

## Education Issue Brief

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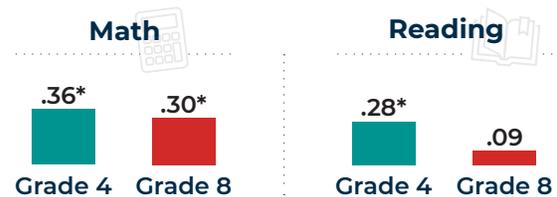
# Measuring the Impacts of School Reforms in the District of Columbia on Student Achievement

## Background

To ensure families residing in the District of Columbia (DC) have greater access to quality public school education, the Council of the District of Columbia passed bold reforms in 2007. These reforms aimed to improve student achievement by hiring and retaining higher quality teachers and providing families in DC with more public school choices.

1. The mayor took control of DC Public Schools (DCPS), which famously led to the implementation of a more rigorous educator evaluation process. This process was based in part on measures of teachers' contributions to student achievement that served to inform teacher retention and promotion decisions.
2. The DC Public Charter School Board became the sole authorizer over all public charter schools in DC and increased the focus on accountability for academic performance. This allowed for continued steady growth of the charter school sector through the approval of new schools and expansion of existing ones.
3. The city introduced a unified enrollment system in 2014. The system facilitated choice by enabling parents to more fully take advantage of all DCPS and charter school options.

## Findings at a Glance



\* $p$ -value < 0.05. Estimated impacts in standard deviation units.

## Evidence and Insights

These reforms in DC were associated with larger than expected improvements in grade 4 math and reading scores on the National Assessment of Educational Progress (NAEP). Even after controlling for student demographics, the magnitudes of these changes were large—around 0.3 standard deviations or 12 percentile points, units commonly used when evaluating education interventions. We found similar gains in grade 8 math but not in grade 8 reading, possibly because progress in grade 4 reading corresponded to skills students could have picked up later even in the absence of these reforms. In contrast to many education reforms that show positive changes initially that later diminish quickly, the results for student achievement in grade 8 math are particularly encouraging because they show that student achievement in math persisted over time and that students who had

## School governance reforms



Mayoral control of DC Public Schools



New centralized authority over charter growth



Unified enrollment system for DCPS and public charters

more exposure to the reforms advanced even more in their math skills than those with less exposure.

There has been much debate among researchers and policymakers about the extent to which improvements in NAEP achievement in DC over time are the result of gentrification that occurred after reforms began in 2007, as opposed to improvements in the quality of public education. Indeed, the percentage of White students enrolled in DCPS increased during this period, whereas the percentage of Black students decreased, both by about 15 percentage points since 2007, compared to percentages nationally. Student achievement could have been directly affected by these demographic changes and indirectly through peer interactions that changed because of these demographic shifts.

Accounting for changes over time in the composition of students in DC suggests the gains in math attributable to the reforms were much larger than demographic changes would explain, demonstrating that they represented real increases in student learning. Our analysis also showed that the impacts of the reforms on NAEP achievement in math were largest for Black and Hispanic students. One possible explanation for the smaller impacts for White students is that a relatively higher proportion of these students might have been attending higher quality schools in DC before the reforms.

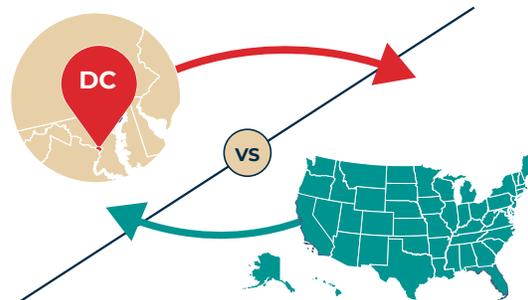
### Key Challenge

Measuring the impact of these reforms on student achievement is difficult. A key challenge is identifying a comparison group that did not experience the reforms, but that used the same student assessments. Annual student assessments are mostly state-determined, but DC is not part of a larger state, so there are no other cities that used the same annual assessments across all the relevant years.

### Our Approach

To overcome these challenges, Mathematica analyzed student achievement data from the NAEP. While these data do not follow students, they do follow individual states and counties over time. Our data covered nearly a quarter century, from the early 1990s to 2017, including achievement in grades 4 and 8 for five cohorts of DC students before 2007 and three cohorts after. This enabled us to cover more cohorts of students than in previous studies. We also

### NAEP facilitates comparison between DC and the rest of the nation



used advanced estimation methods to account for pre-reform differences between DC and other areas.

### Conclusion

Our evidence suggests that the reforms did have important positive impacts on the quality of math and reading education up to grade 4, especially for Black students, with the positive impacts for math lasting through grade 8. The impacts we find in DC are similar in magnitude to those observed in New Orleans, where major school reforms were implemented starting in 2006–2007, immediately after hurricane Katrina, and larger than for some well-known education interventions like the class size reductions in Tennessee and the Success for All program. Additionally, the positive impacts in DC lasted at least through grade 8 for math implying that, unlike many other types of education reforms, the benefits of the education reforms in DC did not fade out. In sum, this study provides policymakers and other decision makers the most comprehensive evidence to date on a causal connection between the overall set of reforms enacted in DC and student achievement because it uses more years of data, thus provides a much richer picture of changes in student achievement over time.

### Acknowledgment

This study was made possible through generous support from Arnold Ventures, a Houston-based philanthropy that supports strategies designed to advance and expand educational options in several cities, including Washington, DC. To read the full report please visit <https://www.mathematica.org/publications/impacts-of-school-reforms-in-washington-dc-on-student-achievement>.

