

# Moving Up

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## Progress in Newark's Schools from 2010 to 2017

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## **About Jesse Margolis, PhD**

Jesse Margolis is a Co-Founder and Managing Partner at MarGrady Research, where he focuses on projects related to performance management, finance, and policy analysis for school districts and foundations. Prior to founding MarGrady Research, Dr. Margolis was a Postdoctoral Fellow at New York University's Robert F. Wagner Graduate School of Public Service, where he researched education policy and taught statistics and econometrics. Previously, he was an analyst and manager at the New York City Department of Education (NYCDOE) and a consultant at The Parthenon Group. Dr. Margolis also spent two years working with school districts in Santiago, Chile, and received a Fulbright Scholarship to spend a year studying the public schools in Sao Paulo, Brazil. He has a bachelor's degree in Applied Mathematics from Harvard University, a master's in Economics from New York University, and a Ph.D. in Economics from the City University of New York. He can be reached at [jesse@margrady.com](mailto:jesse@margrady.com)

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MarGrady Research helps education leaders make better decisions to improve the lives of students. We do this through rigorous analysis of data, clear and insightful presentation of results, and the development of lasting partnerships with the school districts, foundations, and other education organizations we work with. See more at [www.margrady.com](http://www.margrady.com).

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## Summary

Much has been written about Newark's schools since they were thrust into the national spotlight in 2010. Significant reforms brought significant upheaval, as the changes in Newark were controversial. Significant upheaval brought significant press coverage, but that coverage has rarely focused on the outcomes of these efforts over time. So, what do we really know about the progress in public education in Newark over the past seven years?

In this study, I take multiple approaches to analyzing progress in Newark using student test scores at the elementary and middle school level, the graduation rate at the high school level, and student enrollment at all levels. As there is not one universally-accepted approach for analyzing progress over time, I also replicate several analyses conducted by other researchers in earlier years, updating them with the most recent data available.

Across every analytic approach, I find consistently positive and educationally meaningful growth in performance in Newark – growth compared to where the schools were in 2010, growth compared to similar districts, growth compared to similar students in other districts, and growth compared to the state as a whole. Specifically, I find that:

- Finding #1: Total public-school enrollment in Newark has increased over time, and is higher than at any point in recent history.
- Finding #2: In grades 3-8, Newark schools made significant strides in closing the achievement gap with the state and improved relative to similar high-need districts.
- Finding #3: Since 2012, Newark students' growth has improved compared to students statewide with similar starting achievement levels.
- Finding #4: The high school graduation rate has increased dramatically from 2011 to 2017, improving at a faster rate than in the rest of the state.
- Finding #5: Replicating and extending other researchers' analyses with more recent data produces similar evidence of growth Newark's schools, specifically:
  - Finding 5A: Black students in Newark are three times more likely to attend a school with test scores above the state average today than they were in 2009.
  - Finding 5B: Controlling for poverty and ELL status, Newark students show significant gains in math and ELA scores between 2009 and 2017.

In short, on every measure reviewed, the test scores of Newark students have improved relative to other students in the state taking the same tests. Against the backdrop of a rising graduation rate and increasing enrollment, these results are consistent with the narrative that the educational reforms over the past seven years have led to real improvement in the quality of public education in Newark.

## Overview

Newark's public schools were thrust into the national spotlight in 2010, when Facebook Founder and CEO Mark Zuckerberg announced on the Oprah Winfrey show that he was creating a \$100 million challenge grant to improve public education in Newark. At that time, Newark's schools, which had been under state control since 1995, were widely considered to be failing.<sup>1</sup> The five-year grant, when added to \$100 million in matching funds that were later raised, represented approximately 4% of the Newark Public Schools' \$5 billion budget over the next five years. Zuckerberg said his donation was meant to give New Jersey Governor Chris Christie and Newark Mayor Cory Booker – both of whom joined Zuckerberg for the announcement – “the flexibility they need to implement new programs in Newark and really make a difference, and turn Newark into a symbol of educational excellence for the whole nation.” In 2011, Christie and Booker hired a new superintendent, Cami Anderson, who implemented a number of reforms in Newark focused on bringing significant change to the school system.

Significant change brought significant upheaval, as many of the changes in Newark were controversial. Significant upheaval brought significant press coverage, most notably documented by Dale Russakoff in a widely read *New Yorker* article in 2014 and a subsequent book published in 2015, which was critical of how the changes were developed and implemented in Newark.<sup>2</sup> After Superintendent Anderson resigned in 2015, former New Jersey Education Commissioner Christopher Cerf was appointed to be Newark's Superintendent, continuing many of the key reforms first implemented under Anderson, but with more engagement of and collaboration with city leaders.<sup>3</sup>

Despite the extensive press coverage, little has been published on the *effectiveness* of Newark's reforms. Russakoff did not address the effectiveness of the reforms in her article or book – focusing instead on the way the reforms were implemented. Nonetheless, in much that has been written about Newark's schools since 2014, a common narrative has emerged that the city's education reforms were ineffective, with press articles frequently citing Russakoff's work as their primary (and often only) source.<sup>4</sup> At the same time, an alternative narrative has begun to emerge, as the State of New Jersey recently announced that, after 21 years of state control, the District will soon return to local control. In making this announcement, the state cited gains in the district's graduation rate and other measures of academic progress.<sup>5</sup>

So, what do we really know about Newark's progress over the past seven years? The goal of this paper is to begin to address the effectiveness of the educational reforms in Newark by reviewing trends in student learning outcomes since the 2009-10 school year (hereafter referred to as 2010).

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<sup>1</sup> To cite one example, Oprah Winfrey, on her show with Zuckerberg in 2010, said that “Republican Governor Chris Christie, the Democratic Mayor of Newark, Cory Booker, and the Founder of Facebook, Mark Zuckerberg, are putting politics aside to help turn around the failing public schools in Newark, New Jersey.”

<sup>2</sup> Russakoff, Dale. 2015. *The Prize: Who's in Charge of America's Schools?* New York, NY: Houghton Mifflin Harcourt.

<sup>3</sup> <https://www.nytimes.com/2017/09/12/nyregion/20-years-newark-schools-regain-control-baraka.html>

<sup>4</sup> A recent article from July 2017, for example, refers to Zuckerberg's investment in Newark as a “spectacular failure,” citing only Russakoff's 2014 article in *The Atlantic* as evidence. (<http://www.salon.com/2017/07/08/mr-zuckerberg-please-do-not-run-for-president/>)

<sup>5</sup> <https://www.nytimes.com/2017/09/12/nyregion/20-years-newark-schools-regain-control-baraka.html>

To do this, I first focus student test scores in grades 3-8.<sup>6</sup> I take multiple approaches to analyzing test scores over time, reviewing proficiency rates, average scores, and student growth against various reasonable comparison groups. As there is not one universally-accepted approach for analyzing progress, I also replicate several earlier analyses conducted by other researchers, updating them with the most recent data available.

Overall, across every analytic approach, I find positive growth in the performance in Newark students in grades 3-8. For the city of Newark as a whole – including both district and charter schools – I find consistent gains going back to 2010. When looking only at district schools, after results that were flat or modestly declining during the early years of reform, the city’s traditional public schools have seen large gains in recent years. As student demographics have changed little over the past seven years, these gains appear to reflect real improvement, rather than a different student body. Replicating other researchers’ analyses, I find similar results on their own metrics – positive growth over the past seven years.

Standardized test scores, of course, only tell part of the story. The data also show that, in addition to test score gains in the early and middle grades, the district demonstrated substantial improvement in the high school graduation rate during the same period, outpacing gains in the rest of the state. In addition, there has been an increase in citywide enrollment, which is one measure of family demand for the public schools. There are other measures that should be studied going forward, including school culture and climate, student engagement, and students’ post-secondary access and success. However, this analysis provides the most comprehensive review to date of changes in educational outcomes for Newark’s students.

On every measure I have analyzed or reviewed, Newark’s schools are making gains. There are more students enrolled, those students’ test score proficiency and growth has improved relative to similar students, and they are substantially more likely to graduate from high school on time. While one may debate the causes, any fair reading of the recent data on Newark’s students should be one of success and continued progress.

## **Summary of Reforms**

The reforms in Newark were extensive and have been well documented elsewhere. In the interest of brevity, I emphasize those reforms that are most directly focused on school-level impacts and learning. From my review of the literature and conversations with staff at the Newark Public Schools (NPS), I would group these reforms into three categories:

1. Talent: replacing principals and developing a new teacher contract that focused on differentiated compensation and a new model of educator evaluation.
2. Curriculum: focusing early and intensively on the Common Core curriculum
3. Portfolio: closing low performing schools, opening new schools, and simplifying the choice process

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<sup>6</sup> When analyzing test scores, I focus on grades 3-8 for several reasons. First, the transition to PARCC in 2015 was more straightforward in grades 3-8, where nearly all students continued to be tested in math and ELA in each grade. In high school, the grade 11 HSPA test was replaced by PARCC tests taken in grades 9-11. Second, New Jersey’s growth measure – the Student Growth Percentile – is only calculated for grades 4-8 and not for high school. Third, most other research on test scores in Newark focuses on grades 3-8, so by focusing on the same grades, I can more directly compare my results. To assess high school performance trends, I focus on the graduation rate.

In the initial years, educator talent was a significant focus – identifying the right talent to lead schools, creating a coaching and evaluation system that could recognize and build teacher quality, and rewarding and retaining the best teachers. Many principals in NPS schools were replaced in the first few years of the reforms. Principals that remained received far greater autonomy around decision-making for strategic planning, staffing, and budgeting. Additionally, the district rolled out a new teacher evaluation system alongside a new teacher contract in 2012.<sup>7</sup> The new contract shifted how teachers were paid. For the first time, Newark Public Schools (NPS) teachers had to earn their raise based on their evaluation rating, and highly effective teachers could earn an additional bonus of up to \$12,500. The district used the evaluation system to create a differentiated rating system, with between 14% and 20% of teachers earning ratings below effective between 2013 and 2015.<sup>8</sup> With the new contract in place, retention was differentiated by effectiveness – with 95% of highly effective teachers staying from one year to the next, compared to 93% of effective teachers, 72% of partially effective teachers, and 63% of ineffective teachers.<sup>9</sup> In addition, the district brought over 220 tenure charges, more than two-thirds of which resulted in the educator exiting the district.

With its talent strategy in place, the district focused on increasing academic rigor, rolling out Common Core-aligned curricula in English and math across grades K-8 beginning in 2013. This rollout occurred two years prior to the first Common Core-aligned state assessments in 2015, as NPS began focusing on the Common Core earlier than many districts.

Lastly, changes were made to the overall portfolio of schools in Newark. Beginning in 2012, 10 low-performing district schools and three charter schools were closed or consolidated with other schools.<sup>10</sup> Additionally, more than a dozen schools were “renewed” in the early years of reform, resulting in significant staff turnover and a longer school day for students and teachers at those schools. During this time, the city saw growth in the percentage students being served by charter schools—from 12% in 2010 to 31% in 2017. In 2013, the district announced an agreement with most of Newark’s charters to form a universal enrollment system for all Newark families.<sup>11</sup> Intended to make the admissions process easier and more equitable, families considering a new school could submit a single application for nearly all of Newark’s schools – district or charter – and be matched by a computer program that considered both their preferences and school capacity.

These reforms were intended to create a substantially different school system in Newark in 2017 than existed in 2010. In the sections that follow, I explore how student enrollment and outcomes changed in the city over that period.

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<sup>7</sup> <http://assets.njspointlight.com/assets/12/1019/0045>

<sup>8</sup> Fullbeck et al (2016). [http://www.air.org/system/files/downloads/report/Newark-Public-Schools-Teacher-Contract-Evaluation-Year-1-February-2016\\_rev.pdf](http://www.air.org/system/files/downloads/report/Newark-Public-Schools-Teacher-Contract-Evaluation-Year-1-February-2016_rev.pdf)

<sup>9</sup> Ibid.

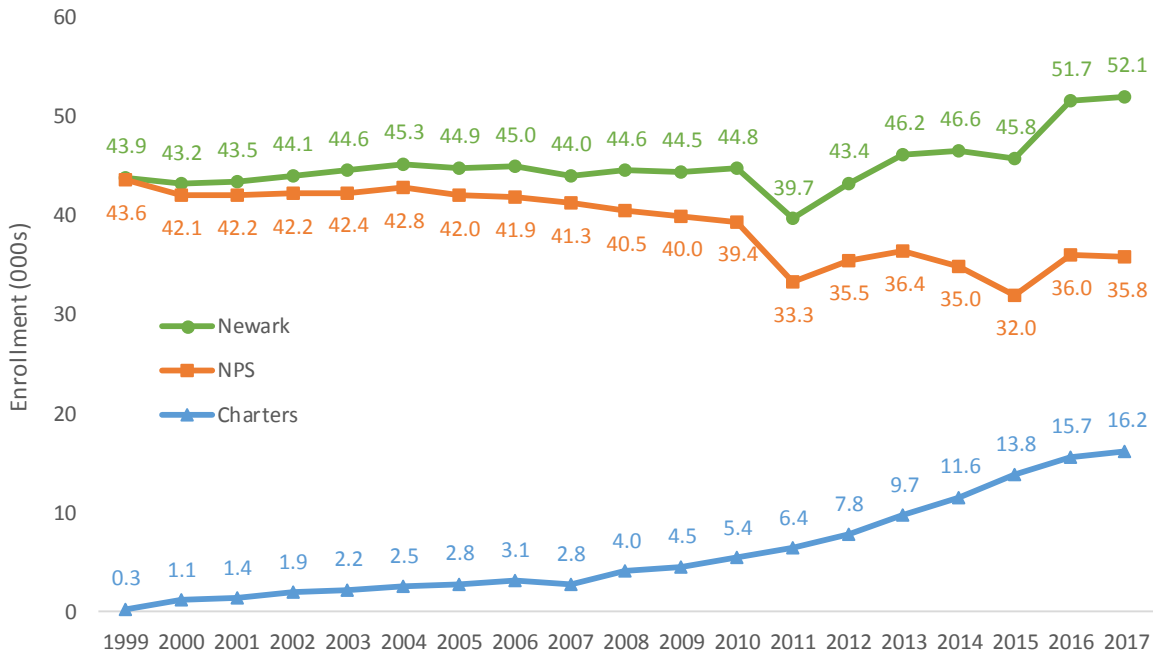
<sup>10</sup> These are defined here as elementary, middle or K-8 schools that had students enrolled in 2011/12 and no students enrolled in 2016/17, according to enrollment data on the NYSED web site.

<sup>11</sup> <http://www.njspointlight.com/stories/13/12/04/fine-print-newark-and-charters-set-up-universal-enrollment-system/>

**Finding #1: Total public school enrollment in Newark has increased over time and is higher than at any point in recent history.**

As is well known, charter school enrollment in Newark has risen in recent years. Less well known, however, is that these charter school gains in enrollment did not translate into an equal decline in enrollment in the district. In recent years, enrollment in district schools has held fairly steady, as outlined in Figure 1. This has led to substantial gains in citywide enrollment, which topped 50,000 for the first time in recent history during the 2015-16 school year.<sup>12</sup>

Figure 1 – Total Enrollment in Newark Schools (1999-2017)



Charter%: 1% 3% 3% 4% 5% 6% 6% 7% 6% 9% 10% 12% 16% 18% 21% 25% 30% 30% 31%

Source: NJDOE web site. Note: 2017 refers to the 2016/17 school year. Note: includes all enrollment, PK-12.

In my analysis of outcomes below, I focus primarily on the City of Newark, including both district and charter schools. I do this for two reasons. First, as we can see in Figure 1, charter schools now represent an important part of the public education system in Newark, and omitting them would present an incomplete picture of educational change in the city. Second, Zuckerberg’s gift and Anderson and Cerf’s reforms have intentionally been citywide strategies, with the goal of improving public schools in Newark, both district and charter. At the same time, I also present my analyses for NPS only, so we can see what trends emerge when looking at the traditional school district alone.

<sup>12</sup> A small portion of these citywide gains are due to an expansion of Pre-K. According to state data, there are roughly 2,300 Pre-K students enrolled in NPS and charter schools in 2017, up from about 800 in 1999 and 1,000 in 2010. In the appendix, Figure A1 excludes PK student enrollment and shows a similar trend to Figure 1.

**Finding #2: In grades 3-8, Newark schools made significant strides in closing the achievement gap with the state and improved relative to similar high-need districts.**

First, I examine how Newark’s students in grades 3-8 have done compared to the state as a whole. As the assessments changed in New Jersey with the introduction of the PARCC test in 2015, I can only look at consistent proficiency data for the last three school years.<sup>13</sup> Over this period, Newark (both district and charter schools combined) has begun to close the proficiency gap with the rest of the state. Figure 2 shows the proficiency rates for Newark (including charters), and the state of New Jersey on the PARCC assessment. In ELA, Newark’s average proficiency improved by 11.4 points, while the state went up by 6.4 points, leading to a 5.0 point reduction in the gap. In math, where the proficiency gap was smaller to begin with, the gap closed by 2.2 points since 2015. Results for district schools only, appearing in Figure A2 in the appendix, show similar trends.

Figure 2 – Grade 3-8 Proficiency Rates on the PARCC Test: 2015 to 2017 (Newark vs. NJ)

% Proficient	ELA				Math			
	2015	2016	2017	2-Year Change	2015	2016	2017	2-Year Change
Newark	29.4%	35.4%	40.8%	11.4%	25.0%	28.0%	32.4%	7.4%
NJ	49.6%	53.0%	56.0%	6.4%	39.0%	43.3%	44.2%	5.2%
Gap	20.2%	17.6%	15.2%	-5.0%	14.0%	15.3%	11.8%	-2.2%

While the gains in recent years are encouraging, we need to look at longer term trends to begin to assess the impact of Newark’s reforms. However, because New Jersey switched from the NJASK to the PARCC test in 2015 – and the PARCC test set a dramatically higher bar for proficiency – we can’t merely look at proficiency rates.<sup>14</sup> One simple alternative is to rank Newark’s proficiency on each year’s test against the proficiency rate of similar districts whose students were taking the same test.

In New Jersey, the state has created groupings of districts that share similar demographics called “District Factor Groups.”<sup>15</sup> Newark is in “District Factor Group A,” or DFG A, which contains the 37 school districts serving geographic areas with the highest need populations in New Jersey, as defined by the 2000 Census.<sup>16</sup> When comparing Newark’s outcomes on ELA assessments from 2010 to 2017 to these similar districts (with charters mapped back to their geographic district), I find that Newark has dramatically improved its ranking.<sup>17</sup> Specifically, as shown in Figure 3, the city of Newark went from the 44<sup>th</sup> percentile (21<sup>st</sup> out of 37 geographic districts) to the 81<sup>st</sup> percentile (8<sup>th</sup> out of 37 geographic districts) in seven years.<sup>18,19</sup>

<sup>13</sup> PARCC stands for the Partnership for Assessment of Readiness for College and Careers and is one of the two major state testing consortia that formed in 2010 to develop Common Core-aligned assessments

<sup>14</sup> Figure A3 in the appendix shows proficiency rates going back to 2010, including a large drop across the state in 2015 when the new PARCC test was adopted.

<sup>15</sup> <http://www.nj.gov/education/finance/rda/dfg.shtml>

<sup>16</sup> Figure A5 in the appendix shows a list of the 37 districts in DFG A with demographic characteristics.

<sup>17</sup> The same is true in math, which can be seen in Figure A4 in the appendix

<sup>18</sup> The percentile calculation is as follows. Let R = Newark’s rank. Let N = the number of districts in the comparison group (e.g. 37, if the comparison group is DFG A). Percentile = (N – R) / (N – 1). This gives results identical to Excel’s PERCENTRANK.INC function and has the nice property that Newark receives a 100 if it is the



Figure 3 – Newark’s Average Proficiency Rank Relative to DFG A in ELA (2010 to 2017)

2010	2011	2012	2013	2014	2015	2016	2017
NORTH WILDWOOD CITY (182, 6)	NORTH WILDWOOD CITY (187, 7)	DOVER TOWN (1260, 71%)	DOVER TOWN (1280, 69%)	DOVER TOWN (1346, 68%)	DOVER TOWN (1282, 51%)	DOVER TOWN (1359, 58%)	DOVER TOWN (1402, 60%)
DOVER TOWN (1248, 65%)	DOVER TOWN (1233, 67%)	NORTH WILDWOOD CITY (175, 6)	QUINTON TWP (236, 61%)	NORTH WILDWOOD CITY (188, 6)	NORTH WILDWOOD CITY (147, 4)	QUINTON TWP (217, 49%)	LAWRENCE TWP (299, 51%)
QUINTON TWP (199, 64%)	FAIRVIEW BORO (683, 65%)	LAWRENCE TWP (297, 58%)	NORTH WILDWOOD CITY (183, 6)	BUENA REGIONAL (838, 57%)	LAWRENCE TWP (309, 41%)	LAWRENCE TWP (295, 46%)	UNION CITY (5115, 49%)
UNION CITY (4436, 58%)	QUINTON TWP (212, 62%)	QUINTON TWP (228, 57%)	BUENA REGIONAL (902, 57%)	VINELAND CITY (4435, 53%)	QUINTON TWP (212, 40%)	UNION CITY (5079, 44%)	QUINTON TWP (221, 49%)
FAIRVIEW BORO (677, 56%)	UNION CITY (4513, 59%)	UNION CITY (4630, 56%)	UNION CITY (4816, 57%)	LAWRENCE TWP (336, 53%)	WEST NEW YORK TOWN (3022, 3)	WEST NEW YORK TOWN (3156, 4)	NORTH WILDWOOD CITY (130, 4)
BUENA REGIONAL (1021, 56%)	BUENA REGIONAL (1048, 59%)	WEST NEW YORK TOWN (2881, 1)	LAWRENCE TWP (297, 56%)	UNION CITY (4995, 53%)	UNION CITY (4900, 37%)	ELIZABETH CITY (10654, 40%)	WEST NEW YORK TOWN (3300, 4)
WEST NEW YORK TOWN (2848, 1)	WEST NEW YORK TOWN (2868, 1)	BUENA REGIONAL (1002, 55%)	WEST NEW YORK TOWN (3038, 5)	WOODBINE BORO (96, 52%)	WOODBINE BORO (95, 35%)	BUENA REGIONAL (671, 38%)	ELIZABETH CITY (11063, 43%)
EAST NEWARK BORO (141, 52%)	LAWRENCE TWP (292, 54%)	FAIRVIEW BORO (693, 54%)	WOODBINE BORO (106, 54%)	WEST NEW YORK TOWN (3076, 5)	ELIZABETH CITY (10073, 33%)	NORTH WILDWOOD CITY (159, 3)	NEWARK CITY (23252, 41%)
VINELAND CITY (4090, 51%)	VINELAND CITY (4142, 52%)	VINELAND CITY (4246, 51%)	VINELAND CITY (4409, 51%)	FAIRVIEW BORO (727, 51%)	FAIRVIEW BORO (729, 33%)	NEWARK CITY (22349, 37%)	FAIRVIEW BORO (768, 40%)
LAWRENCE TWP (286, 51%)	ELIZABETH CITY (9605, 50%)	ELIZABETH CITY (9900, 51%)	ELIZABETH CITY (10059, 51%)	ELIZABETH CITY (10354, 50%)	VINELAND CITY (4367, 31%)	FAIRVIEW BORO (743, 36%)	EAST ORANGE (4374, 39%)
ELIZABETH CITY (9077, 50%)	DOWNE TWP (110, 49%)	EAST NEWARK BORO (153, 47%)	FAIRVIEW BORO (712, 51%)	QUINTON TWP (219, 50%)	NEWARK CITY (20177, 30%)	EAST ORANGE (4283, 36%)	EAST NEWARK BORO (168, 37%)
COMMERCIAL TWP (398, 50%)	EAST NEWARK BORO (156, 48%)	EAST ORANGE (4591, 46%)	DOWNE TWP (115, 51%)	DOWNE TWP (112, 47%)	PERTH AMBOY CITY (4140, 28%)	PERTH AMBOY CITY (4340, 35%)	VINELAND CITY (4688, 37%)
DOWNE TWP (112, 49%)	KEANSBURG BORO (670, 48%)	DOWNE TWP (114, 44%)	EAST NEWARK BORO (174, 45%)	EAST ORANGE (4501, 44%)	EAST NEWARK BORO (151, 28%)	VINELAND CITY (4477, 33%)	BUENA REGIONAL (672, 35%)
CITY OF ORANGE TWP (1999, 48)	EGG HARBOR CITY (283, 46%)	CITY OF ORANGE TWP (2096, 43)	MILLVILLE CITY (2319, 44%)	COMMERCIAL TWP (357, 43%)	EAST ORANGE (4115, 27%)	PERTH AMBOY CITY (4340, 35%)	PERTH AMBOY CITY (4566, 35%)
KEANSBURG BORO (677, 48%)	ATLANTIC CITY (2693, 46%)	NEWARK CITY (20864, 42%)	EAST ORANGE (4600, 44%)	NEWARK CITY (21985, 43%)	COMMERCIAL TWP (312, 27%)	EAST NEWARK BORO (170, 32%)	CITY OF ORANGE TWP (2100, 33)
ATLANTIC CITY (2613, 46%)	SEASIDE HEIGHTS BORO (97, 45)	ATLANTIC CITY (2783, 42%)	NEWARK CITY (21491, 43%)	CITY OF ORANGE TWP (2114, 42)	PATERSON CITY (11880, 25%)	ATLANTIC CITY (3007, 30%)	WOODBINE BORO (84, 32%)
SEASIDE HEIGHTS BORO (97, 45)	CITY OF ORANGE TWP (2076, 45)	MILLVILLE CITY (2261, 42%)	ATLANTIC CITY (2940, 43%)	MILLVILLE CITY (2306, 41%)	ATLANTIC CITY (2922, 25%)	PATERSON CITY (12584, 29%)	PASSAIC CITY (6660, 31%)
EGG HARBOR CITY (290, 45%)	MILLVILLE CITY (2247, 45%)	SEASIDE HEIGHTS BORO (101, 42)	PERTH AMBOY CITY (4037, 42%)	PERTH AMBOY CITY (4438, 40%)	MILLVILLE CITY (2249, 24%)	CITY OF ORANGE TWP (2216, 28)	MILLVILLE CITY (2153, 31%)
WILDWOOD CITY (315, 45%)	EAST ORANGE (4634, 44%)	PERTH AMBOY CITY (4200, 41%)	COMMERCIAL TWP (371, 42%)	ATLANTIC CITY (2943, 40%)	CITY OF ORANGE TWP (2105, 24)	MILLVILLE CITY (2177, 28%)	DOWNE TWP (97, 31%)
EAST ORANGE (4611, 45%)	WOODBINE BORO (129, 43%)	KEANSBURG BORO (658, 41%)	CITY OF ORANGE TWP (2080, 41)	SEASIDE HEIGHTS BORO (96, 40)	BUENA REGIONAL (683, 24%)	PASSAIC CITY (6484, 28%)	PATERSON CITY (12874, 31%)
NEWARK CITY (20876, 44%)	NEWARK CITY (20905, 43%)	WOODBINE BORO (123, 41%)	KEANSBURG BORO (638, 41%)	PENNS GRV-CARNEY'S PT REG (9)	KEANSBURG BORO (478, 22%)	DOWNE TWP (96, 26%)	PLEASANTVILLE CITY (1592, 29%)
WOODBINE BORO (127, 43%)	PAULSBORO BORO (461, 42%)	PENNS GRV-CARNEY'S PT REG (1)	PATERSON CITY (12684, 40%)	PATERSON CITY (12796, 39%)	DOWNE TWP (109, 22%)	PLEASANTVILLE CITY (1556, 26%)	ATLANTIC CITY (3096, 29%)
MILLVILLE CITY (2308, 42%)	PERTH AMBOY CITY (4208, 41%)	EGG HARBOR CITY (255, 39%)	EGG HARBOR CITY (282, 40%)	EGG HARBOR CITY (278, 37%)	PASSAIC CITY (6222, 21%)	COMMERCIAL TWP (312, 26%)	PENNS GRV-CARNEY'S PT REG (9)
PERTH AMBOY CITY (4159, 42%)	COMMERCIAL TWP (408, 40%)	PATERSON CITY (12758, 38%)	PAULSBORO BORO (473, 40%)	KEANSBURG BORO (616, 37%)	SEASIDE HEIGHTS BORO (100, 21)	PENNS GRV-CARNEY'S PT REG (9)	COMMERCIAL TWP (290, 26%)
PAULSBORO BORO (483, 40%)	PENNS GRV-CARNEY'S PT REG (1)	WILDWOOD CITY (323, 37%)	PASSAIC CITY (6007, 39%)	PAULSBORO BORO (488, 36%)	IRVINGTON TOWNSHIP (2998, 21)	IRVINGTON TOWNSHIP (3076, 2)	NEW BRUNSWICK CITY (4409, 25)
PENNS GRV-CARNEY'S PT REG (1)	WILDWOOD CITY (320, 39%)	PLEASANTVILLE CITY (1715, 37%)	SEASIDE HEIGHTS BORO (83, 37)	PASSAIC CITY (6244, 36%)	PLEASANTVILLE CITY (1445, 21%)	KEANSBURG BORO (536, 22%)	IRVINGTON TOWNSHIP (3179, 25)
PLEASANTVILLE CITY (1708, 38%)	PATERSON CITY (12560, 36%)	COMMERCIAL TWP (392, 36%)	PENNS GRV-CARNEY'S PT REG (9)	EAST NEWARK BORO (157, 36%)	PENNS GRV-CARNEY'S PT REG (9)	NEW BRUNSWICK CITY (4205, 21)	KEANSBURG BORO (579, 24%)
IRVINGTON TOWNSHIP (3223, 3)	PLEASANTVILLE CITY (1724, 36%)	PASSAIC CITY (5832, 35%)	FAIRFIELD TWP (342, 36%)	PLEASANTVILLE CITY (1608, 36%)	NEW BRUNSWICK CITY (3966, 19)	TRENTON CITY (6067, 21%)	TRENTON CITY (6187, 23%)
PATERSON CITY (12333, 37%)	PASSAIC CITY (5659, 35%)	IRVINGTON TOWNSHIP (3205, 3)	PLEASANTVILLE CITY (1579, 35%)	IRVINGTON TOWNSHIP (3095, 3)	EGG HARBOR CITY (280, 19%)	EGG HARBOR CITY (292, 18%)	SEASIDE HEIGHTS BORO (102, 23)
PASSAIC CITY (5423, 36%)	IRVINGTON TOWNSHIP (3238, 3)	PAULSBORO BORO (466, 34%)	IRVINGTON TOWNSHIP (3119, 3)	FAIRFIELD TWP (265, 35%)	TRENTON CITY (5735, 17%)	BRIDGETON CITY (2577, 18%)	CAMDEN CITY (7296, 22%)
BRIDGETON CITY (2042, 34%)	FAIRFIELD TWP (347, 34%)	FAIRFIELD TWP (347, 34%)	WILDWOOD CITY (341, 32%)	NEW BRUNSWICK CITY (4015, 29)	SALEM CITY (350, 17%)	CAMDEN CITY (7081, 18%)	PAULSBORO BORO (424, 21%)
FAIRFIELD TWP (342, 33%)	BRIDGETON CITY (2116, 33%)	NEW BRUNSWICK CITY (3656, 31)	NEW BRUNSWICK CITY (3801, 31)	WILDWOOD CITY (323, 29%)	FAIRFIELD TWP (311, 16%)	PAULSBORO BORO (445, 18%)	BRIDGETON CITY (2707, 18%)
NEW BRUNSWICK CITY (3449, 32)	NEW BRUNSWICK CITY (3584, 31)	SALEM CITY (465, 31%)	SALEM CITY (422, 29%)	SALEM CITY (408, 28%)	WILDWOOD CITY (303, 15%)	SALEM CITY (378, 18%)	ASBURY PARK CITY (977, 18%)
SALEM CITY (435, 31%)	TRENTON CITY (6027, 30%)	TRENTON CITY (6058, 29%)	BRIDGETON CITY (2280, 29%)	TRENTON CITY (6026, 28%)	BRIDGETON CITY (2446, 14%)	SEASIDE HEIGHTS BORO (96, 18)	WILDWOOD CITY (327, 16%)
TRENTON CITY (5999, 29%)	SALEM CITY (376, 27%)	BRIDGETON CITY (2214, 28%)	TRENTON CITY (6033, 28%)	BRIDGETON CITY (2391, 26%)	CAMDEN CITY (6027, 14%)	WILDWOOD CITY (316, 17%)	FAIRFIELD TWP (371, 16%)
ASBURY PARK CITY (1045, 24%)	ASBURY PARK CITY (946, 24%)	ASBURY PARK CITY (995, 24%)	CAMDEN CITY (7030, 26%)	CAMDEN CITY (7058, 26%)	PAULSBORO BORO (416, 14%)	FAIRFIELD TWP (323, 15%)	SALEM CITY (316, 16%)
CAMDEN CITY (7066, 24%)	CAMDEN CITY (7020, 23%)	CAMDEN CITY (6997, 23%)	ASBURY PARK CITY (1009, 24%)	ASBURY PARK CITY (1009, 22%)	ASBURY PARK CITY (988, 12%)	ASBURY PARK CITY (951, 13%)	EGG HARBOR CITY (294, 12%)

Source: analysis of data from NJDOE web site. Note: this graph ranks all 37 school districts in District Factor Group A (DFG A) by their average proficiency rate on grade 3-8 ELA tests. Each cell in the chart shows the district name, followed by the number of students tested and the proficiency rate in parentheses. Charter school are mapped back to their geographic district for all districts. Newark is shown in the shaded boxes.

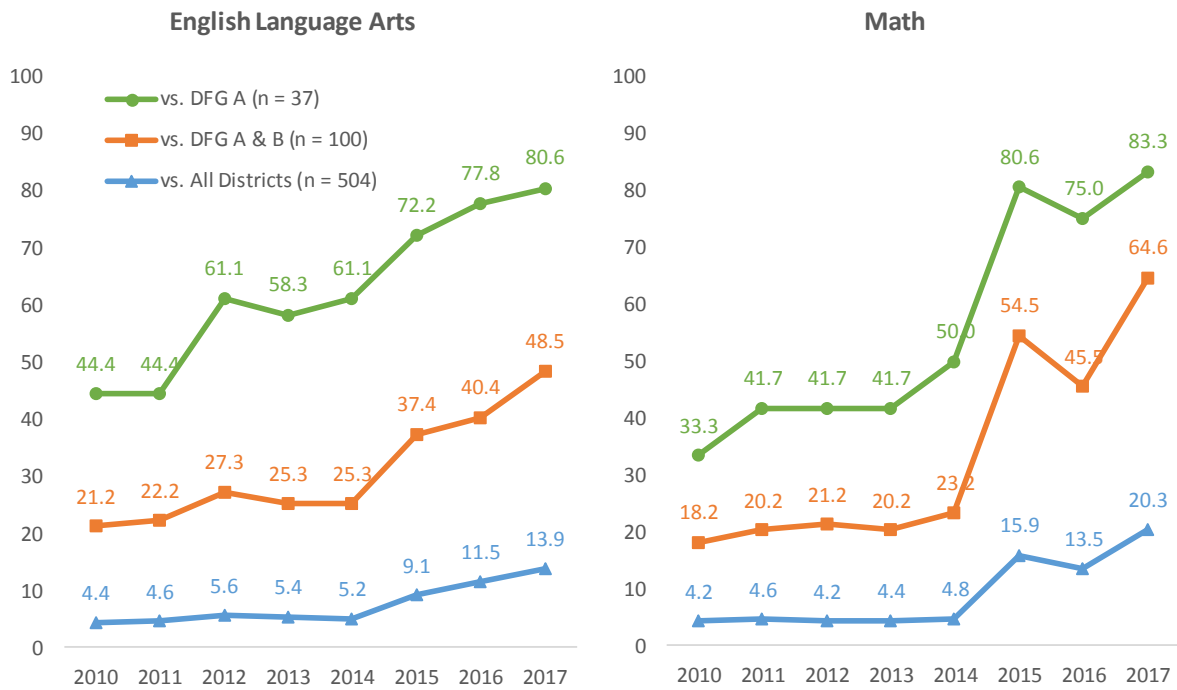
When expanding the comparison to math – and to additional districts throughout New Jersey – Newark continues to improve its relative ranking over time. Figure 4 shows the results, with the top line in the left panel (ELA) exactly replicating the trend shown in Figure 3. In math, Newark schools showed even greater gains, rising from the 33<sup>rd</sup> to the 83<sup>rd</sup> percentile over seven years. When comparing Newark to a broader set of school districts – all 100 districts in DFG A & B or all 504 districts in the state with testing data from 2009 to 2017 – Newark showed substantial gains against a lower base, particularly over the last three years.

Changing demographics do not appear to explain these gains. As we see in Figure A5 in the appendix, Newark has a slightly higher-need population – as measured by the percentage of students eligible for free-or-reduced-price lunch, than the majority of DFG A districts. Moreover, this relationship has changed little during the time period of this study, as shown in Figure A6. Newark had 81% of students eligible for free-or-reduced-price lunch in 2010 and 80% in 2017. The remaining DFG A districts had, on average, 78% of students eligible for free-or-reduced-price lunch in 2010 and 78% today.

highest scoring district in the comparison group and a 0 if it is the lowest. Other common methods of calculating percentiles show identical trends with slightly different numbers.

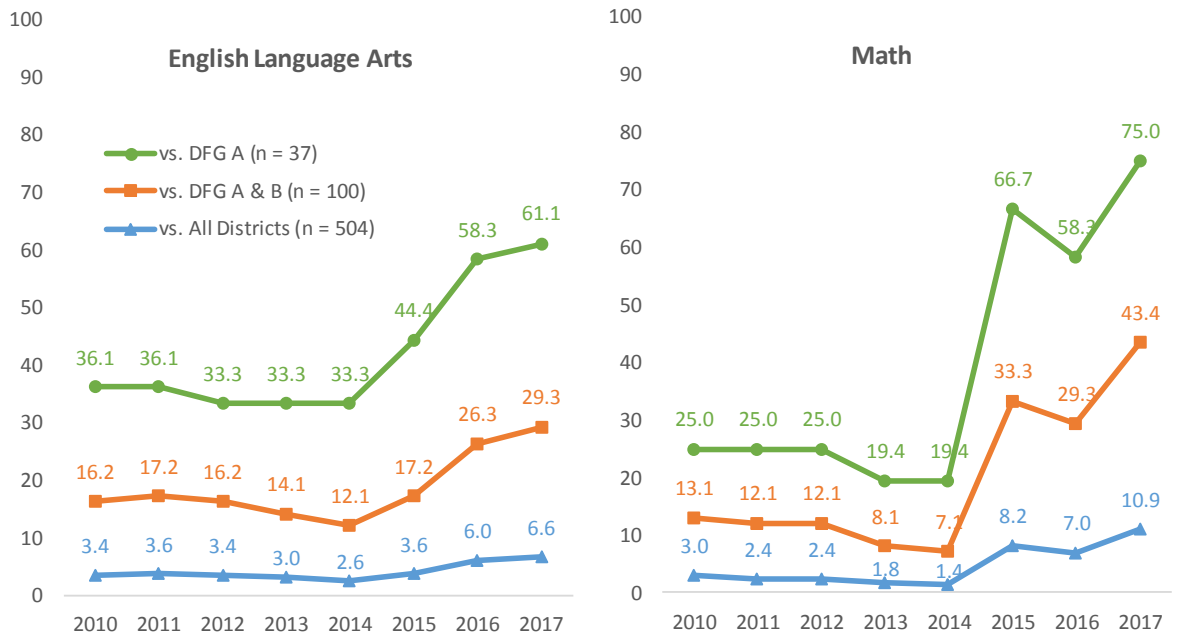
<sup>19</sup> Results using average scaled score as the underlying measure show a similar pattern. See Figures A7 and A8 in the appendix.

Figure 4 – Percentile Rank for the City of Newark (Grade 3-8 Proficiency, Including Charters)



Source: analysis of data from NJDOE web site. Each number shows Newark's percentile rank – based on grade 3-8 proficiency -- against the comparison group noted.

Figure 5 – Percentile Rank for the Newark Public Schools (Grade 3-8 Proficiency, Excluding Charters)



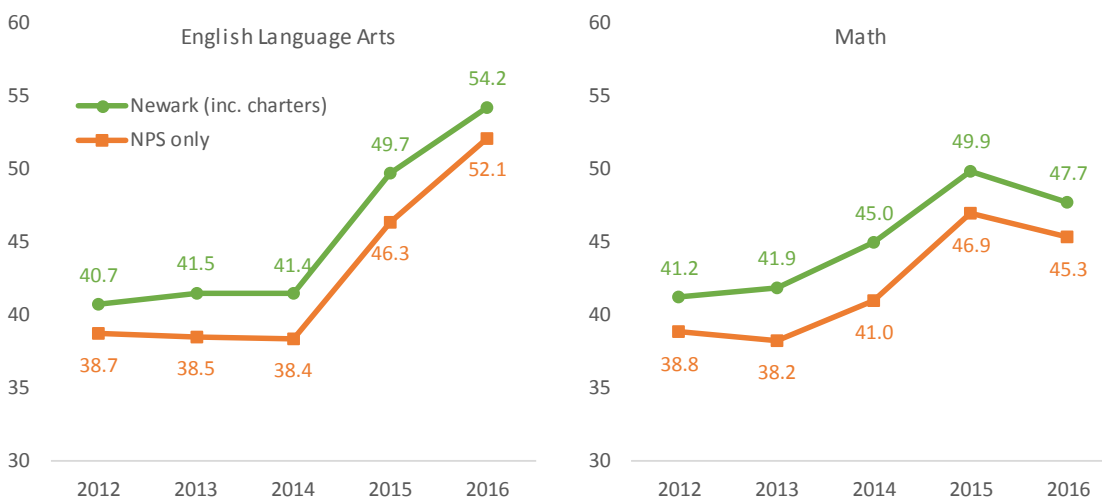
Source: analysis of data from NJDOE web site. Each number shows Newark's percentile rank – based on grade 3-8 proficiency -- against the comparison group noted.

It is important to ask whether Newark is doing better on these rankings simply because more students are enrolling in the city’s higher-performing charter schools. In Figure 5, I exclude charter schools from the analysis, and similar trends emerge for district-only schools.<sup>20</sup> While the early gains in Newark’s relative performance appear to have been driven by the charter sector, beginning in the 2014-15 school year, improvement at NPS also contributed to the city’s rise. The city’s overall gains have not come at the expense of Newark’s traditional public schools, but in part because of them.

**Finding #3: Since 2012, Newark students’ growth has improved compared to students statewide with similar starting achievement levels.**

Since 2012, New Jersey has calculated and published a measure of student test score growth known as a Student Growth Percentile (SGP). First developed in the mid-2000s, the SGP growth model has been adopted by many states, including Colorado, Massachusetts, and Michigan. In New Jersey, SGPs are calculated for students in grades 4 through 8 for ELA and grades 4 through 7 for math.<sup>21</sup> Roughly speaking, a student’s SGP shows how his or her growth in test scores from one year to the next ranks relative to students who had similar baseline test scores. An SGP of 90 indicates that a student’s test score improved more than 90% of students with similar baseline test scores. An SGP of 10 indicates that a student’s test score improved more than 10% of students with similar baseline test scores. In New Jersey, as in many states, schools are evaluated based on the median SGP of their students. The median SGP for the entire state is, by definition, 50.

Figure 6 – Weighted Mean SGP for Newark’s Schools (2012 to 2016)



Source: analysis of data from NJDOE web site. Note: SGP data is only available beginning in 2012.

Looking at both district-only and all-city schools, Newark shows a positive trend in ELA and math SGPs from 2012 to 2016, as we can see in Figure 6.<sup>22</sup> The mean SGP in ELA was flat until

<sup>20</sup> Charter schools are also excluded from all other districts.

<sup>21</sup> [http://www.nj.gov/education/njsmart/performance/SGP\\_Technical\\_Overview.pdf](http://www.nj.gov/education/njsmart/performance/SGP_Technical_Overview.pdf)

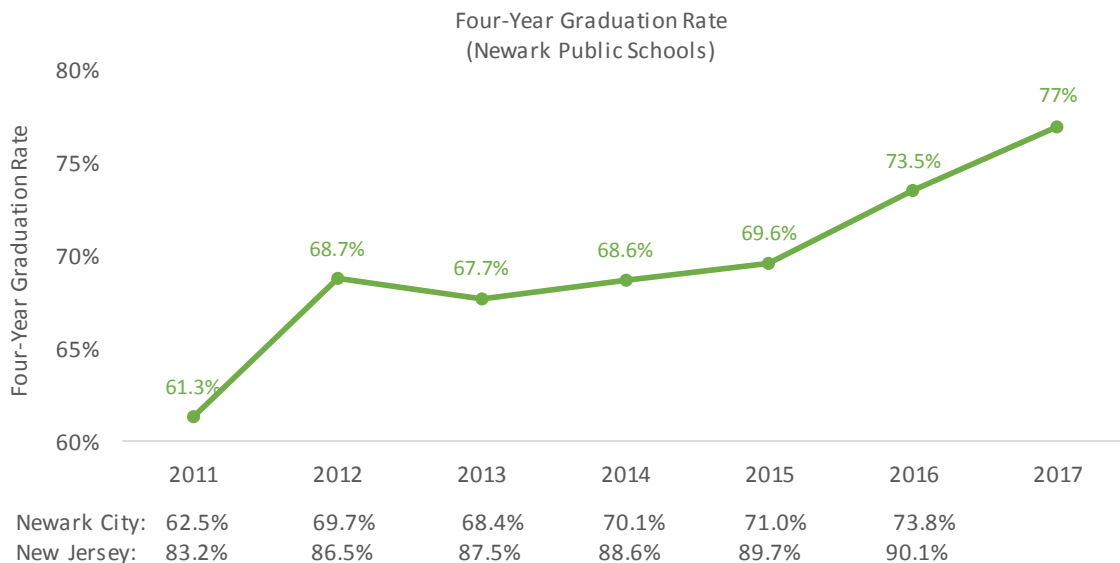
<sup>22</sup> These numbers are calculated by taking the weighted mean of publicly reported school-level median SGPs, weighting by total enrollment in the school. While it is more traditional to use a median when analyzing SGPs,

2014, after which it increased dramatically, rising above the state average of 50 in 2016, whether or not one includes charters. The mean SGP in math showed some gains beginning in 2014, more extensive gains in 2015, and then a slight reduction 2016. The overall trend in math is positive throughout the period, with the mean SGP for Newark rising from 41.2 in 2012 to 47.7 in 2016, though it remains 2.3 points below the state average of 50. The state has not yet released SGP data for the 2016-17 school year, a year in which Newark showed particularly strong gains in grade 3-8 math test score performance (see Figures 2, 4, 5, A7 and A8). Given the past correspondence between performance and growth, Newark seems well positioned to show gains – particularly in math – when its 2017 SGPs are released.

**Finding #4: The high school graduation rate has increased dramatically from 2011 to 2017, improving at a faster rate than in the rest of the state.**

To assess performance in Newark’s high schools, I focus on the graduation rate. As shown in Figure 7, the four-year high school graduation rate in the Newark Public Schools has increased by 16 percentage points since 2011, rising from 61% to 77%. Excluding the 2017 rate – which is a preliminary number reported by the district – the NPS graduation rate increased by 12 points between 2011 and 2016. During the same period, New Jersey’s graduation rate increased by 7 percentage points, from 83% to 90%. While NPS has reduced the graduation rate gap with the state by five points over the last five years, the district continues to have a graduation rate that is well below that of the state. The gains including charter schools have been similar, with Newark’s citywide graduation rate increasing by 11 points since 2011.

Figure 7 – Four-Year High School Graduation Rate in the Newark Public Schools



Source: Graduation rates from 2011 to 2016 from the NJDOE web site. The 2017 graduation rate for NPS is a preliminary NPS number, reported in the *New York Times* (<https://www.nytimes.com/2017/09/12/nyregion/20-years-newark-schools-regain-control-baraka.html>). Since 2011, the NJDOE has calculated graduation rates using the adjusted cohort methodology recommended by the U.S. Department of Education. Prior to 2011, New Jersey used a different methodology, so the results are not shown here. The 2011 rate for NPS is based on the official NJDOE calculation. KPMG audited the official 2011 rate and found that the true 2011 graduation rate for NPS was closer to 55%.

calculating the median for the City of Newark (including charter schools) would require student-level data from both NPS and charters, which is not readily available. Moreover, when looking only at NPS, the weighted mean SGP and median SGP are nearly identical in each year, as shown in Figure A9 in the appendix.

**Finding #5: Replicating and extending other researchers’ analyses with more recent data produces similar evidence of growth in Newark’s schools.**

Shortly after the release of *The Prize*, two separate research studies – one by Andrew Martin in *The 74* and the other by Bruce Baker and Mark Weber at the Rutgers Graduate School of Education – explored trends in the test score performance of Newark students over time.<sup>23</sup> The latest data in both of these analyses was from the spring of 2014, prior to the full implementation of many of Newark’s reforms. Since they were published, three additional years of test score data have been made publicly available on the New Jersey Department of Education (NJDOE) web site. In the sections that follow, I replicate both Martin’s and Baker & Weber’s analysis – to the extent possible – and extend them with data through 2017.

*Finding 5A: Black students in Newark are three times more likely to attend a school with test scores above the state average today than they were in 2009.*

In October 2015, Andrew Martin, a former Newark teacher and then Director of Special Projects at KIPP New Jersey, wrote an article called “‘The Prize’: The Unwritten Appendix, By Those Inside Newark’s Improving Schools.”<sup>24</sup> In that article, Martin reports that by 2014, the percentage of Black students attending a Newark school that beat the New Jersey state proficiency average in math and ELA had doubled since 2009 and tripled since 2006. Martin concludes that most of these gains are due to students moving from district schools to high-performing charters, meaning that “Newark’s neediest students are better off post ‘The Prize.’”<sup>25</sup>

I replicate Martin’s methodology to measure the percentage of Black students in Newark enrolled in a school that beat the state average in terms of proficiency for their grade. Like Martin, I pool ELA and math scores into a single proficiency rate for each grade in each school. Unlike Martin, I focus only on grades 3-8, since the transition to PARCC in 2015 presents greater complications at the high school level (Martin’s original analysis used data through 2014, prior to the PARCC transition). Figure 8 shows the results of my analysis.

The results for Newark from 2009 to 2014 are broadly similar to those in Martin’s analysis. They show that over five years, the number of Black students attending a school that beat the state average nearly doubled. Since 2014, the share of Black students in grades 3-8 in Newark attending a school that beat the state proficiency average has risen dramatically, reaching 27% by 2017. Black students in Newark are now three times more likely to attend a school that performs at or above the state average than they were in 2009, prior to the reforms. Over the same period, the rate was relatively flat in the rest of New Jersey, holding steady at 25% between 2015 and 2017. Today, for the first time, a Black student in Newark is more likely to attend a school with above average test scores than a Black student elsewhere in the state.

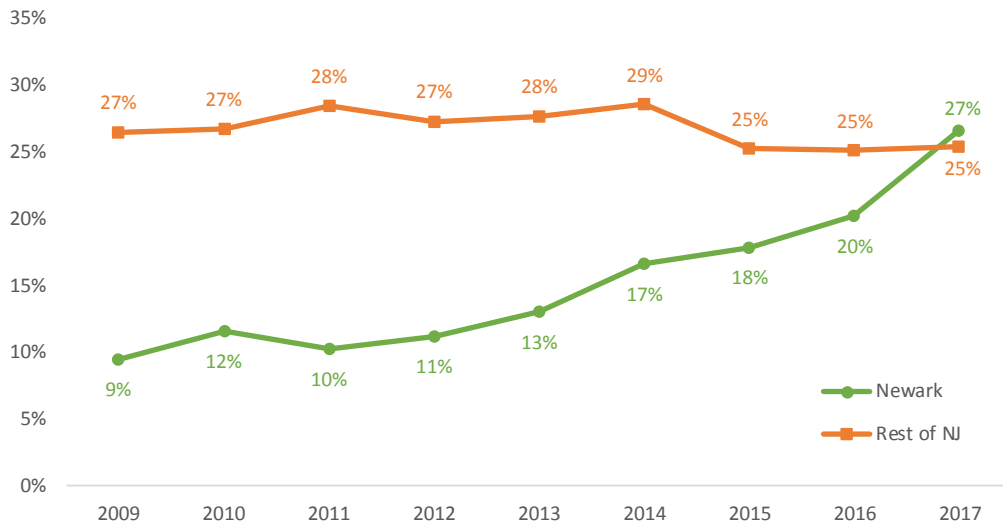
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<sup>23</sup> Another analysis released around the same time (October 2015) came from the Center for Reinventing Public Education (CRPE) at the University of Washington. The CPRE study estimated that nearly 40% of Newark’s students were enrolled in schools that “beat-the-odds” on test scores, well above the 8% national average and higher than in any other city in their study. This analysis relied on average test scores from 2011 to 2013 and did not assess whether this percentage had changed over time.

<sup>24</sup> <https://www.the74million.org/article/the-prize-the-unwritten-appendix-by-those-inside-newarks-improving-schools>

<sup>25</sup> The quoted conclusion is one of the article’s Talking Points on the *The 74* website; it is unclear if Martin or one of *The 74* editors wrote the talking point, but it is consistent with the tone and message of the overall article.

Figure 8 – Percent of Black Students Enrolled in a School that Beat the NJ State Average



Note: the graph shows the percentage of Black students enrolled in a school that had a higher proficiency rate than the state at their grade level (includes ELA and math tests in grade 3-8). Source: analysis of data from NJDOE web site.

*Finding 5B: Controlling for poverty and ELL status, Newark students show significant gains in math and ELA scores between 2009 and 2017.*

In November 2015, Bruce Baker and Mark Weber at Rutgers University published a research note that asked: “On Average, Are Children in Newark Doing Better?”<sup>26</sup> In that note, Baker and Weber analyze average scaled scores in math and ELA for Newark students in grades 6, 7, and 8 compared to students in the rest of the state. Using primarily publicly available aggregate data, they develop a regression model that controls for time trends, the percentage of students who qualify for free lunch, the percentage of students who are English language learners (ELLs), and the percentage of students who have disabilities. They conclude that, by 2014, the performance of Newark middle school students had not improved or declined. As they write, “Average state assessment scores in grades 6, 7, and 8 are pretty much right where they were – relative to non-Newark students – in 2009.”

With more recent data, what do their results say? To replicate Baker and Weber’s analysis of test scores in grades 6 through 8, I had to make two changes. The first change was to convert scaled scores for the NJASK and PARCC tests to standardized scores – also known as z-scores – that have a mean of zero and a standard deviation of one. This was necessary because of the dramatic change to the testing scale when New Jersey switched from the NJASK test in 2014 to the PARCC test in 2015. Standardized scores are commonly used in the analysis of educational test scores to adjust for potential changes in the distribution of scores from year to year. Due to data availability, I standardized based on the school-level mean and standard deviation for each grade, subject, and year.<sup>27</sup>

<sup>26</sup> [https://njedpolicy.files.wordpress.com/2015/11/baker-weber-newarkbetteroff-njepf-11\\_15\\_151.pdf](https://njedpolicy.files.wordpress.com/2015/11/baker-weber-newarkbetteroff-njepf-11_15_151.pdf)

<sup>27</sup> Figure A10 in the appendix shows that after standardization, the statewide distribution of PARCC scores from 2015 to 2017 was very similar to the distribution of NJASK scores from 2009 to 2014.

The second change was to omit one of their control variables: the percentage of students with disabilities. As Baker and Weber note in their article, this data is not publicly available and they had to request it from the NJDOE. Despite these two changes, my results through 2014 align closely with those of Baker and Weber, indicating these changes are unlikely to materially alter the conclusions one would draw from this analysis.

Figure 9 – Newark Test Score Change vs. Statewide

Subject & Grade	ELA 6	Math 6	ELA 7	Math 7	ELA 8	Math 8
<b>Students</b>						
% Free Lunch	-3.026*** (0.0871)	-2.949*** (0.102)	-3.013*** (0.100)	-2.930*** (0.115)	-2.995*** (0.0996)	-2.740*** (0.131)
% ELL	1.425*** (0.341)	1.843*** (0.423)	1.316*** (0.407)	1.388** (0.541)	1.273*** (0.430)	1.391** (0.632)
<b>Year</b>						
2010	0.0695*** (0.0125)	0.0594*** (0.0145)	0.0536*** (0.0123)	0.0438*** (0.0149)	0.0477*** (0.0127)	0.0485*** (0.0146)
2011	0.104*** (0.0147)	0.108*** (0.0169)	0.0912*** (0.0144)	0.103*** (0.0179)	0.0807*** (0.0140)	0.0716*** (0.0171)
2012	0.135*** (0.0163)	0.179*** (0.0182)	0.140*** (0.0163)	0.161*** (0.0197)	0.137*** (0.0157)	0.123*** (0.0199)
2013	0.195*** (0.0167)	0.220*** (0.0198)	0.183*** (0.0164)	0.178*** (0.0204)	0.185*** (0.0166)	0.163*** (0.0203)
2014	0.228*** (0.0173)	0.266*** (0.0215)	0.223*** (0.0174)	0.269*** (0.0212)	0.218*** (0.0179)	0.206*** (0.0239)
2015	0.165*** (0.0245)	0.210*** (0.0251)	0.191*** (0.0238)	0.206*** (0.0288)	0.127*** (0.0273)	0.139*** (0.0392)
2016	0.162*** (0.0247)	0.220*** (0.0243)	0.150*** (0.0253)	0.174*** (0.0281)	0.117*** (0.0277)	0.178*** (0.0378)
2017	0.197*** (0.0243)	0.228*** (0.0250)	0.171*** (0.0233)	0.189*** (0.0274)	0.162*** (0.0254)	0.165*** (0.0374)
Newark	0.142 (0.111)	0.153 (0.137)	0.284** (0.129)	0.224* (0.134)	0.133 (0.121)	0.0764 (0.149)
<b>Newark by Year</b>						
Newark 2010	-0.00230 (0.0963)	0.258** (0.110)	-0.0388 (0.0840)	-0.0716 (0.0938)	0.115 (0.0947)	0.111 (0.0966)
Newark 2011	0.262*** (0.0838)	0.392*** (0.120)	0.139 (0.0926)	0.344*** (0.0877)	0.207** (0.0997)	0.286** (0.117)
Newark 2012	0.119 (0.0940)	0.143 (0.109)	0.0426 (0.110)	0.142 (0.119)	0.157 (0.0999)	0.245** (0.120)
Newark 2013	0.0723 (0.0975)	0.129 (0.112)	0.0638 (0.109)	0.256* (0.139)	0.0761 (0.106)	0.177 (0.124)
Newark 2014	-0.0314 (0.134)	0.0179 (0.152)	-0.119 (0.105)	-0.0589 (0.115)	0.0392 (0.119)	0.204 (0.137)
Newark 2015	0.256 (0.173)	0.108 (0.183)	0.162 (0.163)	0.128 (0.182)	0.244* (0.141)	0.523*** (0.186)
Newark 2016	0.376** (0.182)	0.0581 (0.163)	0.292 (0.180)	0.188 (0.207)	0.449** (0.188)	0.481*** (0.176)
Newark 2017	0.473*** (0.178)	0.362** (0.144)	0.224 (0.157)	0.197 (0.183)	0.427** (0.193)	0.682*** (0.199)
Intercept	0.844*** (0.0256)	0.814*** (0.0316)	0.850*** (0.0292)	0.829*** (0.0320)	0.847*** (0.0284)	0.775*** (0.0314)
R-squared	0.680	0.614	0.677	0.634	0.677	0.565

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Like Baker & Weber, no significant gains by 2014

Adding 2015 to 2017 changes the conclusion & shows significant gains

Figure 9 replicates the main table from Baker and Weber’s analysis – with the changes noted above – and expands it to include test scores from 2015 through 2017. The key variables are the

“Newark by Year” interactions, which measure the degree to which Newark’s scores in a given year are above its results in 2009, adjusting for % Free Lunch, % ELL, and statewide changes in test scores since 2009. Between 2010 and 2014, Figure 9 gives results that are broadly consistent with those in Baker and Weber’s analysis. Notably, by 2014, the Newark by Year coefficient is insignificant in each specification, with three small positive coefficients balanced out by three small negative coefficients (Baker and Weber report four negative and two positive coefficients, with only 8<sup>th</sup> grade ELA having a different sign than in Figure 9 here).

However, adding test scores for 2015 through 2017 changes the picture notably. All of the Newark by Year coefficients in 2015 through 2017 are positive, indicating that Newark’s scores increased by more than scores statewide since 2009, after adjusting for changes in the % ELL and % Free Lunch. In 2015, one of the six scores was statistically significant at the 0.05 level. In 2016, three of the six scores were statistically significant at the 0.05 level. In 2017, four of the six scores were statistically significant at the 0.05 level, with the 8<sup>th</sup> grade scores showing some of the largest gains. According to Baker and Weber, they “focus on grades 6 through 8 (rather than 3 through 5) to capture cumulative effects of schooling.” The positive and significant 8<sup>th</sup> grade scores found here would seem most likely to capture that cumulative effect.

## **Conclusion**

In 2015, when Cami Anderson stepped down as Superintendent of the Newark Public Schools, the narrative was mixed about the success of the district’s reforms. While the graduation rate had increased, analyses of test scores showed both neutral and positive results (with the positive results focused in the city’s charter sector). Those analyses, however, relied on tests taken near the end of the 2013-14 school year, when a number of Anderson’s reforms were just beginning to take hold.

Since then, publicly reported data show that Newark’s students have improved substantially relative to students across New Jersey. The graduation rate has continued to steadily increase, rising by 4.8 points at NPS between 2014 and 2016, compared to 1.5 points in the rest of New Jersey. In terms of test score performance in grades 3-8, Newark is now in the top 20% of demographically similar districts in both ELA and math (the city has also shown strong gains – from a lower baseline – against broader comparison groups). Looking at test score growth, Newark’s mean SGP has increased notably since 2014, and is now four points above the state average in ELA and two points below the state average in math. While a full analysis of 2017 test scores is not yet possible, preliminary results show encouraging trends, particularly in math. Against this backdrop of improving performance, citywide enrollment has increased, and Newark now has more students enrolled in public schools than at any point over at least the last 19 years.

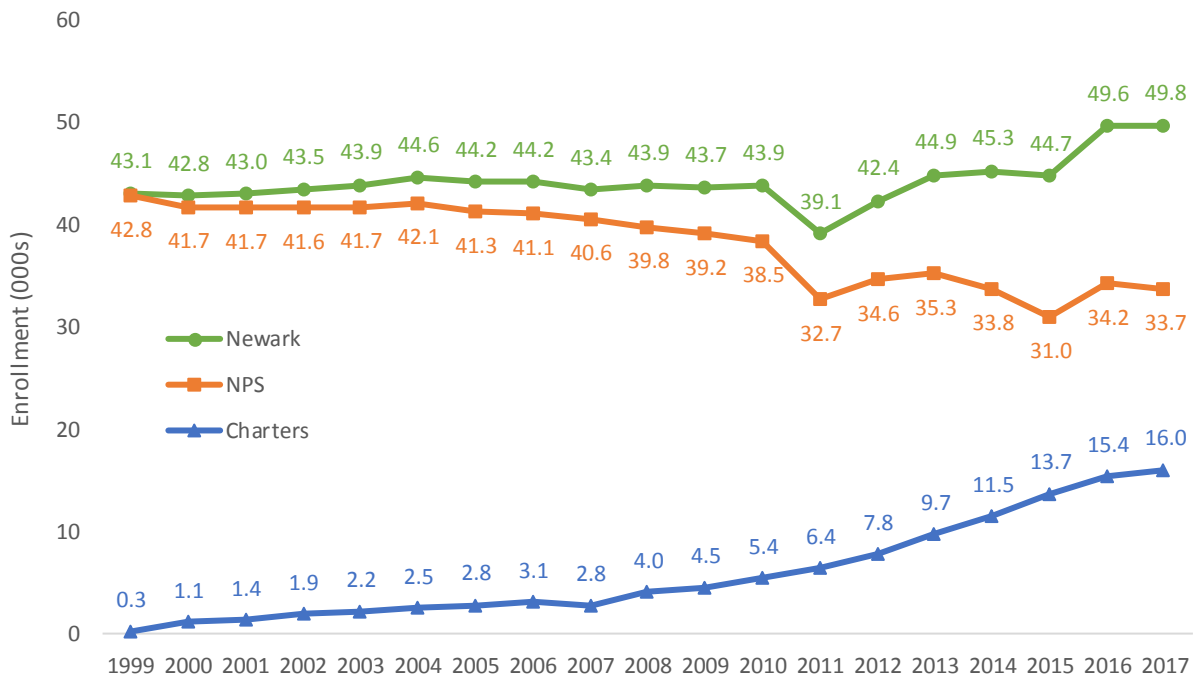
Replicating and extending other researchers’ work confirms these gains. For the first time in 2017, a Black student in Newark was more likely to attend a school that beat the state proficiency average than a Black student elsewhere in New Jersey. Even using methodologies that found neutral results in the past, like Baker & Weber’s 2015 regression analysis, we now see positive trends. While the conclusions one could draw from analysis of Newark’s 2014 results may have been mixed, they appear unambiguous now. On every measure reviewed, the test



scores of Newark students have improved relative to other students in the state taking the same tests. Against the backdrop of a rising graduation rate and increasing enrollment, these results are consistent with the narrative that Newark's reforms over the past seven years have led to real improvement in the quality of public education in the city.

## Appendix – Figures

Figure A1 – K-12 Enrollment in Newark Schools (1999-2017)



Charter%: 1% 3% 3% 4% 5% 6% 6% 7% 6% 9% 10% 12% 16% 18% 22% 25% 31% 31% 32%

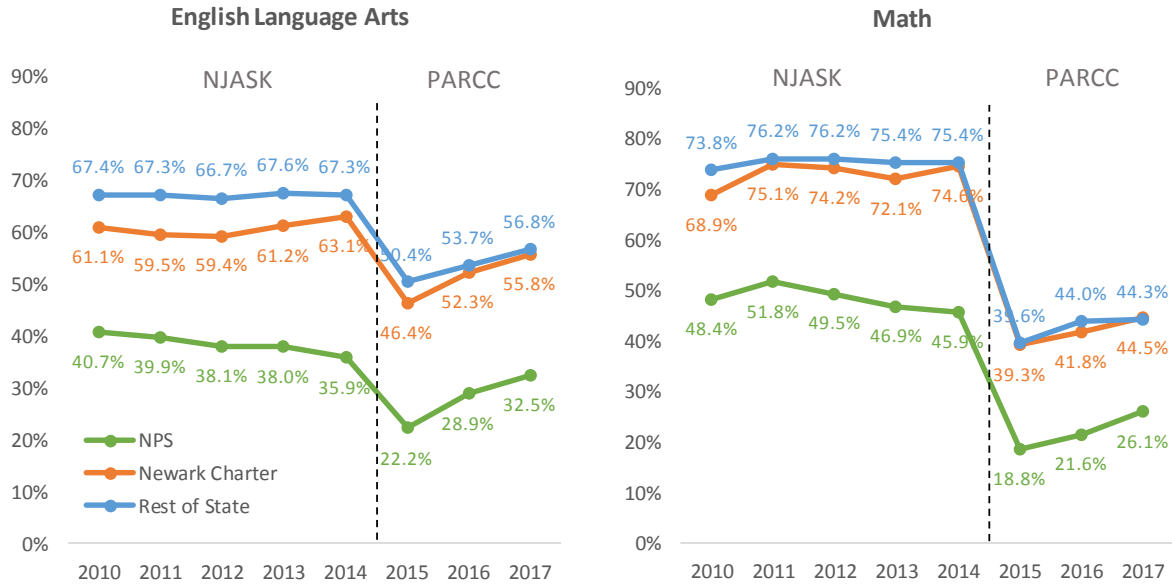
Source: NJDOE web site. Note: 2017 refers to the 2016/17 school year. Note: excludes PK enrollment.

Figure A2 – Grade 3-8 Proficiency Rates on the PARCC Test: 2015 to 2017 (NPS vs. NJ)

% Proficient	ELA				2-Year Change	Math																										
	2015	2016	2017	2015		2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015
NPS	22.2%	29.0%	32.5%	10.3%	18.7%	21.6%	26.1%	7.4%																								
NJ	49.6%	53.0%	56.0%	6.4%	39.0%	43.3%	44.2%	5.2%																								
Gap	27.4%	24.0%	23.5%	-3.9%	20.3%	21.7%	18.1%	-2.2%																								

Source: NJDOE; NPS.

Figure A3 - Percent Proficient on the ELA and Math Test



Source: analysis of data from NJDOE web site.

Figure A4 – Newark’s Average Test Score Rank Relative to DFG A in Math (2010 to 2017)

2010	2011	2012	2013	2014	2015	2016	2017
DOVER TOWN (1246, 227)	NORTH WILDWOOD CITY (188, 218)	DOVER TOWN (1260, 230)	DOVER TOWN (1284, 230)	DOVER TOWN (1348, 229)	QUINTON TWP (212, 743)	QUINTON TWP (218, 747)	NORTH WILDWOOD CITY (130, 744)
NORTH WILDWOOD CITY (183, 2)	DOVER TOWN (1232, 229)	NORTH WILDWOOD CITY (176, 2)	QUINTON TWP (234, 229)	NORTH WILDWOOD CITY (188, 2)	DOVER TOWN (1241, 743)	DOVER TOWN (1336, 745)	DOVER TOWN (1399, 744)
QUINTON TWP (199, 223)	UNION CITY (4516, 226)	QUINTON TWP (227, 227)	NORTH WILDWOOD CITY (183, 2)	QUINTON TWP (218, 219)	NORTH WILDWOOD CITY (146, 7)	NORTH WILDWOOD CITY (160, 7)	QUINTON TWP (207, 742)
UNION CITY (4439, 223)	FAIRVIEW BORO (689, 223)	LAWRENCE TWP (297, 223)	UNION CITY (4818, 219)	WEST NEW YORK TOWN (3077, 7)	WEST NEW YORK TOWN (3071, 7)	WEST NEW YORK TOWN (3254, 7)	WEST NEW YORK TOWN (3420, 7)
WEST NEW YORK TOWN (2847, 7)	WEST NEW YORK TOWN (2871, 7)	WEST NEW YORK TOWN (2885, 7)	WEST NEW YORK TOWN (3044, 7)	UNION CITY (4999, 218)	ELIZABETH CITY (8599, 734)	LAWRENCE TWP (275, 737)	UNION CITY (5312, 736)
SEASIDE HEIGHTS BORO (96, 218)	BUENA REGIONAL (1051, 221)	UNION CITY (4632, 220)	LAWRENCE TWP (298, 219)	LAWRENCE TWP (335, 217)	BUENA REGIONAL (665, 732)	UNION CITY (5215, 736)	ELIZABETH CITY (9533, 735)
BUENA REGIONAL (1016, 217)	QUINTON TWP (212, 220)	SEASIDE HEIGHTS BORO (101, 21)	BUENA REGIONAL (902, 217)	ELIZABETH CITY (10378, 217)	LAWRENCE TWP (293, 732)	EAST NEWARK BORO (177, 735)	DOWNE TWP (79, 734)
ELIZABETH CITY (9155, 214)	LAWRENCE TWP (293, 218)	BUENA REGIONAL (1004, 217)	ELIZABETH CITY (10100, 215)	BUENA REGIONAL (839, 216)	UNION CITY (5029, 732)	ELIZABETH CITY (8985, 735)	LAWRENCE TWP (277, 733)
VINELAND CITY (4089, 213)	SEASIDE HEIGHTS BORO (97, 216)	VINELAND CITY (4257, 215)	VINELAND CITY (4412, 214)	VINELAND CITY (4429, 215)	EAST NEWARK BORO (153, 730)	BUENA REGIONAL (632, 734)	NEWARK CITY (23156, 733)
FAIRVIEW BORO (686, 212)	ELIZABETH CITY (9631, 215)	WOODBINE BORO (124, 209)	SEASIDE HEIGHTS BORO (83, 210)	SEASIDE HEIGHTS BORO (96, 213)	VINELAND CITY (4220, 730)	VINELAND CITY (4355, 731)	EAST NEWARK BORO (179, 732)
COMMERCIAL TWP (390, 209)	VINELAND CITY (4140, 213)	FAIRVIEW BORO (694, 214)	WOODBINE BORO (106, 209)	EAST NEWARK BORO (157, 210)	SEASIDE HEIGHTS BORO (100, 72)	PASSAIC CITY (5652, 731)	BUENA REGIONAL (650, 731)
LAWRENCE TWP (286, 208)	ATLANTIC CITY (2703, 213)	WOODBINE BORO (124, 209)	FAIRVIEW BORO (715, 208)	WOODBINE BORO (96, 209)	WOODBINE BORO (95, 728)	NEWARK CITY (22095, 729)	EAST NEWARK BORO (179, 732)
WOODBINE BORO (127, 207)	EGG HARBOR CITY (282, 210)	PENNS GRV-CARNEY'S PT REG (1)	ATLANTIC CITY (2964, 205)	PASSAIC CITY (6251, 208)	PASSAIC CITY (6027, 727)	PENNS GRV-CARNEY'S PT REG (9)	PASSAIC CITY (5756, 730)
EGG HARBOR CITY (296, 207)	EAST ORANGE (4636, 209)	ATLANTIC CITY (2803, 205)	PASSAIC CITY (6009, 205)	FAIRVIEW BORO (729, 204)	NEWARK CITY (20176, 727)	NEW BRUNSWICK CITY (4220, 72)	PENNS GRV-CARNEY'S PT REG (9)
ATLANTIC CITY (2652, 207)	DOWNE TWP (110, 208)	WILDWOOD CITY (323, 205)	PENNS GRV-CARNEY'S PT REG (9)	NEWARK CITY (22076, 203)	ATLANTIC CITY (2882, 726)	EAST ORANGE (4233, 727)	SEASIDE HEIGHTS BORO (103, 72)
KEANSBURG BORO (679, 206)	PERTH AMBOY CITY (4216, 206)	EAST NEWARK BORO (153, 204)	EAST NEWARK BORO (174, 204)	PATERSON CITY (12841, 203)	FAIRVIEW BORO (764, 725)	FAIRVIEW BORO (783, 727)	EAST ORANGE (4319, 728)
CITY OF ORANGE TWP (2025, 20)	KEANSBURG BORO (674, 206)	EAST ORANGE (4610, 204)	EGG HARBOR CITY (284, 203)	PENNS GRV-CARNEY'S PT REG (9)	PATERSON CITY (11933, 725)	ATLANTIC CITY (3007, 727)	NEW BRUNSWICK CITY (4378, 72)
PENNS GRV-CARNEY'S PT REG (1)	PENNS GRV-CARNEY'S PT REG (1)	NEWARK CITY (20922, 204)	MILLVILLE CITY (2318, 203)	COMMERCIAL TWP (356, 202)	PERTH AMBOY CITY (4241, 725)	PLEASANTVILLE CITY (1548, 727)	PERTH AMBOY CITY (4635, 726)
EAST ORANGE (4665, 205)	NEWARK CITY (20955, 205)	MILLVILLE CITY (2259, 204)	KEANSBURG BORO (643, 203)	CITY OF ORANGE TWP (2136, 20)	PLEASANTVILLE CITY (1426, 725)	PERTH AMBOY CITY (4428, 727)	FAIRVIEW BORO (809, 726)
PERTH AMBOY CITY (4164, 205)	EAST NEWARK BORO (156, 205)	KEANSBURG BORO (661, 203)	PAULSBORO BORO (476, 202)	PERTH AMBOY CITY (4440, 202)	NEW BRUNSWICK CITY (3916, 72)	DOWNE TWP (75, 726)	PLEASANTVILLE CITY (1560, 726)
PAULSBORO BORO (483, 204)	CITY OF ORANGE TWP (2097, 20)	PERTH AMBOY CITY (4215, 203)	NEWARK CITY (21560, 202)	ATLANTIC CITY (2965, 202)	DOWNE TWP (109, 724)	SEASIDE HEIGHTS BORO (95, 725)	ATLANTIC CITY (3055, 725)
BRIDGETON CITY (2041, 202)	MILLVILLE CITY (2247, 203)	EGG HARBOR CITY (256, 203)	COMMERCIAL TWP (370, 201)	MILLVILLE CITY (2308, 201)	COMMERCIAL TWP (305, 723)	PATERSON CITY (12560, 725)	MILLVILLE CITY (2098, 725)
NEWARK CITY (20916, 202)	COMMERCIAL TWP (408, 203)	PASSAIC CITY (5836, 202)	PATERSON CITY (12748, 201)	EGG HARBOR CITY (279, 201)	EAST ORANGE (4062, 723)	MILLVILLE CITY (2133, 725)	WOODBINE BORO (83, 724)
WILDWOOD CITY (315, 202)	PASSAIC CITY (5661, 203)	PAULSBORO BORO (466, 201)	PERTH AMBOY CITY (4308, 200)	PAULSBORO BORO (486, 200)	PENNS GRV-CARNEY'S PT REG (9)	WILDWOOD CITY (318, 723)	PAULSBORO BORO (402, 724)
EAST NEWARK BORO (141, 201)	PAULSBORO BORO (458, 201)	CITY OF ORANGE TWP (2118, 20)	EAST ORANGE (4611, 200)	NEW BRUNSWICK CITY (4018, 20)	MILLVILLE CITY (2207, 722)	CITY OF ORANGE TWP (2217, 72)	PATERSON CITY (12870, 724)
PASSAIC CITY (5424, 200)	WOODBINE BORO (130, 201)	COMMERCIAL TWP (395, 200)	PLEASANTVILLE CITY (1585, 199)	DOWNE TWP (112, 199)	EGG HARBOR CITY (257, 721)	WOODBINE BORO (87, 721)	WILDWOOD CITY (333, 724)
MILLVILLE CITY (2305, 199)	BRIDGETON CITY (2118, 201)	PATERSON CITY (12808, 199)	WILDWOOD CITY (340, 199)	EAST ORANGE (4508, 198)	CITY OF ORANGE TWP (2113, 72)	BRIDGETON CITY (2569, 721)	CITY OF ORANGE TWP (2208, 72)
DOWNE TWP (111, 198)	PLEASANTVILLE CITY (1737, 200)	NEW BRUNSWICK CITY (3655, 199)	DOWNE TWP (115, 199)	PLEASANTVILLE CITY (1618, 198)	BRIDGETON CITY (2431, 721)	COMMERCIAL TWP (296, 721)	BRIDGETON CITY (2718, 720)
PATERSON CITY (12402, 196)	PATERSON CITY (12610, 199)	IRVINGTON TOWNSHIP (3237, 1)	CITY OF ORANGE TWP (2107, 19)	WILDWOOD CITY (323, 196)	IRVINGTON TOWNSHIP (2935, 7)	IRVINGTON TOWNSHIP (3062, 7)	COMMERCIAL TWP (272, 719)
IRVINGTON TOWNSHIP (3269, 1)	NEW BRUNSWICK CITY (3586, 19)	DOWNE TWP (114, 196)	BRIDGETON CITY (2283, 194)	BRIDGETON CITY (2387, 195)	PAULSBORO BORO (402, 720)	SALEM CITY (368, 716)	IRVINGTON TOWNSHIP (3170, 71)
NEW BRUNSWICK CITY (3452, 19)	IRVINGTON TOWNSHIP (3279, 1)	BRIDGETON CITY (2215, 196)	IRVINGTON TOWNSHIP (3137, 1)	IRVINGTON TOWNSHIP (3119, 1)	KEANSBURG BORO (467, 717)	KEANSBURG BORO (514, 715)	CAMDEN CITY (2275, 717)
TRENTON CITY (5988, 187)	FAIRFIELD TWP (369, 191)	TRENTON CITY (6057, 190)	SALEM CITY (422, 189)	SALEM CITY (408, 189)	TRENTON CITY (5718, 716)	TRENTON CITY (6060, 715)	TRENTON CITY (6229, 715)
SALEM CITY (436, 186)	TRENTON CITY (6056, 189)	FAIRFIELD TWP (346, 189)	FAIRFIELD TWP (343, 187)	TRENTON CITY (6050, 188)	FAIRFIELD TWP (311, 715)	EGG HARBOR CITY (277, 715)	EGG HARBOR CITY (285, 715)
FAIRFIELD TWP (340, 185)	SALEM CITY (451, 188)	SALEM CITY (464, 189)	TRENTON CITY (6022, 187)	CAMDEN CITY (7097, 187)	SALEM CITY (355, 714)	CAMDEN CITY (7029, 714)	FAIRFIELD TWP (315, 712)
ASBURY PARK CITY (1049, 184)	ASBURY PARK CITY (934, 187)	CAMDEN CITY (7004, 185)	CAMDEN CITY (7121, 186)	FAIRFIELD TWP (305, 186)	CAMDEN CITY (6199, 712)	ASBURY PARK CITY (964, 711)	ASBURY PARK CITY (999, 710)
CAMDEN CITY (7044, 182)	CAMDEN CITY (7052, 183)	ASBURY PARK CITY (1006, 184)	ASBURY PARK CITY (1016, 181)	ASBURY PARK CITY (1019, 179)	ASBURY PARK CITY (972, 710)	FAIRFIELD TWP (322, 710)	SALEM CITY (354, 709)

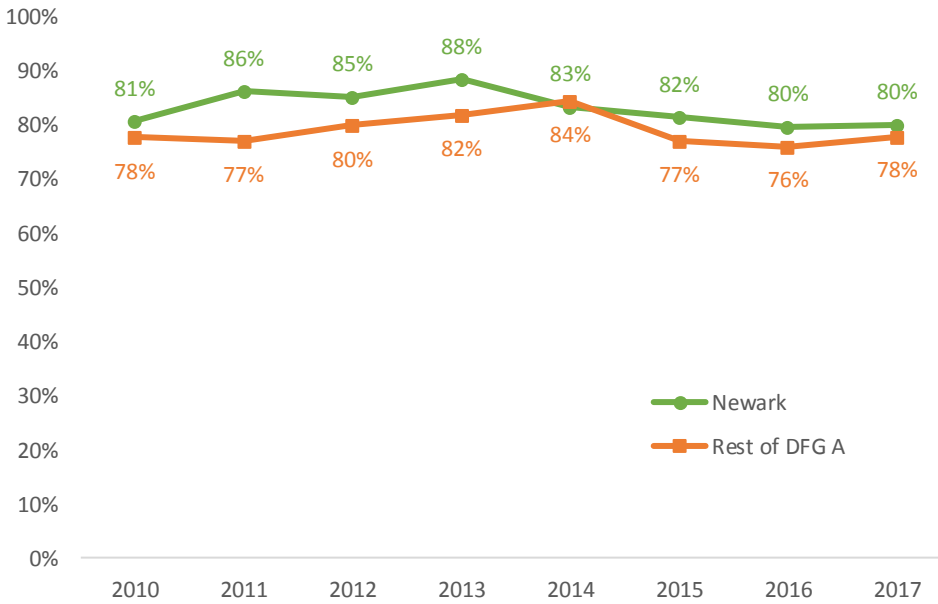
Source: analysis of data from NJDOE web site. Note: this graph ranks all 37 school districts in District Factor Group A (DFG A) by their average scaled score on grade 3-8 Math assessments. Each cell in the chart shows the district name, followed by the number of students tested and the average scaled score in parentheses. Charter school are mapped back to their geographic district for all districts. Newark is shown in the shaded boxes.

Figure A5 – Enrollment and Demographics of DFG A Districts (2017, Includes Charters)

Geographic District (includes charters)	Enrollment	% Free or Reduced						
		Lunch	% Asian	% Black	% Hispanic	% White	% Other	% ELL
FAIRFIELD TWP	624	100%	0%	54%	24%	11%	10%	0%
PASSAIC CITY	15,140	99%	2%	5%	92%	1%	0%	23%
PLEASANTVILLE CITY	3,866	92%	1%	36%	61%	1%	1%	18%
TRENTON CITY	13,368	89%	0%	51%	47%	1%	1%	16%
UNION CITY	11,978	88%	1%	1%	96%	2%	0%	23%
PERTH AMBOY CITY	11,147	87%	1%	6%	92%	2%	0%	22%
IRVINGTON TOWNSHIP	7,130	86%	0%	82%	17%	0%	1%	13%
ASBURY PARK CITY	2,233	84%	0%	56%	42%	2%	1%	9%
ELIZABETH CITY	26,491	83%	2%	19%	71%	8%	0%	19%
ATLANTIC CITY	7,284	83%	15%	37%	41%	5%	2%	14%
WEST NEW YORK TOWN	7,988	83%	1%	1%	91%	6%	0%	12%
SEASIDE HEIGHTS BORO	210	82%	2%	11%	47%	32%	7%	19%
<b>NEWARK CITY</b>	<b>52,051</b>	<b>80%</b>	<b>1%</b>	<b>56%</b>	<b>37%</b>	<b>6%</b>	<b>1%</b>	<b>8%</b>
WILDWOOD CITY	849	79%	0%	14%	62%	24%	0%	23%
FAIRVIEW BORO	1,388	79%	1%	2%	81%	16%	0%	14%
PAULSBORO BORO	1,139	78%	0%	53%	10%	35%	1%	1%
DOVER TOWN	3,192	78%	2%	5%	87%	6%	0%	8%
EGG HARBOR CITY	502	78%	2%	28%	37%	29%	5%	3%
COMMERCIAL TWP	559	76%	1%	14%	14%	70%	2%	0%
PATERSON CITY	28,249	76%	4%	23%	68%	5%	0%	16%
EAST NEWARK BORO	275	76%	1%	1%	87%	11%	0%	15%
KEANSBURG BORO	1,540	74%	2%	18%	22%	58%	1%	3%
PENNS GRV-CARNEY'S PT RE	2,065	73%	0%	35%	35%	28%	1%	8%
CAMDEN CITY	16,594	70%	1%	44%	54%	1%	1%	8%
SALEM CITY	1,156	66%	0%	74%	10%	14%	2%	1%
CITY OF ORANGE TWP	5,167	66%	0%	64%	35%	0%	0%	10%
MILLVILLE CITY	5,773	64%	1%	32%	23%	41%	3%	1%
EAST ORANGE	8,758	64%	0%	92%	7%	0%	0%	4%
VINELAND CITY	10,324	62%	2%	16%	57%	23%	2%	8%
NEW BRUNSWICK CITY	9,440	61%	1%	10%	89%	1%	0%	19%
BRIDGETON CITY	5,956	60%	0%	24%	70%	4%	2%	19%
BUENA REGIONAL	1,812	54%	2%	17%	27%	54%	0%	1%
NORTH WILDWOOD CITY	253	53%	1%	0%	13%	79%	6%	1%
LAWRENCE TWP	472	51%	1%	8%	13%	72%	6%	3%
DOWNE TWP	185	43%	1%	2%	4%	91%	2%	0%
WOODBINE BORO	230	41%	0%	33%	32%	30%	5%	0%
QUINTON TWP	347	37%	0%	17%	8%	63%	12%	1%
DFG A Total	265,731	78%	2%	33%	57%	7%	1%	13%

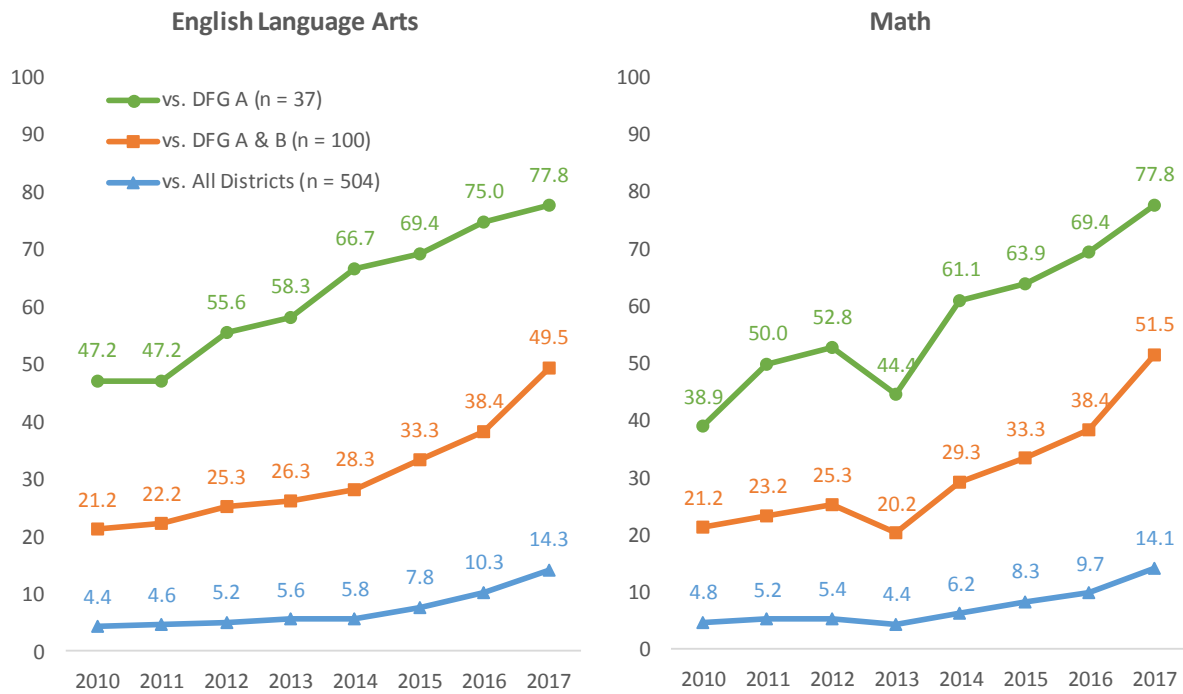
Source: analysis of data from NJDOE web site.

Figure A6 – Percentage Free or Reduced Lunch in Newark and Other DFG A Districts (Including Charters)



Source: analysis of data from NJDOE web site.

Figure A7 – Percentile Rank for the City of Newark (Gr. 3-8 Scaled Score, Inc. Charters)



Source: analysis of data from NJDOE web site.

Figure A8 - Percentile Rank for the Newark Public Schools (Gr. 3-8 Scaled Score, Excl. Charters)

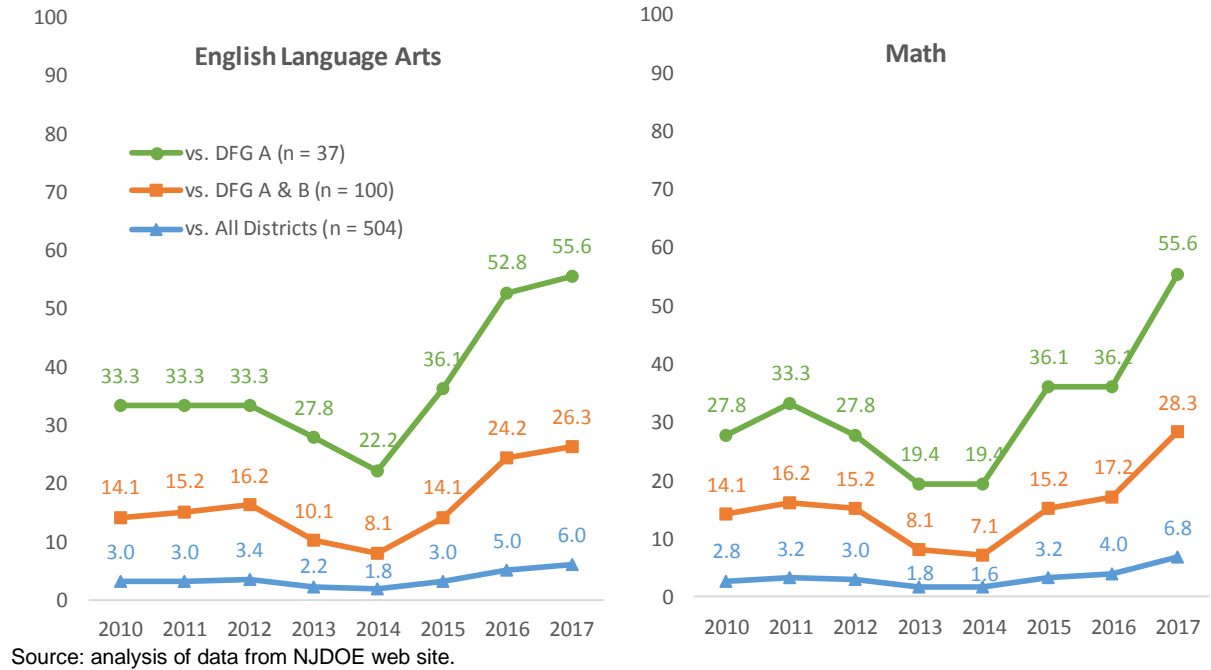
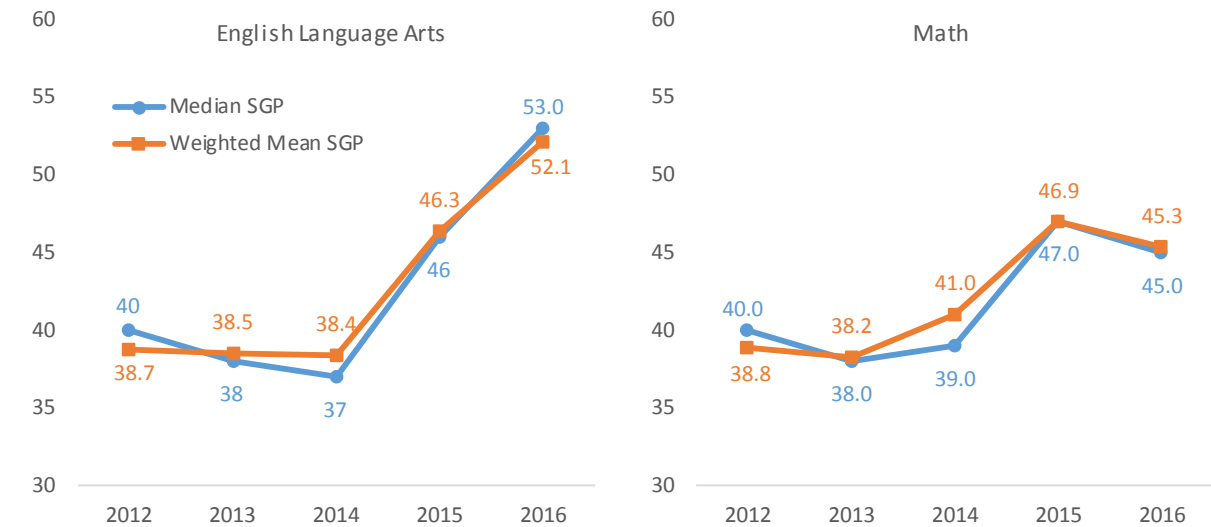
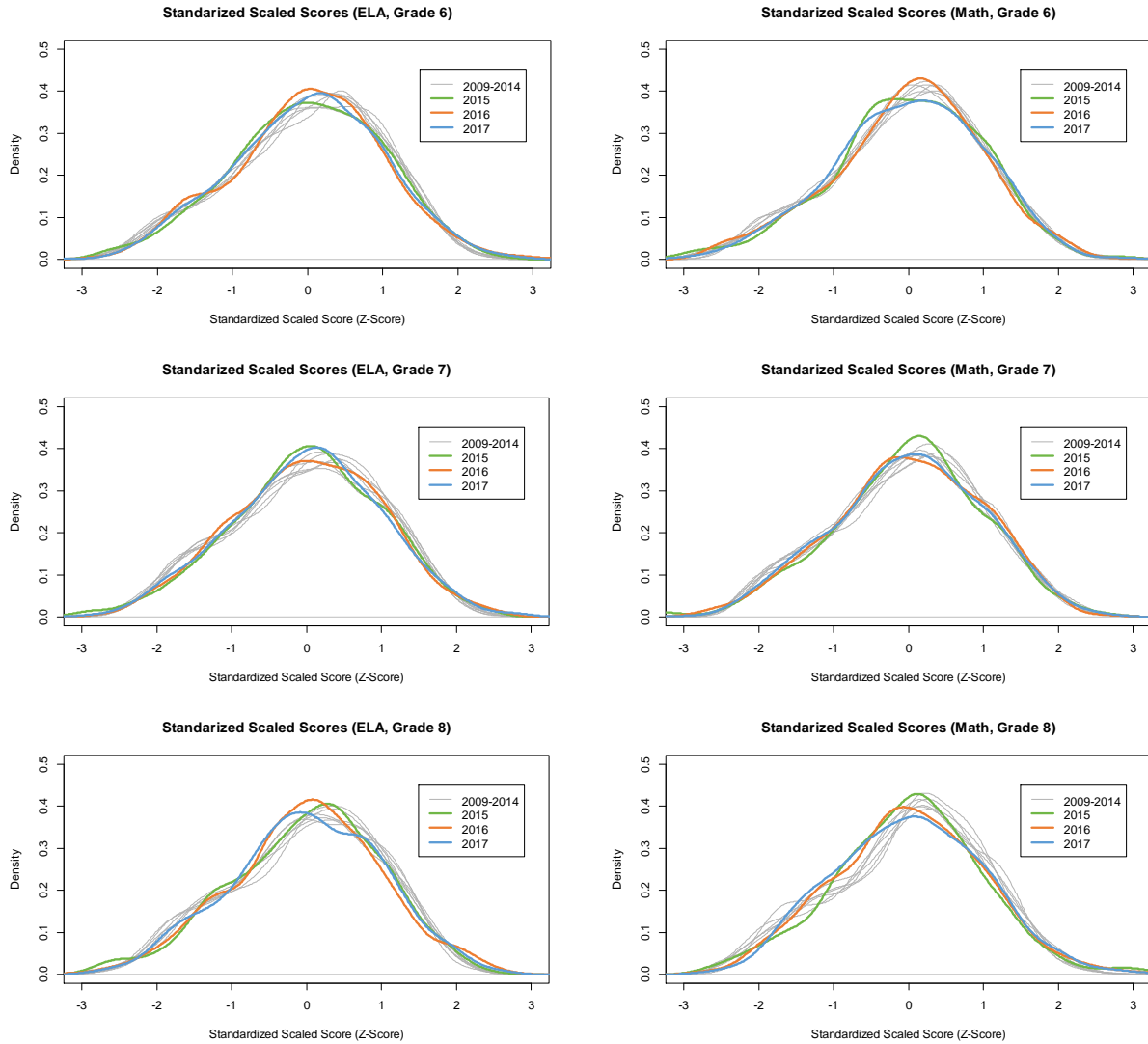


Figure A9 – Comparison between Median SGP and Weighted Mean SGP for NPS (2012 to 2016)



Source: analysis of data from NJDOE web site (Performance Reports) and NJSMART (Ed Analyzer).

Figure A10 – Distribution of Standardized Scaled Scores in New Jersey (2009 to 2017)



Note: this chart shows the distribution of school-level mean scaled scores in New Jersey once they have been standardized – using the school-level mean and standard deviation for each grade, subject, and year– to have a mean of zero and standard deviation of one. Source: analysis of data from NJDOE web site.