

# Raising the Bar: Why Public Charter Schools Must Become Even More Innovative

Data Appendix  
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Prepared with Public Impact

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### Data Appendix

#### Introduction

To better understand charter school expenditures and the relationship between expenditures and student outcomes, we selected four states with comprehensive charter school financial data and analyzed the expenditures of 763 schools. The following discussion details our methodology and findings.

#### **Stage 1—Identify high-performing, low-spending schools; is innovation a factor?**

In stage 1, we set out to analyze expenditures for charter schools in four states for the fiscal year 2012–13. The states chosen were Colorado, New Jersey, Indiana and Texas: states with large numbers of charter schools and access to good data about expenditures. We calculated the per-pupil expenditure for each school as well as the median charter school expenditure for each state. We then set out to find schools that were demonstrating below-median spending while maintaining strong student outcomes. Our objective was to identify a pool of schools meeting these criteria, then determine if any were using innovative practices and sustainable financial models. Our methodology is outlined below in steps 1–4. See the figures below for a summary of our analysis.

*Step 1: Data Gathering.* We obtained comprehensive charter school expenditure data for the school year 2012–13 from state departments of education in Colorado, Indiana, New Jersey, and Texas. The data covered 763 charter schools across the four states.

*Step 2: Data Categorization.* We mapped all expenditure data into distinct categories. With the help and expertise of Larry Maloney of Aspire Consulting, a leader in the University of Arkansas’s national charter school funding research projects, we reviewed expenditure maps and identified 17 expenditure groupings.<sup>1</sup> We calculated total expenditure for each of the 17 categories as a percentage of total school spending. We also calculated per-pupil expenditure and median expenditure across each state. We prepared a summary of these calculations for each state.

*Step 3: Data Review for schools meeting performance categories.* We pulled student performance information for all schools with available data. We then filtered schools according to five categories. Our aim was to identify high-performing schools serving high percentages of low-income students:

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<sup>1</sup> The 17 expenditure categories we used are as follows: administration, business operations, capital expenditure, cocurricular activities, community services, debt service, food services, health, health (special needs), instructional support (general), instruction (general), office of school leader, operations and maintenance, other, summer school, textbooks and workbooks, and transportation.

- High percentage of students, over 70 percent, eligible for free or reduced-price lunch,
- School spending below state median,
- Over 80 percent proficiency rates in state math and ELA tests,
- Above-median growth by students in math and ELA, and, where available,
- High rating on state accountability system.

We identified 46 schools that fell into most or all of these categories and appeared to be obtaining solid results, while at the same time spending less than other schools.

**Figure 1. Schools Meeting Study Criteria**

State	School Name	% FRL	\$ Spent Per Pupil	\$ Spent Above (red) or Below Median	% Spent Above (red) or Below Median	State Tests % Proficient		Growth		Highest State Accountability Rating	
						ELA	Math	Reading	Math		
IN	Signature School Inc.	9%	7,206	1,792	20%	100.0%	96.0%	NA	NA	Yes	
IN	Rural Community Schools Inc.	63%	8,795	203	2%	85.2%	80.5%	62	46	Yes	
IN	Challenge Foundation Academy	82%	10,481	(1483)	(16%)	76.0%	79.1%	44	59	Yes	
IN	Renaissance Academy Charter School	31%	6,229	2,769	31%	92.0%	90.6%	53.5	54	Yes	
IN	Canaan Community Academy	44%	9,532	(534)	(6%)	78.7%	83.0%	39	70	Yes	
IN	Dr. Robert H Faulkner Academy	74%	7,722	1,276	14%	86.6%	88.8%	59	78	Yes	
IN	The Bloomington Project School	37%	8,480	518	6%	87.9%	85.0%	57	52	Yes	
IN	Discovery Charter School	21%	6,186	2,812	31%	95.0%	92.0%	60	55	Yes	
<b>IN MEDIAN PP EXPENDITURE</b>			<b>8,998</b>								
NJ	Central Jersey Prep Charter School	44%	12,662	1,880	13%	84.1%	87.5%	50	79	Yes	
NJ	Riverbank Charter School of Excellence	15%	9,704	4,838	33%	90.0%	100.0%	NA	NA	Yes	
NJ	Hoboken Dual Language Charter School	11%	11,070	3,472	24%	81.8%	90.9%	56	66		
NJ	Classical Academy Charter School	32%	7,992	6,550	45%	89.1%	98.4%	65	79.5	Yes	
NJ	Learning Community Charter School	33%	10,937	3,605	25%	76.7%	81.5%	59	52		
NJ	PACE Charter School of Hamilton	78%	14,051	491	3%	92.0%	92.0%	NA	NA	Yes	
NJ	Robert Treat Academy Charter School	73%	15,089	(547)	(4%)	90.2%	97.9%	54	48	Yes	
NJ	University Academy Charter School	74%	13,608	934	6%	85.5%	59.8%	NA	NA	Yes	
<b>NJ MEDIAN PP EXPENDITURE</b>			<b>14,542</b>								
CO	Prospect Ridge Academy	75%	5,101	3,120	38%	89%	81%	62	54	Yes	
CO	Woodrow Wilson Academy	77%	5,533	2,688	33%	83%	83%	57	53	Yes	
CO	Academy for Advanced and Creative Learning	85%	6,086	2,135	26%	90%	86%	52	61	Yes	
CO	Monument Charter Academy	89%	6,142	2,079	25%	88%	84%	53	52	Yes	

CO	Jefferson Academy Elementary	40%	6,154	2,067	25%	86%	80%	51	52	Yes
CO	Connect CS	81%	6,243	1,978	24%	95%	86%	59	53	Yes
CO	Frontier Charter Academy	91%	8,074	147	2%	83%	73%	61	68	Yes
CO	James Irwin High School	78%	7,305	916	11%	86%	50%	55	51	Yes
CO	Littleton Academy Charter School	85%	8,074	147	2%	94%	93%	50	63	Yes
CO	Thomas MacLaren State CS	91%	6,974	1,247	15%	97%	77%	72	84	Yes
CO	Excel Charter School	76%	7,733	488	6%	83%	77%	54	59	Yes
CO	<b>CO MEDIAN PP EXPENDITURE</b>		<b>8,221</b>							
TX	Girls & Boys Prep Academy El	96%	5,834	1,449	20%	78%	62%	62	89	
TX	The Varnett School – East	99%	5,477	1,806	25%	89%	100%	67	88	Yes
TX	Houston Heights Learning Academy I	99%	6,163	1,120	15%	96%	91%	70	90	Yes
TX	Accelerated Interdisciplinary Academy	95%	5,646	1,637	22%	85%	78%	72	63	Yes
TX	Stepping Stones Charter El	92%	6,329	954	13%	87%	80%	74	76	Yes
TX	Tekoa Academy Of Accelerated Studies	98%	3,054	4,229	58%	88%	96%	87	93	Yes
TX	Ehrhart School	86%	5,535	1,748	24%	76%	65%	69	74	Yes
TX	Rise Academy	85%	6,407	876	12%	94%	95%	61	77	Yes
TX	Pri Campus	71%	5,709	1,574	22%	89%	92%	74	77	Yes
TX	Middle Campus	70%	5,656	1,627	22%	86%	87%	65	67	Yes
TX	Harmony Science Academy – Brownsville	79%	7,161	122	2%	84%	85%	73	76	Yes
TX	Uplift Education - Infinity Prep	79%	7,093	190	3%	81%	85%	65	66	Yes
TX	Nova Academy Prichard	95%	6,270	1,013	14%	78%	74%	69	73	Yes
TX	St Anthony Academy	82%	5,975	1,308	18%	76%	66%	52	60	Yes
TX	Idea Academy	91%	6,743	540	7%	68%	59%	56	61	Yes
TX	Vanguard Academy El li	84%	6,423	860	12%	81%	69%	56	49	Yes
TX	New Frontiers Middle School	86%	7,171	112	2%	71%	71%	68	80	Yes
TX	Dr James L Burch	84%	6,837	446	6%	75%	80%	58	75	Yes
TX	The Education And Training Center	94%	7,266	17	0%	91%	91%	82	83	Yes
	<b>TX MEDIAN PP EXPENDITURE</b>		<b>7,283</b>							

**Figure 2. Descriptive statistics for the 46 schools meeting criteria**

Averages for CO, TX, NJ, and IN shortlisted schools						
FRL	\$ Spent Per Pupil	ELA Proficiency	Math Proficiency	ELA Growth	Math Growth	Median Per-Pupil Expenditure
69%	7,607	86%	83%	61	67	9,761

We researched school websites to identify schools taking an innovative approach to operations. Having ruled out schools that appeared to offer traditional models, our research resulted in a shortlist of eight schools.

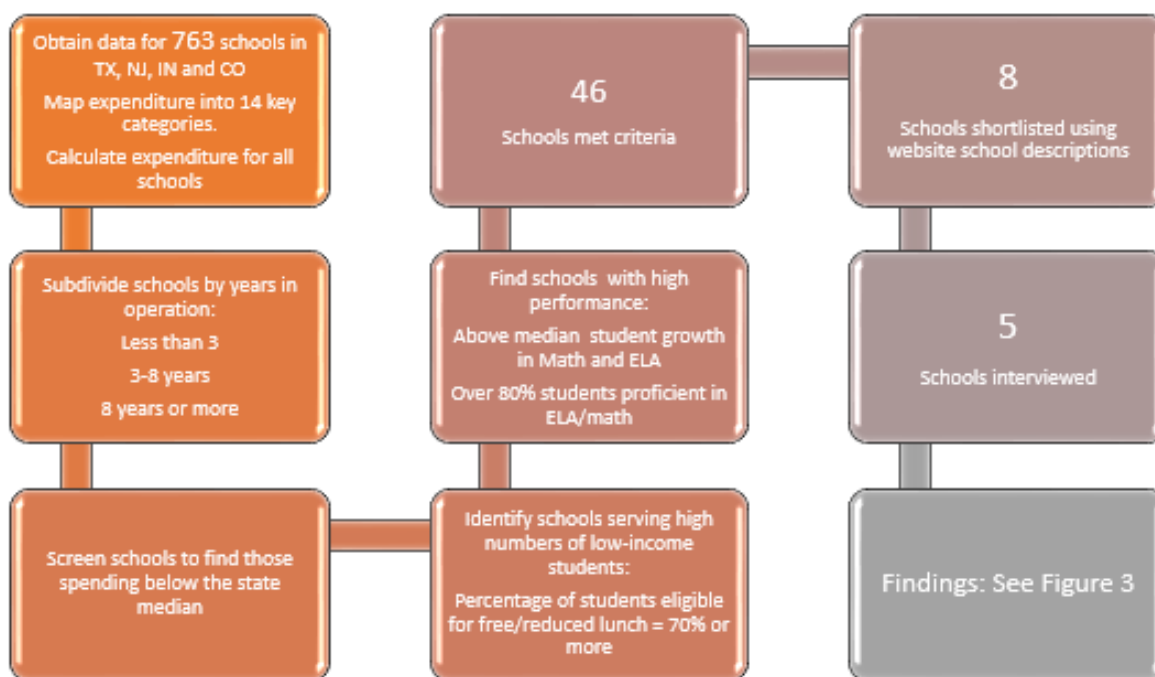
*Step 4: Interview Schools.* We contacted the eight schools to schedule interviews and learn about their school models. We were able to interview five school managers in-depth about their school operations. We determined that the schools were largely able to make cost savings due to careful budgeting, but we did not identify any particularly innovative practices or models. Our findings are summarized in the table below:

**Figure 3. Findings from schools selected for interviews**

School	Findings
Discovery Charter School, IN	<ul style="list-style-type: none"> <li>• Staff members wear many hats</li> <li>• Strong parent base, use of parent volunteers for some administrative tasks, and to staff library, help out at lunch, and create art program</li> <li>• School plays very close attention to budget with management company’s assistance</li> <li>• Parent advisory council helps with fundraising</li> <li>• School is housed in office building; fundraising paid for outdoor play area and library; no gym or cafeteria</li> <li>• Opened with 300 students—needed that number to open but would have liked option of phase-in</li> <li>• One-year teacher contracts</li> <li>• “Backfills” (or fills vacant seats) when students leave the school</li> </ul>
Pace Charter School, NJ	<ul style="list-style-type: none"> <li>• Cost savings made by minimal use of paid administrators; principal and one part-time staff member handle administration</li> <li>• Started out in office building without library, gym, etc.; now in former Catholic school facilities</li> <li>• Negotiated low rent during renovation periods</li> <li>• State grant helped fund expansion for grades 4–5</li> </ul>

	<ul style="list-style-type: none"> <li>• No automatic salary steps; bonuses are paid according to availability of funds each school year</li> <li>• Senior teachers mentor new teachers</li> <li>• “Backfills” (or fills vacant seats) when students leave the school</li> <li>• No sharing of services with other charter schools</li> <li>• Rotating support staff</li> </ul>
<p>Thomas MacLaren Charter School, CO</p>	<ul style="list-style-type: none"> <li>• Accountant and treasurer with charter school expertise oversee finances</li> <li>• Regular review and updating of finances</li> <li>• Teacher salary fund used to help retain best teachers</li> <li>• Facility is a church building</li> <li>• Small class sizes in Socratic seminars</li> <li>• All students take music lessons; partnerships with local arts groups</li> <li>• No gym. Students receive PE credit for outside sports activities</li> <li>• Opened with grades 6–9 to be viable</li> <li>• No backfilling; school model does not cater to midyear entry</li> </ul>
<p>Rural Community Schools, IN</p>	<ul style="list-style-type: none"> <li>• Simple model; school based in old mining community that offers opportunities for experiential learning</li> <li>• Academic director deals with grants and student instruction, operations officer handles finances including transportation</li> <li>• Facility donated to township for nominal annual rent</li> <li>• Teacher salaries are significantly below traditional public school salaries, but retention rates are high</li> <li>• Lottery held in spring to fill any empty seats</li> <li>• Students are assigned to ability groups in grades 5–8 in “levelled classes”</li> </ul>
<p>Robert Treat Academy, NJ</p>	<ul style="list-style-type: none"> <li>• Teachers wear many hats</li> <li>• Founding organization helps with expansion funding; one campus is rented from a private Catholic school; one campus is leased from founding organization, which helps to keep rent affordable.</li> </ul>

## Data Analysis, Stage 1: Identify High-Performing Schools with Below-Median Expenditure – Is Innovation a Factor?



### Stage 2—Data Analysis: Perform a two-stage regression analysis. Do expenditure patterns relate to school performance?

In stage 2, we set out to examine the budget data for the schools in our sample, in an attempt to identify outliers—schools that did not follow the same expenditure patterns as the majority of schools, but had high results for student subgroups combined with low per-pupil expenditure. We ran two regression analyses.

In our first step, we extracted data for percentages of students in the following subgroups, where available for the 2012–13 school year: eligible for free and reduced-price lunch, English language learners, special education, African-American and Hispanic. We performed a two-stage regression analysis for Colorado and Indiana, as follows:

1. We ran a regression analysis with student performance as the dependent variable and dollars spent per pupil, and the demographic data outlined above as independent variables. For states with missing demographic data, we conducted the regression without those variables. We generated residuals for each school, which indicate the degree to which the school’s performance fell above or below the predicted performance based on the school’s population. For example, a high positive residual indicates that the school performs better than schools in the state with similar populations.
2. We then ran a second regression analysis:
  - a. We used residuals from the first analysis as dependent variables together with 16 of the spending categories created in step 2 of stage 1 (see page 2). To select the 16 spending



categories, we counted the number of occurrences of each category across all of the schools and excluded the categories with the fewest number of occurrences. The goal for this analysis was to see if any spending categories were associated with “outlier” schools, or schools with student performance that was higher than the regression predicted in step 1.

- b. We ran an additional regression, again with residuals as a dependent variable, with all spending categories that were excluded in step 2.

*Descriptive analysis.* In short, we found no clear pattern in the data suggesting that certain spending patterns were associated with higher-than-predicted levels of performance. Additional analysis that delves more deeply into expenditure data—going beyond the high-level 16-category approach—might indicate additional relationships or areas of future research. However, given this study’s shift of focus from school spending to school innovation, we did not pursue that deeper analysis at this time.