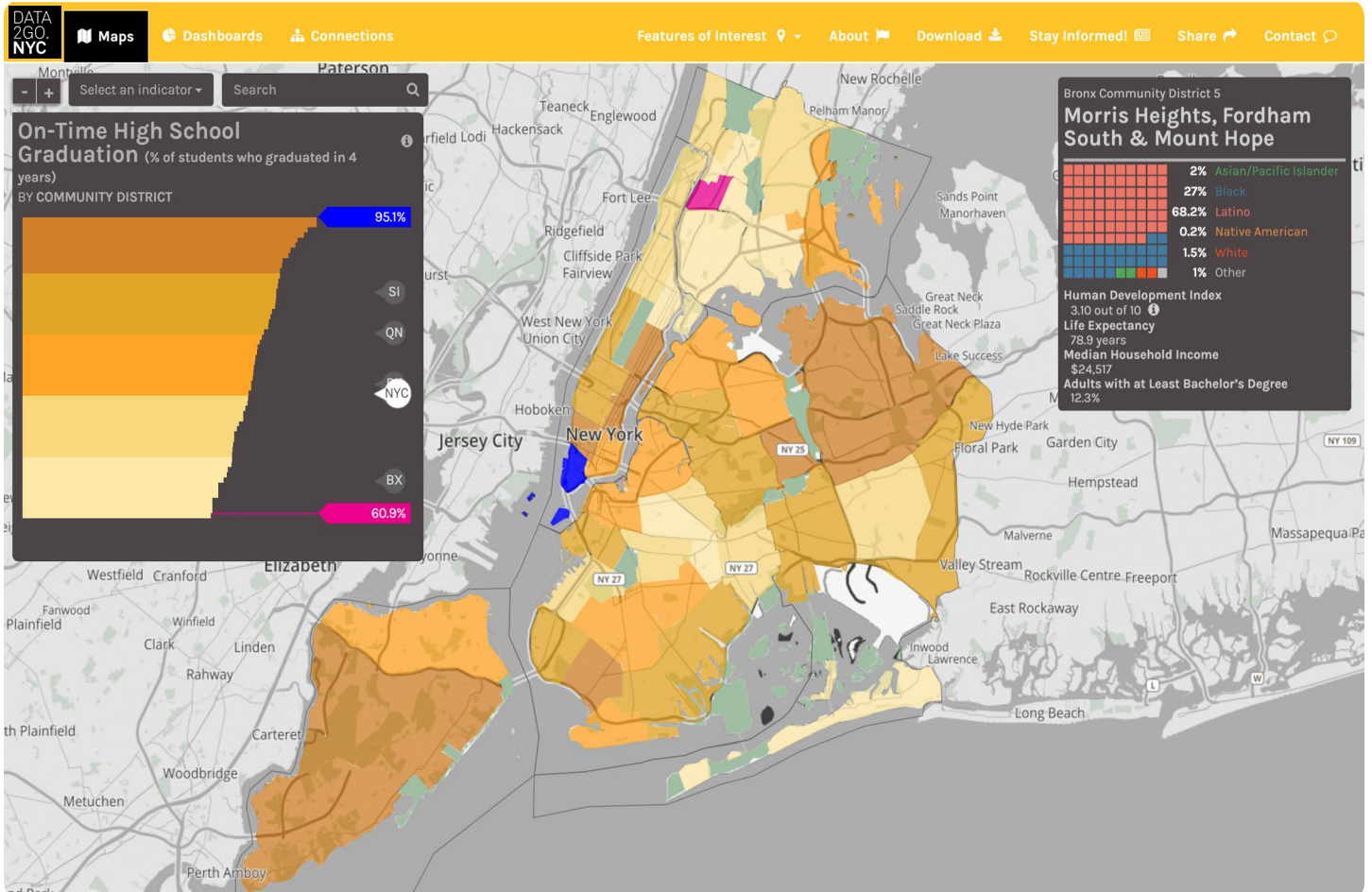


HIGH SCHOOL GRADUATION IN NEW YORK CITY IS NEIGHBORHOOD STILL DESTINY?



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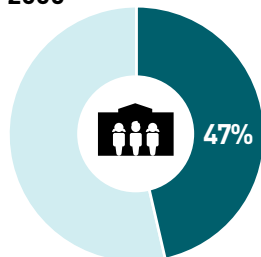
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Is Neighborhood Still Destiny?

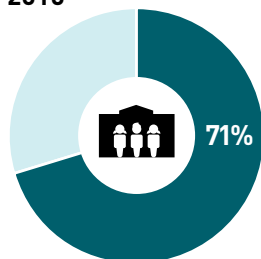
AN ACHIEVEMENT WORTH CELEBRATING

On-time high school graduation rates

2005



2015



Source: New York City Department of Education, 2015.

New York State's announcement in January of this year that the on-time high school graduation rate in New York City (NYC) had topped 70 percent for the first time ever was welcome news.¹ Just 46.5 percent of students who graduated high school in 2005 completed their degrees in four years, compared to 70.5 percent of those who graduated in 2015—an improvement of 24 percentage points.² On-time high school graduation is a bellwether educational indicator; thus, to go from a situation in which fewer than half of all students graduated on time to one in which more than two-thirds did is an impressive achievement worth celebrating (see **BOX 1**).

Alongside the good news of overall progress, however, was troubling evidence of significant disparities by race and ethnicity, gender, language proficiency, and disability status. While 85 percent of Asian students and 82 percent of white students graduated on time in New York City last year, just 65.4 percent of black students and 64 percent of Latino students did.³ Three-quarters of all NYC high school girls earned their diplomas in four years, compared with two-thirds of the city's boys. Only four in ten students who were English-language learners or who had a disability graduated on time.

BOX 1 Why Is On-Time High School Graduation So Important?

A high school diploma is the bare-bones minimum required for financial security and self-determination in today's knowledge-based economy. Failing to graduate high school too often closes off many of life's most rewarding and joyful paths and leads to a future of limited horizons and unrealized potential. Compared with adults without high school diplomas, those with them earn more, have higher levels of life satisfaction, enjoy better health, have more stable relationships, and are less likely to be unemployed, go to prison, or become parents as teenagers.⁴ Interestingly, research has shown that a General Educational Development certification (GED) does not confer the same benefits as a regular diploma; the social and economic outcomes of GED holders are similar to those of high school dropouts without GEDs.⁵ The rate of on-time high school graduation also serves as a useful proxy for educational outcomes more broadly, as a child's likelihood of graduating on time is highly influenced by his or her elementary and middle school experiences and achievements. **For these reasons, the rate of on-time high school graduation is a vital educational indicator for society, schools, and students themselves.**



One important way of presenting the city’s graduation rates was missing from the otherwise comprehensive dataset released by the NYC Board of Education: **graduation rates by neighborhood**. In this paper, we address this gap, presenting high school graduation rates by New York City’s fifty-nine community districts.⁶ We find that the neighborhood disparities dwarf those by race and ethnicity and gender, with 34 percentage points separating the best- and worst-performing districts.

Looking at NYC graduation rates by the neighborhoods in which students live, in addition to where they go to school, is critically important. Research has shown a clear link between the socioeconomic conditions of children’s neighborhoods, the quality of the schools they attend, and their educational outcomes; in education, place matters tremendously. One of the animating motivations behind the universal high school choice program New York City began in 2004 was to weaken this well-known neighborhood-school quality link (see **BOX 2**). (The other was to introduce competition among schools, a market-oriented approach designed to improve school quality by allowing families to “vote with their feet.”) In addition, knowing which neighborhoods have the highest concentrations of students who do not graduate high school allows the city, philanthropic organizations, and nonprofits to better site and target community-based dropout prevention programs.

WHAT IS A COMMUNITY DISTRICT?

Community districts are used as stand-ins for neighborhoods in this study. They roughly line up with generally accepted boundaries of neighborhoods or groups of neighborhoods. New York City has fifty-nine community districts, which range in population from 50,000 to more than 200,000 residents. New York City Department of City Planning methodology, used in this analysis, is to combine four pairs of districts with small populations to ensure reliable results.

BOX 2 New York’s Universal High School Choice Program



In 2004, New York City implemented a universal high school choice program. Unlike the city’s elementary school placement process, which assigns the vast majority of children to nearby neighborhood schools based on their home addresses, the high school process requires that all eighth graders select, rank, and apply to up to twelve high school programs from among the over 700 the city offers.⁷ No neighborhood school “default” option exists; every eighth grader planning to attend a NYC public high school—about 80,000 children—must participate in this process.⁸

Prior to 2004, NYC high schools in poor, predominantly minority neighborhoods tended to be large, highly segregated, “failing” schools. They had poor test scores, disciplinary problems, and trouble attracting and retaining good teachers; many graduated less than half their students. Neighborhood schools in more affluent parts of town had, in general, better facilities, more experienced teachers, more demanding curricula, and better academic outcomes.

Children living in high-poverty communities had no alternative but to attend the poor-quality high schools in their own neighborhoods, and this was rightly viewed as adding to the disadvantages they already experienced. The thinking was that, in the near term, universal choice would create an escape hatch of sorts, allowing at least some students from low-income neighborhoods to bypass the inferior schools nearby, access higher-quality education elsewhere in the city, and experience better educational outcomes. In the longer term, it would push poor-quality schools to improve or risk depopulation and eventual closure.

Key Findings

Six in ten public school students who live in Morris Heights, Fordham South, and Mount Hope in the Bronx graduate high school in four years. **Well over nine in ten** students who set out every weekday from Manhattan’s Battery Park City, Greenwich Village, Soho, and Tribeca do.

The purpose of this study was to contribute to the ongoing discussion around high school choice in New York City in two ways: first, by determining the on-time graduation rates for NYC high school students not by the specific schools they attended (since those data were already available), but rather by the neighborhoods they called home; and second, to explore the relationship between key neighborhood-level social and economic indicators and the graduation rate. High school students do not necessarily attend school in their own districts, as described in **BOX 2**. On-time high school graduation data for all NYC students were obtained from the New York State Education Department and mapped onto New York City’s fifty-nine community districts. This exercise created a new, unique dataset that allowed us to separate where students went to school from where they lived. Students who attended charter high schools were included in this analysis.

Citywide, seven in ten public high school students graduate in four years. But beneath this average lies tremendous variation by place. Only about six in ten public school students who live in Morris Heights, Fordham South, and Mount Hope in the Bronx graduate high school in four years. Well over nine in ten students who set out every weekday from Manhattan’s Battery Park City, Greenwich Village, Soho, and Tribeca do. Four of the five districts with the lowest percentage of on-time high school graduates are in the Bronx.

TABLE 1 High School Graduation Rates in NYC: Top and Bottom Five Community Districts

RANK OUT OF 59	COMMUNITY DISTRICT	NEIGHBORHOOD	GRADUATED HIGH SCHOOL ON TIME, 2014 (%)
TOP FIVE			
1	Manhattan Districts 1 & 2	Battery Park City, Greenwich Village & Soho	95.1
3	Queens District 11	Bayside, Douglaston & Little Neck	92.2
4	Queens District 6	Forest Hills & Rego Park	91.0
5	Staten Island District 3	Tottenville, Great Kills & Annadale	89.0
BOTTOM FIVE			
55	Bronx District 4	Concourse, Highbridge & Mount Eden	63.4
56	Bronx Districts 3 & 6	Belmont, Crotona Park East & East Tremont	61.4
58	Brooklyn District 16	Brownsville & Ocean Hill	61.4
59	Bronx District 5	Morris Heights, Fordham South & Mount Hope	60.9

Source: Measure of America analysis of New York State Education Department data, 2015.

Note: As mentioned earlier, eight community districts with small populations were combined for the purposes of this analysis.

Using these data and several of the 360 other indicators available on [DATA2GO.NYC](https://data2go.nyc), a new mapping and data analysis website that Measure of America launched in October 2015, we analyzed the relationship between on-time high school graduation and some basic socioeconomic indicators. Our findings included the following:

- The higher the **child poverty rate** in a community district, the less likely a young person living in that district will graduate high school on time; the correlation was extremely strong.
- **Household income** also marches in lockstep with community district graduation rates: the higher the median household income in a district, the higher the graduation rate of students who live there (also a very strong correlation).
- The relationship between **adult educational attainment** and on-time graduation is strong; districts where comparatively few adults have completed bachelor's degrees have considerably lower high school graduation rates than districts with high shares of adults with bachelor's degrees.
- Likewise, in districts with low rates of **Supplemental Nutrition Assistance Program (SNAP) use**, on-time high school graduation rates tend to be very high.

WHICH FACTORS ARE ASSOCIATED WITH HIGHER ON-TIME HS GRADUATION RATES?



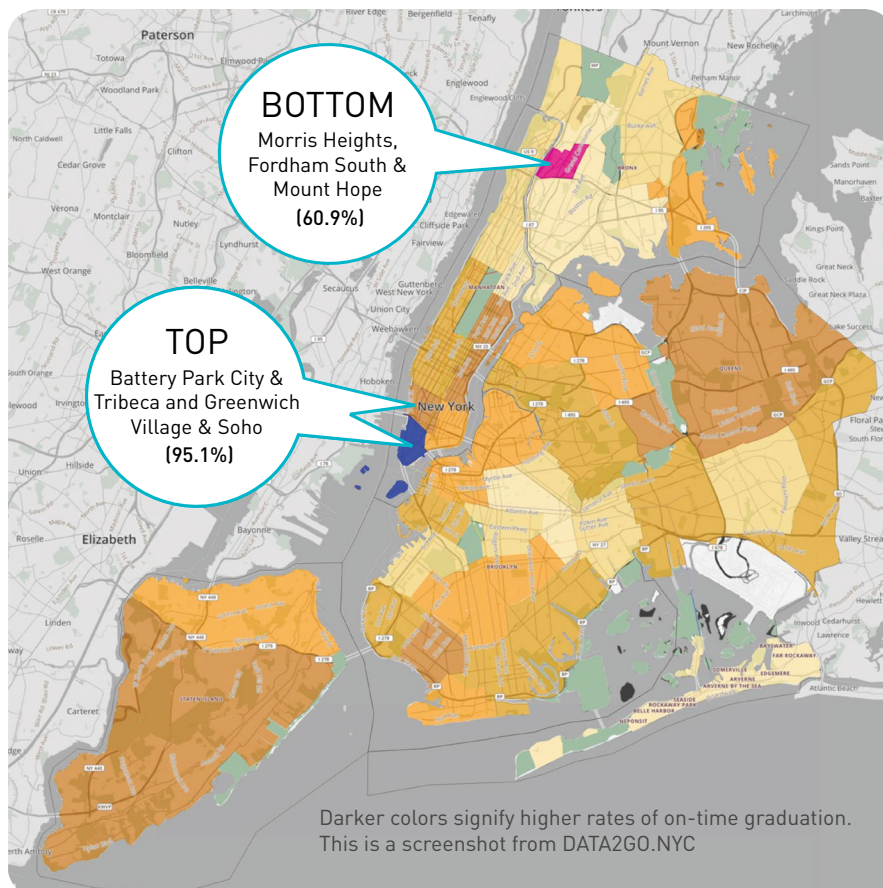
- Median household income
- Share of adults with bachelor's degrees



- Child poverty rates
- Rates of SNAP participation

To see these correlations in action, go to [DATA2GO.NYC](https://data2go.nyc)

MAP 1 On-Time High School Graduation by Community District in NYC



To map these data for yourself, go to: [DATA2GO.NYC](https://data2go.nyc)

High School Graduation Rates in New York City by Neighborhood

RANK OUT OF 59	COMMUNITY DISTRICT	GRADUATED HIGH SCHOOL ON TIME, 2014 (%)
1	MN Districts 1 & 2: Battery Park City, Greenwich Village & Soho	95.1
3	QN District 11: Bayside, Douglaston & Little Neck	92.2
4	QN District 6: Forest Hills & Rego Park	91.0
5	SI District 3: Tottenville, Great Kills & Annadale	89.0
6	MN District 8: Upper East Side	88.3
7	MN District 6: Murray Hill, Gramercy & Stuyvesant Town	86.8
8	SI District 2: New Springville & South Beach	86.0
9	BK District 11: Bensonhurst & Bath Beach	84.2
10	QN District 8: Briarwood, Fresh Meadows & Hillcrest	83.9
11	QN District 7: Flushing, Murray Hill & Whitestone	83.3
12	MN District 7: Upper West Side & West Side	83.2
13	BK District 15: Sheepshead Bay, Gerritsen Beach & Homecrest	82.8
14	BK District 6: Park Slope, Carroll Gardens & Red Hook	82.6
15	MN Districts 4 & 5: Chelsea, Clinton & Midtown Business District	82.1
17	QN District 2: Sunnyside & Woodside	82.0
18	BK District 18: Canarsie & Flatlands	81.8
19	BK District 10: Bay Ridge & Dyker Heights	80.8
20	QN Districts 5: Ridgewood, Glendale & Middle Village	80.2
21	QN Districts 13: Queens Village, Cambria Heights & Rosedale	79.6
22	QN District 10: Howard Beach & Ozone Park	79.6
23	QN District 9: Richmond Hill & Woodhaven	78.0
24	BK District 12: Borough Park, Kensington & Ocean Parkway	77.5
25	QN District 4: Elmhurst & South Corona	76.8
26	SI District 1: Port Richmond, Stapleton & Mariners Harbor	76.1
27	BX District 10: Co-op City, Pelham Bay & Schuylerville	76.0
28	MN District 3: Chinatown & Lower East Side	75.4
29	BK District 14: Flatbush & Midwood	75.2
30	BK District 17: East Flatbush, Farragut & Rugby	74.9

RANK OUT OF 59	COMMUNITY DISTRICT	GRADUATED HIGH SCHOOL ON TIME, 2014 (%)
31	QN District 1: Astoria & Long Island City	74.7
32	QN District 3: Jackson Heights & North Corona	74.6
33	BK District 2: Brooklyn Heights & Fort Greene	74.0
34	BK District 13: Brighton Beach & Coney Island	74.0
35	BK District 1: Greenpoint & Williamsburg	73.1
36	BX District 8: Riverdale, Fieldston & Kingsbridge	73.0
37	BK District 9: Crown Heights South, Prospect Lefferts & Wingate	72.8
38	BX District 11: Pelham Parkway, Morris Park & Laconia	72.1
39	QN District 12: Jamaica, Hollis & St. Albans	71.5
40	BK District 7: Sunset Park & Windsor Terrace	71.4
41	MN District 12: Washington Heights, Inwood & Marble Hill	70.0
42	BK District 4: Bushwick	69.4
43	MN District 9: Hamilton Heights, Manhattanville & West Harlem	68.5
44	BK District 8: Crown Heights North & Prospect Heights	68.5
45	BK District 5: East New York & Starrett City	68.1
46	BX District 12: Wakefield, Williamsbridge & Woodlawn	68.0
47	MN District 10: Central Harlem	67.8
48	BK District 3: Bedford-Stuyvesant	67.7
49	QN District 14: Far Rockaway, Breezy Point & Broad Channel	67.7
50	BX District 9: Castle Hill, Clason Point & Parkchester	66.5
51	BX District 7: Bedford Park, Fordham North & Norwood	66.0
52	MN District 11: East Harlem	65.1
53	BX Districts 1 & 2: Hunts Point, Longwood & Melrose	63.4
55	BX District 4: Concourse, Highbridge & Mount Eden	63.4
57	BX Districts 3 & 6: Belmont, Crotona Park East & East Tremont	61.4
58	BK District 16: Brownsville & Ocean Hill	61.4
59	BX District 5: Morris Heights, Fordham South & Mount Hope	60.9

Source: Measure of America analysis of New York State Education Department data, 2015.

Note: Community districts with small populations were combined for the purposes of this analysis.

To access data tables, go to DATA2GO.NYC

Discussion

These findings above suggest that New York City’s school choice program faces numerous barriers to breaking the link between neighborhood conditions and educational outcomes. Students who come from neighborhoods that face multiple disadvantages, particularly poverty and low levels of adult education, are considerably less likely to graduate high school on time than students from other parts of the city. If school choice had fixed the problem it was designed in part to solve—namely, that low-income, minority students overwhelmingly attended “failing” schools in their neighborhoods and experienced poor educational outcomes—then one would expect to find a weak relationship between the neighborhood in which a high school student lives and his or her likelihood of graduating in four years.

This is not to say that school choice failed to provide any benefits to children; the policy has allowed some bright, motivated students from struggling parts of town to access a better education than they would have otherwise had. Nor does it mean that the situation today is the same as the situation a decade ago; graduation rates city-wide have improved markedly, and it is likely that graduation rates for students living in the Bronx and Brooklyn districts at the bottom of the ranking list were worse prior to 2004 than they are today. The lack of comparable place-of-residence data from before 2004 means that we cannot say for sure. Also, separating the effects of school choice itself from the effects of other reforms implemented around the same time, particularly the closing of dozens of so-called “dropout factories,” would be a dicey prospect. Between 2002 and 2008, the city closed twenty-nine large high schools with graduation rates below 40 percent and opened some two hundred smaller schools. A 2015 study by the Research Alliance for New York City Schools found that closing these failing high schools had “a systematic and large impact on graduation rates” for those students who would have otherwise attended them (though it is important to note that only 56 percent of those students ended up graduating in four years—a better result, but not an objectively good result).⁹ Determining if the absence of troubled schools, the presence of better schools, the act of choosing, or some combination of the three led to better outcomes would present numerous methodological hurdles.

The findings above suggest that New York City’s school choice program faces numerous barriers to breaking the link between neighborhood conditions and educational outcomes.



WHAT MIGHT ACCOUNT FOR THE STRONG RELATIONSHIP BETWEEN NEIGHBORHOOD CONDITIONS AND GRADUATION RATES?

- Lack of high-quality schools
- Cumulative disadvantages
- The choices families make
- Uneven preparation for admissions
- Distance
- Time poverty

Because New York City is highly segregated by race, ethnicity, educational attainment, and income, this circle of trusted advisors tends to be limited to others who share one's socioeconomic status.

Which factors might account for the stubbornly strong relationship between neighborhood conditions and high school graduation rates?

Too few high-quality schools. There just aren't enough high-quality schools to serve all of New York's high school students. Though families living in poor neighborhoods have "choice," they may not have many real choices for the reasons described below.

The effects of cumulative disadvantage and cumulative advantage.

Every morning, the majority of New York City teens leave their neighborhoods to attend high schools somewhere else. But they take the realities of their home neighborhoods with them. Students who live in Battery Park City, Greenwich Village, and Soho take the skills instilled in them by their excellent elementary schools and highly educated parents (81 percent of adults in this part of town have completed a bachelor's degree or higher); they take social and emotional skills and habits well suited to the school environment. They arrive at school well nourished and healthy, fresh from a good night's sleep in their own beds in safe neighborhoods.

In contrast, students from Morris Heights, Fordham South, and Mount Hope, the neighborhoods with the highest child poverty rate in the city, are less likely to arrive at school with the full complement of capabilities they need to succeed—even if the school is a good one. Less experienced teachers in past grades and parents with limited educations (a third of adults in these neighborhoods did not complete high school) mean that students may start high school still struggling with basic skills. Poorer health, the stress of economic insecurity, and greater exposure to trauma may make concentration difficult. They may be distracted by an untreated toothache, or unable to see the board because they need glasses; they may be hungry or depressed. Where these two sets of children go to school matters, but does it matter as much as where they come from?

The choices families make. New York City's Department of Education and numerous nonprofit organizations have sought to make public school information easily available through presentations, websites, reports, and guides of all sorts. Yet one of the chief ways information spreads is through word of mouth. Parents and kids alike canvass friends, relatives, and neighbors for information about which schools would be a good fit. This approach may serve to limit the schools that families investigate and to which they feel comfortable applying to those suggested by people they know and trust. Because New York City is highly segregated by race, ethnicity, educational attainment, and income, this circle of trusted advisors tends to be limited to others

who share one's socioeconomic status. This insularity benefits the privileged, who hear about and apply to the best schools, and harms the disadvantaged, whose social networks tend to be limited to others with fewer resources. The effect is that students from poor neighborhoods are more likely to "choose" schools with high concentrations of other students from poor neighborhoods.¹⁰ The chosen school may lie outside a high school student's immediate community, but its demographic and socioeconomic makeup may nonetheless closely resemble that community, yielding a similar result as attending a pre-2004 neighborhood high school. A 2013 New York University study found that low-performing and high-performing NYC students were equally likely to be placed in their first-choice high school, slightly more than half of each group.¹¹ However, the two groups did not apply to the same schools; the low-performing students applied to schools that were "less selective, lower-performing, and more disadvantaged" than those to which high-performing students applied.

Uneven preparation for admissions. There are several types of high schools: highly selective schools that require special exams, test scores, portfolios, or auditions as part of the admissions process; schools that give preference to students from a particular borough or who attend an open house; and unscreened schools that have no requirements. The best high schools in the city require certain qualifications—a minimum score on a standardized test, strong English essay writing skills, or the ability to play a musical instrument or produce high-quality works of art. As a result, students whose elementary- and middle-school education and family background did not prepare them to score well on entrance exams, perform, or assemble a portfolio—a group that is disproportionately low-income—are at a disadvantage in gaining admission.

Distance. A 2013 Brookings Institution report found that "only 14 percent of participants in the NYC high school choice process list as their first choice the school that is closest to their residence."¹² Although most students leave their immediate neighborhoods to attend high school, their preference tends to be schools that are closer to home; the NYU study mentioned earlier found that both high- and low-performing students' first-choice schools are about a half hour from their homes.¹³ Because of the historic link between a concentration of poor residents and poor-quality public services, including schools, and because neighborhoods of concentrated disadvantage are often adjacent to others with similar struggles, schools that are closer to the homes of low-income high schoolers are more likely to be struggling than those

Identifying and applying to an eighth grader's top dozen choices for high school requires an astounding investment of time from parents and students alike.

Competition in this arena is a blood sport, and successful admission to the best selective high schools requires focus, contacts, money, time, flexibility, transportation, extreme attention to detail, and the ability to prioritize the school admissions process over work or family obligations.

in affluent (but often far away) neighborhoods. Four of the five poorest community districts in NYC, for instance, are concentrated in the Bronx; attending a school in a more affluent area would require a long trip for someone living in Morrisania or East Tremont.

Time poverty—a forgotten aspect of poverty. Identifying and applying to an eighth grader’s top dozen choices for high school requires an astounding investment of time from parents and students alike. The process is Herculean: families must pour through the high school directory, more than 500 pages long; attend high school fairs, tours, open houses, and interviews; prepare for and take special exams; develop portfolios; and prepare and perform auditions. Because the admissions requirements vary, a single student may have to perform a dance sequence or deliver a cold reading of a monologue for one school, take a math or science test or write an essay for another, and take part in an interview for a third—and then there are still nine more to go. The most competitive schools hold few open houses, make a limited number of “test tickets” available in a very short window, and schedule interviews within a several-week period.

Competition in this arena is a blood sport, and successful admission to the best selective high schools requires focus, contacts, money, time, flexibility, transportation, extreme attention to detail, and the ability to prioritize the school admissions process over work or family obligations. In all of these areas the privileged have a significant advantage over others, especially poor families and immigrant families. Affluent parents can pay large sums to prepare their children for admissions tests and to secure the services of high-school-admissions hired guns to guide them through the process, whereas poor families may have only the overstretched school counselor to turn to.

Less understood is the huge time burden and substantial opportunity costs this process places on parents with significant care-taking responsibilities, on hourly workers who lose wages when they take time off, and on families who live far from the schools their children are interested in. Time and flexibility are scarce commodities for the working poor. What kind of time burden are we talking about? We estimate that the process requires a time investment that ranges from a bare minimum of 25 hours (this would allow a student to select 12 schools from the directory, fill out the applications, and visit a handful of nearby schools) to upward of 72 hours (six hours spent on the admissions process for each of the 12 schools, from filling out the applications to attending open houses to preparing for exams, auditions, interviews, and like). This

calculation is likely a significant underestimate for families aiming at the most competitive schools; many of them will invest much more time than even the high-end 72-hour figure.

Adding together the hours spent by all the eighth-grade families in a given year gives us a range from a low of 2,000,000 hours to a high of 5,760,000 hours spent on school choice. That's between 57,142 and 164,571 work weeks' worth of time.¹⁴

Conclusion

Is the collective investment in time, stress, and financial resources required by the high school choice process, not to mention lengthier commutes for high school students, worth it? The evidence suggests not. **After more than a decade of universal school choice, a child's community district is still highly associated with his or her likelihood of graduating high school in four years.** It is time for New York City to reassess its approach.

Students from the city's affluent neighborhoods are doing well when it comes to graduating high school in four years. School choice allows these teens to select schools that not only provide an all-around high-quality education but also are particularly well-matched to their interests, abilities, and ambitions. The significant investment that they and their families make in the choice process tends to pay off, though many question the emotional, financial, and time costs. It is likely, though, that these students also had a fairly good set of options prior to the 2004 reforms. And then as now, the rich could always opt out of the public system altogether by sending their kids to private school.

We often hear about smart, motivated teens from poor pockets of the city who have benefited from leaving underperforming schools behind. But what about those who have not benefited? The data show that far too many young people from low-income black and Latino neighborhoods in the Bronx and central Brooklyn are winding up in high schools with low graduation rates, going to school mostly with other teens who share their socioeconomic disadvantages. For them, the link between neighborhood conditions and school quality remains as strong as ever, even if the school they now attend is farther from home.

Students from the city's affluent neighborhoods are doing well when it comes to graduating high school in four years, but the data show that far too many young people from low-income black and Latino neighborhoods in the Bronx and central Brooklyn are winding up in high schools with low graduation rates, going to school mostly with other teens who share their socioeconomic disadvantages.

What can be done, not just in New York, but in districts nationwide? Large and growing inequalities in the United States, exacerbated by the role property taxes play in funding K–12 education, make educational equality a huge challenge for big cities across the country. For example, the on-time high school graduation rate in Los Angeles is similar to the rate in New York, and both are doing better than Chicago (66 percent) and Philadelphia (64 percent).¹⁵

Children living in poverty in the United States face tremendous challenges—from ill health and hunger to exposure to trauma and social exclusion—that hamper their ability to succeed in the classroom. Addressing these problems, which stem from inequality and segregation, is beyond the ken of the vast majority of schools. Expecting teachers, principals, and school administrators to right society’s most serious wrongs flies in the face of common sense; to blame them for failing to do so is unfair. Investing in better schools is surely necessary, and evidence-based reforms are critical. School choice may well prove to be a beneficial approach if carefully regulated to ensure good choices for all children. But making educational equality a reality requires investments in children, families, and communities far beyond the education sector. Residential segregation by race and income, poverty, the absence of meaningful work, unsafe neighborhoods, lack of voice and political power, and discrimination: addressing these larger issues is the fundamental educational reform that society has thus far been unwilling to make.

The City should set an ambitious, time-bound target for slashing the neighborhood graduation gap and make the changes needed to get there.

A yawning chasm separates the on-time graduation rates of young people living in the City’s affluent, largely white neighborhoods and those who call low-income, black and Latino communities home. Nearly four in ten students in parts of the City fail to earn what is, in today’s economy, a must-have educational credential—clear evidence that current approaches are falling short. The City should set an ambitious, time-bound target for slashing the neighborhood graduation gap and make the changes needed to get there.

Endnotes

- ¹ Elizabeth A. Harris, "New York City's High School Graduation Rate Tops 70%," *New York Times*, January 11, 2016.
- ² Note that the 2005 rate uses graduation rates from June. The Department of Education standard is to use August graduation rates to measure on-time high school graduation, yet August graduation data for 2005 are not available. Graduation rates measured from June are slightly lower than graduation rates measured from August. "Graduation Results, Classes of 2005 through 2015," New York City Department of Education, accessed February 16, 2016, <http://schools.nyc.gov/Accountability/data/GraduationDropoutReports/default.htm>.
- ³ Ibid.
- ⁴ "Income of Young Adults," National Center for Education Statistics, accessed March 23, 2016, <https://nces.ed.gov/fastfacts/display.asp?id=77>; Joan H. Liem, Kara Lustig, and Colleen Dillon, "Depressive Symptoms and Life Satisfaction among Emerging Adults: A Comparison of High School Dropouts and Graduates," *Journal of Adult Development* 17, no. 1 (August 2009): 33–43; Nicholas Freudenberg and Jessica Ruglis, "Reframing School Dropout as a Public Health Issue," *Preventing Chronic Disease* 4, no. 4 (October 2007): 1–11; Adam Isen and Betsey Stevenson, "Women's Education and Family Behavior: Trends in Marriage, Divorce and Fertility," Working Paper (National Bureau of Economic Research, February 2010); "Employment Rates and Unemployment Rates by Educational Attainment," National Center for Education Statistics, May 2015, https://nces.ed.gov/programs/coe/indicator_cbc.asp; Andrew Sum, Ishwar Khatiwada, and Joseph McLaughlin, "The Consequences of Dropping Out of High School: Joblessness and Jailing for High School Dropouts and the High Cost for Taxpayers," Center for Labor Market Studies Publications, October 1, 2009.
- ⁵ James J. Heckman and Paul A. LaFontaine, "The American High School Graduation Rate: Trends and Levels," *Review of Economics and Statistics* 92, no. 2 (2010): 244–62.
- ⁶ The methodology of this analysis is as follows: 1. Applied for data from the New York City Department of Education; 2. Received de-identified student-level data for August on-time high school graduation with zip code and census tract geoids (note: NYC DOE used New York State Education Department Data; therefore NYSED is original source); 3. Used ArcGIS to crosswalk zip/tracts to PUMAs; 4. Calculated the on-time high school graduation rate by PUMA.
- ⁷ "2014–2015 Directory of NYC Public High Schools" (NYC Department of Education, 2014).
- ⁸ Grover Whitehurst and Sarah Whitfield, "School Choice and School Performance in the New York City Public Schools: Will the Past Be Prologue?" (Brookings Institution, October 2013).
- ⁹ James J. Kemple, "High School Closures in New York City: Impacts on Students' Academic Outcomes, Attendance, and Mobility" (The Research Alliance for New York City Schools, NYU, November 2015).
- ¹⁰ Lori Nathanson, Sean Corcoran, and Christine Baker-Smith, "High School Choice in New York City: A Report on the School Choices and Placements of Low-Achieving Students" (Research Alliance for New York City Schools, NYU, April 2013).
- ¹¹ Ibid.
- ¹² Grover Whitehurst and Sarah Whitfield, "School Choice and School Performance in the New York City Public Schools: Will the Past Be Prologue?" (Brookings Institution, October 2013).
- ¹³ Nathanson, Corcoran, and Baker-Smith, "High School Choice in New York City: A Report on the School Choices and Placements of Low-Achieving Students."
- ¹⁴ Using a 35-hour workweek.
- ¹⁵ City News Service, "LAUSD Graduation Rate Increases, Dropout Rate Dips," *Los Angeles Daily News*, April 28, 2015, <http://www.dailynews.com/social-affairs/20150428/lausd-graduation-rate-increases-dropout-rate-dips>; Sarah Karp, "CPS Now Admits Graduation Rate Wrong," *Chicago Sun-Times*, October 1, 2015, <http://chicago.suntimes.com/education/7/71/1005260/cps-now-admits-graduation-rate-overstated>; Joel Mathis, "Report: Philly Public School Graduation Rates Rising," *Philadelphia Magazine*, May 21, 2015, <http://www.phillymag.com/news/2015/05/21/philadelphia-public-school-graduation-rates/>.

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