A New View of New York City School Performance, 2002-2009

EXECUTIVE SUMMARY

New York State's annual English Language Arts and mathematics exams in grades 3-8 are the measures by which school districts across the state determine whether students have mastered the required skills at each grade level. These exams are also the basis of local, state, and federal accountability systems, including New York City's. The percentage of New York City's students meeting or exceeding grade-level standards on the exams has increased dramatically since 2002—from 38 percent to 69 percent in English and from 41 percent to 82 percent in math.

These percentages have also increased in other parts of the state, though. A central question is whether New York City is improving at a faster rate than other school districts. That relative progress—which controls for any changes in the difficulty of the test from year to year—has never been thoroughly examined, with discussion limited mostly to the size of the "proficiency gap" between New York City and the rest of the state. This gap has narrowed significantly since 2002—by 9 percentage points in English and by 18 percentage points in math—but it is just one of many ways to gauge relative progress.

This report takes a closer look at the gains New York City has made in English and math compared to the rest of the state since 2002. It examines progress at the county, district, and school level, and makes several key findings:

- New York City's five boroughs made **more progress in English and math than any other county in the state** between 2002 and 2009.

- As a result, New York City now scores **higher in English and math than many other parts of the state** it used to score below, even though New York City's schools serve a much higher percentage of low-income and minority students than other school districts in the state.

- The fact that New York City lagged behind the rest of the state in 2002 did not make these gains inevitable. **Even after controlling for the low starting point, New York City's gains remain the largest in the state**. This is equally true in parts of the city that had higher scores and lower scores in 2002. At every level, New York City has outpaced the rest of the state.

- **Almost twice as many New York City schools now rank in the top 25%** of schools statewide compared to 2002.

The progress New York City's students have made on the state's exams is important because the exams are reliable indicators of future academic success. As a student's scores on the exams rise, so do his chances of graduating from high school. New York City's progress also challenges the notion that demography is destiny in education. Compared to the rest of the state, New York City serves many more low-income and minority students, demographic factors that have traditionally been correlated with low student achievement. As this report shows, New York City is giving many more students access to high-quality schools—schools that can help them make enough academic progress to put them on track to graduate from high school with a Regents diploma.

NEW YORK STATE'S TESTING PROGRAM

All students in grades 3-8 in New York State take an exam in English and math every year. In 2009, about 420,000 students in New York City took the exams. Students earn a numeric scale score on each exam. Although range of possible scores spans hundreds of points, most students score within a much narrower range. About 60 or 70 points separate the lowest and highest scoring districts in any given year, but those 60 or 70 points represent a difference of several years' worth of achievement.

The scale score translates into a performance level from 1 (not meeting standards) to 4 (exceeding standards). The percentage of students in a school or district who score at Level 3 or higher—in other words, who are proficient or better—is the most widely reported exam statistic. In the eyes of state and federal accountability systems, academic progress means increasing the number of students who achieve proficiency.

Proficiency levels make exam results more intuitive for the public, but they can distort the progress that schools and districts make. Consider two hypothetical schools. In one year, School A moves many of its students from Level 1 to Level 2 and from Level 3 to Level 4. School B doesn't move any of its students from Level 3 to Level 4 and sees many of its students fall from Level 2 back to Level 1. School A is clearly helping its students achieve better results, while students at School B are actually losing ground. The percentage of students who are proficient, however, suggests little change at either school.

Focusing on average scale scores instead of proficiency levels solves this problem, because the average scores take into account the progress of all students at every level, regardless of whether they have crossed the "proficiency" line. This report will focus on average scores for precisely this reason.

The state has made three major changes to its testing program since 2002:

- **More students tested:** Before 2006, the state tested students only in grades 4 and 8. Throughout this report, statistics for a given year reflect the results of all the students who took the test that year unless otherwise noted—students in grades 3-8 from 2006 to 2009, and students in grades 4 and 8 before 2006.

- **More English Language Learners tested in English:** Starting in 2007, the state required many more students who are learning English to take the English test. Previously, English Language Learners did not have to take this test until they had been enrolled in school for three years. Under the new policy, those students had to take the test after just one year of enrollment. This change caused a decline in English scores in many school districts, because the newly-tested students, by definition, were behind grade level in English but had not attended school long enough to catch up. No school system felt the impact of this change more than New York City. The number of English Language Learners who took the English test in New York City more than doubled in 2007, increasing from 24,349 to 55,335 (6 percent and 13 percent, respectively, of all students in the city who took the test).

- **Exams rescaled:** When it began testing students in grades 3-8 in 2006, the state also rescaled its exams. As part of this rescaling, the maximum possible score in grade 8 was revised downward. This change led to declines in average scores across the state between 2005 and 2006—generally between 25 and 30 points in each county or district. These declines outweighed gains before and after the rescaling in many parts of the state.

2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	Rank 2009
Nassau (63564, 698)	Nassau (63948, 700)	Nassau (66159, 702)	Nassau (64343, 707)	Nassau (191893, 678)	Nassau (192130, 682)	Nassau (190375, 685)	Nassau (189735, 688)	1
Putnam (5204, 696)	Westchester (42985, 695)	Westchester (43642, 697)	Westchester (43583, 701)	Putnam (15662, 673)	Putnam (15638, 678)	Putnam (15312, 682)	Putnam (15273, 685)	2
Westchester (41344, 695)	Putnam (5226, 693)	Putnam (5187, 695)	Putnam (5391, 699)	Westchester (129821, 672)	Saratoga (33319, 677)	Saratoga (33054, 680)	Saratoga (32837, 684)	3
Rockland (12361, 692)	Saratoga (11000, 691)	Saratoga (11293, 694)	Warren (3360, 698)	Saratoga (32911, 672)	Westchester (131683, 675)	Westchester (131115, 679)	Westchester (131535, 683)	4
Saratoga (10909, 691)	Rockland (12922, 691)	Suffolk (82154, 694)	Rockland (12286, 698)	Suffolk (237688, 670)	Suffolk (237873, 674)	Suffolk (236172, 678)	Suffolk (234801, 682)	5
Tompkins (3930, 691)	Suffolk (80120, 691)	Warren (3607, 694)	Suffolk (81313, 697)	Warren (9924, 668)	Rockland (38025, 673)	Ontario (15596, 677)	Rockland (37541, 681)	6
Warren (3561, 690)	Tompkins (3858, 690)	Rockland (12716, 694)	Saratoga (10761, 697)	Rockland (37548, 668)	Warren (9560, 673)	Warren (9280, 677)	Ontario (15438, 681)	7
Lewis (1560, 689)	Ontario (5743, 689)	Ontario (5579, 693)	Ontario (5629, 695)	Tompkins (10935, 668)	Tompkins (10485, 672)	Rockland (37548, 677)	Warren (8944, 680)	8
Livingston (3190, 689)	Yates (928, 689)	Tioga (2642, 691)	Hamilton (203, 694)	Ontario (16400, 667)	Ontario (16180, 672)	Hamilton (488, 676)	Tompkins (10182, 678)	9
Ontario (5621, 688)	Madison (3622, 688)	Madison (3866, 691)	Genesee (3219, 694)	Hamilton (532, 666)	Madison (10623, 669)	Madison (10407, 673)	Albany (36310, 678)	10
Suffolk (78421, 688)	Genesee (3250, 688)	Genesee (3293, 690)	Madison (3542, 693)	Albany (38013, 665)	Livingston (8291, 669)	Albany (36538, 673)	Hamilton (491, 678)	11
Broome (10161, 688)	Livingston (3085, 688)	Tompkins (4087, 690)	Broome (9516, 693)	Dutchess (43753, 664)	Hamilton (525, 669)	Livingston (7939, 673)	Madison (10197, 678)	12
Tioga (2881, 688)	Warren (3358, 688)	Niagara (10658, 690)	Tioga (2735, 693)	Livingston (8512, 664)	Dutchess (43284, 669)	Tompkins (10422, 673)	Genesee (8146, 678)	13
Madison (3729, 687)	Albany (12490, 688)	Broome (9715, 690)	Tompkins (3735, 693)	Niagara (29806, 664)	Broome (27328, 669)	Broome (26711, 673)	Livingston (7793, 678)	14
Essex (1412, 687)	Rensselaer (6905, 687)	Livingston (3050, 689)	Wyoming (1701, 693)	Broome (27600, 664)	Albany (37306, 669)	Tioga (7257, 672)	Queens (234974, 677)	15
Albany (12382, 687)	Tioga (2800, 687)	Hamilton (170, 689)	Washington (3263, 692)	Madison (10801, 664)	Genesee (8482, 668)	Genesee (8321, 672)	Niagara (28268, 677)	16
Genesee (3318, 687)	Wyoming (1770, 687)	Albany (13094, 689)	Livingston (2831, 692)	Genesee (8908, 664)	Niagara (29244, 668)	Dutchess (42440, 672)	Tioga (7217, 677)	17
Washington (3473, 687)	Niagara (10560, 686)	Otsego (2834, 689)	Wayne (5373, 692)	Richmond (50822, 663)	Tioga (7469, 668)	Niagara (28672, 672)	Dutchess (42224, 677)	18
Niagara (10860, 686)	Dutchess (15009, 686)	Dutchess (14535, 688)	Niagara (10371, 691)	Wayne (15238, 662)	Orange (59345, 667)	Queens (231926, 671)	Wyoming (4383, 676)	19
Wyoming (1736, 686)	Washington (3212, 686)	St. Lawrence (5261, 687)	Albany (12908, 691)	Queens (225525, 662)	Queens (233104, 667)	Orleans (6206, 671)	Broome (26650, 676)	20
Hamilton (199, 685)	Oneida (11596, 686)	Orleans (2542, 687)	Dutchess (15011, 691)	Orange (59696, 661)	Essex (3930, 666)	Monroe (103543, 671)	Essex (3672, 676)	21
Rensselaer (6866, 685)	Broome (9758, 686)	Orange (20605, 687)	Oneida (11183, 691)	Monroe (108261, 661)	Oneida (32195, 666)	Orange (58738, 671)	Monroe (102095, 676)	22
Delaware (2320, 685)	Onondaga (23360, 686)	Cayuga (3493, 687)	Erie (42682, 689)	Oneida (32524, 661)	St. Lawrence (14092, 666)	Erie (120497, 671)	Erie (118853, 676)	23
Oneida (11257, 685)	Otsego (2966, 685)	Oneida (11431, 687)	Yates (837, 689)	Tioga (7576, 661)	Monroe (106455, 666)	Richmond (51484, 671)	Richmond (52104, 676)	24
Dutchess (14482, 685)	Lewis (1463, 685)	Wayne (5706, 687)	Orleans (2332, 689)	Lewis (4179, 661)	Erie (122286, 666)	Wayne (14413, 671)	Orleans (6178, 676)	25
Chenango (3020, 684)	Erie (43037, 685)	Erie (43985, 687)	St. Lawrence (5107, 689)	Jefferson (16870, 661)	Wayne (14776, 666)	Seneca (4120, 670)	Rensselaer (19912, 675)	26
Otsego (2861, 684)	St. Lawrence (5300, 685)	Lewis (1448, 686)	Orange (20236, 689)	Herkimer (9705, 660)	Richmond (51699, 666)	Oneida (31458, 670)	Orange (58192, 675)	27
St. Lawrence (5458, 684)	Wayne (5564, 685)	Cattaraugus (4920, 686)	Schenectady (7355, 689)	Rensselaer (20817, 660)	Washington (8842, 666)	St. Lawrence (13563, 670)	Wayne (13923, 675)	28
Cayuga (3748, 684)	Orleans (2528, 685)	Washington (3292, 685)	Monroe (37300, 689)	Erie (129510, 660)	Jefferson (16718, 665)	Essex (3792, 670)	Cayuga (9388, 675)	29
Erie (42619, 683)	Orange (20683, 684)	Schenectady (7318, 685)	Otsego (2814, 688)	Cayuga (10172, 660)	Seneca (4170, 665)	Cayuga (9455, 669)	St. Lawrence (13402, 675)	30
Schenectady (7085, 683)	Hamilton (194, 684)	Monroe (38351, 685)	Onondaga (23583, 688)	Washington (9313, 659)	Onondaga (67724, 665)	Onondaga (67222, 669)	Washington (8519, 675)	31
Yates (976, 683)	Cattaraugus (4795, 684)	Schoharie (1583, 685)	Greene (2334, 688)	Ulster (25122, 659)	Ulster (24542, 665)	Wyoming (4477, 669)	Oneida (30994, 675)	32
Wayne (5624, 682)	Chautauqua (7109, 684)	Fulton (3018, 685)	Allegany (2411, 688)	Onondaga (69580, 659)	Cayuga (9804, 665)	Jefferson (16274, 669)	Seneca (4127, 675)	33
Franklin (2691, 682)	Essex (1444, 684)	Chautauqua (7004, 685)	Ulster (8584, 688)	St. Lawrence (14453, 659)	Lewis (4148, 665)	Washington (8847, 669)	Cortland (6321, 674)	34
Clinton (4308, 682)	Cayuga (3533, 683)	Essex (1530, 684)	Herkimer (3499, 688)	Schenectady (21779, 659)	Herkimer (9547, 665)	Herkimer (9458, 669)	Otsego (7261, 674)	35
Cattaraugus (4947, 682)	Schenectady (7075, 683)	Yates (926, 684)	Cayuga (3622, 688)	Essex (4007, 659)	Orleans (6597, 664)	Rensselaer (20415, 669)	Onondaga (66539, 674)	36
Chautauqua (7331, 682)	Oswego (7689, 683)	Ulster (8939, 684)	Chenango (2904, 688)	Seneca (4385, 659)	Rensselaer (20515, 664)	Ulster (23728, 669)	Chautauqua (18702, 674)	37
Columbia (3070, 682)	Jefferson (5444, 683)	Clinton (4264, 684)	Fulton (2922, 688)	Cattaraugus (13541, 659)	Allegany (6699, 664)	Cattaraugus (12861, 669)	Jefferson (16641, 674)	38
Onondaga (23180, 682)	Delaware (2253, 683)	Rensselaer (7118, 684)	Essex (1414, 688)	Orleans (6841, 659)	Clinton (11297, 664)	Lewis (3965, 669)	Herkimer (9158, 674)	39
Monroe (37504, 682)	Fulton (2877, 682)	Onondaga (23815, 684)	Lewis (1460, 687)	Schoharie (4925, 658)	Otsego (7829, 664)	Cortland (6490, 668)	Ulster (22944, 674)	40
Fulton (3021, 682)	Allegany (2461, 682)	Wyoming (1604, 684)	Seneca (1506, 687)	Otsego (8038, 658)	Cattaraugus (13139, 664)	Otsego (7532, 668)	Lewis (3850, 674)	41
Orleans (2569, 682)	Ulster (9017, 682)	Jefferson (5441, 684)	Delaware (2041, 687)	Wyoming (4855, 658)	Sullivan (9811, 663)	Chautauqua (18984, 668)	Clinton (10599, 673)	42
Orange (18982, 682)	Schoharie (1627, 682)	Steuben (5741, 684)	Chautauqua (6912, 687)	Allegany (6771, 658)	Wyoming (4588, 663)	Clinton (10867, 668)	Allegany (6374, 673)	43
Steuben (5797, 681)	Herkimer (3314, 682)	Oswego (7983, 683)	Rensselaer (7138, 687)	Chautauqua (19686, 658)	Schoharie (4720, 663)	Allegany (6560, 667)	Cattaraugus (12760, 673)	44
Seneca (1592, 681)	Monroe (37458, 681)	Delaware (2133, 683)	Oswego (7448, 686)	Greene (6984, 657)	Greene (6908, 663)	Oswego (20155, 667)	Oswego (19529, 673)	45
Ulster (8952, 681)	Steuben (5352, 681)	Chenango (2939, 683)	Jefferson (5686, 686)	Clinton (11601, 657)	Chautauqua (19153, 663)	Yates (2494, 667)	Steuben (14545, 673)	46
Jefferson (5632, 680)	Columbia (2954, 681)	Seneca (1536, 683)	Queens (77162, 685)	Oswego (21368, 657)	Oswego (20666, 663)	Steuben (14815, 667)	Schenectady (20935, 673)	47
Herkimer (3512, 680)	Greene (2395, 681)	Chemung (3980, 683)	Cortland (2291, 685)	Steuben (15669, 657)	Steuben (15179, 663)	Schoharie (4517, 667)	Chemung (10874, 673)	48
Schoharie (1678, 680)	Clinton (4096, 681)	Columbia (2988, 682)	Franklin (2503, 685)	Columbia (7944, 656)	Schenectady (21523, 663)	Greene (6577, 667)	Greene (6321, 673)	49
Cortland (2444, 680)	Chemung (4041, 680)	Allegany (2450, 682)	Cattaraugus (4530, 685)	Fulton (8587, 656)	Fulton (8439, 662)	Fulton (8337, 667)	Manhattan (114050, 672)	50
Allegany (2315, 679)	Franklin (2728, 680)	Herkimer (3606, 682)	Richmond (17614, 685)	Cortland (6796, 656)	Cortland (6632, 662)	Chemung (10792, 667)	Delaware (5412, 672)	51
Chemung (4084, 679)	Chenango (3097, 680)	Greene (2389, 682)	Montgomery (2273, 685)	Sullivan (9902, 656)	Chemung (10907, 662)	Schenectady (21237, 666)	Schuyler (1765, 672)	52
Oswego (7741, 679)	Cortland (2398, 680)	Cortland (2422, 681)	Clinton (3999, 685)	Yates (2657, 656)	Yates (2629, 662)	Schuyler (1799, 665)	Yates (2408, 672)	53
Greene (2361, 679)	Montgomery (2385, 680)	Franklin (2716, 681)	Steuben (5648, 685)	Chenango (8176, 655)	Columbia (7771, 661)	Sullivan (9484, 665)	Schoharie (4504, 671)	54
Montgomery (2470, 678)	Richmond (18113, 680)	Sullivan (3703, 681)	Sullivan (3567, 685)	Chemung (11097, 654)	Chenango (8052, 661)	Delaware (5595, 665)	Fulton (8002, 671)	55
Sullivan (3392, 677)	Sullivan (3591, 679)	Montgomery (2522, 680)	Schoharie (1669, 683)	Franklin (7605, 654)	Delaware (5732, 661)	Columbia (7431, 665)	Brooklyn (268473, 670)	56
Richmond (18063, 676)	Seneca (1649, 679)	Queens (77830, 680)	Columbia (2946, 683)	Montgomery (6935, 654)	Franklin (7558, 660)	Chenango (7760, 665)	Columbia (7231, 670)	57
Schuyler (742, 674)	Schuyler (728, 677)	Richmond (18029, 679)	Chemung (3805, 683)	Delaware (5954, 654)	Schuyler (1913, 660)	Franklin (7341, 664)	Montgomery (6705, 670)	58
Queens (77029, 671)	Queens (80450, 676)	Schuyler (702, 677)	Brooklyn (93996, 679)	Manhattan (117545, 653)	Montgomery (6888, 659)	Montgomery (6766, 664)	Franklin (7113, 670)	59
Brooklyn (96958, 667)	Brooklyn (99196, 671)	Brooklyn (98328, 674)	Manhattan (38704, 678)	Brooklyn (272335, 653)	Brooklyn (276623, 658)	Manhattan (114692, 664)	Chenango (7534, 670)	60
Manhattan (39184, 665)	Manhattan (41341, 669)	Manhattan (40324, 674)	Schuyler (706, 678)	Schuyler (1952, 653)	Manhattan (118270, 657)	Brooklyn (269919, 664)	Sullivan (9282, 670)	61
Bronx (64302, 653)	Bronx (66814, 660)	Bronx (66383, 662)	Bronx (64725, 668)	Bronx (189392, 641)	Bronx (196137, 647)	Bronx (191334, 653)	Bronx (191690, 662)	62

Figure 1: Average Combined ELA and Math Scores of Counties in New York State. 2002-2009

THE FIVE BOROUGHS COMPARED TO OTHER COUNTIES

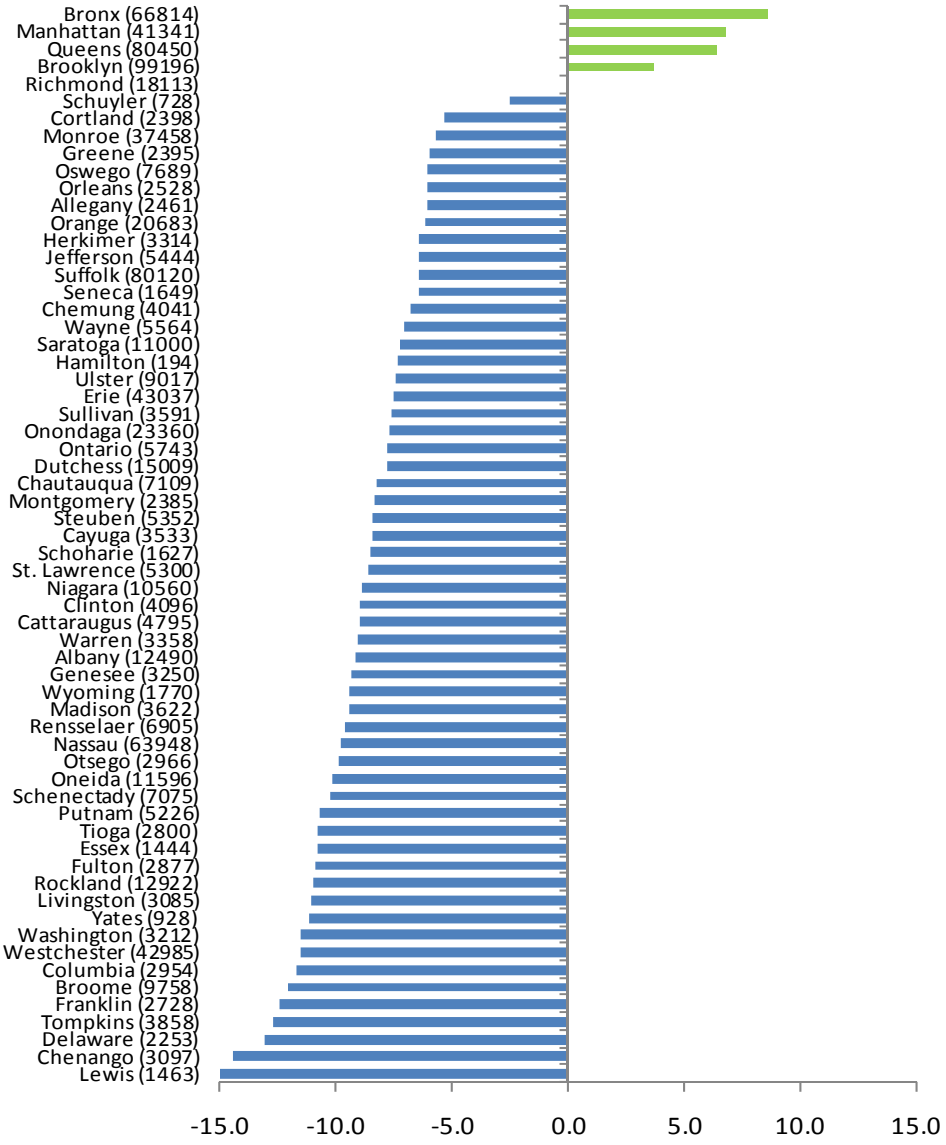
One way to illustrate the progress New York City has made relative to the rest of the state is to rank the state's 62 counties based on their students' average scores on the English and math exams each year. Counties that raise their scores more than the rest of the state should see their rankings rise over time.

Figure 1 ranks each county based on its average English and math scores in all tested grades between 2002 and 2009. In 2002, the Bronx, Manhattan, Brooklyn, and Queens had the lowest average scores in the state. Staten Island had the sixth-lowest scores. Between 2002 and 2009, New York City's counties improved their ranks substantially. Queens passed 44 other counties and moved up to number 15 in the state. Staten Island passed 33 other counties; Manhattan passed 11; and Brooklyn passed 3. The Bronx remained the lowest-ranked county in the state.

These rankings show that New York City has made impressive gains compared to the rest of the state since 2002. Even so, the rankings can be misleading, because they don't take into account the number of points that separate counties from each other. For example, the rankings suggest that Queens and Staten Island made much larger improvements than other areas of New York City between 2002 and 2009.

A closer look at the scores shows that other counties in New York City made just as much progress as Queens and Staten Island, and in some cases even more. For example, although Queens' ranking shot up 44 positions between 2002 and 2009 while the Bronx's ranking remained the same, the Bronx actually improved its average score more than Queens or any other county in the state. The five most-improved counties in the state between 2002 and 2009 were, in order, the Bronx, Manhattan, Queens, Brooklyn, and Staten Island (Figure 2). All five boroughs made large enough gains to achieve a net increase in average score between 2002 and 2009 despite the rescaling of the test in 2006. Every other county in the state saw its average score decline over that period.

Figure 2: Change in Combined Average ELA and Math Scores of Counties in New York State, 2002-2009



The Bronx's low ranking reflects the fact that the old school governance system left it so far behind that even the largest score gains in the state were not enough for it to catch up to other areas. The case of the Bronx demonstrates that rankings by average score are a useful but incomplete measure of success, because they allow past failures to obscure current growth and are often more reflective of the challenges students bring with them to schools than of how much schools are helping students learn. Indeed, the lowest-ranked counties tend to have the highest concentrations of poor and minority students, who have lagged behind other students on the state exams since they began.

Still, the fact that the Bronx and New York City's other counties had fallen so far behind the rest of the state by 2002 did not make their gains since then inevitable. A straightforward regression analysis makes this point clear. This analysis compares a county's expected score gain between 2002 and 2009—based on its average score in 2002—with its actual score gain. Counties that had a higher average score in 2002 would be expected to make a smaller gain than counties that had a lower average score.

Figure 3: Expected vs. Actual Change in Average Combined ELA and Math Scores of Counties in New York State, 2002-2009

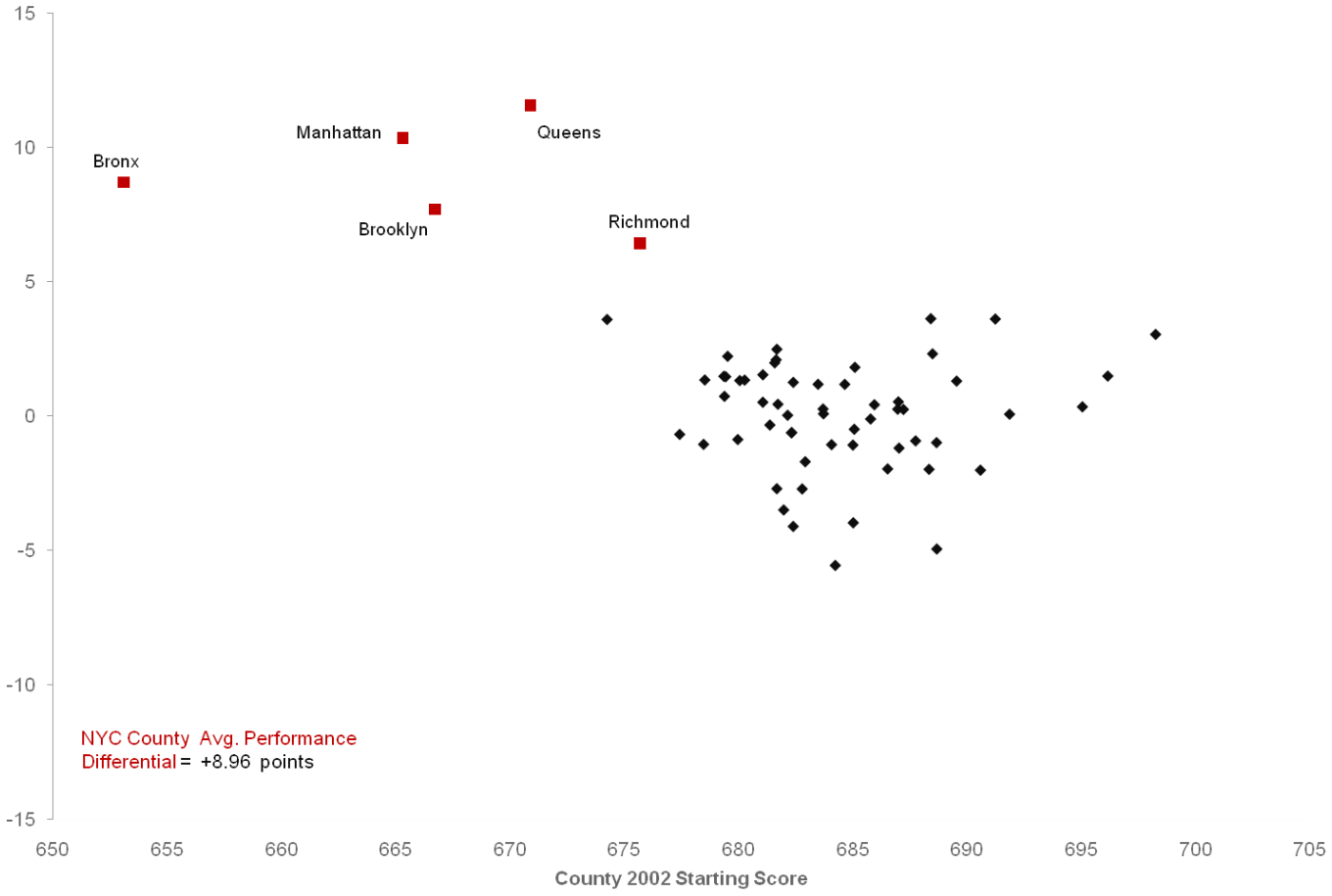


Figure 3 shows the results of this analysis. Most counties in the state outside of New York City, whether they were low or high performing in 2002, achieved an actual gain that was within a point or two of their expected gain. The story for New York City is much different. All five of New York City's counties surpassed their expected gains by more than five points. Manhattan and Queens beat their expected gains by more than ten points. On average, the five boroughs surpassed their expected gains by almost nine points. No other county came close to beating its expected gain by as much as all five of New York City's counties beat theirs. In other words, even controlling for its lower starting position, New York City has made much more progress than the rest of the state has since 2002.

THE 32 SCHOOL DISTRICTS COMPARED TO OTHER LARGE DISTRICTS

The county-level analysis, while compelling, is somewhat limited by the fact that every county in New York City started from such a low level in 2002. Focusing on individual school districts instead of counties eliminates this problem, since there is greater variety in average scores at the district level.

New York City's progress at the district level is as compelling as its progress at the county level. Across all grades in English and math, 27 of the 30 most improved districts between 2002 and 2009, including the top 17, were in New York City (Figure 4).

Figure 5 plots New York City's 32 school districts and the next-largest 32 school districts in the state based on their average combined English and math scores in 2002. The red dots represent New York City's school districts, and the black dots represent other school districts. While many of New York City's districts had low average scores in 2002, several had scores that put them in the middle or on the upper end of the group.

The arrows in Figure 5 illustrate each district's change in average score between 2002 and 2009. At every end of the spectrum, with almost no exceptions, districts in New York City outperformed districts that started from a similar place in 2002. This is especially true among districts that started with a lower score, but it's also true among districts that started with some of the highest average scores.

Figure 4: Change in Combined Average ELA and Math Scores for 64 Largest Districts in New York State, 2002-2009

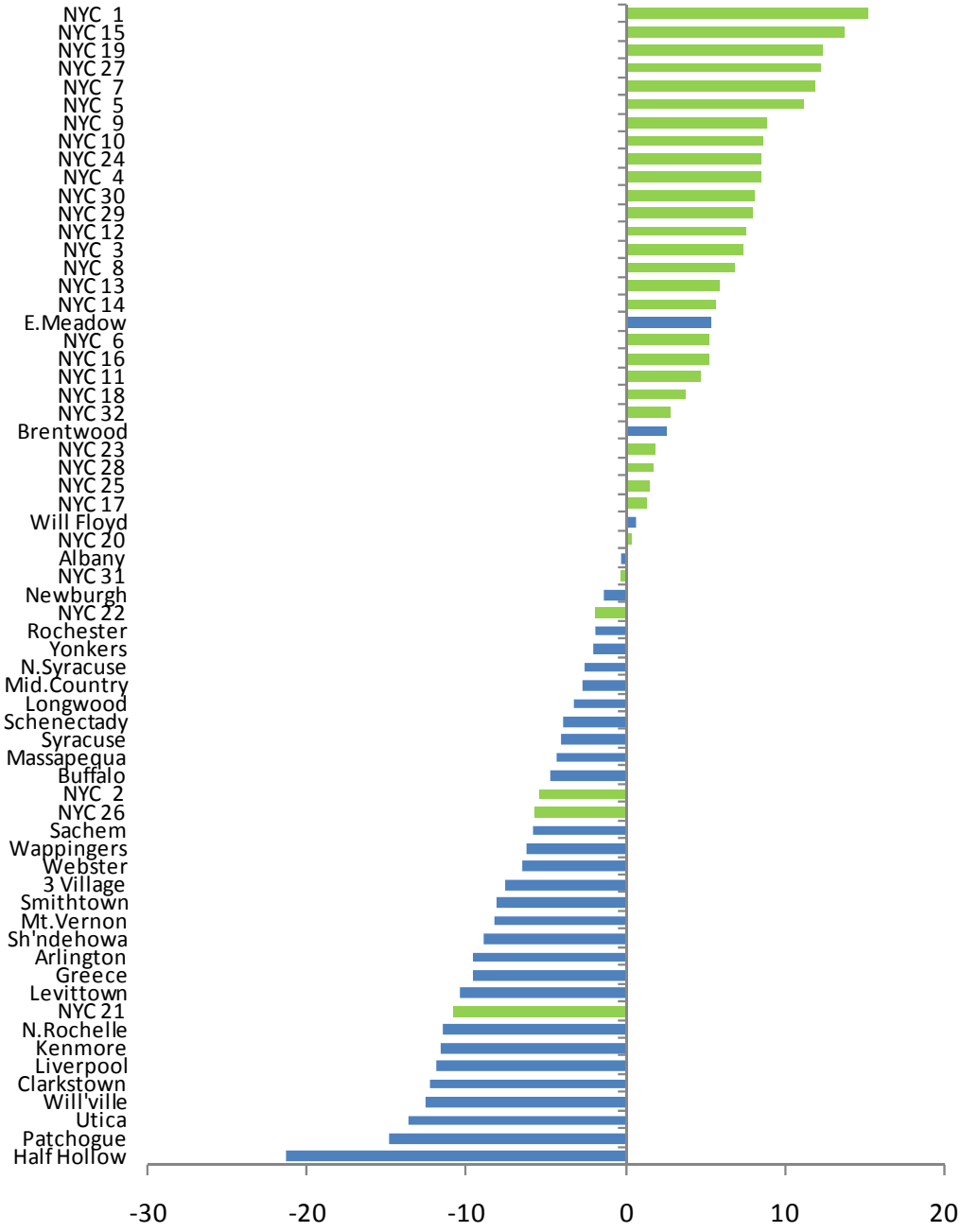
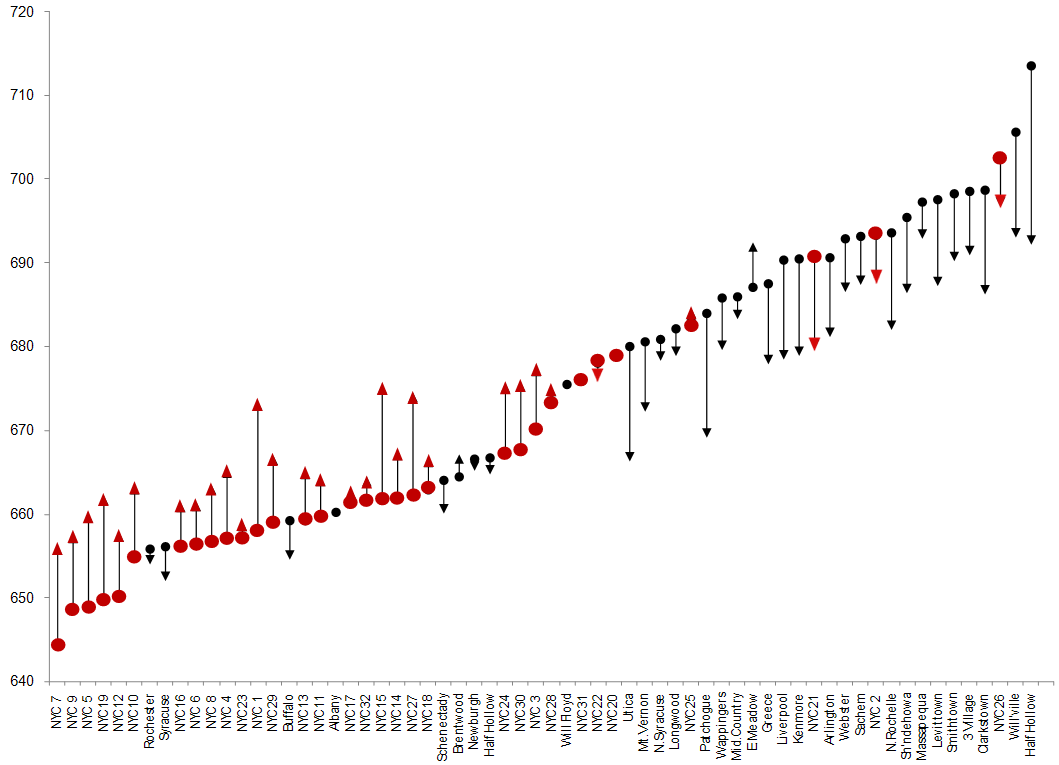
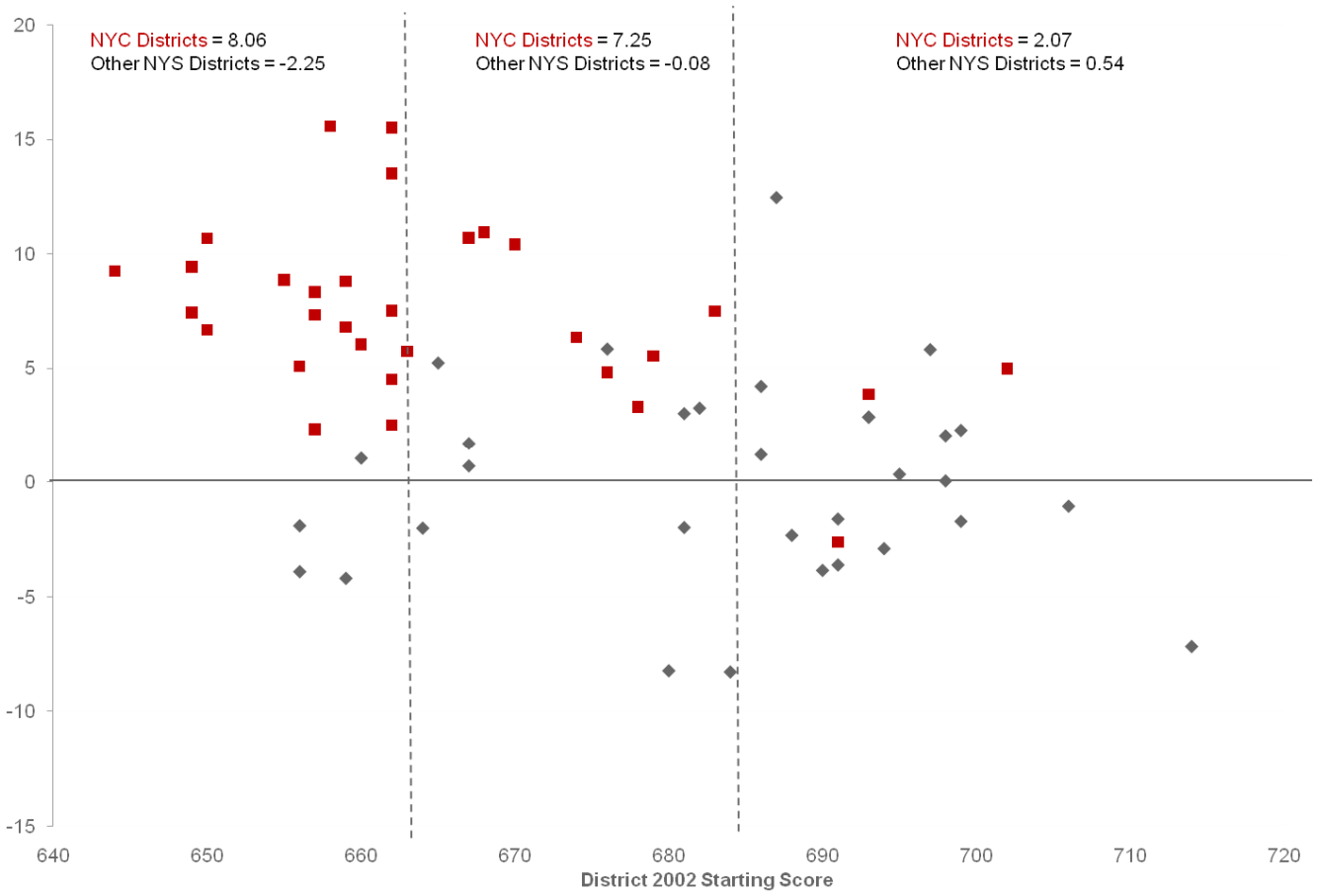


Figure 5: Change in Combined Average ELA and Math Scores for 64 Largest Districts in New York State, 2002-2009



A regression analysis comparing the expected gain for each district to its actual gain confirms this point (Figure 6). Districts in New York City whose 2002 scores put them in the lowest third of the 64 largest districts exceeded their expected gains by an average of eight points. Other districts in the lowest third underperformed their expected gains by an average of more than two points. New York City districts in the middle third beat their expected gains by an average of more than seven points, while other districts in the middle third fell short of their expected gains by an average of one tenth of a point. New York City districts in the highest-performing third outperformed their expected gains by an average of two points, compared to half a point for other districts in the highest third.

Figure 6: Expected vs. Actual Change in Average Combined ELA and Math Scores of 64 Largest Districts in New York State, 2002-2009



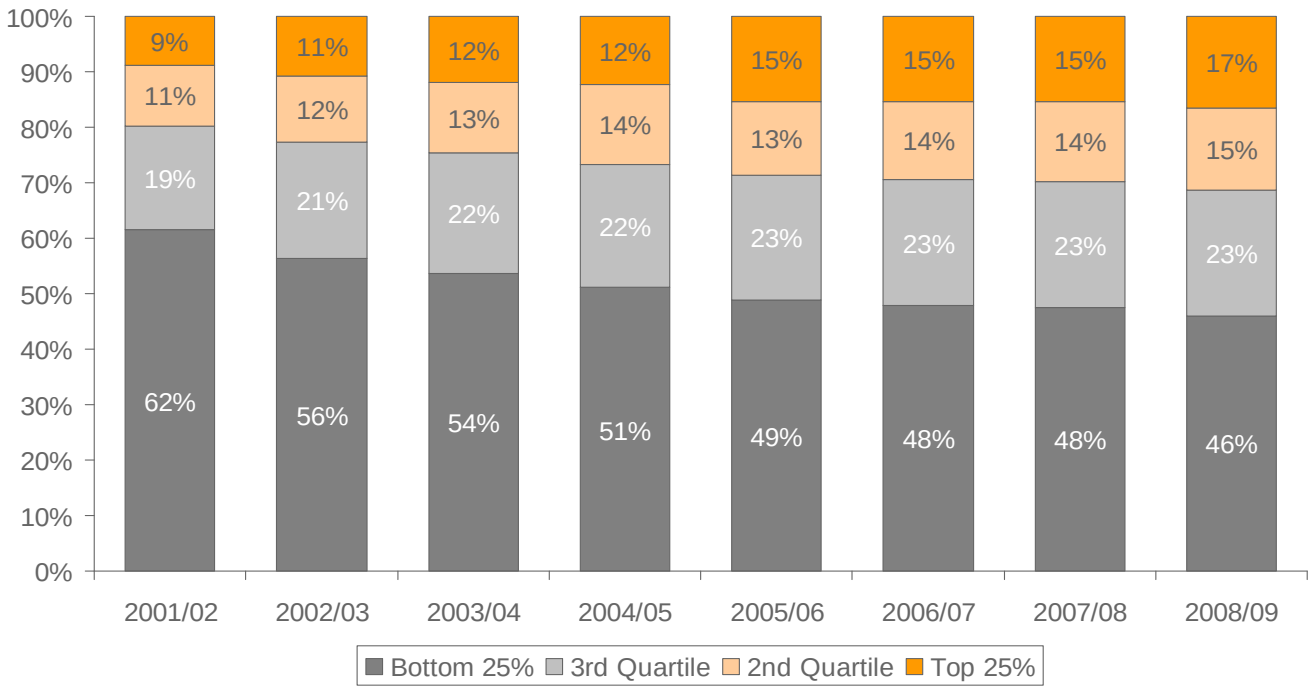
Even at the district level, it's clear that New York City has substantially outperformed the rest of the state in reading and math since 2002, and that this progress didn't happen simply because New York City started so far behind.

NEW YORK CITY'S SCHOOLS COMPARED TO OTHER SCHOOLS

The academic progress that is so apparent at the country and district level in New York City has also had a major impact at the school level. Simply put, many more New York City schools now rank among the top schools in the state.

In 2002, 62 percent of New York City's schools ranked in the bottom 25 percent of all schools statewide based on their average combined English and math scores (Figure 7). Only 9 percent ranked in the top 25 percent, while 11 percent ranked in the second quartile (between the 25th and 50th percentiles). Between 2002 and 2009, this distribution changed dramatically. The percentage of New York City schools in the top two quartiles rose 12 percentage points. The percentage of schools in the top quartile almost doubled, from 9 percent to 17 percent. Meanwhile, the percentage of schools in the bottom quartile fell 16 points, from 62 percent to 46 percent.

Figure 7: Quartile Distribution of New York City Schools Compared to All Schools in New York State Based on Average Combined ELA and Math Scores, 2002-2009



2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	Rank 2009
Nassau (16246, 671)	Nassau (16307, 682)	Nassau (16353, 680)	Nassau (16241, 690)	Nassau (16094, 696)	Nassau (15566, 698)	Nassau (15402, 700)	Nassau (15307, 704)	1
Putnam (1279, 668)	Westchester (11313, 676)	Westchester (11166, 675)	Westchester (11114, 682)	Westchester (11100, 689)	Putnam (1260, 690)	Putnam (1254, 697)	Putnam (1187, 699)	2
Westchester (10729, 667)	Rockland (3249, 671)	Putnam (1306, 671)	Putnam (1308, 679)	Putnam (1268, 688)	Westchester (10907, 688)	Westchester (11071, 692)	Westchester (10996, 697)	3
Lewis (353, 663)	Suffolk (20358, 669)	Rockland (3084, 670)	Rockland (3065, 678)	Suffolk (20004, 685)	Suffolk (19444, 687)	Suffolk (19295, 690)	Queens (19423, 696)	4
Rockland (3063, 662)	Putnam (1372, 668)	Suffolk (20497, 670)	Suffolk (20286, 678)	Rockland (3107, 683)	Saratoga (2586, 687)	Rockland (3064, 690)	Suffolk (19319, 695)	5
Saratoga (2741, 661)	Tioga (657, 667)	Ontario (1326, 669)	Tioga (593, 675)	Saratoga (2714, 682)	Warren (767, 685)	Saratoga (2779, 687)	Richmond (4383, 694)	6
Suffolk (20385, 661)	Madison (881, 667)	Tioga (575, 668)	Saratoga (2659, 674)	Tompkins (807, 682)	Rockland (3242, 685)	Queens (19499, 687)	Wyoming (365, 693)	7
Tompkins (1008, 661)	Niagara (2615, 666)	Niagara (2474, 668)	Hamilton (53, 674)	Tioga (590, 681)	Tioga (582, 685)	Warren (701, 686)	Rockland (2999, 693)	8
Madison (900, 660)	Saratoga (2761, 666)	Saratoga (2782, 667)	Niagara (2424, 673)	Genesee (667, 681)	Tompkins (814, 684)	Ontario (1270, 686)	Saratoga (2630, 692)	9
Livingston (743, 660)	Tompkins (911, 666)	Albany (3168, 667)	Ontario (1347, 672)	Richmond (4276, 681)	Queens (19321, 684)	Richmond (4306, 686)	Warren (717, 691)	10
Tioga (667, 659)	Oneida (2879, 666)	Madison (873, 666)	Albany (3094, 672)	Niagara (2408, 680)	Niagara (2223, 683)	Tompkins (780, 686)	Niagara (2334, 690)	11
Albany (3127, 659)	Warren (878, 665)	Tompkins (970, 666)	Warren (767, 672)	Livingston (677, 680)	Ontario (1279, 683)	Niagara (2276, 684)	Manhattan (9319, 689)	12
Ontario (1401, 659)	Genesee (757, 665)	Warren (834, 665)	Madison (833, 671)	Ontario (1283, 680)	Albany (2989, 682)	Albany (3024, 683)	Ontario (1198, 689)	13
Broome (2371, 659)	Ontario (1460, 664)	Broome (2234, 665)	Oneida (2653, 671)	Broome (2215, 680)	Richmond (4314, 682)	Wyoming (329, 683)	Cayuga (755, 689)	14
Niagara (2657, 658)	Albany (3220, 664)	Lewis (358, 665)	Livingston (657, 671)	Queens (19589, 680)	Orange (4844, 681)	Lewis (302, 683)	Brooklyn (22300, 689)	15
Otsego (691, 658)	Broome (2454, 664)	Schenectady (1793, 665)	Genesee (721, 671)	Essex (290, 679)	Dutchess (3544, 680)	Orange (4721, 682)	Albany (2909, 688)	16
Warren (869, 658)	Livingston (762, 664)	Oneida (2793, 664)	Tompkins (875, 670)	Albany (3174, 679)	Hamilton (42, 680)	Rensselaer (1610, 682)	Livingston (634, 688)	17
Oneida (2766, 657)	Orleans (613, 664)	Livingston (692, 664)	Orleans (535, 670)	Wayne (1177, 679)	Genesee (663, 680)	Hamilton (39, 682)	Genesee (649, 688)	18
Genesee (788, 657)	Onondaga (5882, 664)	Orleans (568, 664)	Dutchess (3654, 670)	Oneida (2530, 678)	Oneida (2623, 679)	Dutchess (3464, 681)	Tioga (593, 687)	19
Rensselaer (1743, 656)	Washington (724, 664)	Dutchess (3525, 664)	Erie (10070, 670)	Warren (780, 678)	Otsego (627, 679)	Broome (2244, 681)	Tompkins (858, 687)	20
Dutchess (3689, 656)	Dutchess (3731, 663)	Erie (10437, 664)	Orange (4888, 670)	Dutchess (3494, 678)	Washington (686, 679)	Madison (849, 681)	Erie (9728, 686)	21
Cayuga (909, 656)	Orange (5012, 663)	Schoharie (355, 664)	Washington (757, 670)	Herkimer (751, 678)	Broome (2114, 679)	Oneida (2523, 681)	Dutchess (3338, 686)	22
Essex (293, 656)	Rensselaer (1643, 663)	Genesee (756, 663)	Wyoming (391, 670)	Cayuga (798, 677)	Livingston (652, 678)	Erie (9752, 681)	Lewis (296, 686)	23
Chenango (724, 656)	Yates (234, 663)	Orange (5052, 663)	Queens (20271, 670)	Orange (4777, 677)	Essex (324, 678)	Ulster (1875, 680)	Oneida (2586, 685)	24
Erie (10703, 655)	Lewis (356, 662)	St. Lawrence (1167, 663)	Broome (2282, 669)	Madison (869, 676)	Rensselaer (1650, 678)	Monroe (8438, 680)	Orange (4803, 685)	25
Washington (779, 655)	Schenectady (1707, 662)	Otsego (629, 663)	Monroe (8673, 669)	Monroe (8443, 675)	Lewis (321, 678)	Otsego (596, 680)	Broome (2214, 685)	26
Schenectady (1710, 655)	Erie (10734, 662)	Monroe (9086, 663)	Cayuga (846, 669)	Erie (10466, 675)	Cayuga (752, 678)	Orleans (505, 680)	Otsego (582, 685)	27
Jefferson (1387, 655)	Schoharie (418, 662)	Onondaga (5763, 662)	Allegany (533, 669)	Cattaraugus (1059, 675)	Herkimer (739, 678)	Livingston (608, 680)	Monroe (8280, 685)	28
St. Lawrence (1299, 654)	St. Lawrence (1246, 662)	Cayuga (782, 662)	Greene (538, 669)	Rensselaer (1709, 675)	Sullivan (766, 678)	Greene (548, 680)	Washington (698, 685)	29
Onondaga (5959, 654)	Cayuga (816, 662)	Jefferson (1376, 662)	Schenectady (1746, 668)	St. Lawrence (1085, 675)	Chautauqua (1463, 677)	Sullivan (765, 680)	Madison (798, 684)	30
Wyoming (431, 654)	Jefferson (1370, 662)	Wayne (1348, 662)	St. Lawrence (1105, 668)	Greene (557, 674)	Erie (9672, 677)	Seneca (306, 680)	Jefferson (1366, 684)	31
Wayne (1403, 654)	Wayne (1328, 662)	Essex (359, 662)	Rensselaer (1707, 668)	Sullivan (762, 674)	Seneca (335, 677)	Genesee (635, 680)	St. Lawrence (1029, 683)	32
Orange (4940, 654)	Wyoming (420, 662)	Washington (769, 661)	Ulster (2016, 668)	Otsego (574, 674)	Monroe (8423, 677)	Onondaga (5336, 679)	Ulster (1787, 683)	33
Delaware (542, 654)	Cattaraugus (1119, 662)	Rensselaer (1756, 661)	Herkimer (770, 668)	Chenango (608, 674)	Orleans (500, 676)	Schuyler (132, 679)	Onondaga (5493, 683)	34
Sullivan (843, 653)	Oswego (1886, 661)	Wyoming (407, 660)	Otsego (641, 667)	Onondaga (5533, 674)	Greene (521, 676)	Jefferson (1356, 679)	Rensselaer (1608, 683)	35
Ulster (2198, 653)	Otsego (676, 660)	Franklin (665, 660)	Onondaga (5628, 667)	Jefferson (1360, 674)	Jefferson (1376, 676)	Herkimer (726, 679)	Oswego (1594, 683)	36
Monroe (9539, 653)	Monroe (9698, 660)	Chautauqua (1672, 660)	Wayne (1206, 667)	Schenectady (1705, 674)	Madison (880, 676)	Tioga (578, 679)	Fulton (640, 682)	37
Seneca (400, 653)	Franklin (667, 660)	Ulster (2074, 660)	Richmond (4379, 667)	Ulster (1981, 673)	Onondaga (5379, 676)	Manhattan (9352, 679)	Cattaraugus (1025, 682)	38
Fulton (750, 652)	Chautauqua (1732, 660)	Allegany (586, 660)	Jefferson (1404, 666)	Chautauqua (1564, 673)	Ulster (1882, 676)	St. Lawrence (1100, 679)	Chautauqua (1515, 682)	39
Steuben (1449, 652)	Steuben (1278, 660)	Hamilton (38, 660)	Essex (314, 666)	Washington (718, 673)	Wayne (1137, 675)	Brooklyn (22466, 679)	Schenectady (1739, 682)	40
Franklin (595, 652)	Herkimer (802, 660)	Cattaraugus (1132, 659)	Franklin (589, 666)	Clinton (887, 673)	St. Lawrence (1043, 675)	Fulton (661, 679)	Herkimer (759, 682)	41
Cattaraugus (1182, 652)	Ulster (2201, 659)	Oswego (1881, 659)	Lewis (336, 665)	Seneca (340, 672)	Fulton (660, 674)	Cayuga (787, 678)	Chemung (951, 682)	42
Herkimer (881, 652)	Delaware (522, 659)	Steuben (1327, 659)	Schoharie (396, 665)	Fulton (673, 671)	Brooklyn (22581, 674)	Schoharie (358, 678)	Essex (287, 682)	43
Chautauqua (1804, 652)	Greene (587, 659)	Delaware (502, 659)	Chautauqua (1579, 665)	Allegany (551, 671)	Wyoming (342, 674)	Washington (653, 677)	Wayne (1171, 681)	44
Allegany (579, 652)	Fulton (687, 659)	Greene (567, 659)	Cattaraugus (1120, 665)	Orleans (525, 671)	Cattaraugus (1045, 674)	Columbia (549, 677)	Orleans (503, 681)	45
Hamilton (50, 651)	Richmond (4510, 659)	Columbia (692, 659)	Steuben (1299, 665)	Lewis (340, 671)	Schoharie (401, 674)	Wayne (1139, 677)	Schoharie (325, 681)	46
Columbia (713, 651)	Sullivan (858, 658)	Herkimer (882, 658)	Columbia (675, 664)	Franklin (618, 671)	Manhattan (9463, 673)	Cattaraugus (1061, 677)	Clinton (847, 681)	47
Orleans (638, 650)	Chemung (966, 658)	Fulton (719, 658)	Fulton (682, 664)	Hamilton (39, 670)	Steuben (1177, 673)	Chautauqua (1580, 677)	Steuben (1188, 681)	48
Schoharie (411, 650)	Clinton (936, 658)	Sullivan (885, 658)	Sullivan (820, 664)	Wyoming (360, 670)	Oswego (1532, 673)	Essex (287, 676)	Allegany (502, 681)	49
Oswego (1922, 649)	Chenango (733, 657)	Chemung (911, 658)	Chemung (906, 664)	Oswego (1670, 670)	Clinton (865, 673)	Delaware (425, 676)	Greene (480, 681)	50
Chemung (989, 649)	Columbia (674, 656)	Chenango (679, 658)	Montgomery (571, 664)	Steuben (1183, 670)	Columbia (626, 673)	Clinton (805, 675)	Delaware (449, 680)	51
Clinton (972, 648)	Queens (21010, 656)	Queens (20668, 658)	Oswego (1672, 663)	Brooklyn (23114, 670)	Allegany (526, 672)	Schenectady (1661, 675)	Franklin (567, 679)	52
Greene (618, 648)	Essex (313, 655)	Clinton (943, 657)	Chenango (637, 663)	Schoharie (375, 670)	Schenectady (1645, 672)	Steuben (1165, 675)	Hamilton (33, 679)	53
Cortland (583, 648)	Allegany (581, 655)	Yates (220, 656)	Cortland (526, 663)	Manhattan (9889, 669)	Cortland (522, 672)	Cortland (533, 673)	Columbia (562, 679)	54
Montgomery (592, 647)	Cortland (565, 655)	Richmond (4556, 656)	Seneca (318, 663)	Chemung (875, 669)	Franklin (538, 672)	Franklin (574, 673)	Seneca (341, 678)	55
Richmond (4612, 647)	Schuyler (175, 655)	Cortland (573, 655)	Delaware (459, 662)	Cortland (523, 668)	Chenango (642, 671)	Oswego (1604, 673)	Bronx (16050, 678)	56
Yates (223, 645)	Hamilton (50, 654)	Seneca (359, 654)	Clinton (896, 662)	Columbia (581, 667)	Yates (198, 669)	Chemung (879, 672)	Cortland (506, 678)	57
Schuyler (184, 644)	Seneca (411, 654)	Montgomery (591, 654)	Yates (192, 662)	Montgomery (547, 666)	Schuyler (149, 668)	Allegany (573, 671)	Schuyler (139, 678)	58
Queens (19830, 643)	Montgomery (570, 654)	Manhattan (10607, 653)	Manhattan (10203, 661)	Delaware (451, 666)	Delaware (444, 668)	Chenango (644, 670)	Chenango (570, 677)	59
Brooklyn (25431, 638)	Manhattan (11052, 648)	Schuyler (163, 651)	Brooklyn (23811, 661)	Yates (197, 665)	Montgomery (541, 668)	Montgomery (548, 670)	Sullivan (734, 676)	60
Manhattan (10633, 638)	Brooklyn (26211, 648)	Brooklyn (25396, 650)	Schuyler (168, 656)	Schuyler (154, 661)	Chemung (869, 667)	Yates (206, 669)	Montgomery (552, 674)	61
Bronx (17903, 629)	Bronx (18344, 641)	Bronx (17661, 641)	Bronx (16781, 651)	Bronx (16098, 658)	Bronx (16373, 662)	Bronx (16162, 668)	Yates (194, 674)	62

Figure 8: Average Grade 4 Math Scores of Counties in New York State. 2002-2009

FOURTH-GRADE MATH: A FAIRER MEASURE?

So far, this report has aggregated New York City's gains in both English and math and across every tested grade. While these results are impressive, they may actually underestimate the true pace of New York City's progress. The change in the state's English Language Learner testing policy slowed gains in English after 2006; overall scores are lower than they would have been under the old testing rules. Furthermore, the average results of all the tested grades put a lot of weight on students who were already far into their academic careers when Mayor Bloomberg and Chancellor Klein instituted their reforms. A major focus of the reforms has been ensuring that students master basic skills in the early grades so that they are prepared to succeed in the later grades.

One way to control for these two problems is to examine results only in fourth-grade math. The math exams were not affected by the change in the English Language Learner testing policy, and results from fourth grade include more students who began school under mayoral control. In many respects, the fourth-grade math results show what New York City is capable of achieving in all grades in the coming years.

Figure 8 shows the county-by-county rankings based on average fourth-grade math scores. The picture in 2002 is nearly identical to the one based on the results from both subjects in all the tested grades. The five boroughs occupied five of the seven lowest ranks, including the bottom four. But the gains between 2002 and 2009 are much more dramatic in fourth-grade math. By 2009, four boroughs (Queens, Staten Island, Manhattan, and Brooklyn) ranked in the top fifteen. Queens passed 55 other counties and shot up to number 4, behind only Nassau, Putnam, and Westchester counties. Staten Island passed 50 other counties and moved up to number 6 in the state. Manhattan passed 49 counties and improved to number 10. Brooklyn passed 45 counties and improved to number 15. The Bronx, which in 2002 was the lowest-ranked county and 11 points behind the second-lowest, passed 6 counties and is now just 11 points away from the top 15. Furthermore, as Figure 9 shows, every New York City school district—regardless of how high or low it started in 2002—made greater gains than other large districts in the state that started from a similar level.

Fourth-grade math results at the school level tell a similar story (Figure 10). In 2002, 8 percent of New York City's schools ranked in the top 25 percent statewide, while 60 percent ranked in the bottom 25 percent—a distribution that's comparable to the one for both subjects in all grades in 2002. By 2009, more than three times as many schools ranked in the top quartile in fourth-grade math—27 percent. Another 17 percent ranked in the second quartile. And the percentage of New York City schools in the bottom 25 percent was cut in half, down to 31 percent.

Figure 9: Change in Grade 4 Math Scores for 64 Largest Districts in New York State, 2002-2009

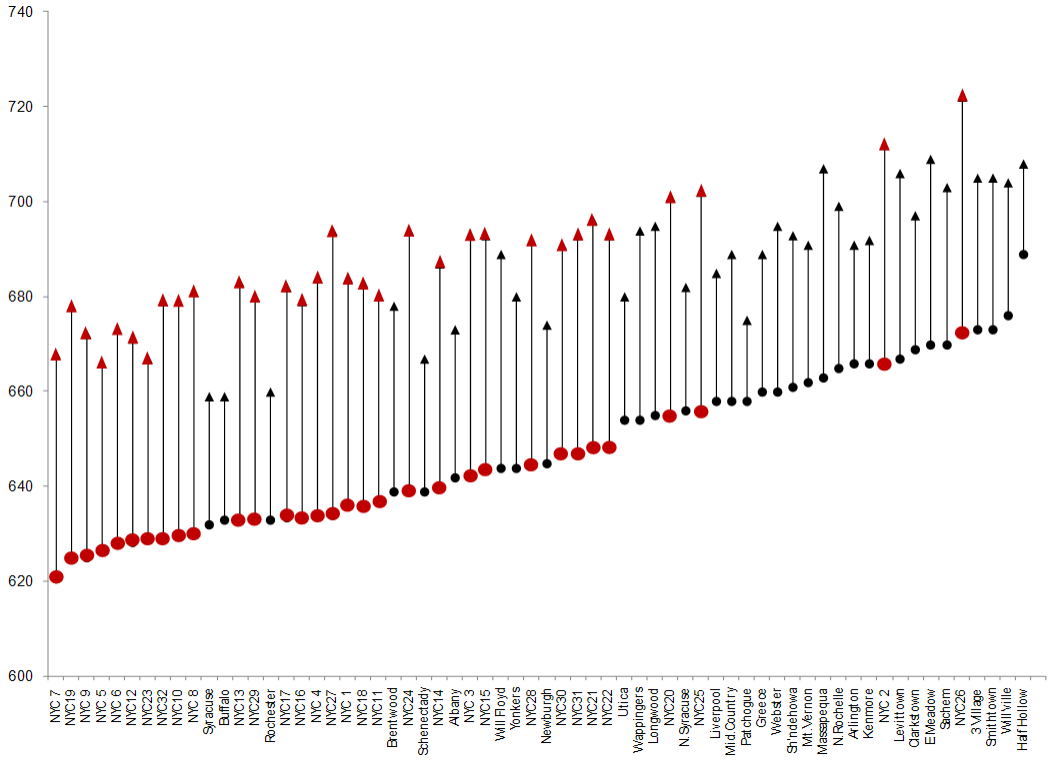
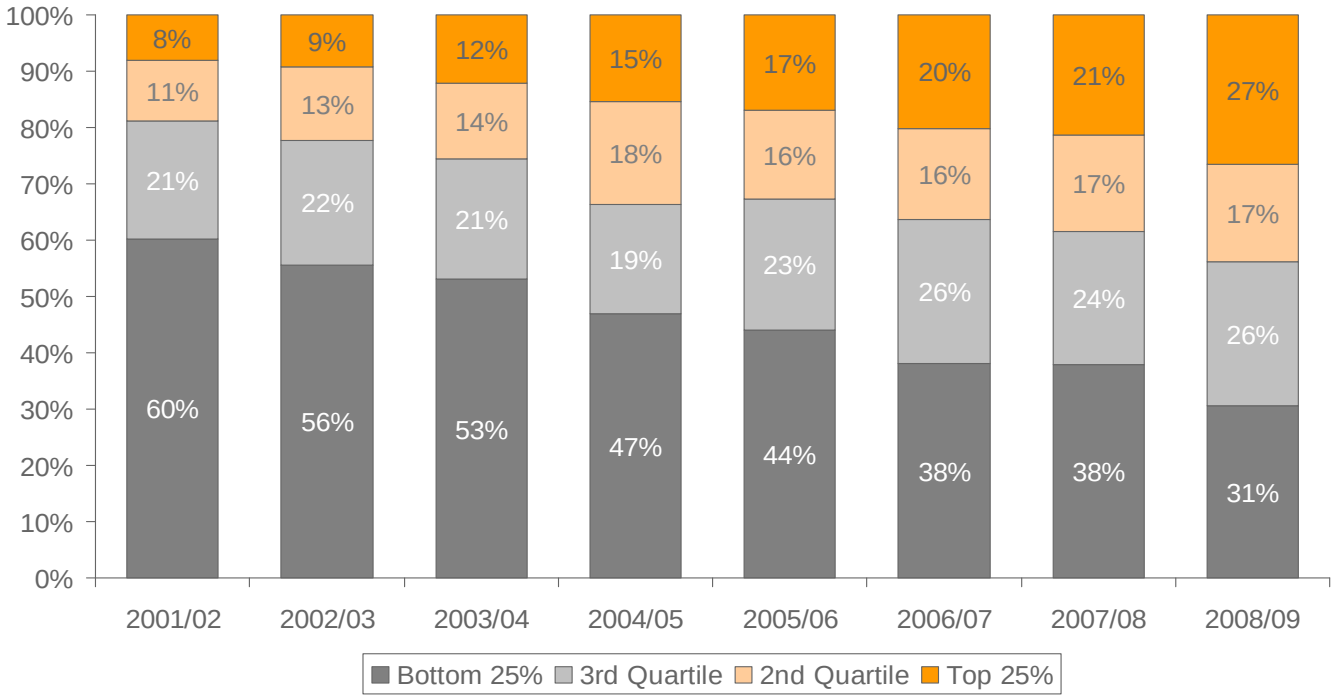


Figure 10: Quartile Distribution of New York City Schools Compared to All Schools in New York State Based on Average Grade 4 Math Scores, 2002-2009

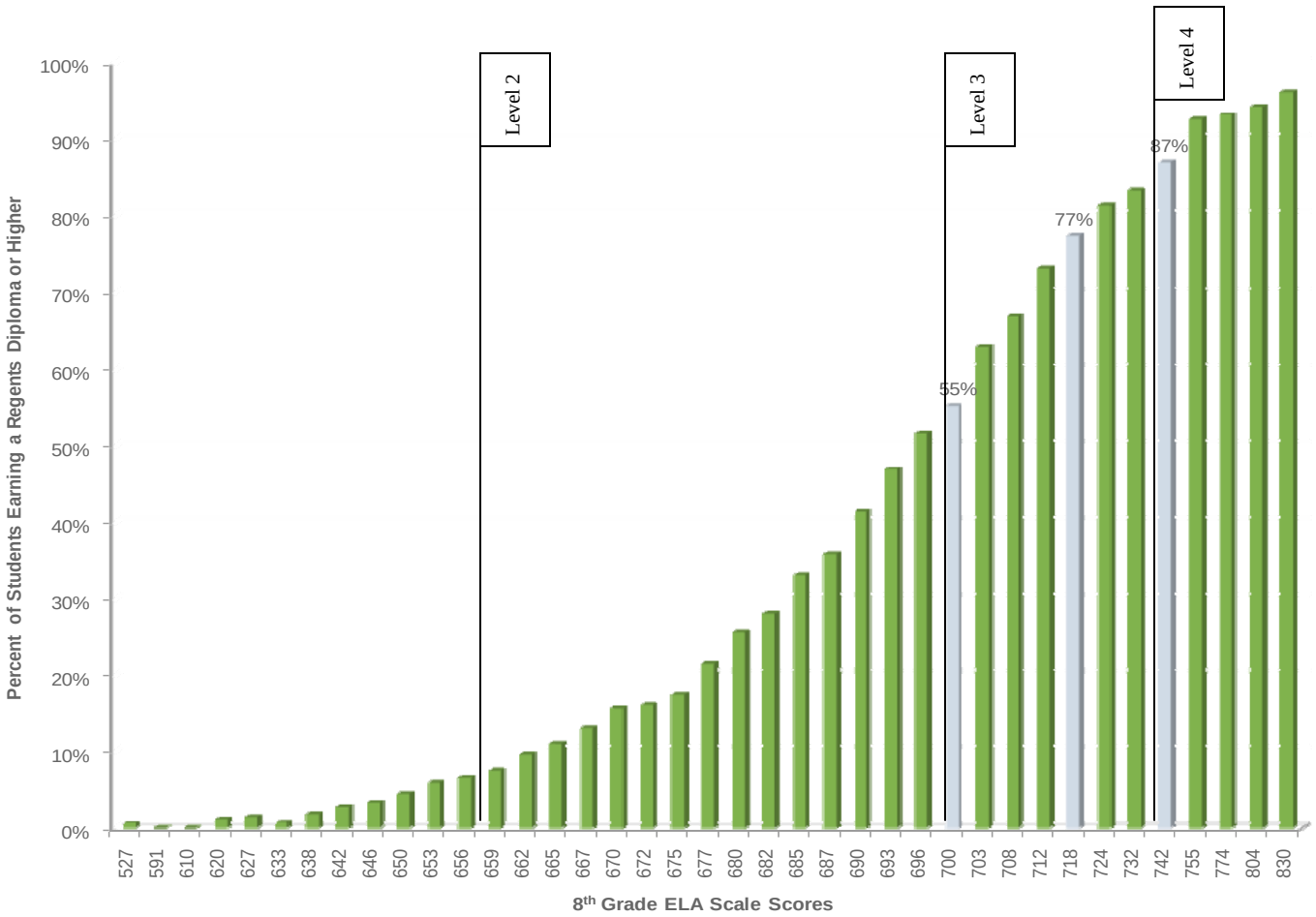


These are remarkable results. Even though New York City serves far more low-income and minority students than any other school system in the state, students in New York City are more likely to attend a school in the top quartile in fourth-grade math than are students in the rest of the state. Almost half of New York City's schools rank in the top two quartiles in fourth-grade math—significantly more than rank in the bottom quartile.

THE LINK BETWEEN EXAM SCORES AND FUTURE ACADEMIC SUCCESS

The progress New York City's students have made on these exams is important because the exams are highly predictive of future academic success. For example, fewer than one in ten eighth grade students who earn exam scores that fall in the Level 1 range graduate on time with a Regents diploma (Figure 11). More surprisingly, only 55 percent of the eighth grade students who earn the minimum score required for Level 3 ("meeting standards") graduate on time.

Figure 11: Four-Year Graduation Rate Based on Average Combined Grade 8 ELA and Math Scores (For Students Who Were in Grade 8 in 2004)



The likelihood of graduation increases dramatically as students earn scores that fall higher in the Level 3 range or in the Level 4 range. More than three quarters of the eighth grade students who score halfway between a Level 3 and a Level 4 graduate on time—a 22 percentage point difference compared to students who score at the lowest end of the Level 3. Eighth grade students who score at the lowest end of the Level 4 range have an 87 percent chance of graduating on time.

Based on these trends, if New York City can sustain the level of progress it has made on the state exams since 2002, thousands more of its students will finish middle school in the coming years on track to graduate from high school and become successful adults.