school year, 175 percent of the federal poverty guidelines for a family of four was approximately \$37,400. 2005 Wisconsin Act 125 specifies that beginning in the 2006-07 school year, a pupil already attending a Choice school may continue to

participate 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 2008-09 school year was approximately \$47,000 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, 20,113 pupils participated in the Choice program in the 2008-09 school year. DPI reports they were enrolled at 127 schools.

Table 1

**Participation in the Milwaukee Parental Choice Program
2008-09 School Year**

Grade Level	Number of Pupils ¹	Percentage of Total
4-Year-Old Kindergarten	1,653	8.2%
5-Year-Old Kindergarten	1,788	8.9
1	1,850	9.3
2	1,788	8.9
3	1,736	8.6
4	1,633	8.1
5	1,544	7.7
6	1,576	7.8
7	1,473	7.3
8	1,372	6.8
9	1,207	6.0
10	1,005	5.0
11	830	4.1
12	658	3.3
Total	20,113	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 a sequentially progressive curriculum 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.

Schools that participated in the 2008-09 school year were statutorily required to work either 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 educational 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 are required to 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 school year, DPI paid the lesser of either a Choice school's

per pupil operating and debt service cost related to educational programming or \$6,442, and it will pay the schools in the same manner in the 2010-11 school year. 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 were 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 from an accredited institution.

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 following ninth-grade pupils to analyze rates of high school graduation, college enrollment, and employment.

The project's longitudinal study includes pupils in the following groups:

- a sample of 2,727 Choice pupils 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 sample of Choice pupils on factors such as neighborhood, test scores, gender, and race/ethnicity.

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 the Choice pupils 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, 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 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 43 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. The project continues to attempt to obtain additional demographic information by using enrollment data from DPI and surveying pupils and their parents.

Table 3

Demographic Characteristics of Pupils in the Demonstration Project's Samples

	Choice Sample	MPS Matched Sample	
Race/Ethnicity	African-American	1,739	1,831
	Hispanic	581	538
	White	213	246
	Asian	63	89
	American Indian	5	15
	Other	21	8
	Missing Data	105	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 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 during the five-year longitudinal study, the project is attempting to track their locations. Data provided to us by the project indicate whether a pupil:

- remained in a Choice school for all three years (from the 2006-07 to 2008-09 school years);
- remained in MPS for all three years (from the 2006-07 to 2008-09 school years);
- transferred from a Choice school to MPS, or vice versa, in either the 2007-08 or 2008-09 school years; or
- attended an unknown school in the 2008-09 school year because, for example, the pupil left the district or complete pupil information was unavailable.

As shown in Table 4, 1,097 pupils from the Choice sample, or 40.2 percent of the total, remained in Choice schools from the 2006-07 to the 2008-09 school years, compared to 2,117 pupils, or 77.6 percent, from the matched sample who remained in MPS. However, 845 pupils from the Choice sample, or 31.0 percent, transferred to an MPS school between the 2006-07 and 2008-09 school years, and 193 pupils from the MPS matched sample, or 7.1 percent, transferred to a Choice school during the same period. Some pupils in the Choice sample likely transferred to MPS because only 33 of the 127 Choice schools offered instruction in grades 9 through 12 during the 2008-09 school year. In addition, the researchers indicated that some Choice pupils transferred to MPS when they transitioned from elementary school to middle school.

Table 4

Location of Pupils in the Demonstration Project’s Two Samples 2006-07 to 2008-09 School Years

	Choice Sample		MPS Matched Sample	
	Number	Percentage of Total	Number	Percentage of Total
Remained in Choice Schools	1,097	40.2%	–	–
Remained in MPS	–	–	2,117	77.6%
Transferred from a Choice School to MPS	845	31.0	–	–
Transferred from MPS to a Choice School	–	–	193	7.1
Unknown	785	28.8	417	15.3
Total	2,727	100.0%	2,727	100.0%

Tracking the location of pupils in the two samples is challenging because some pupils leave Milwaukee to attend school elsewhere or drop out of school. For example, the project was unable to determine the schools that 785 Choice sample pupils, or 28.8 percent of the total, and 417 MPS matched sample pupils, or 15.3 percent, attended in the 2008-09 school year. However, the project continues to attempt to track these pupils and may have information on their location in future years.

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 the fifth through eighth grades or the tenth grade in the 2008-09 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 April 2010 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 2008-09 school year.

In addition, the project's reported calculations of Choice pupils' average test scores included the 845 pupils who started the study in a Choice school but later transferred to MPS. Similarly, its calculations included the 193 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 2008-09 school years. In total, 786 Choice sample pupils, or 48.4 percent, had reading scores in both school years, while 785 pupils had mathematics scores. In comparison, approximately 70.0 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 2008-09 School Years**

Grade Level in 2008-09	Pupils in the Project's Two Samples	Reading		Mathematics	
		Choice Sample	MPS Matched Sample	Choice Sample	MPS Matched Sample
5	341	188	243	188	250
6	324	180	249	180	254
7	338	173	251	171	251
8	330	171	268	171	268
10	290	74	145	75	144
Total	1,623	786	1,156	785	1,167

Table 6 shows the average scores on the reading section of the Wisconsin Knowledge and Concepts Examination for pupils in the Choice sample and the MPS matched sample in the 2006-07 and 2008-09 school years.

Table 6

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

Grade Level in 2008-09	Choice Sample		MPS Matched Sample	
	2006-07 School Year	2008-09 School Year	2006-07 School Year	2008-09 School Year
5	433.3	448.4	434.4	448.9
6	442.1	460.6	436.0	454.2
7	445.5	476.5	440.8	472.4
8	468.6	493.5	465.8	490.6
10	497.2	494.0	492.1	491.3

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. However, the average reading scores of tenth-grade pupils in the Choice sample and the MPS matched sample were lower in the 2008-09 school year than in the 2006-07 school year.

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 2008-09 school years.

Table 7
**Average Pupil Scores on the
Wisconsin Knowledge and Concepts Examination: Mathematics**

Grade Level in 2008-09	Choice Sample		MPS Matched Sample	
	2006-07 School Year	2008-09 School Year	2006-07 School Year	2008-09 School Year
5	385.6	441.1	393.9	454.6
6	423.6	462.6	422.4	465.3
7	444.2	491.2	447.9	490.9
8	472.0	502.9	473.2	505.2
10	502.9	519.1	506.5	520.7

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. We used DPI's information to determine the statewide percentile rankings of the average scores shown in Table 6 and Table 7. As shown in Appendix 1, the pupils in both the Choice sample and the MPS matched sample ranked generally between the 10th and 25th percentiles. This means that in both the 2006-07 and 2008-09 school years, from 75 to 90 percent of all 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 from the 2006-07 to the 2008-09 school years for pupils in the Choice sample and the MPS matched sample, and it determined whether any of the differences in the average test score changes 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.

For the most part, the researchers did not find statistically significant differences in test score changes. However, they reported that the test scores of seventh-grade pupils in the Choice sample increased more, on average, than those in the MPS matched sample on the mathematics section, and the difference was statistically significant.

As shown in Table 8, we did not find any significant differences in the average changes in reading or mathematics scores between the 2006-07 and 2008-09 school years. As noted, we excluded from our calculations the 845 pupils who had transferred from Choice schools to MPS and the 193 pupils who had transferred from MPS to Choice schools.

Table 8
Average Changes in Pupil Scores on the
Wisconsin Knowledge and Concepts Examination
2006-07 to 2008-09 School Year

Grade Level in 2008-09	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
5	15.1	14.5	(0.6)	55.5	60.7	5.2
6	18.5	18.2	(0.3)	39.0	42.9	3.9
7	31.0	31.6	0.6	47.0	43.0	(4.0)
8	24.9	24.8	(0.1)	30.9	32.0	1.1
10	(3.2)	(0.8)	2.4	16.2	14.2	(2.0)

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

In addition to compiling and analyzing Wisconsin Knowledge and Concepts Examination scores for Choice sample and MPS matched sample pupils who took the test in the 2006-07 and 2008-09 school years, the project collected the test scores of pupils who were added to the samples as third-grade pupils in the 2007-08 school year and who progressed to the fourth grade in the 2008-09 school year. Appendix 2 provides demographic information for these pupils.

The project analyzed the one-year changes in average test scores of Choice sample and MPS matched sample pupils who were in grades four through eight in the 2008-09 school year and took the Wisconsin Knowledge and Concepts Examination in the 2007-08 and 2008-09 school years. Appendix 3 shows the number of pupils with test scores, their average test scores, and their average changes in test scores. Although we were generally able to confirm the results that the project reported, we did not find the difference between average changes in mathematics scores for seventh-grade pupils in the Choice and MPS matched samples to be statistically significant. However, we found a statistically significant difference in mathematics scores for sixth-grade pupils, which the project did not report, as well as statistically significant

differences in reading scores for fifth-grade pupils and in mathematics scores for eighth-grade pupils, which the project did report. In all three instances, MPS matched sample pupils outperformed Choice pupils. As noted, our analysis excluded pupils who had transferred from Choice schools to MPS, or vice versa. These pupils were included in the project’s analysis.

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 2008-09 school year. We are unable to determine from the project’s data the type of test administered to two fourth-grade pupils.

Table 9

Tests Administered to Choice Pupils
2008-09 School Year

Test	Number of Pupils		
	4 th Grade	8 th Grade	10 th Grade
Nationally Normed Standardized Tests			
Iowa Test of Basic Skills	419	305	5
Terra Nova	235	224	109
PLAN	0	0	331
Stanford Achievement Test	27	16	21
Northwest Evaluation Association Measures of Academic Progress	0	0	3
Unknown	2	0	0
Subtotal	683	545	469
Wisconsin Knowledge and Concepts Examination	263	319	96
Total	946	864	565

In April 2010, the project reported that three Choice schools—Kidpreneur, The Way and the Truth Christian Academy, and Tuskegee Aviation Academy—had enrolled pupils in fourth, eighth, or tenth grade but did not provide test scores for the 2008-09 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 of a lack of required insurance coverage, and the school will not participate in the Choice program in the 2010-11 school year. Kidpreneur and The Way and the Truth Christian Academy did not participate in the Choice program in the 2009-10 school year.

While the project indicated that only three Choice schools did not provide it with test scores for the 2008-09 school year, the data it provided us included test scores for only 2,375 of the 4,010 Choice pupils, or 59.2 percent, enrolled in the program in fourth, eighth, or tenth grade, as was shown in Table 1. 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 project's data 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. 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.

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 34th percentile of all pupils nationwide, eighth-grade pupils scored in the 35th percentile of all pupils nationwide, and tenth-grade pupils scored in the 39th percentile of all pupils nationwide. This means that approximately three-fifths of all pupils nationwide scored higher than Choice pupils.

Table 10

Choice Pupil Results on Nationally Normed Standardized Tests: Reading¹ 2008-09 School Year

Grade Level	Number of Pupils			Choice Pupils' Average National Percentile Ranking
	Total	Without Test Scores	With Test Scores	
4	683	14	669	34.9
8	545	12	533	35.7
10	469	5	464	39.4

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
2008-09 School Year

Grade Level	Number of Pupils			Choice Pupils' Average National Percentile Ranking
	Total	Without Test Scores	With Test Scores	
4	683	19	664	29.7
8	545	15	530	37.2
10	469	2	467	38.4

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
2008-09 School Year

Grade Level	Number of Pupils			Choice Pupils' Average National Percentile Ranking
	Total	Without Test Scores	With Test Scores	
4	683	20	663	33.8
8	545	17	528	36.7
10	469	5	464	36.7

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

Wisconsin Knowledge and Concepts Examination

The project separately analyzed pupils' scores on the Wisconsin Knowledge and Concepts Examination because the 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 April 2010, the project reported the test scores of fourth- and eighth-grade pupils in the 2008-09 school year, but it did not report information about tenth-grade pupils because only 96 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 2008-09 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 pupils than MPS pupils in the fourth and tenth grades scored in the proficient or advanced levels on each section of the Wisconsin Knowledge and Concepts Examination. In contrast, higher percentages of Choice pupils than MPS pupils in eighth grade scored in those levels on two of the test's three sections. The scores of other pupils statewide were uniformly higher than those of both Choice pupils and MPS pupils. Appendix 5 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 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 the third through eighth grades, as well as to those in tenth grade, and to annually report pupils' scores to DPI. DPI has not yet determined when information on the Choice pupils' scores will become publicly available.

The project's longitudinal study shows no significant difference in the performance of Choice and similar MPS pupils after three years of participation. The researchers have acknowledged future challenges for their longitudinal study, such as taking into account pupils

who transfer between Choice schools and MPS. As noted, the test scores of pupils who transferred either from a Choice school to MPS or vice versa have been included in the project's analysis. The researchers used advanced statistical techniques to conclude that the academic achievement of Choice and MPS pupils was similar both when pupils who had transferred were included in and when they were excluded from the analysis. However, including such pupils in future analyses will be more challenging because it is difficult to determine whether academic achievement should be attributed to attendance at Choice schools, MPS, or both.

Finally, the number of pupils in the project's samples is likely to continue to decline because some of the pupils in both sample groups are likely to continue to transfer to other school districts or drop out of school. In addition, pupils who remain in a Choice school or in MPS during the entire length of the study will likely not have tests scores in all school years for a variety of reasons. For example, only 188 of the original 341 Choice pupils in the fifth grade during the 2008-09 school year had test scores on the reading and mathematics sections of the Wisconsin Knowledge and Concepts Examination in both the 2006-07 and 2008-09 school years. The researchers believe that the pupil samples are large enough to provide meaningful results in future years, and their April 2010 report indicated that more pupils in the samples could be located during the 2008-09 school year than they had originally anticipated. However, we believe pupil attrition will likely pose a significant challenge to the researchers. It will be important for the project to use the most appropriate methodology for analyzing and comparing pupil tests scores in its longitudinal study 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**

2006-07 and 2008-09 School Years

Reading

Grade Level in 2008-09	2006-07 School Year				2008-09 School Year			
	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking
5	433.3	21	434.4	22	448.4	21	448.9	21
6	442.1	18	436.0	15	460.6	18	454.2	15
7	445.5	16	440.8	14	476.5	18	472.4	16
8	468.6	20	465.8	18	493.5	21	490.6	19
10	497.2	24	492.1	21	494.0	20	491.3	19

Mathematics

Grade Level in 2008-09	2006-07 School Year				2008-09 School Year			
	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking	Choice Sample	Statewide Percentile Ranking	MPS Matched Sample	Statewide Percentile Ranking
5	385.6	14	393.9	18	441.1	11	454.6	17
6	423.6	15	422.4	14	462.6	12	465.3	14
7	444.2	14	447.9	16	491.2	15	490.9	14
8	472.0	16	473.2	17	502.9	16	505.2	17
10	502.9	19	506.5	21	519.1	16	520.7	17

Appendix 2

**Demographic Characteristics of the Demonstration Project's
Supplemental Pupil Sample**

Fourth-Grade Pupils in the 2008-09 School Year

	Choice Sample	MPS Matched Sample		Choice Sample	MPS Matched Sample
Race/Ethnicity			English Not Primary Language		
African-American	286	316	Yes	9	18
Hispanic	86	83	No	208	385
White	27	23	Missing Data	229	43
Asian	13	17	Total	446	446
American Indian	2	1	Free or Reduced-Price Lunch¹		
Other	3	6	Yes	91	333
Missing Data	29	0	No	126	70
Total	446	446	Missing Data	229	43
Gender			Total	446	446
Female	197	211	School Attended in 2008-09		
Male	187	235	Remained in Choice Schools	314	–
Missing Data	62	0	Remained in MPS	–	403
Total	446	446	Transferred from a Choice School to MPS	82	–
Disability			Transferred from MPS to a Choice School	–	0
Yes	15	89	Unknown	50	43
No	202	314	Total	446	446
Missing Data	229	43			
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 3

**Changes in Average Pupil Scores on the
Wisconsin Knowledge and Concepts Examination**

2007-08 and 2008-09 School Years

Pupils with Test Scores in Both School Years

Grade in 2008-09	Pupils in the Project's Two Samples	Reading		Mathematics	
		Choice Sample	MPS Matched Sample	Choice Sample	MPS Matched Sample
4	446	252	378	251	384
5	341	190	246	187	249
6	324	180	238	181	241
7	338	176	245	175	243
8	330	167	262	166	261
Total	1,779	965	1,369	960	1,378

Average Pupil Scores

Reading

Grade Level in 2008-09	Choice Sample		MPS Matched Sample	
	2007-08 School Year	2008-09 School Year	2007-08 School Year	2008-09 School Year
4	416.9	435.7	423.2	437.1
5	443.4	446.2	439.1	448.4
6	441.6	456.2	445.3	456.2
7	459.9	475.1	454.5	473.2
8	476.5	490.2	477.0	493.3

Mathematics

Grade Level in 2008-09	Choice Sample		MPS Matched Sample	
	2007-08 School Year	2008-09 School Year	2007-08 School Year	2008-09 School Year
4	376.2	414.0	392.0	431.7
5	420.4	441.2	429.7	454.5
6	441.6	460.6	441.7	467.3
7	463.5	490.9	469.4	492.9
8	492.2	497.8	490.6	506.8

Average Changes in Pupil Scores
2007-08 to 2008-09 School Years

Grade Level in 2008-09	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	18.8	13.9	(4.9)	37.8	39.7	1.9
5	2.8	9.3	6.5	20.8	24.8	4.0
6	14.6	10.9	(3.7)	19.0	25.6	6.6
7	15.2	18.7	3.5	27.4	23.5	(3.9)
8	13.7	16.3	2.6	5.6	16.2	10.6

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

Appendix 4

**Choice Pupil Percentile Rankings on
Nationally Normed Standardized Tests**
2008-09 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	117	17.5%	69	13.0%	55	11.9%
10 to 19	108	16.1	78	14.6	57	12.3
20 to 29	99	14.8	89	16.7	78	16.8
30 to 39	84	12.6	90	16.9	46	9.9
40 to 49	71	10.6	60	11.3	67	14.4
50 to 59	58	8.7	57	10.7	69	14.9
60 to 69	52	7.8	40	7.5	24	5.2
70 to 79	37	5.5	29	5.4	27	5.8
80 to 89	33	4.9	16	3.0	22	4.7
90 to 99	10	1.5	5	0.9	19	4.1
Total	669	100.0%	533	100.0%	464	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	168	25.3%	80	15.1%	56	12.0%
10 to 19	125	18.8	83	15.7	67	14.3
20 to 29	101	15.2	81	15.3	66	14.1
30 to 39	73	11.0	68	12.8	78	16.8
40 to 49	65	9.8	52	9.8	67	14.3
50 to 59	31	4.7	43	8.1	61	13.1
60 to 69	36	5.4	49	9.2	27	5.8
70 to 79	23	3.5	28	5.3	15	3.2
80 to 89	28	4.2	30	5.7	17	3.6
90 to 99	14	2.1	16	3.0	13	2.8
Total	664	100.0%	530	100.0%	467	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	105	15.8%	67	12.7%	56	12.1%
10 to 19	125	18.9	78	14.8	43	9.3
20 to 29	91	13.7	83	15.7	67	14.4
30 to 39	98	14.8	69	13.1	127	27.4
40 to 49	77	11.6	77	14.6	68	14.7
50 to 59	66	10.0	58	11.0	20	4.3
60 to 69	47	7.1	47	8.9	34	7.3
70 to 79	32	4.8	25	4.7	19	4.1
80 to 89	15	2.3	21	4.0	14	3.0
90 to 99	7	1.0	3	0.5	16	3.4
Total	663	100.0%	528	100.0%	464	100.0%

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

Appendix 5

**Percentage of Pupils Scoring in the Proficient or Advanced Levels
on the Wisconsin Knowledge and Concepts Examination**
2008-09 School Year

	Choice	MPS	Statewide
Fourth Grade			
Reading	47.2%	61.2%	81.6%
Mathematics	33.1	60.2	81.0
Science	23.6	50.8	76.1
Eighth Grade			
Reading	71.2	63.7	84.7
Mathematics	47.7	50.2	78.4
Science	51.1	44.8	75.7
Tenth Grade			
Reading	39.6	41.3	74.9
Mathematics	16.7	28.8	69.3
Science	17.7	28.4	71.8