Graduation Rates

for

Choice and Public School Students in Milwaukee

Jay P. Greene, Ph.D.
Senior Fellow
Manhattan Institute for Policy Research

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School Choice
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*The State of Wisconsin last issued an evaluation of the **Milwaukee Parental Choice Program** (MPCP) four years ago. Since then, program opponents have blocked efforts to conduct new research administered by the state.*

Next year will bring a renewed attempt to obtain formal state approval for a longitudinal evaluation of the MPCP. This report on graduation rates illustrates the type of information that a long-term, comprehensive study would address.

We chose the Manhattan Institute's Jay P. Greene to conduct a study of high school graduation rates because his pioneering work has made him a leading expert in the field. Indeed, Dr. Greene's method is widely used by and cited in educational publications.

Dr. Greene finds in this report that students in the MPCP graduate at notably higher rates than students in the Milwaukee Public Schools (MPS). This finding, based on data for the 2002-2003 school year, should help spur interest in research that will track results for an extended period of time.

Susan Mitchell
School Choice Wisconsin President

2025 N. Summit Avenue, Suite 103
Milwaukee, Wisconsin 53202

Tel. 414 319-9160

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Executive Summary

This study examines whether students in Milwaukee experience greater educational success if they use a voucher to attend a private school rather than remaining in public schools. While early high-quality research on the **Milwaukee Parental Choice Program** suggested that they do, it has been almost a decade since those early evaluations, and critics have continued to question whether the program provides students with better educational opportunities. This study calculates graduation rates for choice students and students remaining in public schools in order to provide new evidence on whether Milwaukee's voucher program benefits students academically.

Choice students in Milwaukee graduate high school at much higher rates than students in its public schools. What's more, their graduation rates are higher than those at selective public high schools whose students are likely to be more advantaged in their background than Milwaukee's choice students, who are disproportionately poor and minority. This indicates that choice students' higher graduation rates are unlikely to be the result of any demographic bias in the student population. The accuracy of the study's calculations of graduation rates is confirmed by those produced through an alternative method of calculation.

- In the graduating class of 2003, Milwaukee students using vouchers to attend private high schools had a 64% graduation rate.
- That same year, the 37 Milwaukee public high schools for which data are available had a combined graduation rate of 36%.
- Milwaukee's six academically selective public high schools, whose students are likely to be more advantaged than choice students, had a combined graduation rate of 41% in 2003.
- Using an alternative method to calculate these graduation rates produces similar results, confirming the accuracy of the study's results. Both the study's main method and its alternative method are widely accepted by education researchers.

Do students in Milwaukee experience greater educational success if they use a voucher to attend a private school rather than remaining in the Milwaukee Public Schools (MPS)? Early high-quality research on the Milwaukee Parental Choice Program (MPCP) suggested that they do. But it has been almost a decade since those early evaluations, and the program has grown considerably since then. Critics have continued to question whether the MPCP provides students with better educational opportunities and whether enough information is available to answer that question.

This study addresses, for the first time, a key issue involving the effects of Milwaukee's school choice program on student achievement. In particular, it estimates high school graduation rates for students enrolled in the MPCP and students enrolled in MPS, and compares the two as a measure of their relative academic achievement. It also presents an estimated graduation rate for a subset of Milwaukee public high schools that have selective admissions policies.

This study finds that students in the MPCP graduate high school at significantly higher rates than all MPS students. Furthermore, choice students also graduate at significantly higher rates than students who attend selective MPS high schools.

Approximately 64% of students who used a voucher to enter 9th grade in 1999 graduated high school in 2003, compared to 36% of all MPS students. Among students at six MPS high schools with selective admission requirements, an estimated 41% graduated in the class of 2003. At other MPS high schools, approximately 34% graduated.

Comparing the graduation rate for Milwaukee's choice students to students at all Milwaukee public high schools as well as to a selective subset of those schools does not provide a definitive evaluation of the city's choice program. However, such a comparison helps confirm earlier research finding that choice students in Milwaukee and other cities have higher academic achievement. A more definitive evaluation would require longitudinal data for individual students and employ a random-assignment research design to control for the selection of students into the choice program. In 2003, the Wisconsin Legislature approved such an evaluation, which was to have been overseen by the state's nonpartisan Legislative Audit Bureau, but Governor James Doyle vetoed the bill. Another attempt at launching this important study will likely be made in the next legislative session.

In the meantime, the lack of a comprehensive study does not mean that we do not have any useful evidence. The significantly higher graduation rate achieved by choice students compared to all MPS students and even to students who attend selective public schools helps confirm the findings of earlier rigorous evaluations that school choice improves student outcomes.

Previous Research

The MPCP, the country's largest and longest-running voucher effort, has been the subject of two random-assignment studies. Random-assignment designs are the "gold standard" for research because they help ensure that the treatment and control groups are nearly identical. Only chance distinguishes between those who win a lottery and are assigned to the treatment group and those who lose and are assigned to the control group. Because random

assignment has these significant advantages, it is the research design normally employed in medical studies.

The Wisconsin law that created the program requires participating schools to conduct lotteries to admit students whenever they have more applicants than spaces available. This makes random-assignment studies of the program possible. The first State of Wisconsin evaluations, conducted in 1990-1995, did not use random-assignment research designs, but two later evaluations did. The first, conducted by Jay Greene of the University of Texas, and Paul Peterson and Jiangtao Du of Harvard University, found that MPCP students who won lotteries and were able to attend private schools outperformed a control group of students who lost those lotteries and remained in MPS schools. After four years in the program, the treatment group of MPCP students produced standardized test results that were 6 normal curve equivalent points higher than the control group in reading, and 11 points higher than the control group in math.[1]

Princeton University economist Cecilia Rouse published a second analysis of the Milwaukee school choice program employing a random-assignment design.[2] Using a slightly different set of test scores than was used by Greene, Peterson, and Du, Rouse found that students able to attend private schools with vouchers outperformed the control group by 8 percentile points on a standardized math test after four years in the program. She found no statistically significant effect from the program in reading.

Our confidence in drawing conclusions from both of these studies is limited by incomplete data, and because they examined the program in its early years before it was expanded to include religious schools. However, the confidence with which we can conclude that Milwaukee's school choice program improves the academic outcomes of its participants is strengthened by a series of random-assignment studies conducted in other cities by a variety of research teams, all of which have produced positive results.

Random-assignment studies of school choice programs in Charlotte, Dayton, New York, and Washington, D.C. have been conducted by researchers at the Manhattan Institute for Policy Research, Harvard University's Program on Education Policy and Governance, Mathematica Policy Research, Princeton University's economics department, and Harvard University's statistics department.[3] Only the Princeton study fails to find statistically significant positive effects for at least some groups of students in some academic subjects. The Princeton study, however, produces positive estimated effects that fall short of statistical significance, and these estimates only fail to achieve significance because the researchers fail to control for previous test scores (even though relatively few were missing) and define students' race in a way that is inconsistent with federal research grant guidelines.

The bottom line is that existing research already gives us fairly good reason to believe that students are benefiting from participating in the MPCP. Additional research of the kind approved last year by the Wisconsin Legislature would be helpful to verify these earlier findings. Additional research could also clarify ambiguities in the existing research, such as whether some racial/ethnic groups benefit more than others, whether benefits extend to reading as well as math, and whether the effects might be different if more generous vouchers were available.

But the continuation of Milwaukee's school choice program should not be contingent upon receiving approval from new research. Many educational practices and policies currently used without controversy in Milwaukee and elsewhere have considerably less research support than the multiple random-assignment studies supporting Milwaukee's choice program.

Examining Graduation Rates: Potential and Problems

Despite fairly strong evidence in support of the MPCP, critics continue to question its effectiveness and to lament the alleged lack of information on the progress of its students. Interestingly, the principal critics of the program on grounds of inadequate data urged Governor Doyle to veto the longitudinal study that the Legislature approved last year. Strong ongoing support for such a study suggests it might face a more positive outcome in 2005, leading to more direct and up-to-date evidence on how the choice program is faring based on the systematic collection of test scores and a high-quality random assignment evaluation.

But other measures of academic outcomes are available even if test scores are not. In particular, it is possible to examine high school graduation rates as an indicator of academic achievement. High school graduation is a crucial predictor of success or failure later in life. People who graduate high school have significantly higher employment rates, enjoy significantly higher incomes, are significantly less likely to be in prison, and significantly more likely to participate in political and community affairs.

Using graduation rates as an indicator, however, is complicated by the notorious unreliability of official graduation rates. According to the Education Trust, all but six states that provided graduation rates as part of No Child Left Behind requirements reported official graduation rates that were higher than independent estimates indicated they should be. Four states reported graduation rates that were more than 20% higher than independent estimates; Wisconsin reported a 91% graduation rate, compared to an independent estimate of 81%.[4] MPS has reported an official high school graduation rate of 61% for the class of 2003.[5] An earlier independent estimate put the city's graduation rate at 43%.[6] In addition, using graduation rates to measure the relative performance of students in Milwaukee's school choice program is problematic because participating private schools do not report the same graduation statistics as do the public schools.

While official graduation rates are not helpful, techniques for independently estimating graduation rates can be used to provide information on outcomes for voucher students compared to students in MPS. These independent techniques have gained widespread acceptance by education experts and observers. For example, a method developed by Jay Greene has been used by Education Week's annual "Quality Counts" report in lieu of less reliable official

graduation rates. Respected education advocates from the Gates Foundation to the Education Trust have also relied upon the Greene Method as a reliable independent estimate of high school graduation rates.

Estimating Milwaukee's Graduation Rates

The Greene Method produces an estimate that is simple to generate but still reliable and reasonably accurate. It compares the number of high school graduates to the number of students who entered 9th grade four years earlier, making adjustments (if possible) for net migration of students and the effects of 9th grade retention on enrollment data. The most recent study using this method estimated the national high school graduation rate to be 70%, the rate for African-American students to be 51%, and the rate for Hispanic students to be 52%. For a more detailed description of the method by which those rates were computed, including the adjustments made for net migration and retention, see *http://www.manhattan-institute.org/html/ewp_03.htm*.[7]

For this study, data were not available to make adjustments for net migration or retention, so a simpler variant of the Greene Method was employed. This study estimates high

school graduation rates in Milwaukee by comparing the number of students enrolled in 9th grade in the fall of 1999 to the number of students awarded regular diplomas in the spring of 2003. No adjustments were made for the possible net inflow or outflow of students or for students repeating 9th grade. While this simple approach does not produce a perfectly precise graduation rate, neither would any alternative method. This method does produce a reasonable estimate that is valid for the purposes of comparing choice students and public-school students in Milwaukee.

Results

Information on enrollment and graduates for Milwaukee public schools comes from the MPS "Official State Aids (School Enrollment) Report" and the "Wisconsin School Performance Report."[8] Similar information was obtained for private schools participating in the school choice program from a survey of those schools. Estimated high school graduation rates were calculated by taking the sum of all graduates in 2002-03, the most recent year for which graduation data were available from MPS, and dividing this by the sum of all 9th grade enrollments in 1999-2000. A school was only included if both 9th grade enrollment and graduation data were available for that school.

Data were available for 37 public high schools, charter schools, and "partnership" schools in Milwaukee. The partnership schools are schools that operate under contract with the public-school system and focus on at-risk students. Including charter and partnership schools is essential because they are all part of the public-school system. Excluding them would artificially inflate the graduation rate by excluding schools that the public system creates or employs specifically to educate some of their students who are at greatest risk of failing to graduate. Data were also available for 10 private schools in the choice program, including virtually all participating schools with a substantial number of high school students.

In the 37 Milwaukee public high schools with data available, there were a total of 9,226 students in 9th grade in 1999-2000. Four years later, when that cohort would be graduating, there were 3,329 regular diplomas awarded. Dividing 3,329 by 9,226 we arrive at an estimated high school graduation rate of 36% for the Milwaukee public-school class of 2003 (see Table 1).

In the 10 private high schools participating in Milwaukee's school choice program there were a total of 262 students using a voucher to attend 9th grade in 1999-2000. In 2002-03 those schools awarded 167 regular diplomas to students attending with vouchers. Dividing 167 by 262 we arrive at an estimated graduation rate of 64% for students in the Milwaukee school choice program (see Table 1).

Table 1:
Graduation Rates for Choice & Public

	Choice	Public
Graduation Rate	**64%**	**36%**
9th Graders in '99-2000	262	9,226
Graduates in 2002-03	167	3,329
Number of Schools	10	37

A Hard Test to Rule Out Selection Bias

While choice students graduate high school at a substantially higher rate than do public-school students in Milwaukee, perhaps this can be explained in part or in full by differences in the advantages and disadvantages that choice and public-school students bring to their education. That is, the comparison could be distorted by selection bias. It might be reasonable to expect that students who voluntarily participate in a school choice program are more highly motivated and have parents who are particularly involved and concerned with their education. On the other hand, students and their families might seek a voucher to switch to an alternative school because they are not progressing well educationally, which would produce a bias in the opposite direction.

Earlier research on the MPCP suggests that choice students are significantly more likely to be low-income and minority, and to have lower initial test scores than the average student in MPS.[9] Nevertheless, researchers must be concerned that unobserved differences between students seeking vouchers and those who remain in public schools could account for differences in outcomes. The best way to rule out that possibility is to employ a random-assignment research design. Since such a design is not available for this study of graduation rates, it would be reasonable to subject the voucher program to a hard test in order to increase confidence that unobserved factors cannot account for the superior graduation rate among choice students. By comparing the outcomes of choice students to a subset of MPS students who are likely to be at least as advantaged in their background characteristics, if not significantly more so, we can evaluate whether background characteristics might

account for the choice program's higher graduation rate. There is a subset of Milwaukee public high schools that are selective in their admissions because only students meeting certain academic requirements are eligible to enroll.[10] The choice program, on the other hand, is not allowed to establish academic requirements for admission and must accept all students, or accept students by lottery if it is over-enrolled. The students in selective Milwaukee public high schools are thus likely to be at least as advantaged as the students in the choice program. By comparing the graduation rate of students in selective MPS high schools to that of students in the choice program, we are putting the MPCP to a hard test. If it outperforms the selective public schools, its success is unlikely to be caused by background factors.

There were six public high schools with academic admission requirements in Milwaukee that also had the necessary data available to estimate graduation rates.[11] At those six schools there were 2,968 students enrolled in 9th grade in 1999-2000. In 2002-03 those schools graduated 1,220 students, producing an estimated graduation rate of 41% (see Table 2). The rate at these selective public high schools is in fact higher than in non-selective Milwaukee public high schools, where an estimated 34% of the class of 2003 graduated. The 41% figure for selective Milwaukee public high schools is still much less than the 64% graduation rate estimated for students in the school choice program. Thus, the choice program easily passes this hard test; it is very unlikely that differences in the backgrounds of its students account for their superior performance.

TABLE 2:

A HARD TEST TO RULE OUT SELECTION BIAS

	Choice Students	Selective Public School Students	Non-selective Public School Students
Graduation Rate	**64%**	**41%**	**34%**
9th Graders, '99-2000	262	2,968	6,258
Graduates in 2002-03	167	1,220	2,109
Number of Schools	10	6	31

Verifying the Results

The gap in the graduation rate between choice students and students in selective MPS high schools is approximately 23 percentage points. Could the margin of error in estimating graduation rates account for this gap? Given that the method used to compute graduation rates in this study is a very simple one, dividing the number of graduates by the number of 9th graders four years earlier without any adjustments, it is reasonable to consider the possible distortion of estimation error.

It is hard to imagine how error could fully account for a 23-point gap in graduation rates. We know that comparing the number of 9th graders to the number of graduates four years later does not produce a perfectly precise graduation rate, but it is unlikely such an approach would be off by a very large margin. All of the students who enter 9th grade eventually have to either graduate or drop out. When we see 9,226 Milwaukee public-school students start high school while only 3,329 earn their diplomas, we know that the graduation rate is well below 50% even if we cannot say that it is precisely 36%. Similarly, if we see 262 choice students enter high school and 167 graduate four years later, we can be confident that the graduation rate is well above 50% even if we cannot say that it is precisely 64%.

However, even if the gap cannot be entirely due to estimation error, it is reasonable to consider how large our estimation error might be. The primary source of uncertainty in these estimates is the migration of some students into and out of these school systems between 9th grade and graduation. While this movement of students is a concern, it is unlikely to substantially distort the comparisons in this study. For example, a previous study estimated the graduation rate for the state of Wisconsin to be 81%. Removing the adjustments made in that study for student migration would have changed that estimate to 78%. The adjustment makes a difference, but not a very large one.

Another way to check the precision of the method used to estimate graduation rates in this study is to employ another method to see how results differ. The Harvard Civil Rights Project and the Urban Institute have developed an approach that they call the Cumulative Promotion Index.[12] It compares the number of 10th graders in one year to the number of 9th graders the year before, then the number of 11th graders to the number of 10th graders the year before, then the number of 12th graders to the number of 11th graders the year before, and finally the number of graduates to the number of students who started 12th grade that same year. The idea is to compute the percentage of students promoted from one grade to the next in one year's time as a way of estimating the graduation rate.

The Cumulative Promotion Index (CPI) has been widely accepted and reported. It also has the virtue, for our purposes,

of relying only on enrollment data from two consecutive school years. Because it creates a "synthetic cohort" across one year of time rather than tracking an actual cohort of students over four years, CPI is less vulnerable than the unadjusted method used in this study to errors caused by students moving into or out of school systems. The CPI estimate of the graduation rate for Milwaukee public high schools is 39%, very close to our estimate of 36% (see Table 3). The CPI estimate for choice students is 67%, also very similar to our estimate of 64%. And the CPI estimate for selective Milwaukee public high schools is 49%, which is higher than our estimate of 41%. With the CPI approach the gap between the graduation rates for choice students and students attending selective Milwaukee public high schools is a fairly large 18 percentage points.

TABLE 3:
VERIFYING THE RESULTS

	Choice Students	Public School Students	Selective Public School Students	Non-selective Public School Students
Greene Method	64%	36%	41%	34%
CPI Method	67%	39%	49%	34%

CONCLUSION

The evidence clearly shows that students who receive a voucher to attend a private school in Milwaukee graduate high school at much higher rates than MPS students. Students in the choice program also graduate at a much higher rate than do students at selective MPS high schools, suggesting that differences in student background are unlikely to account for the superior achievement of voucher students. These findings hold true whether one uses an unadjusted variant of the Greene Method or the Cumulative Promotion Index to estimate graduation rates, suggesting that estimation error is unlikely to account for the superior achievement of voucher students.

These graduation-rate results are consistent with earlier random-assignment research in Milwaukee and other cities showing that students experience significant academic benefits from being able to attend a private school with a voucher. Confirming earlier research may not silence critics of Milwaukee's school choice program, but it ought to reassure other observers of the program that it does produce substantial benefits.

END NOTES

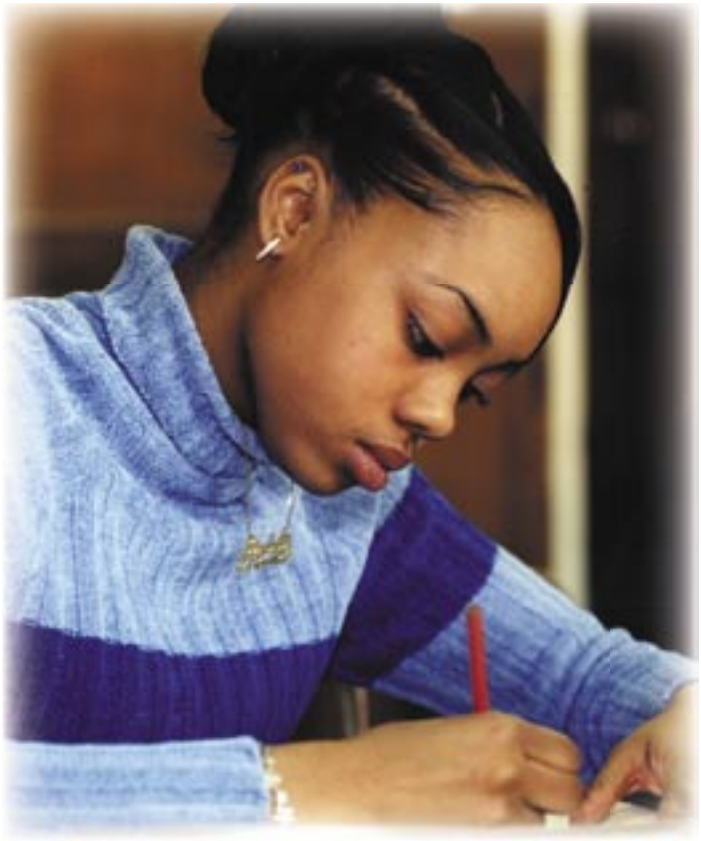
[1] Jay P. Greene, Paul E. Peterson, and Jiangtao Du, "Effectiveness of School Choice: The Milwaukee Experiment," *Education and Urban Society*, February 1999.

[2] Cecilia Elena Rouse, "Private School Vouchers and Student Achievement," *Quarterly Journal of Economics*, May, 1998.

[3] See Jay P. Greene, "Vouchers in Charlotte," *Education Next*, Summer 2001; William G. Howell and Paul E. Peterson, *The Education Gap* (Washington, D.C.: Brookings Institution) 2002; Alan B. Krueger and Pei Zhu, "Another Look at the New York City School Voucher Experiment," Working Paper, March 2003; and John Barnard, et al, "Principal Stratification Approach to Broken Randomized Experiments: A Case Study of School Choice Vouchers in New York City," *Journal of the American Statistical Association*, June 2003.

[4] "Telling the Whole Truth (or Not) About High School Graduation," Education Trust Working Paper, December 2003, Table 1.

[5] "2002-3 District Report Card for the Milwaukee Public Schools," p. 19.



[6] Jay P. Greene, "High School Graduation Rates in the United States," Manhattan Institute Civic Report, November 2001.

[7] Jay P. Greene and Greg Forster, "Public High School Graduation and College Readiness Rates in the United States," Manhattan Institute for Policy Research Education Working Paper Number 3, September 2003.

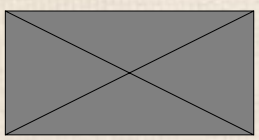
[8] The MPS Office of Student Services calculates the district's Official State Aids Report every year during the district's official third Friday in September enrollment count. Published by the Wisconsin Department of Public Instruction in May for the prior school year, the Wisconsin School Performance Report serves as the state's annual public school report card. See http://www2.dpi.state.wi.us/spr/.

[9] See John F. Witte, *The Market Approach to Education: An Analysis of America's First Voucher Program* Princeton University Press, 2000; and Jay P. Greene, Paul E. Peterson, and Jiangtao Du, "Effectiveness of School Choice: The Milwaukee Experiment," Education and Urban Society, February 1999.

[10] Howard Fuller and George A. Mitchell, "Selective Admission Practices? Comparing the Milwaukee Public Schools and the Milwaukee Parental Choice Program," Institute for the Transformation of Learning, Marquette University, January 2000.

[11] According to the Fuller and Mitchell report they are Custer, Rufus King, Madison University, Milwaukee High School of the Arts, Milwaukee Trade and Technical High School, and Riverside. The Milwaukee Trade and Technical High School was renamed Bradley Tech.

[12] See Gary Orfield, Daniel Losen, Johanna Wald, and Christopher B. Swanson, "Losing Our Future: How Minority Youth are Being Left Behind by the Graduation Rate Crisis," A Joint Release By: The Civil Rights Project at Harvard University, The Urban Institute, Advocates for Children of New York, The Civil Society Institute, 2004.



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