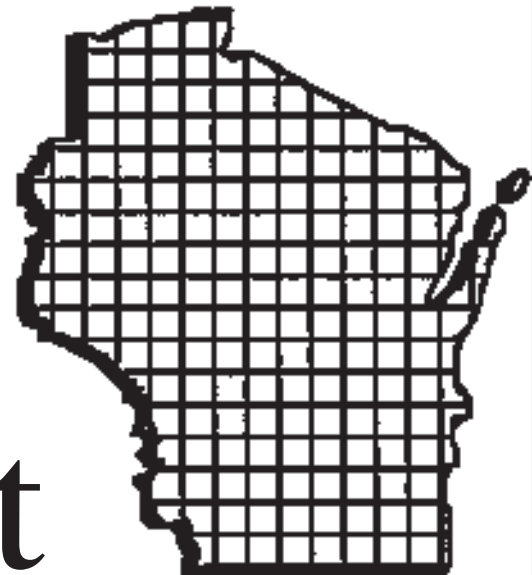


Wisconsin

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Research
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Report



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**The Achievement
Gap in Milwaukee
Public Schools**

*Outcomes by Gender, Race and
Income Level*

REPORT FROM THE SENIOR FELLOW:

Few issues are more important to Wisconsin than improving the disappointing performance of Milwaukee's school children. Few researchers have the credentials or experience studying Milwaukee Public Schools (MPS) than UW-Milwaukee professor Sammis White. Professor White is a widely recognized expert on both Milwaukee's schools and Milwaukee's economy.

In Doctor White's latest study he has obtained access to records of over 13,000 individual MPS students. He reviewed the records of students in the classes of 2008 and 2011 to better understand student performance. This access to student data has allowed White to examine educational performance from the inside, almost as though he were sitting in the classroom. His findings are revealing.

It is commonly known that gender, race and income are key ingredients in determining student performance. White's examination of the records of thousands of students reveals the seriousness of the gaps that separate MPS students; gaps between gender, race, and income. If these gaps can be closed, the future for Milwaukee looks bright. If the gaps continue to grow, the future looks bleak.

White's research is a key step in understanding the desperate nature of learning gaps within MPS. For example, while we know that only 31% of African-American males graduate from MPS, Professor White shows what causes the high dropout rate, when problems begin and when intervention is needed.

African-American males fall behind other students in the early grades, almost from the first time they walk through the schoolhouse doors, and the gap between them and their fellow students widens as they get older. Further, White's research shows that the gaps between boys and girls are greatly exacerbated by race and income. MPS has made numerous efforts to close the gap but those efforts are not working. MPS efforts are especially failing African-American males, which comprise 25%-30% of the MPS student body. For example, by the seventh grade, reading tests show that low-income African-American males are three full grades behind middle-income white females. The gap in math is nearly as bad.

These results are totally unacceptable. The economic prospects for Milwaukee and Southeast Wisconsin depend on closing the gap between the educational haves and the have-nots. And, while efforts have been made to close the gap, White's research starkly shows the reality that current efforts are not working. Well-intentioned, incremental efforts should no longer be tolerated.

White is correct in laying this issue at the feet of the governor and the legislature. They represent the taxpayers from throughout Wisconsin who invest more than \$900 million per year in MPS. Today the governor and legislature ask for nothing in return for this enormous investment. That laissez-faire approach is failing not only another generation of Milwaukee children, it is also jeopardizing the future economic health of Wisconsin.



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THE ACHIEVEMENT GAP IN MILWAUKEE PUBLIC SCHOOLS

Outcomes by Gender, Race and Income Level

SAMMIS WHITE, PH.D.

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EXECUTIVE SUMMARY

Despite a host of initiatives the Milwaukee Public Schools (MPS) have had very modest and irregular success in raising levels of student achievement in recent years. The results are not sufficient to ensure economic health for the individual students or the regional economy. These are among the numerous compelling reasons why achievement levels must rise.

To raise student achievement, we first need a better understanding of what factors may be most influential in the low scores that have been commonplace in MPS. A factor that may be playing a role is the failure to teach in ways that helps the majority of males achieve at higher levels. Increasingly, evidence suggests urban school systems fail males, especially minority males. According to one source, African-American males in MPS, for example, have a graduation rate of about 31%, and Hispanic males have an estimated graduation rate of 36%. The white, male rate of graduation from MPS is estimated to be 66%, suggesting something is out of kilter for minority males, not to mention the system as a whole, one that largely serves a low-income population.

We must also note, however, that minority females, while doing better than comparable males, have not achieved at close to white female levels in the district. The MPS African-American female graduation rate is estimated at 46%, Hispanic female, 50%, and white female, 75%, in a state where the average overall graduation rate is 88.8%. Graduation is just one measure, albeit a critical one, of achievement. Thus, the question is whether the problem of low achievement is one of gender, race, or income.

This report examines the differing levels of achievement of two genders, three different racial groups, and four different levels of income among two classes of students followed over seven or eight years to learn what factors appear to have the greatest impacts on student achievement in reading and math. The analysis is done of cohorts of Milwaukee Public School students.

Among the findings that appear are the following stark messages:

- On reading, MPS male students of all incomes and races combined, on average, score consistently below similar females. The gap increases substantially as students move to higher grades.
- On math, MPS male students of all incomes and races combined tend to score, on average, just marginally below females, and the gaps do not change much as students move to higher grades.
- Within the same gender there are very large gaps in average reading and math scores between students with the lowest incomes (eligible for free lunches) and middle-income students (those who did not apply for lunch support), starting in the earliest years of testing. The sizes of these gaps grow markedly among both males and females, as students move to higher grades.
- Large gaps in average reading achievement scores exist between minority and white MPS students (all incomes combined). The scale of these gaps grows as students move through the grades.
 - * Among MPS females the average Hispanic/white reading gap, on average, is relatively modest most years, but the average African-American/white gap starts large at lower grades and doubles by tenth grade. This latter gap most years is roughly estimated at more than a year of progress.
 - * Among MPS males the average Hispanic/white reading gap, on average, is larger than the female gap, but it is in the range of about a half-year's progress until tenth grade, at which point it increases. The average African-American/white gap starts early and remains large, increasing dramatically in tenth grade. Most years the gap is roughly estimated at more than a year of progress.
- Despite modest average differences between males and females in math, there are large differences in average math achievement scores between minority and white MPS female and male students (all incomes combined). The scale of these gaps grows as students move through the grades.
 - * Among females the average Hispanic/white math score gap begins at a modest level and doubles within a few years. The average African-American/white gap begins large and grows substantially over the grades 4th-10th. Most years the gap is very roughly more than a year of progress.
 - * Among males the average Hispanic/white math score gap is large (over half a year) at fourth grade and basically doubles by high school. The average African-American/white gap begins large at twice the Hispanic/white gap and almost doubles over grades 4th-10th. Most years the Black/white gap is very roughly more than a year of progress.

- When all three characteristics are combined and the consistently lowest-scoring group of students' (on average, African-American males) achievement levels are compared with the group that is consistently the highest-scoring group, white females, by grade and subject, extremely large differences are commonplace.
 - * For the Class of 2011 the difference in average reading achievement between these two groups is 49 points at fourth grade, rising to 70 points in seventh grade. This can loosely be estimated to be a three-year difference in reading levels, on average, by seventh grade.
 - * For the Class of 2011 the difference in average math achievement between these two groups is 30 points at fourth grade, rising to 61 points in seventh grade. This can loosely be estimated to be a two- to three-year difference in math levels, on average, by seventh grade.

The evidence from these two classes shows what many others have been saying; on average, an extremely large difference in levels of reading and math achievement exists between African-American males and white males and females. And African-American males are quite consistently the lowest scorers, on average, on both reading and math.

But the differences that exist are almost as large between average African-American females and average white males and females. The gaps start early; they are not an issue that suddenly appears late in the elementary school years. Many of the differences appear as soon as testing is done.

If measured against the average student in the state of Wisconsin at 8th grade, the average African-American male in MPS is approximately two years behind in math and almost two years behind in reading.¹ Those are huge gaps that should be totally unacceptable to the citizens of the state.

Hispanics have also been achieving at lower than white levels, on average. They should be given every opportunity to achieve at least at middle-income white levels. So programs should not be targeted just at African-Americans or African-American males.

Furthermore, the gap is not just a minority gap: on average, low-income white males are often a year or more behind middle-income white males in reading and math. That indicates a very large need for instituting approaches that are targeted at low-income children, regardless of race. A high proportion of these children could use the attention.

These learning achievement differences must be addressed both for the sake of the individuals and for the sake of the regional economy. The Milwaukee economy is growing increasingly reliant on a minority workforce. If that workforce is largely undereducated, then the economy will not be able to compete globally, and incomes of all residents, not just the undereducated, will suffer.

The learning gaps must be addressed, beginning now. Steps must be taken both inside and outside MPS to raise student achievement and high school graduation rates for all. To begin the move in that direction, some suggestions are offered. Each has some research support, but several would benefit from additional application and evaluation in the Milwaukee setting. The most important step is taking more concerted efforts to raise levels of student achievement.

There are several steps that are very likely to make success easier to achieve in K-12 education. Some of these steps are harder to achieve than the others, although the reader may have trouble deciding which of the five mentioned is really harder — since all will be opposed to at least some degree. The five recommendations are:

- Increase parent involvement in their child's education.
- Inject accountability in the governor, legislature and local educators for student outcomes.
- Replicate lessons from successful schools.
- Better prepare children for school before they reach Kindergarten.
- Embed body-movement exercises in everyday classes in all schools and preschools.

The author would like to acknowledge the assistance of Bruce Thompson in the development of the data for this analysis. The author is solely responsible for the analysis and policy recommendations.

INTRODUCTION

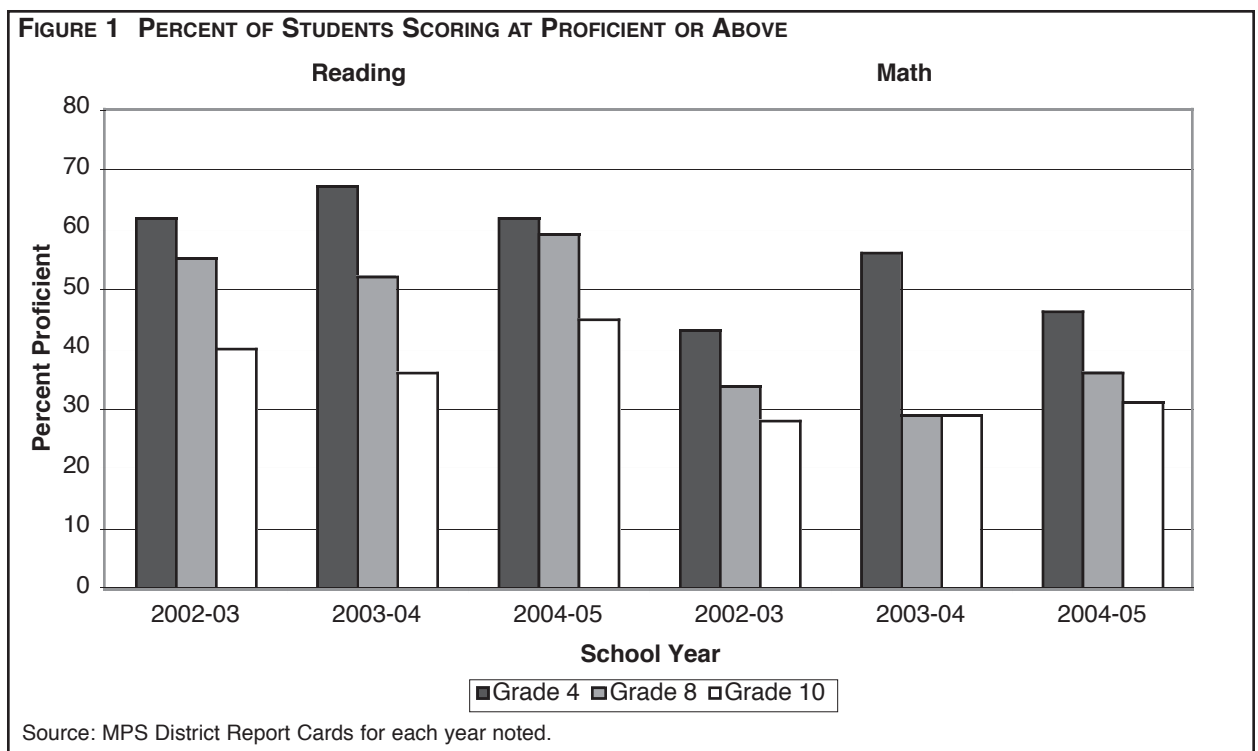
In the last year numerous headlines have appeared in the news media that suggest a large gender problem exists in our schools. The *New York Times* said: “Boys are No Match for Girls in Completing High School.”² Another from the *Times*: *Dire Problems for Young Black Men, Several New Academic Studies Warn.*³ Locally, the *Journal Sentinel* featured a story that “Boys learn differently from girls, studies say.”⁴ And last July in the results of a national study Wisconsin fared worst in the nation in what was termed the state Education Inequality Index, the difference between graduation rates of black males and white males. The gap in Wisconsin was 47 points, the difference between a graduation rate of 38% for black males and 84% for white males across the state.⁵

There is also a growing literature that bemoans the treatment boys are receiving in education today.⁶ The claim is that males learn differently and that those differences work against them in schools that teach to the girls’ way of learning. They cite evidence of higher grades, higher high school graduation rates of girls, higher rates of college attendance among young women, and higher grades in college. Boys, these critics complain, are getting the short end of the stick.

On the other hand, another group claims that the issue is that girls are finally being given the education that they deserve and that both sexes are doing better overall.⁷ One only need to note that the majority of college students today are women to know that girls are finally competing well with boys, at least on many indicators.

But even those who argue that females are only beginning to equal males realize that certain males — minority and low-income — are not doing well. These defenders of girls’ achievements admit that “academic performance for minority boys is often shockingly low.”⁸ This is certainly the case in Milwaukee where minority test scores and graduation rates are significantly behind those of white students in the district and even further behind those of white students in the rest of the state.

Milwaukee Public Schools’ (MPS) test scores have not been rising for several years, despite a host of initiatives (Figure 1). The district has seen an increase in the proportion of low-income students, so holding scores steady may be an accomplishment, modest though it may be. But stability in scores is not enough. There are numerous compelling reasons why achievement levels must rise. A recent report on MPS reveals that outside reviewers see MPS as far too complacent with its non-gains.⁹ The reviewers insist that more pressure be placed on MPS for gains in student achievement.



Pressure alone is not sufficient. We need a better understanding of what factors may be most influential in the low scores that have been commonplace in MPS. The new report cites the decentralization of authority as a contributor to no steady gains. MPS administration is now trying to reverse that (re-centralize), so that it can have a greater role in curriculum and budget decisions, among other points. But few view management style as the determining factor in educational outcomes.

A factor, however, that may be playing a role is the failure to teach in ways that helps the majority of males achieve at higher levels. According to one source, African-American males in MPS, for example, have a graduation rate of about 31%, and Hispanic males have an estimated graduation rate of 36%.¹⁰ The white male rate of graduation from MPS is estimated to be 66%, suggesting something is out of kilter for minority males, not to mention the system as a whole. What must also be noted is that the minority females, while doing better than comparable males, have not achieved at close to white female levels in the district. The African-American female graduation rate is estimated at 46%, Hispanic female, 50%, and white female, 75%. This is just one measure, albeit a critical one, of achievement.

Do these differences among these groups start at young ages or do they develop over time, perhaps as peer pressure gets stronger? Do the differences vary by subject area or are boys behind girls in levels of achievement on every subject? And do Hispanic males and females more closely follow the patterns of achievement for whites or for African-Americans? These are important questions to answer, because the answers can lead to more appropriate curricula and teaching methods.

If gender differences are not an issue, then we can look for other factors that might make better targets for interventions. Given the media coverage, we look first to the gender differences.

RESEARCH

The popular press has been quick to pick up on the proposition that males, especially African-American males, are falling further and further behind not only white males but African-American females. *Business Week* ran an article entitled “The new gender gap: From kindergarten to grad school, boys are becoming the second sex.”¹¹ The article made the case that boys are not doing as well in school achievement, school graduation, or college entrance or graduation. And they make the case that this is a problem, not only economically but socially. *USA Today* ran an opinion piece entitled: “Pay closer attention; Boys are struggling academically.”¹² It talks of the reforms that have helped girls do better and that several of the reforms have made achievement more difficult for boys. The impression given is that boys are struggling.

Despite these media articles on males, the evidence is not so clear. A review of trends in the educational equity of girls and women for 2004 reveals that “females have done much better than males in reading and writing, but have generally, though not always, lagged behind in science and mathematics.” The report also states that “females in grades 4, 8, and 12 have consistently outperformed males in reading . . . and also outperformed their male peers in writing in 1998 and 2002.”¹³

The same study revealed a somewhat different finding with regard to math. In fact, “[a]lthough there is a common perception that males consistently outperform females in mathematics, National Assessment of Educational Progress (NAEP) mathematics scores have not shown this. In mathematics, the gap between average scale scores has been quite small and fluctuated only slightly between 1990 and 2003.”¹⁴ Another study, one that examined 111 studies on male and female abilities concluded that “most of the [studies] suggest that men’s and women’s abilities for math and science have a genetic basis in cognitive systems that emerge in early childhood but give men and women on the whole equal aptitude for math and science.”¹⁵ The author goes on to report that boy and girl infants were found to perform equally well as young as six months on such tasks as addition and subtraction.

Surprisingly, given the results of the NAEP test scores on reading and writing, Hyde and a colleague reported that data from 165 studies revealed a female superiority so slight as to be meaningless, despite previous assertions that “girls are better verbally.”¹⁶ Hyde and two colleagues examined math performance and concluded that there was little support for saying boys are better at math. They instead concluded that social and cultural factors influence perceived or actual performance differences.¹⁷

Reinforcing the conclusion that social and cultural factors are very influential were the results from the two international tests. One is from the Trends in Mathematics and Science Study (TIMSS) for students in grades 4 and 8. The

second is the Program for International Student Assessment (PISA) for students at age fifteen. The American Institutes for Research (2003) noted that boys in the United States consistently outperform girls in all three assessments on math. The differences are small (less than a tenth of a standard deviation). But the most intriguing finding is that the U.S. and Italy are the only countries out of twelve compared in which boys consistently outperform girls on all three assessments.¹⁸

The case for culture and social factors being influential may well play a role in what several studies see as a greater gap between males and females — that between African-American males and females. According to a 2004 report (The Schott Foundation for Public Education) the widest gap separates African-American males from other sub-groups of students, including Black females.¹⁹ The study notes that several school districts have the lowest Black male graduation rates in the country; these include: Cincinnati and Cleveland, Ohio, 19%; Chatham County, Georgia, 21%, Rochester, New York, Milwaukee, Wisconsin, and Pinellas County, Florida, 24%.²⁰ Although these numbers likely overstate the problem, it is clear that the African-American, male graduation rates are very low in Milwaukee and elsewhere.

It is this phenomenon that needs greater exploration. Why is it that African-American males have such low graduation rates? Does this pattern of modest achievement start at some early date? If it does, can interventions be identified that can help to reduce the failure and desire to leave high school before it can be completed? These are critical questions. Again the popular media has picked up on this and the implications. The *USA Today* editorial referred to above states that for African-American men the gender gap is widening at an alarming rate in terms of high school completion, college enrollment, and college degrees. The 2000 US Census pointed out that 35% of African-Americans enrolled in college were men.

The primary quest for this report is to learn if and when African American males in Milwaukee begin to fall behind African-American females in terms of reading and math. The report also seeks to learn if the pattern is different among Hispanics and whites in the Milwaukee Public Schools. If the African-American males drop behind at an early age, the question then becomes what sorts of interventions might be appropriate to try to raise average African-American male scores to at least equivalent to those of average African-American females and even better would be to make them equivalent to white males and females.

Data

To explore the pattern of student achievement within the Milwaukee Public Schools, we employed the data resources of MPS. The data used in this study are from the MPS records of individual students. These students' identities are disguised. But the manner in which they are disguised allows us to track the students by using a unique identifier assigned to each student. Thus, we are able to track students over time, and we are able to associate select pieces of individual information, such as grade, race, gender, and eligibility for free or reduced-price lunch with their standardized test scores in math and reading.

Standardized test results were used as a measure of achievement. MPS uses annual tests (the same test but with two different names) in grades four through ten. This allows annual comparisons to be made rather than having to use only fourth-, eighth-, and tenth-grade tests, the ones mandated by the State Department of Public Instruction. Thus, student identifiers are associated with the Wisconsin Knowledge and Concepts Exam (WKCE) for fourth, eighth, and tenth grades, and the Terra Nova exam for fifth, sixth, seventh, and ninth grades. The exams are given in the fall (usually November) of each year.

We selected two classes to examine in this study: the Class of 2008 and the Class of 2011, each named for the year of scheduled high school graduation. For the class of 2008, fourth-grade WKCE exams were given in 1999, eighth-grade WKCE exams were given in 2003 and tenth grade WKCE exams were given in the fall of 2005. In an attempt to better understand how students actually did at the time they were first scheduled to take the exams, the individual records were created so that the only scores available for analysis were those associated with the first attempt at taking each test. If students are kept behind, they drop from the class of analysis.

The Class of 2011 was constructed in similar fashion. But the data start at second grade because MPS changed its rules and organized testing for second-graders. Thus, their first tests were the Terra Nova, given in 2000. And because they started later, the most recent test scores available are the seventh grade Terra Nova from the fall of 2005.

Results of the exams are expressed in a three-digit number for each subject area. The scores we are using are referred to as “scale” scores.²¹ These scores allow us to follow progress over time because they are “scaled” so that progress or lack thereof can be easily seen. These exams do cover subjects beyond reading and math. But since those are fundamental subjects, they are the ones on which we concentrate.

Each class started with over 7,000 members. The Class of 2011, for example had 7,614 members in 2000, the year they were in second grade. By the time they were in sixth grade the class had diminished to 6,845 students. While the class was smaller by 769 students that is still a large number of students. When we did the analysis, we used information on fewer students because we needed complete records. Thus, when we analyzed the class of 2008 in sixth grade for details on gender, race, and income, we used records from 6,960 students. For the Class of 2011’s sixth grade for a similar analysis, we employed records of 6,407 students.

The vast majority of students in these classes are minority, and the clear majority of these students qualified for free- or reduced-price lunch. Thus, in the sixth grade of the Class of 2008, some 5,031 minority students qualified for free lunch, and another 552 minority students qualified for reduced-price lunch (Table 1). Subsidized students constituted 92% of minority students for whom we had data.

TABLE 1 COUNTS OF STUDENTS BY RACE, GENDER, AND INCOME FOR SIXTH GRADE, CLASS OF 2008

Grade 6 Lunch	African-American		Hispanic		White		Total		Total
	Females	Males	Females	Males	Females	Males	Females	Males	All
Free	1907	1916	398	428	185	180	2679	2717	5,396
Reduced	173	198	62	54	76	73	339	362	701
Denied	60	61	24	20	36	33	129	128	257
No Support	99	96	15	20	170	177	301	305	606
Total	2239	2271	499	522	467	463	3448	3512	6,960

The concentration of minority students means that the pool of white students is modest in scale to begin with. For this same sixth grade of the Class of 2008, we had data for 930 white students or 13% of the students for whom we had complete records. That is quite close to their overall proportion in the district (14%). When the white student population is subdivided by income, sub-groups, such as those denied subsidized lunches, are not very large. The same is true of Hispanics and even African-Americans. So the most reliable test scores are those for students eligible for free lunch in all three racial groups and whites with incomes too high to be eligible. We use test scores on all sub-populations, but we urge caution drawing firm conclusions on some of the smaller sub-groups, such as those with reduced-price lunches or those denied subsidized lunches.

Methodology

The analysis of MPS student achievement is very straightforward. All available test scores were aggregated and divided by the number of appropriate students to create average, standardized, scale-scores for each group of students. Thus, for example, the reading scale scores of all fourth-grade males and females from the Class of 2008 were put together and divided by the number of such males and females to create an average scale score for fourth-grade males and females from that class. Similar figures were created for the fourth-grade from the Class of 2011. The differences in scores between the males and females of each class were compared to see if they are similar.²²

Average test scores were also created for sub-parts of the original gender group. Thus, fourth-grade females were sub-divided into three racial groups — African-American, Hispanic, and white — and then again the three were sub-divided into, for example, African-American fourth-grade girls who received a free lunch, those who received a reduced-price lunch, those who applied and were denied a subsidy for lunch, and those who were not eligible for lunch support. This further subdivision was undertaken for all grades, for all three racial groups, for two genders, and

for two different classes. All of the averages were compared with comparables to see what patterns exist and to begin to explore what case might be made to address any particular sub-groups.

Averages were chosen because they are an easily understood measure. They can show whether there are small or large differences between groups. They are easily computed. And they give a clear picture over time of how groups of students are doing.

The basic reason for the analysis of the MPS students is to see whether and to what degree conditions in Milwaukee match conditions elsewhere. We expected to see evidence that African-American males, especially low-income males, started behind everyone, including comparable African-American girls, from early years in school, especially in reading. That is what evidence from elsewhere suggests. If true, that then raises the question of what interventions, if any, are needed to address this condition, especially since between 25% and 30% of the MPS student population consists of low-income, African-American males. Discussion of alternative approaches to addressing this issue is what follows the exposition of the scores within MPS.

ANALYSIS

Gender Differences by Grade in Milwaukee

Before examining differences by race and income, it is important to first get a picture of how males and females fared on standardized tests, as they move through school. We begin this analysis by choosing one class, the class of 2008 in MPS, in order to be able to follow scores for largely the same individuals from fourth to tenth grade. We will subsequently examine the results for the Class of 2011 that allows us to see the scores for second and third grades to see if the patterns start even earlier in children's school experience and to see if other patterns are the same for two very different classes.

Table 2 shows the average reading scale scores by gender for all students in the Class of 2008 who took the standardized tests offered at MPS each year from 1998 through 2005. This is basically one cohort, although there are individuals who dropped back into this cohort and members of this cohort who dropped back and took some tests later than their original counter parts. But basically, these are the same or similar individuals. We are largely comparing these class members with themselves, not with a totally different class.

Gender is extremely important to this population's test scores. In fourth grade, the average female has a test score that is over 6 points higher than the average male. By eighth grade the difference is almost 12 points. By tenth grade, even with a different and lower calibration of scores on the test, the females outscore the males by 20 points, on average. The trend throughout higher grades is a growing disparity between males and females. The pattern is evident by fourth grade. It almost doubles by fifth grade and inches up until 9th grade, when there is another large jump. Females clearly do better than males, on average, on reading. One should note that this MPS class is largely minority and largely low income, skewing the averages in ways that will be examined below. Nevertheless, gender does matter and males do not, on average, achieve at the same levels as females on reading.

The question is whether this pattern prevails in math as well. The research cited above suggests that the genders should be quite similar in math achievement, based on innate ability, but that cultural differences (e.g., greater math emphasis for males) might lead to findings that are the reverse of those in reading.

TABLE 2 AVERAGE READING SCALE SCORES AND DIFFERENCES BY GENDER AND GRADE, MPS CLASS OF 2008

Grade	Female	Male	Male Gap
4	631	625	-6
5	651	640	-11
6	660	647	-12
7	652	637	-15
8	659	648	-11
9	670	654	-16
10	494*	474*	-20

* These test scores are significantly lower because the test changed that year.

TABLE 3 AVERAGE MATH SCALE SCORES AND DIFFERENCES BY GENDER AND GRADE, MPS CLASS OF 2008

Grade	Female	Male	Male Gap
4	615	613	-2
5	626	623	-3
6	637	631	-6
7	649	643	-6
8	661	658	-3
9	663	662	-1
10	516	510	-6

Table 3 is not as dramatic as the one for reading scores. But females outscore males, on average, in math in all grades between fourth and tenth. The gap is small at first, but it grows in grades six and seven, declines in eighth and ninth and jumps again in tenth. But none of the gaps is very large (six points being the largest difference). Basically, we can say that males do not, on average, outscore females in grades 4-10 on standardized math test scores. The pattern this class exhibits suggests that while males may appear, on average, to be behind on math achievement, the differences are relatively modest.

Income's Influence

A second way to look at male and female differences is to see whether there are greater male and female differences among students with different family incomes. The major question is whether MPS faces the same conditions found many other places — that lower incomes are associated with lower levels of achievement and that the pattern of females achieving at higher levels than their male counterparts holds regardless of income. To ascertain this, we will examine students for grades 4-10 for the Class of 2008 for reading and then for math.

Since income levels are not available, we must use a surrogate, eligibility for free or reduced-price lunch. Eligibility for subsidized lunch is based on one's family's income being either poverty level or within 175% of federally established poverty levels. Those eligible for free lunch are from the lowest-income families. Those who are eligible for a reduced-price lunch are next-lowest income. Those who have applied for subsidized lunch because they think they may be eligible but are denied are third-lowest income. And those who did not apply are said to be highest income. Some of these students may be eligible for a lunch subsidy, but because of stigma or lack of knowledge, they did not apply. We include them with the non-eligible population because we have no contrary knowledge, and it is not until high school that participation in the subsidized lunch program declines.

Table 4 reveals the average scale reading scores for fourth grade by gender and lunch-eligibility status for the Class of 2008. The first point to note is that on every male/female comparison of seemingly equals, that is the same lunch status, females, on average, outperformed males in all four income categories. The level of income does not change the fact that in MPS females outperform males. Also worth noting is that the scale of the male to female difference is basically the same regardless of income.

The reader should additionally note that as incomes rise from eligible to partially eligible to being close but denied to not being eligible, average scale scores rise. Being eligible for reduced-price lunch or applying but being denied students do better, on average, than low-income students but not nearly as well as those with no support. This pattern is seen in every grade for which data are available (grades 4-10; not illustrated here). Basically, level of income is strongly related to achievement.

TABLE 4 AVERAGE READING SCORES AND GAP BY GENDER AND ELIGIBILITY FOR LUNCH SUPPORT, GRADE 4, MPS CLASS OF 2008

Lunch Status	Female	Male	Male Gap
Free	625	619	-6
Reduced	641	634	-7
Denied	641	637	-4
No support	658	652	-6

Since that income-achievement link is clearly established and since the counts of students in the reduced and denied pools are relatively small, they are excluded from the next table that displays the gender gap for the poorest (free lunch) and those best off (no support) across grades 4 through 10 (Table 5). The first point to note is the size of the reading gap, starting in fourth grade. The gap almost doubles in fifth grade and remains in that vicinity until eighth

grade. Ninth grade had a decline in the gap between genders among the poorest students but a huge gain among those with no support. Ninth grade is an anomaly and likely affected by students coming to MPS for high school from private K-8 schools. In tenth grade both income levels have substantial gaps. The basic trend is a gain in the size of the average reading gap within each income category as the students move to higher grades regardless of income level.

More important to note is the scale of the difference between those eligible for free lunch, the lowest-income students, and those not eligible for lunch support. The differentials are very large, be it among males or females (Table 6). For example, at fourth grade, females with no lunch support scored an average of 33 points (658-625) above females with free lunches. For males the difference was the same, 33 points (652-619). The difference between income levels within the same genders is large but relatively similar across most grades. But in high school the gap enlarges for females in ninth grade and males in tenth grade. The initial pattern grows over time: on average low-income males fall further and further behind both middle-income males and middle-income females.

Low-income males were 39 points behind the non-subsidized females, on average, in fourth grade reading. By fifth grade the gap was 46 points. By sixth grade it was 51 points. And by tenth grade low-income males were 70 points, on average, behind middle income females in the District. Those are very substantial differences. While it is

very difficult to be precise, males could be interpreted as being between one and two years or more behind middle-income females.²³ Gender matters, but even more pronounced is the effect of income.

Math score differences should not be as pronounced, given the relatively small differences seen

TABLE 5 AVERAGE READING SCORES AND GAP BY GENDER AND ABBREVIATED ELIGIBILITY FOR LUNCH SUPPORT, GRADES 4-10, MPS CLASS OF 2008

Grade	Lunch Status	Female	Male	Male Gap
4	Free	625	619	-6
	No support	658	652	-6
5	Free	645	634	-11
	No support	680	668	-12
6	Free	654	641	-13
	No support	692	682	-10
7	Free	647	632	-15
	No support	679	670	-9
8	Free	655	642	-13
	No support	686	678	-8
9	Free	665	649	-6
	No support	699	680	-19
10	Free	485	464	-21
	No support	534	517	-17

TABLE 6 AVERAGE READING GAP BETWEEN INCOME GROUPS BY GENDER AND GRADE, MPS CLASS OF 2008

Grade	Female	Male	Male - Female
	Free - No Sup.*	Free - No Sup.*	Free - No Sup.*
4	-33	-33	-39
5	-35	-34	-46
6	-38	-41	-51
7	-32	-38	-47
8	-31	-36	-44
9	-43	-31	-50
10	-49	-53	-70

*Free lunch minus those with no support: This is calculated by gender by subtracting the average scale score of those with free lunches from those that did not apply for lunch support, the group we refer to as "middle-income." The score in each cell represents the point spread. The third column contains the difference between the average scores of low-income males and middle-income females.

above between genders across the seven grades. Table 7 shows the scores for the fourth grade of the class of 2008. The gender pattern is the same for three groups, those eligible for free or reduced-price lunch, and those not seeking support: females outperform males. The difference among those denied support is nil. Regardless, there appear to be extremely modest average differences between genders within income groups.

TABLE 7 AVERAGE MATH SCORES AND GAPS BY GENDER, GRADE, AND ELIGIBILITY FOR LUNCH SUPPORT, FOURTH GRADE, MPS CLASS OF 2008

Lunch Status	Female	Male	Male Gap
Free	610	608	-2
Reduced	622	620	-2
Denied	622	622	0
No support	637	635	-2

TABLE 8 AVERAGE MATH SCORES AND GAPS BY GENDER, GRADES 5-10, AND ABBREVIATED ELIGIBILITY FOR LUNCH SUPPORT, MPS CLASS OF 2008

Grade	Lunch Status	Female	Male	Male Gap
5	Free	621	618	-3
	No support	652	650	-2
6	Free	633	625	-8
	No support	664	663	-1
7	Free	644	637	-7
	No support	677	675	-2
8	Free	656	652	-4
	No support	689	692	3
9	Free	657	655	-2
	No support	696	695	-1
10	Free	509	502	-7
	No support	546	544	-2

When we examine just the lowest-income and middle-income students by gender, we see a very mixed series of numbers (Table 8). There are occasionally larger gaps between those on free lunch, but for the most part the differences are modest. Basically, gender differences do still exist on math scores, and in most instances the differences in averages are small within the different income groups.

Table 9 displays the differences in average math scale scores between low-income and middle-income females in the first column. In the second column is the difference between low-income males and middle-income males in MPS by grade. The third column shows the average score differential between the low-income males and the usually higher-scoring, middle-income females in the same grade. The main message is that within each grade, the differences between students with no support and with free lunches are not quite as large as on reading. But they are still substantial. In fourth grade, the two pools of females differ, on average, by 33 points and the males differ by 27 points. By tenth grade the average gap between higher and lower incomes is 37 points among females and 42 points among males. Those are extremely large differences and translate into at least one and perhaps two or more years of achievement, on average.

The third column in Table 9 is included to point out just how far low-income males are behind middle-income females, on average. The numbers are almost always larger than the ones that show the gap between low- and middle-income males. The gaps are usually not as large as on reading, but they are very large.

TABLE 9 AVERAGE MATH GAPS BY GENDER, INCOME, AND GRADE, MPS CLASS OF 2008

Grade	Female	Male	Male - Female
	Free - No Sup.*	Free - No Sup.*	Free - No Sup.*
4	-33	-27	-29
5	-31	-32	-34
6	-31	-38	-39
7	-33	-38	-40
8	-33	-40	-37
9	-39	-39	-41
10	-37	-42	-44

*This translates as the scores of those eligible for free lunch minus those with no lunch subsidy.

Reading Scores by Gender and Race

Given the literature that pinpoints race as a critical factor associated with differences in levels of student achievement, we need to examine scores by subject, by grade, and by race to learn the situation in Milwaukee. The data to aid this exploration are available. They are examined first with all incomes combined and then differentiated by lunch status. Obviously, in Milwaukee with 74% of students eligible for free or reduced-price lunch in 2004, the picture given by a view of all incomes combined will be strongly influenced by the dominant low-income population.

Table 10 needs to be examined across both gender and race. Looking at gender for fourth grade for all three groups sets the general stage. Males, on average, are a bit behind females among African-Americans, Hispanics, and whites. That pattern does not change as the class aged and moved up through the grades. The one difference is that males are a bit further behind their female counterparts as they

TABLE 10 AVERAGE READING SCORES BY GRADE, RACE, AND GENDER, MPS CLASS OF 2008

Grade	African-American		White		Hispanic	
	Female	Male	Female	Male	Female	Male
4	625	617	651	647	632	628
5	644	633	673	662	653	645
6	654	640	685	673	660	649
7	645	631	675	663	655	642
8	654	641	682	674	662	652
9	664	648	693	677	671	659
10	482	459	534	515	499	486

progressed through school. Thus, African-American males in ninth grade are 16 points, on average, behind African-American females while they were only 8 points behind in fourth grade. White males in ninth grade are, on average, 16 points behind white females while the males were only 4 points behind in fourth. Among Hispanics, the four-point gap that existed in fourth grade averages grew to 12 points by ninth grade. The pattern is clear: males, on average, do not do as well in reading as females, regardless of race. But the gap is most often greatest among African-American students.

A second important way to read this information is to compare racial differences to learn of differences within the same gender across racial groups. As expected, at every grade, white females had substantially higher average scores than Hispanic females. And both white and Hispanic females scored higher, on average, than African-American females. The same pattern holds for males.

TABLE 11 GAPS IN AVERAGE READING SCORES BY GENDER, RACE, AND GRADE, MPS CLASS OF 2008

Grade	Females		Males	
	Af Am -Hispanic	Af Am - White	Af Am - Hispanic	Af Am - White
4	-7	-26	-11	-30
5	-9	29	-12	-29
6	-6	-31	-9	-33
7	-10	-30	-11	-32
8	-8	-28	-11	-33
9	-7	-29	-11	-29
10	-17	-52	-27	-56

These patterns are spelled out in Table 11. The differences between average African-American females and average Hispanic and white females are detailed. Most often the gap with Hispanics is in the 6- to 10-point range. But between African-American and white females in the same grades, the differences are often 26 to 30 points and jump to 52 points in 10th grade. Similar patterns are visible among the males, only the

Black/white gap is 56 points in 10th grade.²⁴ Thus, it is clear that African-American males have been achieving at lower levels, on average, in reading than their cohorts of other races within MPS, be they males or females. The African-American male is, on average, behind by fourth grade and continues to be even further behind as the class moves through subsequent grades.

The next logical question to explore is whether males are behind females in math, as they are in reading. Table 12 shows the distribution of average scores by grade, gender, and race for the three largest student groups in MPS. A glance at the first line, fourth grade, reveals that math is different from reading. Only African-American males have average scores lower than

TABLE 12 AVERAGE MATH SCORES BY GRADE, RACE, AND GENDER, MPS CLASS OF 2008

Grade	African-American		White		Hispanic	
	Female	Male	Female	Male	Female	Male
4	609	605	633	633	617	617
5	619	614	648	648	632	631
6	630	622	663	661	640	636
7	641	633	672	672	657	653
8	653	647	684	688	669	668
9	654	651	695	695	667	675
10	506	496	547	549	522	523

African-American males have average scores lower than African-American females. Whites and Hispanic males and females have the same scores. Again, there is evidence that African-American males are behind others early in their academic careers.

Gender differences on average scores are quite small, ranging from 0 to 4 points between males and females by grade among whites and Hispanics. For these two groups, there is not, on average, a difference in math achievement across genders. But for African-Americans there are larger differences. The differences are not consistent but grow from 4 points at fourth grade to 10 at tenth grade, hitting 8 points in sixth and seventh grades before dropping to 3 points in the mix of ninth grade. African-American male averages always are below African-American females. The scale of difference in math does not match that in reading, but it does exist and must be noted. More critical are the racial and income differences that exist.

What also should be noted is that the average scores of both males and females among African-Americans are quite far below those of Hispanics and whites. This pattern is likely largely related to income, the subject of the next section.

Before going to income discussions, the scale of differences should be examined by grade and race (Table 13). African-American males in fourth-grade math are, on average, 12 points behind Hispanic males. By eighth grade the difference in averages is 21 points, and by tenth grade the difference is 27 points on an exam scale that understates

the difference relative to the 4th-9th grade scores. African-American males not only are behind in math by fourth grade; they drop further behind as they age. Hispanic males and females are about half as far behind whites as African-Americans, on average.

The gap between the fourth-grade, African-American males and the white males is, on average, 28 points. By tenth grade, the difference is 53 points. That is likely more than two years of average progress and indicates a severe difference in achievement in math. This is not new news, but its repetition points out how difficult the challenge of raising math test scores, when the gap is so large in the early years of elementary school.

TABLE 13 GAPS IN AVERAGE MATH SCORES BY GENDER, RACE, AND GRADE, MPS CLASS OF 2008

Grade	Females		Males	
	Af Am -Hispanic	Af Am - White	Af Am - Hispanic	Af Am - White
4	-8	-24	-12	-28
5	-13	-29	-17	-34
6	-10	-33	-16	-39
7	-16	-31	-20	-40
8	-16	-31	-21	-39
9	-13	-39	-24	-44
10	-16	-41	-27	-53

Achievement by Gender, Race, Grade, and Income

Given the smaller number of students in the categories of “reduced or denied” lunch status and their common results being somewhat in between free lunch and no support, we reduce the basic comparison to just those with either free lunch or no support. This will make differences more pronounced and keep distinctions clear between low-income students and middle-income students. Again, we look at reading and math separately.

First, we look at reading, starting with fourth grade to see if there are large gaps by gender, even among those of similar incomes. We start with the fourth grade and examine average reading scores by gender, income, and race. There are

TABLE 14 AVERAGE READING SCORES FOURTH GRADE BY RACE, INCOME, GENDER, MPS CLASS OF 2008

Lunch	African-American		White		Hispanic	
	Female	Male	Female	Male	Female	Male
Free	622	615	642	633	629	625
Reduced	636	628	651	645	641	634
Denied	636	628	651	649	641	642
No support	645	637	663	658	651	643

six entries on the first line in Table 14. This line contains the average scores of students who qualify for free lunches, meaning they are lower income. What is immediately obvious is the pattern discussed above: in reading, males are behind comparable

females in average reading scores regardless of their income. The largest gap among the lowest-income students is between white males and females, followed by African-Americans. The key point for this report is that once again, African-American male scores are both below African-American females’ scores and below all other scores.

When we examine the scores of middle-income students (no support), gaps between males and females exist regardless of race. On reading, males, on average, do not do as well regardless of race or income at fourth grade. When we look across grades, we see the same pattern: males are consistently below their female counterparts on reading across all grades (Table 15). In most grades, the male-female gap is pretty similar. There are some anomalies, but male averages are basically well below female averages regardless of race or income.

TABLE 15 GENDER GAPS IN AVERAGE READING SCORES BY RACE, INCOME, AND GRADE, MPS CLASS OF 2008

Reading				
Male Minus Female Score				
Grade	Income	Af American	White	Hispanic
4	Free	-7	-9	-4
	No support	-8	-5	-8
5	Free	-12	-10	-9
	No support	-8	-7	-8
6	Free	-13	-12	-11
	No support	-6	-11	-11
7	Free	-15	-15	-14
	No support	-13	-10	-9
8	Free	-14	-9	-10
	No support	-14	-6	-2
9	Free	-15	-20	-11
	No support	-18	-16	-23
10	Free	-23	-26	-13
	No support	-25	-14	-19

A further point to note about the African-American males is that the low-income males drop further and further behind the middle-income males (Table 16). The gap between the two starts at -22 points in fourth grade and slowly moves up to -38 points by sixth grade, drops back a bit and ends at -34 points in tenth grade. That it a substantial difference across income groups. But the gap is even wider among white males at tenth grade: 48 points separate low-income from middle-income. But to put that in perspective, the low-income, African-American male reading score, on average, is an additional 38 points below low-income, white male's average 10th grade score. In other words, by tenth grade, the average low-income African-American male scored 86 points below the average white male with incomes too high for lunch support. That is several years of learning and clearly points to a problem.

TABLE 16 READING ACHIEVEMENT GAPS BETWEEN MALES BY INCOME AND RACE, MPS CLASS OF 2008

Differences in Male Free Lunch - Male No Lunch Scores			
Grade	African-American	White	Hispanic
4	-22	-25	-18
5	-29	-23	-19
6	-38	-28	-24
7	-27	-25	-21
8	-24	-26	-29
9	-35	-30	-6
10	-34	-48	-18

We look next at math and use fourth-grade average scores as an illustration of what is found. Math scores across three races vary by income (Table 17). But the scores differ little by gender, except among African-American students. Once again there is a gender difference. Low-income, African-American females in fourth grade outscore low-income African-American males, on average, by three points. As with reading, scores by gender and race rise with income. Across races, the lowest scores are achieved by those

on free lunch, followed by those with reduced-price lunch and those denied a subsidy, regardless of race.

Table 18 shows the gender gap in average math scores by race for low- and middle-income students by race. The differences in average test scores

TABLE 17 AVERAGE MATH SCORES BY RACE, INCOME, AND GENDER, GRADE 4, MPS CLASS OF 2008

Lunch	African-American		White		Hispanic	
	Female	Male	Female	Male	Female	Male
Free	607	604	624	622	614	615
Reduced	616	613	631	631	622	621
Denied	615	613	630	636	627	622
No support	623	618	644	642	631	630

TABLE 18 GENDER GAPS IN MATH SCORES BY RACE, INCOME, AND GRADE, MPS CLASS OF 2008

Grade	Income	Math Male Minus Female Score		
		Af American	White	Hispanic
4	Free	-3	-2	1
	No support	-5	-2	-1
5	Free	-5	-1	-1
	No support	-3	-1	-2
6	Free	-9	-6	-3
	No support	-5	1	-16
7	Free	-7	-4	-4
	No support	-5	2	5
8	Free	-6	-1	-2
	No support	-2	5	2
9	Free	-3	5	8
	No support	-4	3	-5
10	Free	-9	-5	0
	No support	-14	6	-9

by gender do not seem to be race-based. By examining those with sufficient incomes to not be in the lunch program, we can see that among all three racial groups there are very modest differences in average scores between genders, with an occasional exception. One exception is among sixth-grade Hispanic students; the second is tenth-grade African-American students. These have 16 and 14 point differences, respectively. Such a difference is odd, since many other years have 2-4 point differences. We attribute this to a small number of students in each of these cells. The basic pattern is that males and females score relatively similarly. Thus, for the most part we must conclude that although middle-income, African-American males score consistently below African-American females with similar incomes in math, the differences are not pronounced, on average, until tenth grade. The issue is not an early problem across gender, although African-Americans are the only racial group in which males are consistently behind females.

The Class of 2011

Statements on levels of achievement should not be made on the basis on just one class, even though the number of students in that class for which we had complete information was close to 7,000. To determine whether the same pattern holds true and to see if African-American males are behind African-American females and others earlier than fourth grade, we chose to examine another MPS class, the class that is scheduled to graduate in June, 2011.

Because this class has not progressed as far in school as the Class of 2008, test data are available only up through seventh grade. The advantage is that the scores start at second grade. This is the only class MPS tested at second grade. Unfortunately, there is a hole in the reading scores because of the use of a different reading test in third grade that is not calibrated in the same fashion as the other scores. That said there are still lessons to be learned from examining the data from another class.

TABLE 19 AVERAGE READING SCORES BY GENDER FOR ALL STUDENTS, MPS CLASS OF 2011, GRADES 2 & 4-7

Grade	Female	Male	Male Gap
2	595	588	-7
3	NA	NA	NA
4	633	625	-8
5	658	649	-9
6	645	636	-9
7	487	474	-13

The key point to note in Table 19 is that on reading, males consistently have a lower average score than females across all of the grades. The difference starts at seven points in second grade and grows to 13 points in seventh grade. This pattern and scale of difference are exactly the finding for the Class of 2008.

Table 20 reveals the pattern of average math scores for all students in grades second through seventh. As the reader may recall, among students in the class of 2008, the girls, on average, outscored the boys on math in grades 4th through 10th. But the differences never exceeded six points. Little can be said of the differences: the two genders' scores were almost the same. In the class of 2011 male math scores were higher than females in fourth and fifth grades and lower in sixth and seventh. That is hardly a strong pattern, especially since the difference never exceeds three points. So both classes are similar in math: difference in gender is not related to average score.

TABLE 20 AVERAGE MATH SCORES BY GENDER FOR ALL STUDENTS, MPS CLASS OF 2011, GRADES 2 & 4-7

Grade	Female	Male	Male Gap
2	549	551	+2
3	595	598	+3
4	612	615	+3
5	631	633	+2
6	637	636	-1
7	491	488	-3

As with the Class of 2008, race does seem to be associated with different levels of reading achievement (Table 21). Average white scores are highest, followed by Hispanic and then African-American. The gap between African-American and Hispanic is present but relatively small by gender in the second grade. But the differences grow rather dramatically between sec-

ond and seventh grade by which time African-American females, on average, are 19 points behind Hispanic females and African-American males are 28 points behind Hispanic males.

Gender differences in the two MPS classes also are similar (Table 22). African-American males in every grade

score, on average, lower than African-American females. For the Class of 2011 the gap is nine points at second grade, rises to ten points by fifth grade and is 16 points in seventh grade. The gap widens; it does not narrow. A similar pattern holds for the Class of 2008.

TABLE 21 READING SCORES BY RACE, GRADE, AND GENDER, MPS CLASS OF 2011

Grade	African-American		White		Hispanic	
	Female	Male	Female	Male	Female	Male
2	590	581	612	606	595	592
3	NA	NA	NA	NA	NA	NA
4	628	619	650	644	635	627
5	652	642	676	666	664	657
6	639	629	665	656	652	644
7	478	462	516	504	497	490

The same pattern of increasing gender differences holds for whites and for Hispanics in both classes. For Hispanics in the Class of 2011 the gender gap is not as wide, but it is certainly present in terms of reading achievement. It is possible that the males made up a little ground on their counterparts in the Class of 2008. Among whites the

growing gaps are very similar in the two classes. Overall, the gender gaps' presence and scales for the Class of 2011 are very similar to those found in the Class of 2008: males start behind and drop further behind females as they go through school. Unfortunately, this is most pronounced among African-Americans.

TABLE 22 AVERAGE READING GENDER GAPS BY GRADE AND RACE, MPS CLASSES OF 2008 AND 2011

Grade	READING					
	African-American Male - Female Gap		White Male -Female Gap		Hispanic Male -Female Gap	
	2008	2011	2008	2011	2008	2011
2	NA	-9	NA	-6	NA	-3
3	NA	NA	NA	NA	NA	NA
4	-7	-9	-4	-6	-4	-8
5	-11	-10	-11	-10	-8	-7
6	-13	-10	-12	-9	-10	-8
7	-15	-16	-12	-12	-13	-7

TABLE 23 MATH SCALE SCORES BY RACE, GRADE, AND GENDER, MPS CLASS OF 2011

Grade	African-American		White		Hispanic	
	Female	Male	Female	Male	Female	Male
2	543	543	569	573	552	557
3	588	590	614	621	597	603
4	607	608	627	634	616	618
5	624	623	651	655	639	641
6	630	627	659	660	646	648
7	480	475	519	520	504	509

Average math scores by race and gender for the Class of 2011 are quite similar in many ways to those of the Class of 2008 (Tables 23 and 24). For example, African-American scores are lower than both Hispanic and white, and year-to-year

gains in average score by race and gender are often about the same size. But unlike the Class of 2008, African-American males do not always have lower scores than their female counterparts. The gaps are not large, as we see below (Table 24).

In math the results for the Class of 2011 are a bit different from those for the Class of 2008 (Table 24). Rather than having gaps as high as eight points (sixth and seventh grades, Class of 2008), the gaps in 2011 never exceed five points. And instead of males always being lower, average male scores exceed female scores in third and fourth grades (two points and one point, respectively) in the Class of 2011. The fourth grade net difference in math gap between the two classes is five points. While appearing to be dramatic in terms of males exceeding females, the scale of the difference is sufficiently small as to not be very meaningful. Thus, on math, across grades and races, the two classes are relatively similar in their findings among African-Americans. Males, on average, do lag, and the size of the gap increases over time after fourth grade.

Among whites and Hispanics the basic assessment that genders are quite similar still holds. But there are differences across the years. In the Class of 2011 males exceed females, on average, across grades second through seventh in math. The same pattern holds for Hispanics. This was not true for 2008. But again the differences in scores are often so modest that they are negligible. (There are a couple of exceptions, but they may well be due to smaller num-

**TABLE 24 AVERAGE MATH GENDER GAPS BY GRADE AND RACE,
MPS CLASSES OF 2008 AND 2011**

Grade	MATH					
	African-American Male - Female Gap		White Male -Female Gap		Hispanic Male -Female Gap	
	2008	2011	2008	2011	2008	2011
2	NA	0	NA	4	NA	5
3	NA	2	NA	7	NA	4
4	-4	1	0	7	0	2
5	-5	-1	0	4	-1	2
6	-8	-3	-2	1	-4	2
7	-8	-5	0	1	-4	5

bers of students.) The basic point is that over most grades there is not a real gender differential in math between males and females within these two racial groups. Among African-Americans the gender gaps grow and become more substantial by the seventh grade. But the real differences between genders by race appear in reading.

Income and Gender Combined for African-Americans

The next question is whether the pattern seen for the Class of 2008, low-income African-American males scoring somewhat below African-American females on math and considerably below African-American females on reading are similar for the Class of 2011. We will only talk of grades 4-7, because those are the only grades for which we have comparable scores.

Having shown that there are achievement gaps between genders among the three races, especially on reading, we turn next to focus on the differences in achievement by race within genders and across incomes. The point is to explore just how different African-Americans are from whites and to see if these differences are similar across the two income extremes, low- versus middle-income in the MPS student population. We use the Class of 2011 to explore the differences.

**TABLE 25 AVERAGE READING GAPS BETWEEN AFRICAN-AMERICANS AND WHITES BY GENDER
AND INCOME, MPS CLASS OF 2011**

Grade	Lunch	Average Reading Scores					
		Females			Males		
		Af Am	White	Af Am Gap	Af. Am	White	Af Am Gap
4	Free	623	638	-15	613	630	-17
	No	646	662	-16	636	652	-16
5	Free	646	659	-13	636	648	-12
	No	674	688	-14	661	678	-17
6	Free	634	652	-18	623	643	-20
	No	655	672	-17	645	666	-21
7	Free	470	496	-26	455	482	-27
	No	497	525	-28	485	520	-35

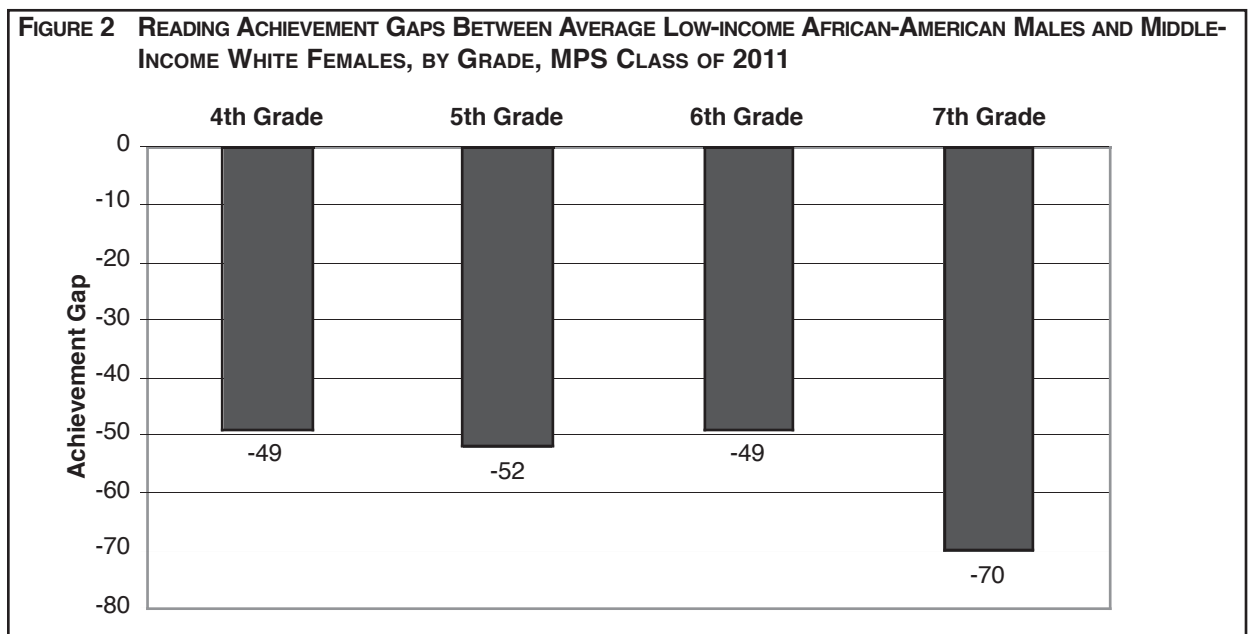
Source: Longitudinal File of MPS students in the class of 2011.

The easiest way to examine racial differences within genders is to focus directly on the gaps. Thus, Tables 25 and 26 show the average scores and gaps by grade of African-American and white females and males. The gap is the gender gap by race within the same income category.

African-American females may, on average, be ahead of their male colleagues in reading, but they are substantially behind white females, on average, in every grade, fourth through seventh. African-American males are also, on average, markedly behind white males in every grade. Income matters little in most grades: the scale of the difference between those eligible for free lunch and those who are middle income is negligible in almost every instance. The one pronounced difference is seen in seventh-grade males, where African-American, middle-income males have fallen even further behind white male counterparts. Notable are the size of the Black-white gap and the fact that the size of the gap continues to rise as grade levels rise. African-Americans are behind by the fourth grade and the gaps in reading achievement grow as they continue in school.

Another important point to note is that the gaps between African-American and white females and African-American and white males are very similar in size at each grade level. That reinforces the point that the real issue here is not one of gender. Minority males and females are equally behind their white counterparts, on average.

What also must be examined is the gap between the average scores of the highest achieving group, middle-income, white females and the lowest-achieving group, low-income, African-American males, to learn the scale differences that exist (Figure 2). For this class in fourth grade, the gap was 49 points (662-613). At sixth grade the gap between average middle-income, white females and low-income, African-American males was still 49 points (672-623). This gap increases to 70 points (525-455) in seventh grade (using scores from tests that were calibrated differently). In short, there are large score differences between the averages of these two groups that do not narrow over time. Middle-income, white females have a huge lead over low-income African-American males in reading, and the gap likely increases even further after grade seven, if the Class of 2011 is like the Class of 2008. In the early years the gaps seen in the two classes are very similar.



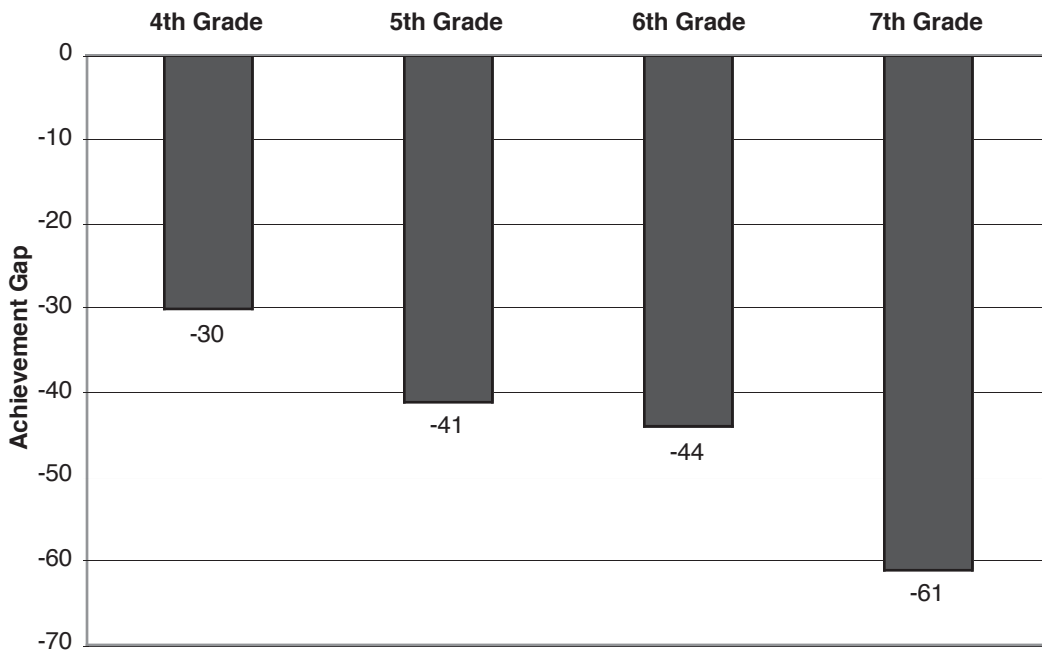
When we make African-American versus white comparisons across income categories and within genders for math, we see gaps in averages that are as large or larger than was found in reading (Table 26). At fourth grade, low-income, African-American females are 17 points, on average, below low-income, white females in math, and low-income, African-American males are 20 points below low-income, white males. Those differences grow as the students move up through the grades. What start out among low-income students as 17 and 20 point differences in fourth grade averages grow to 30 (female) and 36 (male) points by seventh grade. Among middle-income students the gaps are very similar in seventh grade (31 and 38 points, respectively). But the gap is not quite as large in fourth grade among the females (13). Just as in reading, there are large differences within genders in achievement in math between African-American and white students in MPS in grades 4th through 7th.

TABLE 26 MATH GAPS BETWEEN AVERAGE AFRICAN-AMERICANS AND WHITES BY GENDER AND INCOME, MPS CLASS OF 2011

Grade	Lunch	Average Math Scores					
		Females			Males		
		Af Am	White	Af Am Gap	Af. Am	White	Af Am Gap
4	Free	602	619	-17	604	624	-20
	No	621	634	-13	622	642	-20
5	Free	619	639	-20	618	641	-23
	No	636	659	-23	634	667	-23
6	Free	625	646	-21	622	649	-27
	No	644	666	-22	640	670	-30
7	Free	475	505	-30	468	504	-36
	No	498	529	-31	495	533	-38

The math gap is substantially larger when we again compare low-income African-Americans males with middle-income white females (Figure 3). At fourth grade 30 points (634-604) separates the two, on average. That is saying that the gap is at least one year by the fall of fourth grade. By sixth grade the difference between the two groups is 44 points (666-622). And by seventh grade the difference is 61 points. Low-income, African-American males are, on average, well behind their middle-income, white female counterparts before they even get to high school. The scale of that difference goes some way in explaining different high-school graduation rates. Race, income, and gender all contribute to these substantial gaps.

FIGURE 3 MATH ACHIEVEMENT GAPS BETWEEN AVERAGE LOW-INCOME AFRICAN-AMERICAN MALES AND MIDDLE-INCOME WHITE FEMALES, BY GRADE, MPS CLASS OF 2011



The basic conclusion from these many comparisons of averages is that the basic patterns of African-American males scoring below African-American females and everyone else is very true on reading, regardless of the grade level. Even at second grade the difference in averages is ten points. On math, however, African-American males cannot be said to be behind their female counterparts. On the other hand, both, on average, are markedly behind not only white students but also Hispanic students. Those differences grow as the students move through the grades. So, even if the male and female African-American math students do not differ much in achievement through several of the early grades, they fall increasingly behind other students over time. This same pattern is found in the Class of 2008.

The many findings across two MPS classes suggest that the issue in reading is early struggles and low levels of achievement, especially among males. The distance males fall behind females, on average, appears very hard to make up, regardless of race or income. But of greater import is that the gap in averages across incomes, regardless of gender is even harder to reduce. In fact, the gap widens substantially as children age within each racial group. Thus, important as gender may be, it only exaggerates the much larger differences in achievement associated with income variation. Race does play a role, as there are differences in achievement within the same income level. This finding would suggest a need for interventions are not aimed just at one gender or one racial group.

POLICY IMPLICATIONS AND INTERVENTIONS

The findings developed above on differential levels of student achievement in MPS make three key points. The first is the score differentials make an extremely strong case for taking action, action that is far more focused and dramatic than has been taken to date to address these many achievement gaps. The gaps between genders and among races and income levels are unacceptably large. Second, the data also make a very strong case for special attention to be paid to African-American males, especially low-income, African-American males who constitute between 25% and 30% of the MPS student population. This group consistently underperforms others in the district. Third, the data also make an even stronger and inclusive case for taking the necessary steps that help all minorities and actually all children in MPS achieve at higher levels.

On the first point, there is a sizable gap in reading achievement for males compared to females and a more pronounced gap between African-American males and females. That said there are larger gaps between African-Americans and whites, regardless of gender. When compounded by gender, the gaps are extremely large. The gaps expand even further when income is taken into consideration. Thus, low-income, African American males are, on average, years behind middle-income white females by seventh grade and even further behind by tenth grade, be it reading or math.

The scores examined in this report show that African-American males, on average, start their educations behind even African-American females. The males never catch up, on average, in reading and seldom catch up in math. The males are years behind middle-income white males and even further behind white females in MPS. If measured against the average student in the state of Wisconsin at 8th grade, the average African-American male in MPS is approximately 60 points behind in math and 49 points behind in reading.²⁵ Those are huge gaps that should be totally unacceptable to the citizens of the state.

On the second point, there are large ethnic differences when gender and income are compared. Though very large for males, the gap is almost as large for females. African-American females, though doing better than African-American males, are not doing that much better. Low-income, African-American females are significantly behind (55 points) middle-income white females, on average, in seventh grade (Class of 2011). MPS African-American females, with an estimated high school graduation rate of 46%, suffer at half the state's high school graduation rate. The size of these gaps strongly suggests that although male needs for attention are great, African-American females also need a good deal of attention. Both gaps are far too great to leave these groups in schools that are following the same basic approaches that have kept these gaps in place over time. Dramatic steps must be taken.

And third, when we see Hispanic male and female graduation rates just above those for African-Americans and average student test scores above African-Americans but far below comparable whites, a strong argument can be made that both minority groups and both genders should be the focus of all efforts at raising student achievement levels. The key is to focus attention on these gaps and take explicit actions to raise both test scores and graduation rates of all minorities.

Furthermore, the gaps between low-income whites of either gender and their middle-income white counterparts suggest that low-income whites should be included in the target groups for new initiatives. The achievement gap and the gap between white graduation rates in MPS and white graduation rates in the rest of Wisconsin show that there is a long way to go before they become equal.

The average score differentials shown in the analysis above clearly illustrate the need for more dramatic change in how children in Milwaukee are educated, both before and during K-12 schooling. With the knowledge that low-income children start formal schooling behind and fall further behind middle-class students and with the further knowledge that low-income, African-American males start furthest behind, it is critical that new steps be taken to reduce the achievement gaps. Exactly how to reduce and eventually eliminate these gaps is not fully understood. But there is evidence that several approaches can make a difference, if they can be implemented.

This report cannot review all of the options; it just makes the case that African-American males are behind all others and that the gaps are shameful. As shameful are the gaps between white and most minority educational outcomes. What should also be unacceptable are the gaps between low- and middle-income whites. Dramatic steps must be taken to shrink all of these gaps. Here are a few ideas to be implemented before and/or during K-12.

RECOMMENDATIONS

MPS has struggled for many years to bring up low levels of student achievement. But standardized test scores reveal year after year of lower percentages of students at or above proficiency when compared to the rest of Wisconsin. A good deal has been written about this, and Choice schools and Charter schools gained support because of the gaps between desires for higher levels of student achievement and reality. Efforts have been made within MPS to change. But the pressure to really succeed has not been sufficient to bring the degree of change and commitment that is necessary for success.

Educational outcomes in MPS have largely been ignored because of labor surpluses. Employers have complained about the shortage of capable workers coming out of MPS, but they have not really felt much pain, as they have been able to coax more women into the workforce (Wisconsin has the highest female labor force participation rate in the nation) and have benefited from the application of technology. Employers have also benefited from modest levels of immigration. But the world is changing. The U.S. will soon face a huge worker shortage, estimated to be 10 million by as soon as 2010. Wisconsin will experience at least a proportionate amount of the pain.

Milwaukee is already hearing complaints from employers that they have worker shortages. Some of these open positions are for those with few skills. Many positions could be filled by those with just high school degrees. But because of decades of non-graduations, Milwaukee has a very modest number of those with degrees who have not been able to find work. The region needs more high school graduates. Milwaukee is home to over 40% of K-12 age individuals in the metropolitan area. But when approximately half fail to graduate, that means that more than one-fifth of the possible metropolitan workforce is not available, exacerbating the worker shortage.

Milwaukee cannot afford to wait around for very incremental change, which is the best we have seen from overall test scores over several years. Milwaukee must take steps that will make more of an impact on outcomes. Obviously, that will not be easy, as the district has struggled for at least 20 years to match its previous successes.

Given the very compelling case for dramatic intervention, the question then is what can be done to reduce and eventually eliminate those gaps by income, race, and gender. That question and many variations on it have been asked for decades, with only occasionally accurate answers. A few schools have done well with this urban, largely low-income, African-American male population. Some of the successful schools exist in the city of Milwaukee. Their success proves that success in this setting is possible. The lack of replication of their success proves that copying that success in other schools is extremely difficult, especially with low-income students. We have more than ample proof of that statement.

There are several steps that are very likely to make success easier to achieve in K-12 education. Some of these steps are harder to achieve than the others, although the reader may have trouble deciding which of the five mentioned is really harder — since all will be opposed to at least some degree. The five recommendations are:

- Increase parent involvement in their child's education.
- Inject accountability in the governor, legislature and local educators for student outcomes.

- Replicate lessons from successful schools.
- Better prepare children for school before they reach Kindergarten.
- Embed body-movement exercises in everyday classes in all schools and preschools.

Increase Parental Involvement in Their Child's Education

Parents are a critical component to success for which some interventions can successfully substitute: we have examples of individuals who have succeeded without much parental support and whole schools that have succeeded without much parental support. But these have proven to be exceptions. It is easier, usually much easier, to achieve higher levels of learning with parental support of education and the work required.

- The district and almost all schools must make a greater effort to get parents involved in support of their child's education. Parents must be encouraged to utilize specific actions that they can regularly take. Recognize that there are at least 27 different ways that parents can be involved, so schools need to be flexible in how this message is transmitted and acted upon.
- Just as important is the effort to get parents involved in adult education at the schools or elsewhere. The basic message is that given the developing worker shortage many more adults will have a chance to work and to learn that work will have a payoff. We need both the MPS students and their parents to contribute to the workforce. If parents have greater economic success, they and their children are more likely to see the benefits of additional education, and the parents can better support the behavior that helps students learn more quickly

Inject Accountability

Greater accountability for MPS outcomes is needed at many levels. And it must start at the top. The state must step up and take greater responsibility for the outcomes. The state invests \$900 million a year in MPS and asks for nothing. That is irresponsible. The governor and the legislature must be responsible for the outcomes and take steps to ensure that better outcomes are achieved. The future of the state depends on this. That truth is stated repeatedly in both Milwaukee and Madison, but little is done. It is time for real action.

There are a number of steps that can be taken in the community, at the schools, and at higher governmental levels to begin to immediately address the young, African-American male achievement gaps by forcing greater accountability on those who should be responsible for the outcomes. These include such steps as:

- Build a public will for change, so that real pressure can be brought to bear on the many actors who can play a role in reducing the achievement gap.
- The school board must hold the superintendent and principals accountable for having the district and schools meet the challenge of having all students, including African-American male students, perform at "proficient" levels on assessments and graduate on time and college-ready.
- The superintendent and school board must allocate resources within the district in alignment with the needs of students, teachers, and schools to meet proficiency targets.
- The state Department of Public Instruction (DPI) must hold the district accountable for meeting state targets and closely supervise MPS and other districts with large achievement gaps.
- The governor must make closing the achievement gap a state policy goal, holding the state DPI responsible for achieving that goal.
- The legislature must push to closely examine funding formulas to ensure that they are aligned with the goal of closing the achievement gap and pass legislation, including additional funding, as necessary to meet that goal.²⁶

Replicate Successful Schools

Other, more specific steps can and should be taken at the schools to contribute to greater student success. The first of these is replicating successful schools on a much larger scale. We have examples of schools in Milwaukee that have succeeded, for example, Barton, Bethune Academy, Clarke, Hawthorne, Maryland Ave, Meir, and Milwaukee College Prep, to name a few. Others are having success adding value, even if the results leave students behind where they should be. But there is still insufficient duplication of the best schools' successes. Replicating them goes well beyond just duplicating a few elements. That is a tall order, given the many elements pushing against replication. But replicating these schools and their success should be a clear goal. And greater than current efforts are required.

In fact, it will take an extremely concerted effort, the support for which has yet to appear. Some of the essential elements have been identified: well-qualified and well-prepared principals who are extraordinary at leading; well-qualified, well-informed, and extremely committed teachers who work with the belief that all students can succeed; sufficient resources to offer the tools, courses, and persons needed for success; often the use of particular curricula that have proven success when implemented well; and support for the individual student in terms of nutrition and health care, at a minimum.

- Studiously apply the lessons we have learned make a difference in educational outcomes.
 - * Increase the rigor of principal preparation and selection. Principals can really drive improvement, when they have the commitment and skills to do so.
 - * Hold principals responsible for the aggregate progress made by students in their buildings — principal salaries should go up and down in line with test scores, and large decreases or insufficient progress means loss of job.
 - * To increase the number of well-qualified, well-informed, and committed teachers, eliminate the residency requirement that limits the attraction and retention of good teachers.
 - * Pay new teachers at least as much as suburban districts, so that MPS can really compete with the alternatives.
 - * Change assignments of senior teachers to assure that they work in the most challenging situations, not the easiest.
 - * Employ teachers who truly believe that all students can learn and that are comfortable setting high standards for all children to achieve.
 - * Expand current MPS nutrition and health (nurse) care programs.
 - * Take advantage of and systematically use baby-boom age volunteers who want to contribute their time and energy consistently in the classroom.

Better Prepare Children for School

Since African-American males are behind by the time they are tested in second grade, it seems very logical that efforts be made to help them come to school as ready as anyone else. This implies that they should be attending preschool. It should not be just any preschool but one that actually works with them to assure that they are ready to excel once they arrive in K-12. These children should be enrolled in top quality early childhood education, either in MPS or outside. Furthermore, they should be given access to other services, such as meals and health care that are likely to speed their development.

- Start with 3-year-old kindergarten. Better yet move quickly to high-quality, early-childhood education that can start at birth to give all students the initial start on learning that can propel them through subsequent schooling.²⁷
- Get rid of faddish small schools and put the money into learning at the elementary grades; this will create more students who will succeed and who will not need the protection supposedly offered by small high schools.
- Build more partnerships with other organizations to help shape after-school lives and reduce distractions.

Embed Body Movement

As part of student preparation an intermediate step that is beginning to build a research track record is the initiation of body movement exercises for students, especially in elementary and pre-elementary classrooms. Body movement is not traditional physical education. It is scripted and focused use of body and limbs that is explicitly designed to build synapses in the brain, so that children have in place the neuron connectors that allow them to succeed at academic subjects. This is not time consuming or aimed at only a few students, although it can be. It is intended for all students for a period of minutes a day.

Many children today, especially inner-city children whose outdoor play space is limited and whose outdoor time is often limited because of fear of violence in their neighborhoods, do not do the activities that develop the ability to read across the page, for example, much less comprehend what they read. Childhood activities today often concentrate on one side of the body and hence, one side of the brain. Using one's thumbs for a video game does not develop one's ability to cross one's arms or legs or make one's eyes read across the page.

- Embed a research-proven series of physical movements into the daily lives of children in school and in pre-school settings.²⁸

Research done elsewhere makes a good case, but data are also available locally. The recent application of these movement exercises in five, third-grade classrooms in an inner-city Milwaukee elementary school yielded promising results. Upon entry in the fall of 2006, 41% of these students were reading at or above grade, as judged by a simple test that teachers use to understand generally where student skills lie. By January 2007, after one semester of the usual curriculum plus the body movement, 61% of these students were reading at or above grade. That is an increase of 49%. Comparable student scores from another school are not yet available for comparison, but on face value that is a large increase in achievement in just one semester.

And it was not just students at the upper level that made sizable gains: there was a 61% drop in the percentage of students reading at the lowest level (pre-primary/primary/emerging) and a 25% decline in the number of students reading at the first- or second-grade levels. Those are dramatic improvements that strongly suggest that this program of movements should be part of many more children's daily activities.

CONCLUSION

The MPS schools are extremely challenged by many discrepancies in student achievement. Gender gaps are one of these challenges. But even greater challenges are racial and income differences. These differences have been identified for years, yet not enough has been done to address them. Milwaukee can look to other cities and think that Milwaukee is no worse off than Chicago, or Baltimore, or Newark, or Detroit. But that does not solve the problem. There are huge gaps in student learning that must be addressed and addressed soon. These students' futures depend on it. The Milwaukee economy depends on it.

The options briefly discussed above deserve some attention. More must be done now to address these many unnecessary differences in student achievement. The gaps are much too large to ignore any further. Milwaukee and Wisconsin must step up to jointly eliminate these enormous differences. Both entities have too much at stake to allow these conditions to continue as they have.

ENDNOTES

1. In the fall of 2002 the average scale score for the state of Wisconsin in eighth grade was 686.9 in reading and 704.9 in math. Low-income African-American males in MPS had respective average scores of 638 on reading and 645 on math. Source for Wisconsin scores: www.dpi.state.wi.us/oea/xls/kcmnscsclscr.xls.
2. Tamar Lewin. "Boys are no match for girls in completing high school." *New York Times*. April 19, 2006.
3. Erik Eckholm. "Dire Problems for Young Black Men, Several New Academic Studies Warn." *New York Times*. March 20, 2006.
4. Katherine Goodloe. "Boys learn differently from girls, studies say." *Milwaukee Journal Sentinel*. June 5, 2006.
5. Jamaal Abdul-Alim. "State at top in high school gap." *Milwaukee Journal Sentinel*. July 14, 2006.
6. Judith Klein. "Student Performance: males versus females." 1999 at <http://uaf.edu/northern/schools/myth.html>; "Public Education and Black Male Students: A State Report Card." The Schott Foundation for Public Education. 2004; "The New Gender Gap – Why are so many boys foundering while so many girls are soaring?" 2004. at http://teacher.scholastic.com/products/Instructor/Mar04_gendergap.htm; Betsy Gunzelmann and Diane Connell. "The New Gender Gap: Social, Psychological Neuro-biological and Educational Perspectives." *Educational Horizons*. Winter 2006.
7. Sara Mead. "The Evidence Suggest Otherwise: The Truth About Boys and Girls." Education Sector. June 2006 at www.educationsector.org.
8. *Ibid.*, p. 5.
9. Alan J. Borsuk. "Report Sparking MPS to Act." *Milwaukee Journal Sentinel*. January 2, 2007.
10. The graduation rate of MPS is claimed by MPS to be 62% in 2003-04. The derivation of that graduation rate is taken to task by Greene and Winters. They develop an estimation technique that takes into account the exaggerated size of the freshman class that is the normal denominator, since it is enlarged by the number of students who annually fail to earn enough credits to become a sophomore. It also uses a count of the number of eighth graders rising to ninth grade but admits this undercounts since many students from private elementary schools transfer to public schools at ninth grade, given the cost of private high school education. The Greene and Winters numbers are contested by some as understating the actual conditions. The Greene and Winters' numbers are used here because they are the best supported of any estimates.
11. *Business Week*, May 26, 2004.
12. *USA Today*, December 2, 2004, p. 1.
13. National Center for Education Statistics, "Trends in Educational Equity of Girls and Women 2004; Press release, available at: <http://nces.ed.gov/pubs2005/equity/Section4.asp>.
14. *Ibid.*
15. Elizabeth S. Spelke. 2005. "Sex Differences in intrinsic aptitude for mathematics and science?: A critical review." *American Psychologist*, 60(9), 950-958.
16. J.S. Hyde and M.C. Linn. (1998). "Gender differences in verbal ability: A meta-analysis." *Psychological Bulletin*. 104, 53-69.
17. J.S. Hyde, E. Fennema, & S. Lamon. 1990. "Gender differences in mathematics performance: A meta-analysis." *Psychological Bulletin*. 107, 139-155.
18. Alan Ginsburg, Geneise Cook, Steve Leinwand, Jay Noell, and Elizabeth Pollock. "Reassessing U.S. International Mathematics Performance: New Findings from the 2003 TIMSS and PISA. Washington, D.C.: American Institutes for Research. November 2005.
19. Michael Holzman, Ph.D. "Public Education and Black Male Students: A State Report Card." Schott Foundation. Cambridge, MA. October 2004.
20. Different methods have been used to estimate graduation rates. This method produces even lower graduation rates for Black males. These numbers paint an even grimmer picture of how well larger central city school systems are doing in educating minority males.
21. Scale scores represent approximately equal units on a continuous scale from 0 to 999. As a student's academic achievement increases over the grades, his/her scale scores is also expected to rise. This allows a more detailed view of growth. Source: MPS District Report Card 2004-05, p. 16.

22. Test scores from 2002 and later cannot safely be compared with test scores from 2001 and earlier because the tests were changed between these years to better meet the needs of No Child Left Behind. In the analysis that follows, almost all comparisons are within the same year and not across years. This avoids the sticky question of how to cross the dividing year scores.
23. Attempting to translate points behind on average scale scores into years of schooling is a very tricky exercise. One has to be careful that the same tests are compared year-to-year and that one is comparing students who are making a year's progress in one year. To do this, we might look at the progress made by middle-income, white males and females to get a sense of average progress. We chose scores from the class of 2011, since all are the same version of the test. (We need to avoid comparing pre- and post 2001, since the tests were re-normed that year.) Thus, on reading, white females and males made 26 and 24 points' progress on reading between 4th and 5th grade, respectively. On math, they made 24 and 21 points' progress, respectively. If we refine this further and look at middle-income white gains for the same years, we see a 26 point gain between fourth and fifth grades among females and a 25 point gain among males on reading. These are a bit higher and might be a better standard.

But the gains by year are not always the same. Some years appear to have smaller averages than others. Thus, making statements of translation of years behind is fraught with challenges. We attempt to make some estimates to give the reader a slightly better sense of what the gaps in scoring might actually mean.

24. The jump between ninth and tenth grades is in part a real gain in the difference in races, but it is also due in part to the rescaling of the test. We cannot attribute the jump precisely to either one reason or the other.
25. In the fall of 2002 the average scale score for the State of Wisconsin in eighth grade was 686.9 in reading and 704.9 in math. Low-income African-American males in MPS had respective average scores of 638 on reading and 645 on math. Source for Wisconsin scores: www.dpi.state.wi.us/oea/xls/kcmnnsclscr.xls.
26. These recommendations are taken from a report by Renku Sen, Executive Director of the Applied Research Foundation: (2006). *A Positive Future for Black Boys: Building the Movement*. Cambridge, MA: The Schott Foundation for Public Education.
27. A recommendation for high-quality, very early-childhood education, especially for low-income children, has a great deal of research support behind it but very limited political support to date. If this quality early childhood education was to be available, it should be available to males and females, minority and majority. The research shows that such efforts, if done with quality instruction and support, can yield benefits of \$4 to \$16 per each dollar invested in the program.
- This should not be modeled after Headstart, a program that has an unimpressive track record. It must be more comprehensive, taught by more highly educated staff, and held to higher standards. It will also be more expensive. There is growing knowledge of this subject. And there is Wisconsin support slowly building through such efforts as www.wis-biz4kids.com, a business organization trying to build political support for investing heavily in early childhood education in Wisconsin. Such organizations need support. That apparently will take time. But the evidence on the contributions of early childhood education to higher achievement levels, higher high-school graduation rates, less involvement in crime, and better employment outcomes make a compelling case that this initiative should be pursued.
28. Several studies suggest that learning complex movements stimulates the part of the brain used in problem solving and learning. One example that employs a series of cross-lateral movements (right elbow to left knee, etc.) is a fundamental program named Brain Gym. It employs a 26-movement series for use in interested schools and companies. Time spent on this type of exercise can be as little as 15 minutes/day and can be done right in class.

Independent research indicates that participation in Brain Gym can be linked to higher test scores, less hyperactivity, better concentration, memory improvements, and better relations between student and teacher. Post-tests in one school showed a one-to-two-year growth for all students on the reading and comprehension testing and growth of one or more years for over 50 percent of the students on math scores — greater results than might have been expected for Special Education students. Behavior patterns also improved.

ABOUT THE INSTITUTE

The **Wisconsin Policy Research Institute** is a not-for-profit institute established to study public-policy issues affecting the state of Wisconsin.

Under the new federalism, government policy increasingly is made at the state and local levels. These public-policy decisions affect the life of every citizen in the state. Our goal is to provide nonpartisan research on key issues affecting Wisconsinites, so that their elected representatives can make informed decisions to improve the quality of life and future of the state.

Our major priority is to increase the accountability of Wisconsin's government. State and local governments must be responsive to the citizenry, both in terms of the programs they devise and the tax money they spend. Accountability should apply in every area to which the state devotes the public's funds.

The Institute's agenda encompasses the following issues: education, welfare and social services, criminal justice, taxes and spending, and economic development.

We believe that the views of the citizens of Wisconsin should guide the decisions of government officials. To help accomplish this, we also conduct regular public-opinion polls that are designed to inform public officials about how the citizenry views major statewide issues. These polls are disseminated through the media and are made available to the general public and the legislative and executive branches of state government. It is essential that elected officials remember that all of the programs they create and all of the money they spend comes from the citizens of Wisconsin and is made available through their taxes. Public policy should reflect the real needs and concerns of all of the citizens of the state and not those of specific special-interest groups.