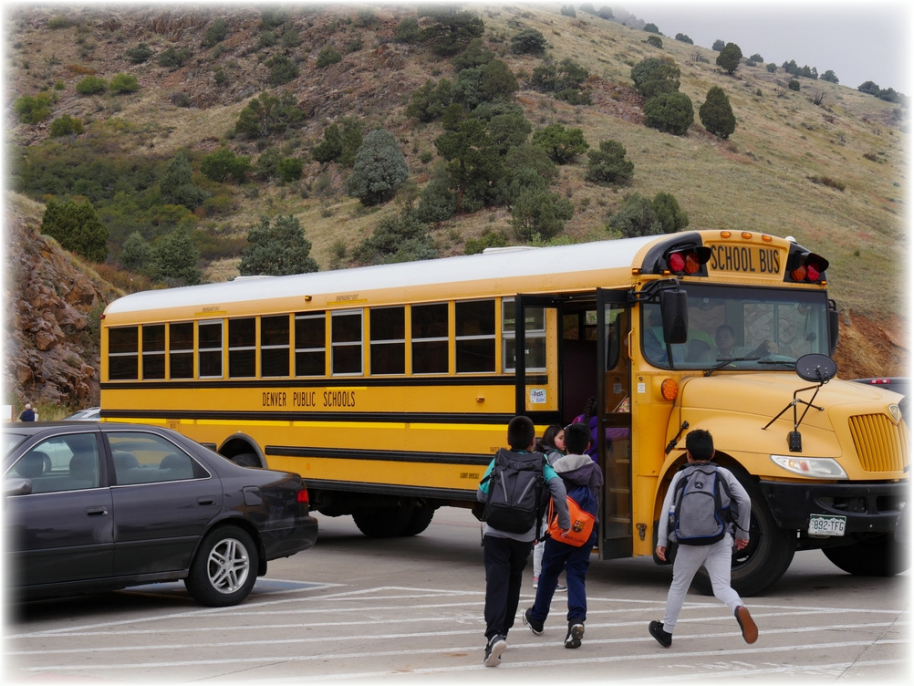
NEPC Review: The System-Level Effects of Denver's Portfolio District Strategy: Technical Report (Center for Education Policy Analysis, University of Colorado Denver, December 2022)



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Summary

The Center for Education Policy Analysis at the University of Colorado Denver recently published *The System-Level Effects of Denver's Portfolio District Strategy*, an analysis of changes in academic performance as measured by test scores and graduation rates in the Denver Public Schools versus comparable schools in Colorado over 11 years of the district's experimenting with the "portfolio" approach to school district management. The district's portfolio approach includes central-office oversight of different school types (such as charter schools, innovation schools, and district-run schools), with widespread parental choice under a single enrollment system. The model looks to choice, competition, and accountability to drive gains in student performance. The recent study finds substantial system-level gains in math and ELA scores as well as graduation rates. These reported gains are indeed dramatic, but they were not experienced equally and may have widened achievement gaps. Further, attributing them specifically to the portfolio reforms seems premature for at least three reasons. First, many other changes, beyond the portfolio reforms, were occurring in the district at the same time. These included changes to funding, curriculum, leadership, teacher policies, and student demographics. Second, some gains, particularly among marginalized groups of students, predated the reforms. Third, the "portfolio" reforms themselves are diffuse and difficult to parse. For these reasons, the recent report succeeds in drawing attention to real academic gains in Denver over the past decade, but is less useful as a guide to how other districts could replicate that success.

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I. Introduction

States and school districts have long grappled with the right organizational structure to support excellent schools for all students. One popular reform strategy, employed most notably by New Orleans in its reorganization after the devastation of Hurricane Katrina, is the "portfolio" approach[1]. Though it can take many forms, the approach generally comprises school autonomy, accountability, and choice. Schools are typically given greater authority over budget, staffing, and curriculum decisions; schools face increased accountability pressures; and parents select among traditional public and sometimes charter schools. The portfolio approach has both defenders and detractors. Former New York City Schools Chancellor Joel Klein cited the benefits of "a system of great schools" over the infeasible goal of achieving a "great school system." Others, however, have raised concerns about loss of necessary supports and democratic governance and oversight; resources flowing to already-privileged schools; and marginalized students falling through the cracks due to barriers to accessing the best schools, such as information and transportation.[2]

The Denver Public Schools (DPS) adopted such an approach starting in the 2007-08 school year. DPS has seen both significant enrollment growth and impressive gains in student performance since that time, climbing from near the bottom to the middle of the distribution of Colorado school districts with regard to student test scores and high school graduation rates. Parker Baxter, Anna Nicotera, Erik Fuller, Jakob Panzer, Todd Ely, and Paul Teske of the Center for Education Policy Analysis at the School of Public Affairs at the University of Colorado Denver argue these gains are attributable to the portfolio strategy in a recent report, *The System-Level Effects of Denver's Portfolio District Strategy: Technical Report*[3] and its accompanying *Study Summary*.[4] The report analyzes changes in student performance, as

measured by test scores and graduation rates, in Denver versus comparable school districts in Colorado over fifteen years (four years pre-reform and 11 years post-reform) to conclude that the set of portfolio reforms contributed to substantial gains in student learning outcomes.

II. Findings and Conclusions of the Report

The report finds DPS reforms were associated with an improvement of approximately 0.5-0.9 standard deviations over the course of the reform period in math and ELA scores as compared with different sets of similar districts in Colorado.[5] These results are consistently positive and, in most cases, statistically significant, meaning that they are unlikely to have occurred merely by chance. The report characterizes these effects as substantively large and meaningful on three bases: They exceed those of most educational interventions,[6] can be interpreted as approximately similar to a gain of a year of learning, and nearly closed performance gaps between Denver and other large Colorado districts over the decade of reforms.[7]

The report also finds that graduation rates in DPS high schools increased by approximately 15 percentage points more than in other large Colorado school districts over the post-reform period.[8] The report also analyzed effects for subgroups of students, finding statistically significant and positive effects in math and ELA for White students, and in math for Black students and students with disabilities.[9] Effects for all other subgroups were positive but not statistically significant.

Based on these findings and the sweeping nature of the reforms in question, the report concludes that the portfolio reforms were among the most comprehensive in American history and led to substantial academic gains that benefited all subgroups of students.[10]

III. The Report's Rationale for Its Findings and Conclusions

The report's conclusions are supported primarily by analyses of changes over time in Denver relative to Colorado as a whole and then three comparison groups: 1) other districts in Colorado that, similarly to Denver, were in the bottom 20 percent of average test score performance pre-reform; 2) the 10 largest districts in Colorado; and 3) a Colorado district that had similar demographic and performance data to Denver pre-reform. The report uses district-level data from the Colorado Department of Education analyzed using two similar methods for assessing relative changes over time between a treatment and comparison group: comparative interrupted time series (CITS) and difference-in-differences (DID). The report also includes several additional statistical tests to examine threats to validity, including a test for whether results are predicted by demographic changes within the city of Denver and DPS.

IV. The Report's Use of Research Literature

Although there is variation in the ways districts have applied the portfolio approach, the report characterizes the portfolio approach as a cohesive strategy of interventions[11] that include a single enrollment system with choice among multiple providers including traditional district, innovation and charter schools; a performance framework for evaluating schools; providing support and sanctions to underperforming schools; and a new funding model to direct resources to schools based on student need.[12]

The report does engage with the literature on the portfolio approach as a cohesive strategy,[13] as well as evaluations of previous districtwide portfolio reforms, most notably in New Orleans.[14] The report also briefly notes the extensive literature on accountability, competition, and choice[15] and presents the argument that DPS provides a useful case study of a unified approach under a common oversight body with multiple providers.[16]

Nonetheless, the report lacks discussion of causal mechanisms, the reform's overall theory of change, and theory and prior literature on how the various parts of the reform are meant to act in concert. For example, weighted student funding is only very briefly mentioned as an aspect of the reform. Although weighted student funding often accompanies school budgetary autonomy,[17] it is not inextricably tied to school choice regimes and thus its connection to the portfolio strategy requires elaboration.

Further, the report lacks discussion of the implications of having traditional, innovation, and charter schools overseen by the same public agency. The record on charter schools is mixed,[18] with some positive outliers[19] but null results on average, and some theory that governance and oversight are a key determinant of success[20] (with standardized test scores being the key outcome in these studies). A large body of literature discusses the effects of competitive pressure, due to choice or other factors, on traditional public schools,[21] and a smaller but still important body of literature addresses the potential for greater collaboration between nontraditional and traditional schools in a unified system, akin to Albert Shanker's original vision for charter schools as autonomous lab schools.[22] The report could benefit from greater attention to these strands of literature and more discussion of *how* and *why* the reforms are expected to work together to achieve results, and which of these effects could dominate.

Finally, and perhaps most importantly, the report has very little engagement with the large body of literature on potential drawbacks to a number of the reforms, in particular those with equity implications that would burden already marginalized populations of students. In addition to mixed and even in some cases negative effects of school choice policies, the report would benefit from engaging further with the literature on portfolio strategies and associated reforms exacerbating inequities due to disparities in access to information, transportation, and other necessities to access educational opportunities, as well as the potential to worsen segregation and widen achievement gaps.[23]

V. Review of the Report's Methods

The comparative interrupted time series (CITS) and difference-in-differences (DID) methods used in the report are well-recognized[24] and robust approaches to make causal inferences because they rely upon relative changes over time between two otherwise similar groups, one affected by the intervention in question and the other not. With these methods, the comparison group ideally helps net out any general time trends that would have affected all districts, including DPS, regardless of the reform. This allows the examination of changes over time in a way that should net out persistent differences between DPS and other districts, leaving the estimated effect to be the true effect of the portfolio reforms. The report also includes several tests that bolster confidence in its conclusions. This includes multiple comparison groups and model specifications, as well as tests for robustness to limitations where possible. Finally, the sheer magnitude of the impressive gains DPS made relative to peer districts and to Colorado as a whole during this time period suggest that any bias in the results would have to be quite large to significantly alter the bottom-line conclusion that DPS outperformed the comparisons in terms of test scores and graduation rates.

However, the methods do have several drawbacks that largely stem from using district-level data as opposed to student-level data. This is a deliberate and defensible design decision, for which the report provides a justification in that it is examining a comprehensive, system-level reform and should appropriately consider its effects across all students and types of schools. That acknowledgement and appropriate focus on the net effects across the whole district of a hodgepodge of reforms is simultaneously the report's greatest strength and greatest weakness, as it leaves us unable to understand causal mechanisms or heterogeneity, and unable to determine which of the reforms is working, how, and for which students.

The report's weaknesses are especially troubling because not all of the reforms highlighted in the report are strongly linked to the portfolio approach, with the notable outlier being a weighted student funding approach, which targets some resources according to student need.[25] Relatedly, the report has very limited consideration of potential alternative explanations for the findings, which are a significant concern given the long time horizon and sweeping nature of the reforms. The most notable of the concerns involve the extent to which demographic shifts in Denver that coincided with the reforms are driving results. The report attempts to mitigate this concern with sensitivity analyses and the inclusion of demographic controls, but neither approach is entirely convincing.[26] The report also does not consider several other changes that occurred in DPS that could be driving results largely unrelated to the portfolio reforms. For example, over the time period studied, per-student revenues increased in Denver by 22% but only 13% across Colorado[27] and the student-to-teacher ratio in Denver dropped from 17.9 to 14.9.[28] The district also pursued numerous other reforms as noted in the Denver Plan of 2006, including initiatives focused on teacher leadership and collaboration, curriculum, and professional development, all of which the report does not consider.[29]

Finally, although the report includes a test to determine that DPS and comparison schools had similar trajectories prior to the reforms, it also acknowledges that DPS was already showing improvement before implementation of the portfolio reforms. In fact, for a number

of the subgroups of marginalized students, particularly Black and Hispanic/Latinx students, the pace of improvement was significantly higher before the reform compared to after the reform. All subgroups of students did show positive growth relative to students in other Colorado districts post-reform, but not only was growth post-reform much faster for White students than other groups of students, but Black and Hispanic/Latinx students were growing at approximately 0.06 standard deviations per year pre-reform and 0.03-0.04 standard deviations per year post-reform.[30] While growth for all students is desirable, this pattern of results allows achievement gaps to persist and even widen, suggesting that further examination of priorities in design and implementation of the reforms is in order. It also brings into question inferences attributing growth to the reforms themselves. If for some subgroups of students much of that growth preceded reforms, it suggests the possibility that something other than the reforms—such as the leadership or organizational climate that put the reforms into place—could be responsible.

VI. Review of the Validity of the Findings and Conclusions

The impressively large findings and generally sound methods with ample robustness checks all support the conclusion that *something* important happened in Denver that is worthy of attention and further study. However, the comprehensive nature of the reforms themselves, as well as the undertheorized nature of the report, with insufficient attention to causal mechanisms and alternative explanations, means that any specific policy prescriptions from the report are premature. The substantial increase in academic achievement and attainment in Denver over the past decade is worthy of celebration. Given the host of changes in the city and the district over the same time period as the portfolio reforms, attributing the gains to the portfolio reforms specifically is unwarranted by the evidence.

Although the report examines relative changes over time in Denver as compared to similar districts for different subgroups of students and emphasizes effects on marginalized groups of students, the bulk of the benefits seemed to accrue to White students. White students showed significant jumps in math and ELA scores post-reform. On average, while no group of students in Denver was actively harmed by the reforms, most other subgroups continued on the modestly positive trend that began pre-reforms—and the pace of improvement for Black and Hispanic/Latinx students actually decreased. Future reform efforts, particularly when examining a policy such as weighted student funding intended to allocate funding according to student needs, should prioritize closing resource and opportunity gaps and aim to benefit students with greatest need.

VII. Usefulness of the Report for Guidance of Policy and Practice

Overall, this report calls attention to meaningful improvements in academic outcomes in Denver. However, before clear implications for policy that are actionable in other districts

emerge, much more study is needed on the exact nature of these reforms including what they comprised, what else was happening in the district at the same time, and how different communities and groups of students experienced the reforms.

Notes and References

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Although it is a strength of the report that it considers this potential limitation and somewhat reassuring that estimates are relatively stable regardless of the inclusion of demographic controls, this sensitivity analysis is limited to observable changes in the Census data. Further, the report relies on a variation of a method of selecting a parsimonious set of control variables known as "stepwise regression" that can suffer from incorrect standard errors and inferences; see, e.g., Harrell, F.E. (2001). *Regression modeling strategies: With applications to linear models, logistic regression, and survival analysis* (Vol. 608). New York: Springer.

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