

Methodology Report

POCKETS OF EDUCATIONAL EXCELLENCE

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Methodology for Selecting Schools to be Included in Study

The Rutgers-Newark Institute on Education Law and Policy has embarked on a research project, with support from the Goldman Sachs Foundation, entitled “Pockets of Educational Excellence.” The project will address the need for improvement in New Jersey’s “special needs school districts,” also known as its “*Abbott* districts” after New Jersey’s landmark school funding case, *Abbott v. Burke*. It will not focus on the districts’ troubles or failures, but rather on the successes occurring in some of their schools – their “pockets of educational excellence.” The goal of the project is to investigate the causes of success in these schools and determine whether it can be replicated in other schools in *Abbott* districts and, indeed, elsewhere in the state and the nation.

The project will examine student, school and community characteristics of eight high-performing schools in *Abbott* districts, and consider three interrelated issues: (1) what characteristics of the students, their families and their communities are correlated with the schools’ success, and specifically whether demographic characteristics such as ethnicity, English proficiency, or the date of immigration are correlated with school success; (2) what school characteristics, such as teaching staff qualifications, leadership style or instructional program (including whole school reform) are correlated with success; and (3) the degree to which any of these characteristics can be treated as elements of a successful school program and replicated in other schools that have been less successful with comparable student populations.

This report describes the criteria and methodology that we have used to make the initial selection of eight schools to be included in the study. In Section 1 we discuss the data used to make the selection; in Section 2 we describe our selection criteria and explain our methodology; in Section 3 we discuss the regression analysis that is an essential element of the selection methodology; and in Section 4 we present detailed demographic data for the 16 schools included in our preliminary selection and the eight schools in the final selection.

1. The Data

The data used to select schools were obtained from the New Jersey Department of Education School Report Cards for the 2003-04 school year. School Report Card data for that year (the

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most recent available), including data relating to performance on state-mandated fourth- and eighth-grade standardized tests, is published on the Department of Education web site (<http://www.state.nj.us/njded/data/>). The site contains report cards for 188 of the 193 *Abbott* schools that include grade eight. The data set includes numerous indicators, at the school level, of student performance, student demographics and teacher and school characteristics. Table 1 lists the indicators included in School Report Cards for schools that include grade eight.

Table 1: Descriptive Statistics for Abbott Districts, Schools w. 8th Grades, 2004					
Variable	Mean	Std. Dev.	Min	Max	# Obs.
Test Performance					
Language Arts Exam					
# Tested (gen. ed.)	85.9	73.1	12.0	463.0	189
% Below Proficiency	40.6	22.4	0.0	95.0	189
% Proficient	57.9	21.0	5.0	100.0	189
% Above Proficiency	1.5	2.6	0.0	12.8	189
Mathematics					
# Tested (gen. ed.)	85.7	72.8	12.0	459.0	189
% Below Proficiency	54.0	24.4	0.0	95.1	189
% Proficient	37.3	17.5	4.9	78.8	189
% Above Proficiency	8.7	9.5	0.0	43.3	189
Student Variables					
% White	10.0	17.4	0.0	96.3	193
% Black	47.8	33.4	0.0	99.5	193
% Hispanic	39.0	28.7	0.5	98.0	193
% Asian	2.9	5.9	0.0	30.3	193
% Native American	0.2	0.5	0.0	3.6	193
% Male	51.1	4.2	35.9	84.2	193
% Chapter 1	77.3	36.1	0.0	100.0	192
% Reduced Lunch	11.5	4.9	0.0	26.7	192
% Free Lunch	61.6	15.7	13.2	98.6	192
% Student Mobility	23.6	27.3	0.0	342.1	193
% Limited English Proficiency (LEP)	9.3	13.7	0.0	100.0	193
Faculty Variables					
% Faculty with Bachelor's only	67.8	10.1	29.6	88.6	193
% Faculty with Master's	30.2	10.5	10.3	70.4	193
% Faculty with Phd/Ed's	1.9	3.0	0.0	18.8	193
% Teacher Turnover	9.2	13.7	0.0	155.8	193
% Admin. Minority	48.3	37.4	0.0	100.0	193
% Teachers White	57.7	22.6	11.8	100.0	193
% Teachers Black	28.6	24.6	0.0	84.1	193
% Teachers Hispanic	12.0	10.7	0.0	51.5	193
% Teachers Native American	0.1	0.6	0.0	6.7	193
% Teachers Asian	1.6	2.8	0.0	19.0	193
# Teachers	53.9	24.2	2.0	132.0	193
School Variables					
Avg. Attendance 8th Grade	93.2	3.9	65.4	99.5	193
Student-Faculty Ratio	10.9	3.9	1.8	52.3	193
Enrollment 8th Grade	103.6	98.2	3.0	754.0	193

Total Enrollment	649.6	312.5	19.0	1638.0	193
Lowest Grade (excluding K)	2.9	2.4	1.0	8.0	193
Avg. 8th Gr. Class Size	20.3	4.8	3.0	30.3	193
Charter School	0.11				
Predominately Black School	0.23				

As shown in Table 1, most of the indicators in the data set are standard measures of student and school characteristics. To highlight a few:

Student mobility, the percent of new students entering and withdrawing or transferring during the school year, is a measure of student turnover.

The reduced-price and free lunch indicators are measures of student poverty, as students qualify for federal lunch subsidies based on household income. Chapter 1 (Title 1) is another measure of student poverty, based on census counts of children age 5-17 whose household incomes are below the federal poverty rate.²

“Charter School” is a “dummy variable” that has a value of 1 if the school is a charter school and 0 if it is not. (Eleven percent of all public schools with eighth grades located in *Abbott* districts are charter schools.)

“Predominantly Black School” is another dummy variable that has a value of 1 if the school has both student population and teacher composition at least 50% Black (as the term is used in the School Report Cards), and 0 if it does not. (Twenty-three percent of the schools in the sample qualify as Predominantly Black Schools.)

2. Selection Criteria and Methodology

2.1. Initial Screening

Of the schools for which data are available, those that met the following criteria were selected for preliminary consideration:

- (1) Aggregate performance in the top 25th percentile of all *Abbott* schools in the language arts literacy and mathematics sections of the 2003-04 Grade Eight Proficiency Assessment (GEPA) for the general education student population (i.e., not including students with disabilities). We chose eighth grade test scores rather than fourth grade (the only other grade for which test score data are available for more than one year) because eighth-grade proficiency levels in *Abbott* districts are lower across the board than fourth-grade levels, and therefore high levels of performance at the higher grade level may be a stronger measure of excellence

Performance rankings were based on the percent of students at or above the state-established proficiency level (with scores in either the “proficient” range or the

² For more information on Chapter 1 (Title 1) see <http://www.state.nj.us/njded/title1/>.

“advanced proficient” range) for both the language arts literacy and mathematics sections of the GEPA exam.

Although we used rankings for the general education population, we also examined the scores for the total population (including students with disabilities) in order to examine if schools were achieving high performance by non-disabled students while possibility neglecting their disabled students (at least as measured by standardized test scores). Including both criteria allowed us to select schools that were for the most part doing well overall, for both disabled and non-disabled students, in comparison to other schools throughout the state. Although we did not eliminate the one school with a significant differences in performance between its general education students and its total population (13th Avenue), in the case of this school, we decided that it was important to examine the differences between its general and total education scores as part of our project.

- (2) School structure that includes, at least, first through eighth grades. This criterion eliminated from selection all middle schools and any high schools serving eighth grade. The grade 1-8 structure was chosen so that we can study the effects, if any, of relatively long-term enrollment in the same school.
- (3) Performance at higher than predicted levels based on 12 regressions of test performance using different combinations of 34 different variables. (A detailed description of the regression analysis is provided in section 3.)

Applying these three criteria generated an initial list of 16 schools in six school districts. Table 2 lists the schools and shows performance data for each of them. Note that all of these schools selected are above the 2004 GEPA state averages for general education students for Language Arts (except Number 18, Patterson) and Mathematics. The state average for at or above proficiency for the Language exam for general education students is 82.5%, and for Math it is 71.3%.

Table 2: General Education Test Performance Details for Selected 16 Schools

	NJ STATE		Abington		C. Bradford		H.L. Bain		Lafayette St.		N. Copernicus		Number 1		Number 2	
			Newark		Jersey City		West NY		Newark		Jersey City		West NY		West NY	
	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
ASK 4																
Language Arts																
Number Tested	86,735	73,433	66	32	41	42	54	67	54	37	112	126	66	51	48	42
Partial	13.9%	9.7%	1.5%	0.0%	14.6%	9.5%	13.0%	7.5%	7.4%	13.9%	21.4%	14.4%	10.6%	7.8%	4.2%	4.8%
Proficient	81.5%	84.6%	92.4%	93.8%	85.4%	90.5%	87.0%	89.6%	92.6%	77.8%	77.7%	85.6%	84.8%	86.3%	95.8%	92.9%
Advanced	4.6%	5.7%	6.1%	6.3%	0.0%	0.0%	0.0%	3.0%	0.0%	8.3%	0.9%	0.0%	4.5%	5.9%	0.0%	2.4%
Mathematics																
Number Tested	86,586	83,422	66	32	41	42	54	67	54	37	112	126	66	51	49	42
Partial	25.2%	21.6%	1.5%	0.0%	36.6%	16.7%	20.4%	9.1%	9.3%	5.4%	31.3%	21.6%	16.7%	7.8%	18.4%	21.4%
Proficient	45.8%	48.9%	13.6%	18.8%	56.1%	57.1%	63.0%	69.7%	25.9%	45.9%	53.6%	56.8%	50.0%	51.0%	55.1%	54.8%
Advanced	29.0%	29.5%	84.8%	81.3%	7.3%	26.2%	16.7%	21.2%	64.8%	48.6%	15.2%	21.6%	33.3%	41.2%	26.5%	23.8%
GEPA																
Language Arts																
Number Tested	86,772	88,203	60	80	32	30	53	44	53	60	86	102	51	67	35	37
Partial	15.3%	17.5%	0.0%	11.3%	3.1%	6.9%	9.4%	6.8%	13.2%	3.3%	12.8%	9.8%	2.0%	7.5%	2.9%	0.0%
Proficient	76.7%	75.8%	100.0%	86.3%	93.8%	89.7%	88.7%	88.6%	81.1%	88.3%	84.9%	81.4%	96.1%	89.6%	91.4%	94.6%
Advanced	8.0%	6.7%	0.0%	2.5%	3.1%	3.4%	1.9%	4.5%	5.7%	8.3%	2.3%	8.8%	2.0%	3.0%	5.7%	5.4%
Mathematics																
Number Tested	87,041	88,127	60	80	32	30	53	44	53	60	86	102	51	67	35	37
Partial	34.0%	28.7%	13.3%	15.0%	37.5%	17.2%	11.3%	6.8%	26.4%	16.7%	34.9%	20.6%	3.9%	11.9%	5.7%	13.5%
Proficient	46.8%	47.2%	71.7%	78.8%	46.9%	62.1%	73.6%	68.2%	41.5%	40.0%	45.3%	55.9%	64.7%	74.6%	80.0%	51.4%
Advanced	19.2%	24.1%	15.0%	6.3%	15.6%	20.7%	15.1%	25.0%	32.1%	43.3%	19.8%	23.5%	61.4%	13.4%	14.3%	35.1%

Table 2 cont. : General Education Test Performance Details for Selected 16 Schools

	Number 28		Number 3		Number 4		Number 5		Number 9	
	Jersey City		West NY		West NY		West NY		Paterson	
	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
ASK 4										
Language Arts										
Number Tested	103	87	25	36	34	37	54	63	89	107
Partial	22.3%	26.7%	12.0%	5.6%	8.8%	5.4%	11.1%	9.5%	11.2%	5.6%
Proficient	75.7%	73.3%	84.0%	91.7%	88.2%	89.2%	88.9%	89.9%	86.5%	93.5%
Advanced	1.9%	0.0%	4.0%	2.8%	2.9%	5.4%	0.0%	1.6%	2.2%	0.9%
Mathematics										
Number Tested	1	1	25	36	34	37	54	63	89	107
Partial	36.9%	32.6%	4.0%	5.6%	11.8%	5.4%	22.2%	11.1%	20.2%	14.2%
Proficient	53.4%	57.0%	48.0%	75.0%	44.1%	54.1%	53.7%	66.7%	53.9%	55.7%
Advanced	9.7%	10.5%	48.0%	19.4%	44.1%	40.5%	24.1%	22.2%	25.8%	30.2%
GEPA										
Language Arts										
Number Tested	62	67	30	28	33	40	54	42	91	82
Partial	1.6%	3.0%	10.0%	3.6%	3.0%	10.0%	9.3%	14.3%	15.4%	6.2%
Proficient	85.5%	92.5%	86.7%	92.9%	90.9%	77.5%	88.9%	85.7%	82.4%	85.2%
Advanced	12.9%	4.5%	3.3%	3.6%	6.1%	12.5%	1.9%	0.0%	2.2%	8.6%
Mathematics										
Number Tested	62	67	30	28	33	40	54	42	92	82
Partial	40.3%	20.9%	13.3%	0.0%	18.2%	5.0%	25.9%	14.3%	26.1%	19.5%
Proficient	48.4%	65.7%	53.3%	64.3%	45.5%	55.0%	63.0%	57.1%	56.5%	54.9%
Advanced	11.3%	13.4%	33.3%	35.7%	36.4%	40.0%	11.1%	28.6%	17.4%	25.6%

Table 2 cont. : General Education Test Performance Details for Selected 16 Schools								
	R. Waters		W. Wilson		Thirteenth Ave		Number 18	
	Union City		New Brunswick		Newark		Paterson	
	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
ASK 4								
Language Arts								
Number Tested	78	61	40	46	60	44	86	84
Partial	15.4%	13.1%	7.5%	2.2%	50.0%	16.3%	11.6%	8.3%
Proficient	84.6%	83.6%	90.0%	95.7%	50.0%	83.7%	86.0%	88.1%
Advanced	0.0%	3.3%	2.5%	2.2%	0.0%	0.0%	2.3%	3.6%
Mathematics								
Number Tested	78	61	40	46	60	43	86	84
Partial	16.7%	9.8%	17.5%	10.9%	85.0%	52.4%	45.3%	17.9%
Proficient	50.0%	44.3%	65.0%	65.2%	13.3%	45.2%	44.2%	67.9%
Advanced	33.3%	45.9%	17.5%	23.9%	1.7%	2.4%	10.5%	14.3%
GEPA								
Language Arts								
Number Tested	92	84	16	19	33	39	101	104
Partial	3.3%	3.6%	6.3%	10.5%	9.1%	0.0%	5.0%	20.4%
Proficient	94.6%	88.1%	87.5%	84.2%	84.8%	87.2%	93.1%	78.6%
Advanced	2.2%	8.3%	6.3%	5.3%	6.1%	12.8%	2.0%	1.0%
Mathematics								
Number Tested	92	84	16	19	33	39	101	104
Partial	41.3%	16.7%	12.5%	10.5%	24.2%	20.5%	7.9%	24.3%
Proficient	51.1%	65.5%	62.5%	57.9%	54.5%	53.8%	56.4%	60.2%
Advanced	7.6%	17.9%	25.0%	31.6%	21.2%	25.6%	35.6%	15.5%

2.2 Final Selection

After making the initial selection of 16 schools we reduced the number from 16 to 8 in order to formulate a workable study. Our methodology and rationale for eliminating certain schools and selecting others was simple: we decided to focus our research on the three Abbott districts still under state control. Research on schools in Jersey City, Newark and Paterson represents a logical continuation of IELP's recommendations in its report on returning the districts to local control,³ as well as its current research on the implementation of NJ-QUSAC.

3. Regression Analysis

This section discusses in more detail criterion (3) from section 2.1, the regression analysis. Regression analysis allows us to examine school performance as a function of several explanatory variables, such as the demographic characteristics of the students and faculty and school characteristics.

Each regression generates a predicted value for school performance based on selected characteristics of the school. We compare the predicted performance to the school's actual performance; the difference, called the *residual*, is a measure of the degree to which a school is achieving above or below expectations, given the set of variables used to measure performance.

For schools that perform better than predicted, it is positive, for those that perform less well than predicted it is negative, and it is exactly zero on average. Residual analysis helps to identify high-performing schools in the sense that those with large positive residuals are achieving at levels that are not explained by the predictor variables. Since the performance of those schools cannot be explained statistically, they are worthy of qualitative study to examine the unquantifiable characteristics that may explain their success.

We ran three regressions each on the language arts literacy and mathematics sections of the 2003-04 GEPA for the general education student population, and we ran the same three regressions for total student population. Thus, we ran a total of 12 regressions (three for Gen. Ed. Language, three for Gen. Ed. Math, three for Total. Ed. Language, and three for Total Ed. Math).

The first regression, "POV," regressed the percent of students in each school at or above the established proficiency level with characteristics based on measures of student poverty: the percent of students receiving reduced-price lunch, the percent receiving free lunch and the percent of Chapter 1 students. This regression results in predicted student performance based solely on poverty measures.

The second regression, "SES," regressed test performance on the percent of students in each school with certain socio-economic characteristics. The socio-economic variables were racial composition, gender composition, percent of students with limited English proficiency, percent of students receiving free lunch, and student mobility rate.

³ Tractenberg, P., Holzer, M., Miller, G., & Sadovnik, A. (2002). *Developing a plan for reestablishing local control in the state-operated districts*. Newark, NJ: Institute on Education Law and Policy, Rutgers University, www.ielp.rutgers.edu.

The third regression, “FULL,” was based on student characteristics, including those included in the POV and SES analyses as well as school and teacher characteristics and dummy variables pertaining to the county in which each school is located and the “district factor group” (DFG) to which the district belongs. (“DFGs” are groups of school districts, labeled A through J, established by the New Jersey Department of Education based on socioeconomic status.) The residual generated by this regression can be interpreted as the difference between actual performance and expected performance based on student, school and other environmental factors.

To be included in our selection of “high-performing schools,” the residuals from all 12 regressions had to be greater than zero. As discussed above, 16 schools that met our first two initial selection criteria had positive regression residuals.

Table 3a below presents the language arts literacy regressions, and Table 3b presents the mathematics regressions. (Only the POV regression contains the “Chapter 1” variable. This variable is excluded from the others since it is highly correlated with the “% Free Lunch” variable.)

Table 3a: 2003-04 GEPA Language Regression Results. Dep. Var.: % Prof. + Above Prof.						
Variable	Total Education			General Education		
	POV	SES	FULL	POV	SES	FULL
% Students Black		-0.242 <i>0.07***</i>	0.010 <i>0.11</i>		-0.358 <i>0.07***</i>	-0.024 <i>0.12</i>
%Hispanic		-0.017 <i>0.09</i>	0.055 <i>0.12</i>		-0.018 <i>0.10</i>	0.039 <i>0.13</i>
% Asian		0.142 <i>0.18</i>	0.099 <i>0.20</i>		0.239 <i>0.18</i>	0.196 <i>0.19</i>
% Native American		-1.837 <i>2.09</i>	-0.878 <i>1.95</i>		1.50 <i>2.1</i>	1.689 <i>2.3</i>
% Male		-0.830 <i>0.51</i>	-0.746 <i>0.42</i>		-0.488 <i>0.54</i>	-0.417 <i>0.47</i>
% Reduced Lunch	1.247 <i>0.31***</i>	0.239 <i>0.23</i>	0.162 <i>0.22</i>	1.475 <i>0.38***</i>	0.182 <i>0.25</i>	0.232 <i>0.25</i>
% Free Lunch	-0.161 <i>0.10</i>	-0.155 <i>0.11</i>	-0.227 <i>0.14</i>	-0.031 <i>0.12</i>	-0.031 <i>0.12</i>	0.00 <i>0.15</i>
% Chapter 1	-0.074 <i>0.04*</i>			-0.063 <i>0.05</i>		
% LEP		0.058 <i>0.09</i>	0.156 <i>0.14</i>		0.129 <i>0.09</i>	0.216 <i>0.13</i>
% Student Mobility		-0.560*** <i>0.13</i>	-0.251 <i>0.16</i>		-0.498 <i>0.15***</i>	-0.119 <i>0.19</i>
Avg. Attend Total			2.302 <i>0.74***</i>			2.657 <i>0.90***</i>
% Fac. Masters			0.252 <i>0.14</i>			0.338 <i>0.17</i>
% Fac. PhD/Ed			0.015 <i>0.59</i>			0.208 <i>0.63</i>
Student-Faculty Ratio			-0.458 <i>0.40</i>			-0.878 <i>0.41</i>
% Admin. Minority			0.039 <i>0.04</i>			0.037 <i>0.04</i>
% Teachers Male			0.127 <i>0.15</i>			0.059 <i>0.15</i>

% Teachers Black			-0.346			-0.488
			<i>0.12***</i>			<i>0.15**</i>
% Teachers Hispanic			-0.257			-0.245
			<i>0.19</i>			<i>0.20</i>
% Teachers Native Am.			-1.993			-2.402
			<i>1.76</i>			<i>1.8</i>
% Teachers Asian			-0.032			-0.327
			<i>0.43</i>			<i>0.47</i>
Lowest Grade			-1.551			-1.741
			<i>0.72*</i>			<i>0.76-</i>
log(Enrollment)			-8.519			-5.373
			<i>2.76**</i>			<i>3.3</i>
% Teacher Turnover			-0.315			-0.389
			<i>0.14*</i>			<i>0.17*</i>
Avg. Class Size			0.475			0.664
			<i>0.50</i>			<i>0.58</i>
Predom. Black School			1.631			6.991
			<i>4.14</i>			<i>4.9</i>
Charter School Year			-0.791			-0.83
			<i>0.51</i>			<i>0.54</i>
School Day			13.267			12.64
			<i>2.66***</i>			<i>2.8***</i>
Charter Elementary			-14.882			-13.247
			<i>10.28</i>			<i>12.2</i>
Charter Secondary			13.489			14.874
			<i>12.57</i>			<i>14.0</i>
Non-charter Secondary			-4.365			5.574
			<i>15.50</i>			<i>13.3</i>
Non-charter Comprehensive			-25.691			-23.362
			<i>10.27*</i>			<i>10.7*</i>
Constant	48.236	119.08	-4.918	49.2	109.8	-65.4
	<i>8.45</i>	<i>27.02***</i>	<i>99.92</i>	<i>9.27***</i>	<i>28.3***</i>	<i>111.2</i>
County Dummies			Yes			Yes
DFG Dummies			Yes			Yes
# Observations	188	189	189	188	189	189
R-squared	0.194	0.411	0.663	0.124	0.429	0.687
Adj. R-squared	0.181	0.381	0.557	0.110	0.400	0.588

Notes: Robust standard errors below estimates. *= $p < .1$, **= $p < .05$, ***= $p < .01$.

Table 3b: 2003-04 GEPA Mathematics Regression Results. Dep. Var.: % Prof. + Above Prof.						
Variable	Total Education			General Education		
	POV	SES	FULL	POV	SES	FULL
% Students Black		-0.219	-0.05		-0.289	-0.048
		<i>0.1**</i>	<i>0.1</i>		<i>0.07***</i>	<i>0.14</i>
% Hispanic		0.102	0.069		0.145	0.13
		<i>0.1</i>	<i>0.1</i>		<i>0.10</i>	<i>0.15</i>
% Asian		0.166	0.148		0.263	0.213
		<i>0.2</i>	<i>0.2</i>		<i>0.20</i>	<i>0.25</i>
% Native American		1.748	2.727		5.245	5.307
		<i>2.1</i>	<i>2.1</i>		<i>2.2*</i>	<i>2.2*</i>
% Male		-0.47	-0.862		-0.23	-0.643
		<i>0.5</i>	<i>0.4*</i>		<i>0.56</i>	<i>0.45</i>
% Reduced Lunch	1.546	0.450	0.377	1.885	0.469	0.529
	<i>0.34***</i>	<i>0.3</i>	<i>0.3</i>	<i>0.4***</i>	<i>0.31</i>	<i>0.31</i>

% Free Lunch	-0.008 <i>0.10</i>	-0.116 <i>0.1</i>	-0.112 <i>0.1</i>	0.101 <i>0.121</i>	-0.052 <i>0.13</i>	0.052 <i>0.16</i>
% Chapter 1	-0.098 <i>0.04**</i>			-0.095 <i>0.05*</i>		
% LEP		0.01 <i>0.1</i>	0.158 <i>0.1</i>		0.033 <i>0.16</i>	0.161 <i>0.13</i>
% Student Mobility		-0.444 <i>0.1**</i>	-0.134 <i>0.2</i>		-0.374 <i>0.16*</i>	0.052 <i>0.19</i>
Avg. Attend Total			2.999 <i>0.8***</i>			3.523 <i>0.88***</i>
% Teach. Masters			0.042 <i>0.1</i>			0.123 <i>0.18</i>
% Teach PhD/Ed			-0.28 <i>0.5</i>			-0.246 <i>0.57</i>
Student-Faculty Ratio			-0.073 <i>0.4</i>			-0.333 <i>0.40</i>
% Admin. Minority			0.005 <i>0.0</i>			-0.002 <i>0.04</i>
% Teachers Male			0.091 <i>0.2</i>			-0.015 <i>0.18</i>
% Teachers Black			-0.297 <i>0.1*</i>			-0.365 <i>0.15*</i>
% Teachers Hispanic			-0.093 <i>0.2</i>			-0.106 <i>0.23</i>
% Teachers Native Am.			0.365 <i>1.7</i>			-0.459 <i>1.7</i>
% Teachers Asian			-0.374 <i>0.4</i>			-0.582 <i>0.47</i>
Lowest Grade			-0.749 <i>0.8</i>			-0.772 <i>0.87</i>
log(Enrollment)			-9.33 <i>3.2**</i>			-7.528 <i>3.7*</i>
% Teacher Turnover			-0.417 <i>0.1**</i>			-0.462 <i>0.15***</i>
Avg. Class Size			-0.159 <i>0.5</i>			-0.022 <i>0.58</i>
Predom. Black School			4.104 <i>4.5</i>			8.011 <i>5.0</i>
Charter School Year			-1.29 <i>0.5*</i>			-1.413 <i>0.56*</i>
Charter School Day			10.284 <i>4.1*</i>			9.6 <i>4.3</i>
Charter Elementary			-17.955 <i>14.7</i>			-18.584 <i>17.4</i>
Charter Secondary			12.015 <i>16.3</i>			13.093 <i>18.2</i>
Non-charter Secondary			2.322 <i>14.7</i>			11.958 <i>13.8</i>
Non-charter Comprehensive			-18.423 <i>12.5</i>			-9.779 <i>14.2</i>
Constant	27.268 <i>7.6***</i>	77.476 <i>27.5**</i>	45.816 <i>104.6</i>	25.424 <i>9.0***</i>	69.0 <i>29.6*</i>	-5.8 <i>118.7</i>
County Dummies			Yes			Yes
DFG Dummies			Yes			Yes
# Observations	188	189	189	188	189	189

R-squared	0.177	0.401	0.671	0.144	0.433	0.713
Adj. R-squared	0.164	0.371	0.568	0.131	0.405	0.623

Notes: Robust standard errors below estimates. *= $p < .1$, **= $p < .05$, ***= $p < .01$.

Most of the variables in the regressions are relatively clear, but a few are mentioned here. The length of the school day and school year are included since many charter schools have longer school days and years. Thus, the “Charter School Year” coefficients can be interpreted as the effect of longer school years for charters as compared to the regular public schools; the “School Day” variable is the effect of a longer school day. Dummy variables for the type of school are also included. The base group is non-charter public elementary schools.

We have produced tables showing the prediction values and the residuals for all 12 regressions for all schools in the data base. These tables are not reproduced here, but are available at <http://www.andromeda.rutgers.edu/~jmbarr/GSReportTables.pdf>

4. Detailed Data on the Selected Schools

Tables 4a and 4b provide performance data on the 16 schools selected in our initial screening. For the “Ed Type” variable, “G” means data is provided for the general education student population (non-disabled students only) and “T” means data is provided for all eighth grade students in the school (disabled and non-disabled students). “%P+AP” is the percent of students achieving at or above the established proficiency level on the 2003-04 GEPA. “Pred POV” shows the predicted values for percent at or above proficiency based on the POV regression; “Pred SES” shows the predicted performance based on the SES regression; and “Pred FULL” shows the predicted values for the full regression. The three columns to the right, “Resid POV,” “Resid SES” and “Resid FULL,” show the residual values, the differences between “%P+AP” and the predicted values, for each of the three regressions.

Table 4a: 2003-04 GEPA Language Arts Performance Measures for Selected 16 Schools

Ed Type	%P+AP	Pred POV	Pred SES	Pred FULL	Resid POV	Resid SES	Resid FULL	School	District
G	88.8	64.6	76.5	75.4	24.2	12.3	13.4	ABINGTON AVE	NEWARK CITY
T	79.0	50.9	59.0	59.0	28.1	20.0	20.0	ABINGTON AVE	NEWARK CITY
G	93.1	66.8	71.9	78.3	26.3	21.2	14.8	CORNELIA F BRADFORD	JERSEY CITY
T	82.9	55.4	59.6	68.6	27.5	23.3	14.3	CORNELIA F BRADFORD	JERSEY CITY
G	93.1	74.6	75.4	85.8	18.5	17.7	7.3	HARRY L BAIN	WEST NEW YORK
T	63.8	62.0	55.4	63.0	1.8	8.4	0.8	HARRY L BAIN	WEST NEW YORK
G	96.6	69.6	82.4	79.1	27.0	14.2	17.5	LAFAYETTE ST	NEWARK CITY
T	80.2	58.8	66.8	67.0	21.4	13.4	13.2	LAFAYETTE ST	NEWARK CITY
G	90.2	71.1	83.1	85.0	19.1	7.1	5.2	NICOLAS COPERNICUS	JERSEY CITY
T	66.2	57.8	63.5	65.4	8.4	2.7	0.8	NICOLAS COPERNICUS	JERSEY CITY
G	92.6	69.6	76.1	75.7	23.0	16.5	16.9	NUMBER 1	WEST NEW YORK
T	73.2	56.3	58.1	54.5	16.9	15.1	18.7	NUMBER 1	WEST NEW YORK
G	79.6	64.0	72.1	69.8	15.6	7.5	9.8	NUMBER 18	PATERSON CITY
T	58.2	50.8	56.1	49.0	7.4	2.1	9.2	NUMBER 18	PATERSON CITY
G	100.0	68.5	71.0	79.8	31.5	29.0	20.2	NUMBER 2	WEST NEW YORK
T	77.4	56.3	54.3	59.3	21.1	23.1	18.1	NUMBER 2	WEST NEW YORK
G	97.0	51.4	72.5	79.6	45.6	24.5	17.4	NUMBER 28	JERSEY CITY
T	67.9	37.4	51.1	52.9	30.5	16.8	15.0	NUMBER 28	JERSEY CITY
G	96.5	69.7	71.6	91.1	26.8	24.9	5.4	NUMBER 3	WEST NEW YORK
T	76.3	56.9	54.1	72.1	19.4	22.2	4.2	NUMBER 3	WEST NEW YORK
G	90.0	67.6	64.9	86.5	22.4	25.1	3.5	NUMBER 4	WEST NEW YORK
T	70.4	54.9	45.4	62.9	15.5	25.0	7.5	NUMBER 4	WEST NEW YORK
G	85.7	62.7	68.6	81.7	23.0	17.1	4.0	NUMBER 5	WEST NEW YORK
T	66.7	50.2	49.1	58.0	16.5	17.6	8.7	NUMBER 5	WEST NEW YORK
G	93.8	60.8	78.7	83.6	33.0	15.1	10.2	NUMBER 9	PATERSON CITY
T	67.0	46.8	60.4	58.5	20.2	6.6	8.5	NUMBER 9	PATERSON CITY
G	96.4	41.3	75.5	89.6	55.1	20.9	6.8	ROBERT WATERS	UNION CITY
T	70.4	26.7	53.5	59.5	43.7	16.9	10.9	ROBERT WATERS	UNION CITY
G	100.0	49.2	31.6	53.4	50.8	68.4	46.6	THIRTEENTH AVE	NEWARK CITY
T	52.4	35.9	23.0	36.9	16.5	29.4	15.5	THIRTEENTH AVE	NEWARK CITY
G	89.5	65.8	66.5	71.0	23.7	23.0	18.5	WOODROW WILSON	NEW BRUNSWICK
T	71.5	55.9	54.4	59.3	15.6	17.1	12.2	WOODROW WILSON	NEW BRUNSWICK

Table 4b: 2003-04 GEPA Mathematics Performance Measures for Selected 16 Schools

Ed Type	%P+AP	Pred POV	Pred SES	Pred FULL	Resid POV	Resid SES	Resid FULL	School	District
G	85.1	52.3	66.8	64.1	32.8	18.3	21.0	ABINGTON AVE	NEWARK CITY
T	87.6	41.7	52.8	53.1	45.9	34.8	34.5	ABINGTON AVE	NEWARK CITY
G	82.8	52.3	58.1	61.6	30.5	24.7	21.2	CORNELIA F BRADFORD	JERSEY CITY
T	74.2	43.5	48.5	53.3	30.7	25.7	20.9	CORNELIA F BRADFORD	JERSEY CITY
G	93.2	65.2	73.0	84.3	28.0	20.2	8.9	HARRY L BAIN	WEST NEW YORK
T	65.2	54.6	54.9	62.6	10.6	10.3	2.6	HARRY L BAIN	WEST NEW YORK
G	83.3	58.6	65.1	66.7	24.7	18.2	16.6	LAFAYETTE ST	NEWARK CITY
T	77.9	50.0	54.3	61.0	27.9	23.6	16.9	LAFAYETTE ST	NEWARK CITY
G	79.4	59.0	72.7	72.2	20.4	6.7	7.2	NICOLAS COPERNICUS	JERSEY CITY
T	59.7	48.2	56.8	56.0	11.5	2.9	3.7	NICOLAS COPERNICUS	JERSEY CITY
G	88.0	59.9	68.4	75.8	28.1	19.6	12.2	NUMBER 1	WEST NEW YORK
T	70.1	49.2	53.6	58.0	20.9	16.5	12.1	NUMBER 1	WEST NEW YORK
G	75.7	51.0	61.7	56.5	24.7	14.0	19.2	NUMBER 18	PATERSON CITY
T	51.8	41.0	49.1	41.2	10.8	2.7	10.6	NUMBER 18	PATERSON CITY
G	86.5	58.1	64.3	76.9	28.4	22.2	9.6	NUMBER 2	WEST NEW YORK
T	66.0	48.4	50.2	57.9	17.6	15.8	8.1	NUMBER 2	WEST NEW YORK
G	79.1	37.9	60.7	68.2	41.2	18.4	10.9	NUMBER 28	JERSEY CITY
T	57.5	28.4	45.5	47.5	29.1	12.0	10.0	NUMBER 28	JERSEY CITY
G	100.0	59.4	65.5	91.2	40.6	34.5	8.8	NUMBER 3	WEST NEW YORK
T	76.3	49.1	50.5	72.7	27.2	25.8	3.6	NUMBER 3	WEST NEW YORK
G	95.0	57.5	59.7	84.2	37.5	35.3	10.8	NUMBER 4	WEST NEW YORK
T	77.7	47.6	43.5	61.5	30.1	34.2	16.2	NUMBER 4	WEST NEW YORK
G	85.7	51.2	61.1	79.3	34.5	24.6	6.4	NUMBER 5	WEST NEW YORK
T	64.2	41.9	45.8	58.1	22.3	18.4	6.1	NUMBER 5	WEST NEW YORK
G	80.5	48.3	62.9	64.6	32.2	17.6	15.9	NUMBER 9	PATERSON CITY
T	62.4	37.9	50.2	47.1	24.5	12.2	15.3	NUMBER 9	PATERSON CITY
G	83.4	27.1	59.6	72.2	56.3	23.8	11.2	ROBERT WATERS	UNION CITY
T	68.6	18.1	46.0	50.6	50.5	22.6	18.0	ROBERT WATERS	UNION CITY
G	79.4	34.6	15.6	37.2	44.8	63.8	42.2	THIRTEEN AVE	NEWARK CITY
T	41.8	25.9	10.9	25.9	10.9	15.9	30.9	THIRTEEN AVE	NEWARK CITY
G	89.5	52.8	53.6	62.4	36.7	35.9	27.1	WOODROW WILSON	NEW BRUNSWICK
T	71.4	45.4	44.4	52.9	26.0	27.0	18.5	WOODROW WILSON	NEW BRUNSWICK

Finally, Table 5 provides more detailed demographic data about the final eight selected schools, including enrollment, average class sizes, attendance rates and student-faculty ratios.

Table 5: Selected Data for 8 Chosen Schools									
Test Performance									
School	District	GEPA				ASK4			
		# Gen Ed Lang Tested	Lang %P+AP	# Gen Ed. Math Tested	Math %P+AP	# Gen Ed Lang Tested	Lang %P+AP	# Gen Ed. Math Tested	Math %P+AP
CORNELIA F BRADFORD	JERSEY CITY	30	93.1	30	82.8	42	90.5	42	83.3
NICOLAS COPERNICUS	JERSEY CITY	102	90.2	102	79.4	126	85.6	126	78.4
NUMBER 28	JERSEY CITY	67	97.0	67	79.1	87	73.3	87	67.5
ABINGTON AVE	NEWARK CITY	80	88.8	80	85.1	32	100.0	32	100.0
LAFAYETTE ST	NEWARK CITY	60	96.6	60	83.3	37	86.1	37	94.5
THIRTEENTH AVE	NEWARK CITY	39	100.0	39	79.4	44	83.7	43	47.6
NUMBER 9	PATERSON CITY	82	93.8	82	80.5	107	94.4	107	85.9
NUMBER 18	PATERSON CITY	104	79.6	104	75.7	84	91.7	84	82.2

Student Data								
School	District	% Free Lunch	% LEP	% St. Mob.	% White	% Black	% Hisp.	% Asian
CORNELIA F BRADFORD	JERSEY CITY	41.8	3.4	16.6	12.3	33.2	30.7	23.9
NICOLAS COPERNICUS	JERSEY CITY	63.2	15.3	22.4	20.8	5.6	44.8	28.3
NUMBER 28	JERSEY CITY	79.2	20.6	21.6	13.5	4.1	77.0	5.1
ABINGTON AVE	NEWARK CITY	61.5	15.6	13.8	8.4	13.3	75.3	2.9
LAFAYETTE ST	NEWARK CITY	49.9	22.3	12.3	49.8	1.9	48.0	0.3
THIRTEENTH AVE	NEWARK CITY	76.1	0.0	31.6	0.0	98.2	1.8	0.0
NUMBER 9	PATERSON CITY	68.1	20.0	15.6	39.0	4.0	55.4	1.6
NUMBER 18	PATERSON CITY	58.2	21.8	18.3	6.8	18.2	74.8	0.2

Table 5 cont.: Selected Data for 8 Chosen Schools

Faculty Data										
School	District	% BA's	%MA's	% PhD / ED's	% Teach Turn over	% Admin Min.	% Teach White	% Teach Black	% Teach Hisp.	% Teach Asian
CORNELIA F BRADFORD	JERSEY CITY	65.9	34.1	0.0	15.8	0.0	74.3	8.6	5.7	11.4
NICOLAS COPERNICUS	JERSEY CITY	54.8	45.2	0.0	4.5	20.0	73.4	8.9	10.1	7.6
NUMBER 28	JERSEY CITY	68.8	31.3	0.0	2.8	60.0	76.3	3.1	18.6	2.1
ABINGTON AVE	NEWARK CITY	77.5	20.0	2.5	0.0	33.3	68.1	8.3	23.6	0.0
LAFAYETTE ST	NEWARK CITY	80.0	18.6	1.4	6.0	33.3	75.4	4.9	18.0	1.6
THIRTEENTH AVE	NEWARK CITY	61.3	32.3	6.5	2.2	50.0	38.7	60.0	1.3	0.0
NUMBER 9	PATERSON CITY	56.9	42.2	1.0	4.0	33.0	83.9	5.4	8.6	2.2
NUMBER 18	PATERSON CITY	71.3	28.7	0.0	7.1	0.0	72.4	5.7	20.7	1.1

School Data						
School	District	Enroll	Avg Gr. 4 Class Size	Avg Gr. 8 Class Size	Avg % Attend	Stud-Fac. Ratio
CORNELIA F BRADFORD	JERSEY CITY	440	21.5	16.5	95.9	11.6
NICOLAS COPERNICUS	JERSEY CITY	1,111	22.5	23.4	96.0	12.6
NUMBER 28	JERSEY CITY	1,208	22.8	25.8	95.5	11.3
ABINGTON AVE	NEWARK CITY	906	22.3	26.3	92.6	11.8
LAFAYETTE ST	NEWARK CITY	791	16.8	20.8	94.5	11.8
THIRTEENTH AVE	NEWARK CITY	716	13.3	15.8	93.0	8.0
NUMBER 9	PATERSON CITY	1,202	28.4	24.6	95.3	12.1
NUMBER 18	PATERSON CITY	1,218	30.0	29.2	93.5	12.4