

New York City Elementary Schools:

A Tale of Two Cities



NewYorkAppleseed[®]

Acknowledgments

New York Appleseed wishes to thank **Edgeworth Economics**—and **Sophie Meadows** in particular—and **Latham & Watkins LLP** for assisting New York Appleseed with the research behind this briefing. Special thanks are also due to the volunteer professionals formerly of **Dewey & LeBoeuf** who did important initial research on this topic for New York Appleseed and to **Lisa Donlan** for her insights into the complexities of New York City school data. **Sarah Camiscoli**, **Margaret Fung**, and **Rene Kathawala** also provided critical feedback on drafts of this briefing. Finally, this work relied heavily on the pioneering work of **Edwin Darden** in creating the **Resource Equity Assessment Document** for the **Appleseed network**.

This work would have not have been possible without generous grants from the **Donors' Education Collaborative**, the **Orrick, Herrington & Sutcliffe Foundation**, and the **Sirus Fund**. Additionally, the members of the **New York Appleseed Board of Directors** provided critical seed money for this work at a time when the goal of pursuing school diversity across New York City may have struck them as quixotic. Thanks to their initial confidence, this goal lies increasingly within our reach.

About New York Appleseed

New York Appleseed advocates for equity of access and fair allocation of resources to schools and neighborhoods in New York City and its greater metropolitan area. We collaborate with volunteer lawyers, parent groups, demographers, real estate professionals, government officials and community advocates to uncover regional disparities, develop practical solutions, and advocate for implementation of our recommendations.

New York Appleseed is a member of the **Appleseed network** of social justice centers. Please visit our website at nyappleseed.org.

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Introduction

New York needs a renewed commitment to equity to insure that the opportunity to learn is not determined by the census tract where a child resides. Creative leadership is needed to find ways to promote integration so that our schools no longer concentrate the neediest children in the most troubled schools, while ignoring their de-facto exclusion from Gifted and Talented programs and high-performing schools.

—Dr. Pedro Noguera¹

We are often asked: “Why do we need more integration? Why not just make every school a great school?” This study provides a response to that question: in the context of a society intensely stratified by race and socioeconomic status, separate will never be equal and is even less likely to be equitable. Our analysis in this study found that segregation by race and income correlates with resource disparities among elementary schools in New York City, depending on their levels of racial isolation and poverty concentration. With the exception of two categories that prove the rule, these resource disparities run against the city’s most educationally disadvantaged students.²

Over the last three years, New York Appleseed has been a prominent voice for increased school integration within the community school districts of New York City. After the *New York Times* in 2012 reported the New York City school system to be the third-most segregated in the nation,³ New York Appleseed’s *Within Our Reach* series of policy briefings carefully revealed and explained the complex mechanisms by which schools become segregated in a city so diverse.⁴ This study, by contrast, demonstrates why this segregation matters.

Both the positive benefits of diversity in the classroom for all children and the harms of isolation for those students with the most educational disadvantages support the argument for school diversity. The benefits are well established in the scholarly literature. Diverse schools help prepare

children for the diverse nation in which they will be living and working—a nation in which by 2042 no single ethnic group will predominate. Complementing the Common Core,⁵ diverse schools offer all children the opportunity to develop the kind of critical-thinking skills that arise from multiple perspectives expressed by students of different backgrounds,⁶ and allow children (and their parents) the opportunity to learn how to foster welcoming, safe environments where all people feel valued.⁷ The benefits of such environments extend to people of different races and incomes, students with disabilities, LGBT students, and English Language Learners. Students in diverse schools are less likely to employ stereotypes about the “others” with whom they share the city,⁸ and are able to develop the kind of cross-racial understanding that comes naturally with positive daily interaction with children of other races and backgrounds.⁹ Students who attend integrated schools are also more likely to live in diverse neighborhoods later in their lives.¹⁰

This study addresses the harms of racial isolation for educationally disadvantaged students and adds to the substantial body of literature on the resource disparities that segregated school systems create. Appleseed’s 2011 report “The Same Starting Line” introduced the “Resource Equity Assessment Document” (“READ”) developed by Edwin Darden and available at <http://www.appleseednetwork.org/equity-and-diversity-resources/>.¹¹ That report summarized findings of five other Appleseed centers which had used READ to uncover significant resource disparities

between low-poverty and high-poverty schools. In this study, New York Appleseed worked with a team of professionals from Edgeworth Economics to analyze the disparities in educational resources most critical to educational opportunity.¹² The New York City Department of Education (“DOE”) does not maintain public data on many of the important categories of educational resources covered by READ, an important finding of this report in its own right. Without such publicly available information, it is impossible to assess the full extent of the disparities in educational opportunity between schools with different populations. Indeed, many of the undisclosed resource categories are likely more sensitive to the disparities in private-fundraising capacity among schools than are the categories of resources analyzed in this study.

The findings of this study, described in the Summary of Findings section below, were consistent with those of the five other Appleseed centers. With two exceptions that essentially prove the rule, we found that resource disparities run in one direction—against those schools with heavier concentrations of students of color and low-income students. This study therefore supplements recent findings of disparity in educational opportunity by the Schott Foundation in *A Rotting Apple: Education Redlining in New York City*,¹³ and by the New York City Independent Budget Office in *Availability and Distribution of Selected Program Resources in New York City High Schools*¹⁴ and *A Statistical Portrait of New York City’s Public School Teachers*.¹⁵

The persistence of disparities across hundreds of schools and multiple jurisdictions where Appleseed centers have conducted analysis strongly suggests that attempts to “make every school a great school” by addressing individual resource disparities as they reveal themselves will always fall short. New York City must continue to take steps to allocate resources more equitably, but it must also exercise leadership in reducing the levels of segregation within the system. Increased integration is not itself sufficient to provide fully equitable access to educational opportunity, but it does seem to be a prerequisite.

Summary of Findings and Recommendations

This report highlights the nature and magnitude of unequal resource allocation among the elementary schools within New York City's public school system. Based on data collected by the State of New York with respect to New York City elementary schools from academic calendar years 2009-2010, 2010-2011, and 2011-2012, this report presents and analyzes unequal distributions and potential deficiencies in available resources at certain of the city's public elementary schools. The report also considers the effects these inequalities may have on the academic achievement of students in schools that are at a resource disadvantage.

Findings:

With the exception of two resource categories explained later, our analysis of the data in this report reveals that students at schools with higher populations of racial minorities and low-income students are at a resource disadvantage when compared to students at schools with predominately White and more affluent student populations.

- (a) When accounting for teacher experience, schools with a majority of Black, Latino, Black or Latino, or non-White students had higher percentages of less qualified teachers than did schools with a majority of White students, as measured by:
 - (i) Teachers with a master's degree plus 30 academic credit hours of additional training or a doctorate degree;
 - (ii) Teachers without a valid teaching certificate;
 - (iii) Teachers teaching out of certification;
 - (iv) Core classes not taught by "highly qualified" teachers;
 - (v) Annual new teacher turnover; and
 - (vi) Annual total teacher turnover.

- (b) When accounting for (i) student-to-teacher ratio and (ii) average class size, schools with a majority of Black, Latino, Black or Latino, or non-White students had lower ratios as compared to schools with a majority of White students. As discussed below, the circumstances behind these two exceptions strengthen, rather than weaken, the conclusion that unequal resource distribution weighs against schools with higher concentrations of students of color and low-income students.

Recommendations:

As Dr. Noguera's quote above indicates, we need creative leadership and proactive policies from the DOE. As described in our *Within Our Reach* series, one of the most important steps that DOE can take now is to develop and adopt an official DOE policy statement insisting on the primary importance of diverse schools with accountability standards for schools, their leaders, and school districts. DOE should announce a policy that all schools must take specific steps to foster an environment of inclusion in which people of all races, cultures, and economic backgrounds are genuinely welcome and will require officials to evaluate the impact of all major DOE actions on the diversity of affected schools. Specific accountability standards will require administrators to consider how each of the myriad administrative decisions they make each day lines up against the important goal of school diversity.¹⁶

Additional recommendations from *Within Our Reach* are reprinted in the conclusion of this document.

1 | The New York City Public School System

The New York City public school system is the largest public school system in the United States, with an overall student population of approximately 1.1 million students.¹⁷ It includes 1,800 schools and roughly 75,000 teachers.¹⁸ Of these 1,800 schools, approximately 700 are elementary schools.¹⁹ In academic years 2009-2010, 2010-2011, and 2011-2012, the average elementary school had approximately 627 students and an average class size of 24 students.

Variation among Elementary Schools

The data reveal significant variation among New York City elementary schools with respect to categories relevant to educational quality and opportunity.

Poverty within the School System

For purposes of this report, we characterize students who qualify for free lunch or reduced price lunch ("FRPL") in school as low-income.²⁰

Poverty is prevalent among students in New York City elementary schools. During academic years 2009-2010, 2010-2011, and 2011-2012, on average, approximately 78% of elementary-school students were low-income. The percentage of students eligible for FRPL varies widely among elementary schools.²¹ In some schools nearly 100% of the student population is low-income. Conversely, only 4% of students were low-income at a school in the Upper East Side of Manhattan.²²

Racial Diversity within the School System

While the New York City elementary-school population is racially and economically diverse on the whole, individual schools are highly segregated. For example, during academic year 2011-2012, schools were, on average, composed of student populations that were 40.74% Latino/Hispanic, 28.89% Black, 16.12% White, 13.40% Asian, and less than 1% either Native American or multiracial. Many elementary schools located in Manhattan, Staten Island, and regions of Brooklyn had majority-White populations, with some as high as 93% White. In other regions of the city, students were predominantly Black and Latino.²³

2 Methodology

The data analyzed in this report came from publicly available sources on the DOE's website. Data were collected for each district elementary school in the school system serving Kindergarten (and, in some instances, pre-Kindergarten) through the fifth grade, for a total of 543 elementary schools across the 5 boroughs.²⁴ Charter schools were not included in this study. Data were collected for three academic calendar years (2009-2010, 2010-2011, and 2011-2012), although data for select categories were only available for two academic calendar years (2009-2010 and 2010-2011).²⁵

Most of the data were collected from each school's Report Card, which was part of the Accountability and Overview Report. Report Cards for each elementary school contained information pertaining to the categories listed below. The data collected targeted resource availability according to classroom demographics. The scope of the data was generally limited by information collected and compiled by the elementary schools and included:

- Average class size, as well as teacher turnover, student-to-teacher ratios, and percentage of core classes not taught by "highly qualified" teachers;
- Poverty rate;
- Racial composition of students within each school; and
- Qualifications of teachers, including the percentage of teachers:
 - With no valid teaching certificate;
 - Teaching out of certification;
 - With fewer than three years' experience; and
 - With master's degrees plus 30 academic credit hours of additional training or a doctorate.

In addition to performing summary statistical analyses, regression analyses were also conducted in order to examine resource distribution at each school with respect to race and income. Each of the dependent variables was analyzed to determine its relationship to the percentage of (a) students in various racial categories, including: (i) Black students; (ii) Latino students; (iii) Asian students; (iv) Black or Latino students; and (v) all non-White students; and (b) FRPL-eligible students.

The mean value of each data category listed above was determined for schools with a majority of students in any one of these categories. These mean values were then compared to those of (a) all other schools and (b) schools with a majority of White students. A statistical test was then run to determine whether the difference between these mean values was statistically significant—that is, whether it was statistically different from 0%.²⁶

New York Appleseed and its partners have observed for years that the aforementioned data sets are not reliable with respect to any individual school. We have observed instances where the data as reported simply do not describe the realities at a given school—at least as those data would be understood by an untrained member of the public. Our methodology does not, however, hang on the accuracy of the data with respect to any individual school, but rather, analyzes broad trends across data reported for the 543 schools. Since we have no reason to believe that data for one category of school may be more unreliable than for another category, our finding of statistically significant disparities across the school system is not affected or compromised by the data available to us.

3 | The Data

The results from the data analyzed highlight how race and poverty correlate with resource distribution in New York City elementary schools. Statistically significant relationships emerged with respect to the levels of teaching “caliber” and teacher turnover. Specifically, racial demographics and rates of FRPL-eligible students were tested against (a) teaching experience, with metrics including (i) percentage of teachers with master’s degrees plus 30 academic credit hours of additional training or a doctorate degree, (ii) percentage of teachers without a valid teaching certificate, (iii) percentage of teachers teaching outside of certification, (iv) percentage of core classes not taught by “highly qualified” teachers, (v) percentage of annual new teacher (fewer than 5 years’ experience) turnover, and (vi) percentage of annual total teacher turnover; and (b) school statistics, with metrics including (i) ratio of students per teacher and (ii) average class size.

Teacher Experience

Percentage of Teachers with Master’s Degrees Plus 30 Academic Credit Hours of Additional Training or a Doctorate Degree

Overview

Teachers with a master’s degree plus 30 academic credit hours of additional training or a doctorate degree, hereafter defined as “Qualified Teachers,” represent a significant percentage of all New York City elementary-school teachers. Qualified Teachers made up 46.45% of the average school’s overall teachers. For the 25th to 75th percentile of schools, the number of Qualified Teachers ranged from 36% to 57% of all teachers.

Racial and Poverty Effects

The percentage of Qualified Teachers was lower in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. These disparities are statistically significant. The

result holds when comparing these schools to those with a majority of White students. For example, the average percentage of Qualified Teachers was 41.86% in majority Black or Latino schools and 56.91% in majority White schools.

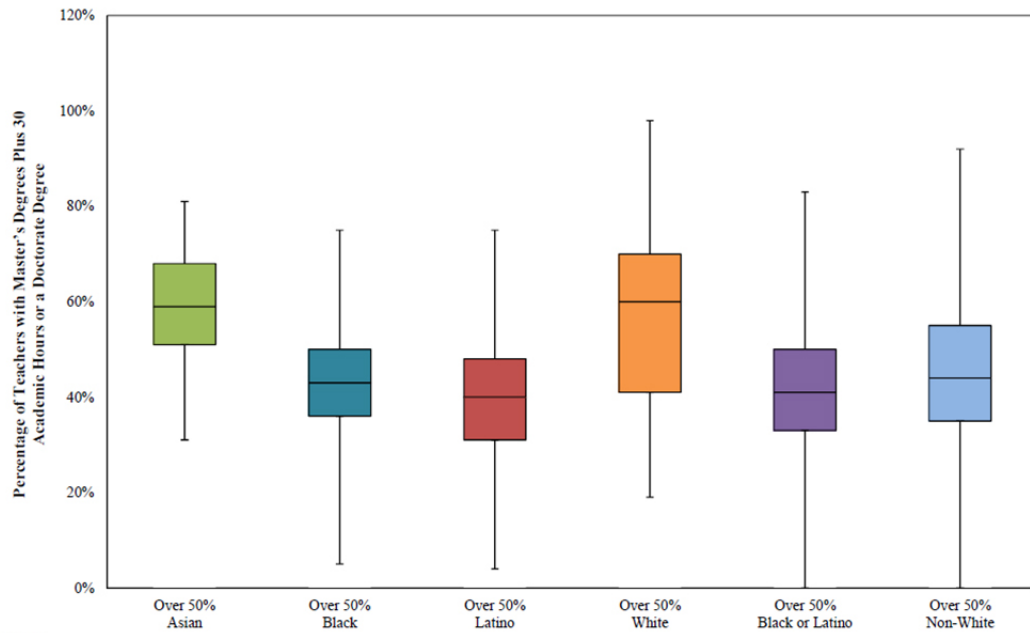
The percentage of Qualified Teachers was also lower in schools with a majority of FRPL-eligible students. The average percentage of Qualified Teachers in schools with a majority of FRPL-eligible students was 45.37%, while the average for all other schools was 53.36%. This difference is also statistically significant.

Analysis

Schools with a majority of FRPL-eligible students, and particularly schools with a high concentration of students of color, employed fewer Qualified Teachers than did other elementary schools within the New York City public school system. Although schools with significant Black student populations enjoyed a moderately greater number of Qualified Teachers compared to majority Latino schools and schools with generally large overall minority populations, schools with a majority of students of color were inadequately staffed with Qualified Teachers as compared to other elementary schools.

A lack of Qualified Teachers reduces the depth and quality of instruction that is available to students. Many children, but especially low-income students and students of color, enter the classroom with educational disadvantages.²⁷ But instead of pairing the most skilled teachers with these children to help them catch up with their peers, “[t]he very children who most need strong teachers are assigned, on average, to teachers with less experience, less education, and less skill than those who teach other children.”²⁸ Pairing academically disadvantaged students with teachers less experienced and less qualified than teachers at other schools diminishes the opportunities for students of color and low-income students to succeed academically. New York City’s system of racially and economically

**QUALIFIED TEACHERS
BY SCHOOLS WITH A MAJORITY OF STUDENTS IN EACH CATEGORY
2009/2010 - 2011/2012 SCHOOL YEARS**



Notes:

Minimum, 25th percentile, median, 75th percentile, and maximum shown.

Schools with majority Black or Latino students and schools with majority non-White students include schools within the other categories.

Source:

Consolidated Appleseed Chart with Initial Data(5771312_6_NY).xlsx.

**QUALIFIED TEACHERS AND POVERTY RATE
2009/2010 - 2011/2012 SCHOOL YEARS**



Source:

Consolidated Appleseed Chart with Initial Data(5771312_6_NY).xlsx.

segregated schools “produces exactly the opposite of what fairness would dictate and what we need to close achievement gaps,” and actually “enlarges achievement gaps.”²⁹

Percentage of Teachers Without A Valid Teaching Certificate

Overview

New York State offers two levels of certificates for classroom teachers, which are issued in specific subjects or grade titles: (i) an entry-level certificate, which requires completion of a teacher preparation program or equivalent coursework and experience, and which is valid for 5 years; and (ii) an advanced-level certificate, which requires a master’s degree and 3 years of teaching experience and ongoing professional development. On average, in each school, less than 1% of teachers were teaching without a valid teaching certificate, hereafter defined as the “Uncertified Teachers,” with roughly 44% of schools employing Uncertified Teachers at any point during academic years 2009-2010, 2010-2011, and 2011-2012. Numerous schools reported having 0% Uncertified Teachers.

Racial and Poverty Effects

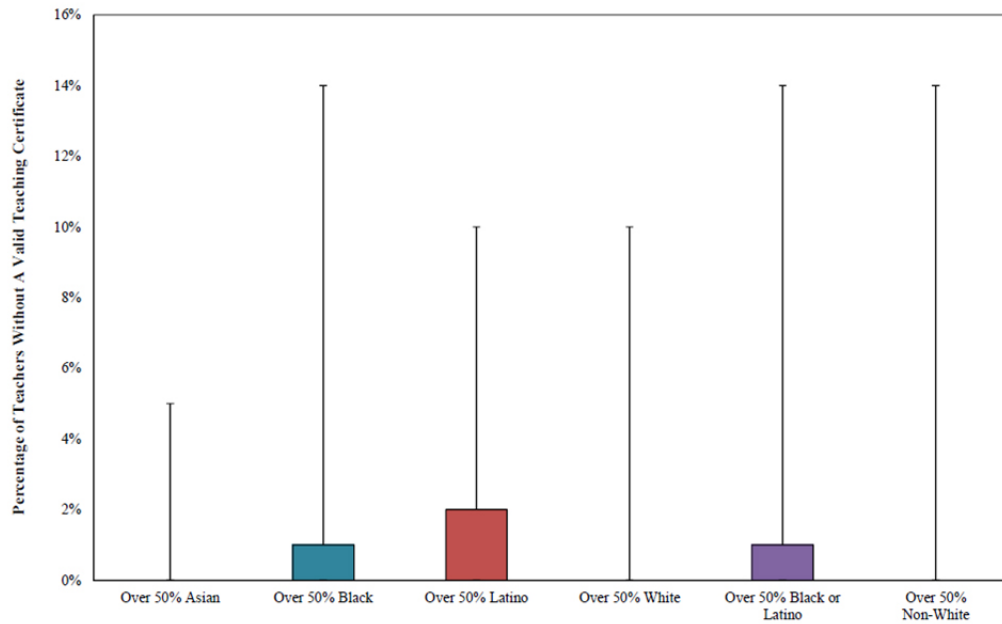
The percentage of Uncertified Teachers was higher in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. This difference is statistically significant for each of these racial categories, aside from Black students. The result holds when comparing these schools to those with a majority of White students, and is in that instance statistically significant for majority Black schools as well.

The percentage of Uncertified Teachers was also higher in schools with a majority of FRPL-eligible students. The average percentage of Uncertified Teachers in schools with a majority of FRPL-eligible students was 0.69%, while the average for all other schools was 0.45%. This difference is statistically significant.

Analysis

Almost half of the schools examined employed Uncertified Teachers, and the percentage of Uncertified Teachers was related to the percentage of FRPL-eligible students who were Black, Latino, Black or Latino, and non-White, indicating a non-random relationship between a higher number of Uncertified Teachers and these categories of students. These data suggest that students of color and low-income students in New York City’s elementary schools have less access to teachers who have achieved a certain minimum teaching standard. Given that minority and low-income student populations are already falling behind their peers at more affluent schools, the “fact that the least-qualified teachers typically end up teaching the least-advantaged students is particularly problematic.”³⁰ Further, recent studies have found that “difference in teacher quality may represent the single most important school resource differential between minority and white children.”³¹ For example, one study found that “large disparities in achievement between black and white students were almost entirely accounted for by differences in the qualifications of their teachers.”³² Studies like this one suggest that disparities in teacher qualifications intensify the opportunity gap between students of color and low-income students as compared to their peers.

**UNCERTIFIED TEACHERS
BY SCHOOLS WITH A MAJORITY OF STUDENTS IN EACH CATEGORY
2009/2010 - 2011/2012 SCHOOL YEARS**



Notes:

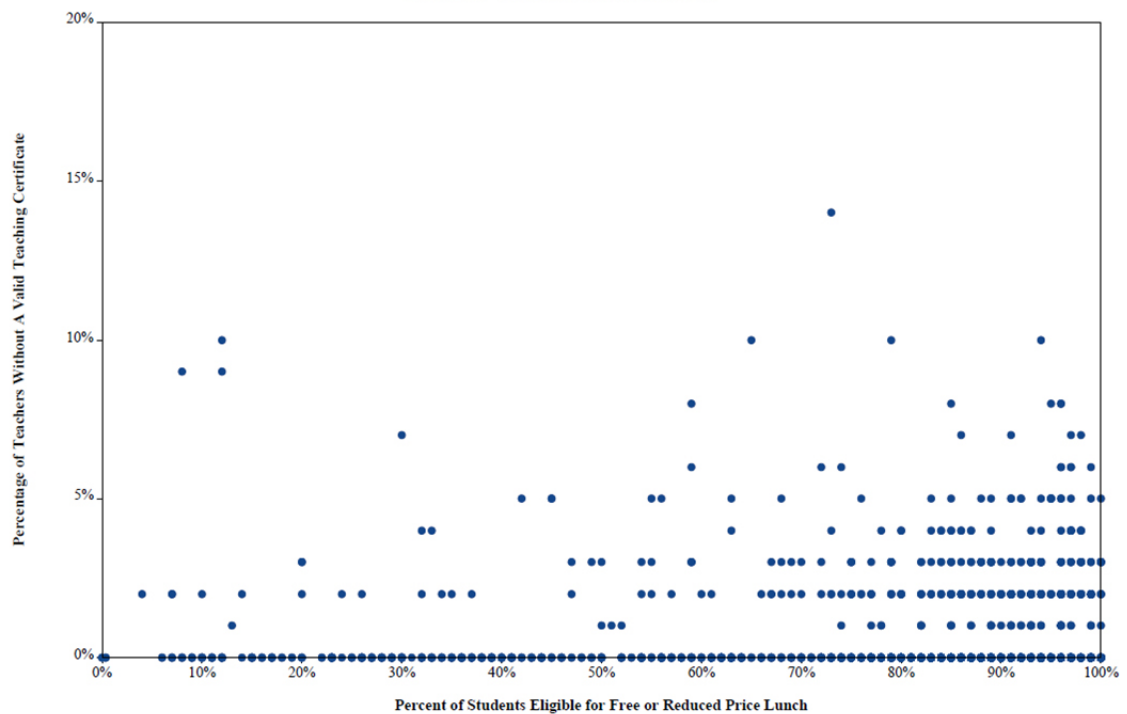
Minimum, 25th percentile, median, 75th percentile, and maximum shown.

Schools with majority Black or Latino students and schools with majority non-White students include schools within the other categories.

Source:

Consolidated Appleseed Chart with Initial Data(5771312_6_NY).xlsx.

**UNCERTIFIED TEACHERS AND POVERTY RATE
2009/2010 - 2011/2012 SCHOOL YEARS**



Source:

Consolidated Appleseed Chart with Initial Data(5771312_6_NY).xlsx.

Percentage of Teachers Teaching Out of Certification

Overview

The DOE defines this category, hereafter defined as “Out of Certification Teachers,” as the percent of teachers teaching for more than five class periods per week outside of certification, i.e., on a more than incidental basis. Since there are only two levels of certification for classroom teachers, to fall within the category of Out of Certification Teachers, elementary-school teachers must either be hired without the entry-level certificate or fail to qualify for the advanced-level certificate following the 5-year expiration of their entry-level certificate. At the average elementary school in New York City, 3.35% of teachers were Out of Certification Teachers, with at least 75% of schools having 5% or less Out of Certification Teachers. Numerous schools reported having no Out of Certification Teachers.

Racial and Poverty Effects

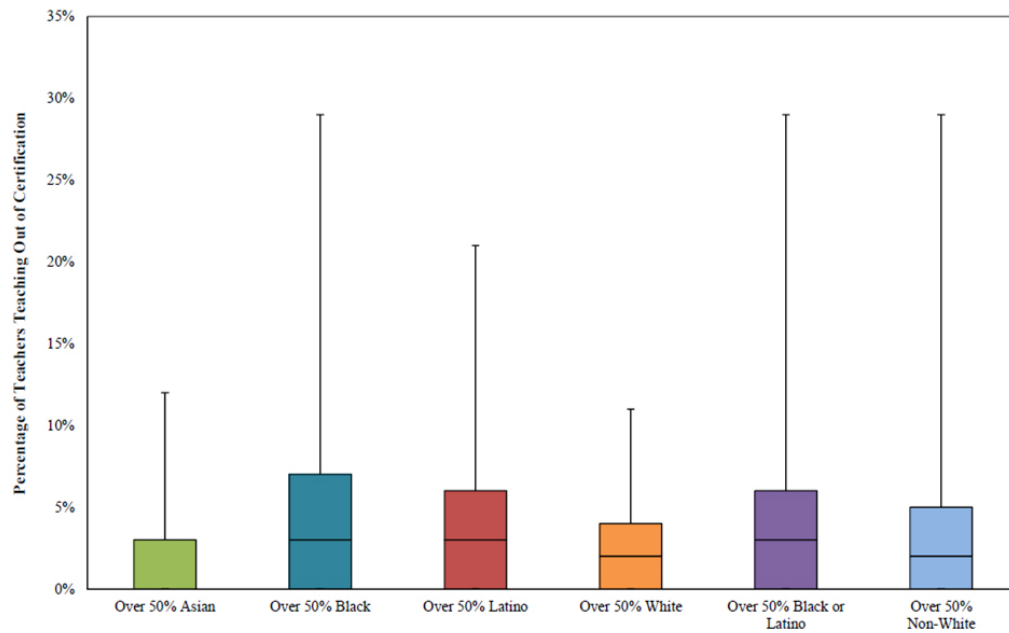
The percentage of Out of Certification Teachers was higher in schools with a majority of students who were Black, Latino, Black or Latino, and non-White, as compared to all other schools. This difference is statistically significant for each of these racial categories. The result holds when comparing these schools to those with a majority of White students.

The percentage of Out of Certification Teachers was also higher in schools with a majority of FRPL-eligible students. The average percentage of Out of Certification Teachers in schools with a majority of FRPL-eligible students was 3.49%, while the average for all other schools was 2.44%. This difference is statistically significant.

Analysis

Three-quarters of schools employed teaching staffs comprised of only 5% or less of Out of Certification Teachers. However, the analysis also indicated that both students of color and FRPL-eligible students were more likely to attend schools with a higher percentage of Out of Certification Teachers. This result is consistent with prior findings that less experienced educators are teaching disproportionately in schools with a majority of low-income and minority children.³³ As one textbook describes the issue: “the least qualified, least experienced, lowest-paid teachers tend to work in schools with the highest number of low-income and minority students. . . . As teachers gain experience and move up the pay scale, they often transfer to more affluent schools.”³⁴

**OUT OF CERTIFICATION TEACHERS
BY SCHOOLS WITH A MAJORITY OF STUDENTS IN EACH CATEGORY
2009/2010 - 2011/2012 SCHOOL YEARS**



Notes:

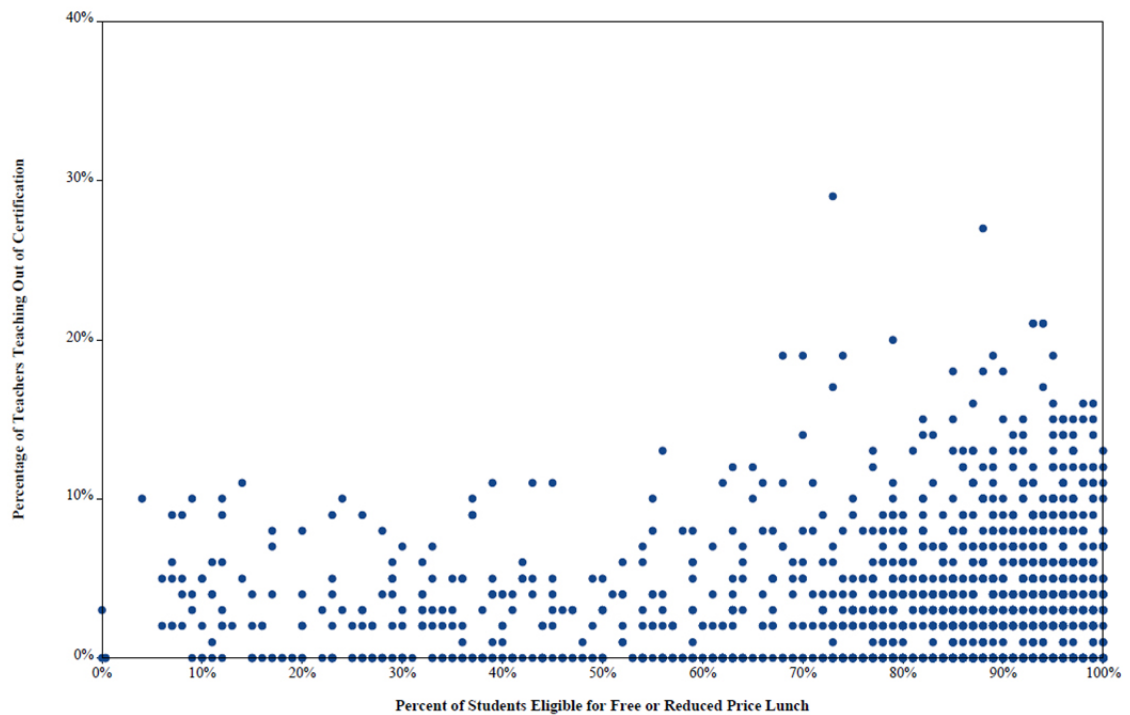
Minimum, 25th percentile, median, 75th percentile, and maximum shown.

Schools with majority Black or Latino students and schools with majority non-White students include schools within the other categories.

Source:

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**OUT OF CERTIFICATION TEACHERS AND POVERTY RATE
2009/2010 - 2011/2012 SCHOOL YEARS**



Source:

Consolidated Appleseed Chart with Initial Data(5771312_6_NY).xlsx.

Percentage of Core Classes Not Taught by “Highly Qualified” Teachers

Overview

DOE also gathers information on the percentage of “core classes” not taught by “highly qualified” teachers. “Core classes” are comprised of English, Mathematics, Science, Social Studies, Art, Music, and foreign languages. To be considered highly qualified, a teacher “must have at least a Bachelor’s degree, be certified to teach in the subject area or otherwise in accordance with New York State standards, and show subject matter competency.”³⁵ Alternatively, Out of Certification Teachers may demonstrate acceptable subject knowledge to be deemed highly qualified.

For the average school, the percentage of core classes not taught by highly qualified teachers was 3.33%. At least three-fourths of the schools studied had 5% or less of their core classes not taught by highly qualified teachers, although in about 20% of the measured schools that figure was higher than 10% in at least one of the academic years studied. Multiple schools reported 0%.

Racial Effects

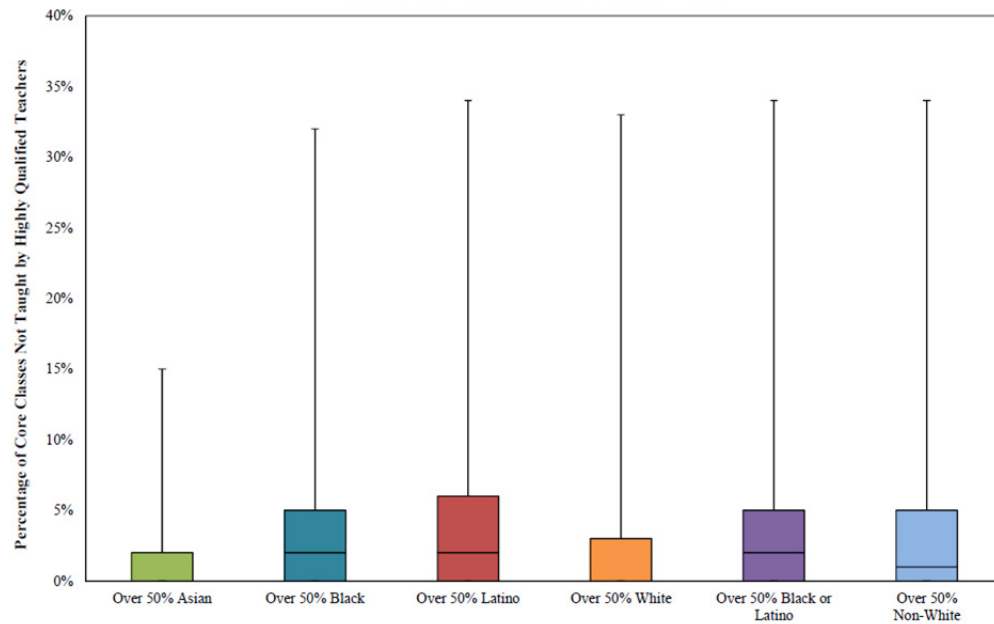
The percentage of core classes not taught by “highly qualified” teachers was higher in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. This difference is statistically significant for each of these racial

categories, except for non-White students. The result holds when comparing these schools to those with a majority of White students, although it is no longer statistically significant for schools with a majority of Black students.

Analysis

The percentage of students of color at a school was shown to have a relationship with the number of core classes not taught by “highly qualified” teachers, suggesting a non-random correlation. Research has shown how important a teacher’s knowledge of a subject’s content is to his or her effectiveness in teaching students.³⁶ Particularly, the “data are especially clear in mathematics and science, where teachers with a major in the subject they teach routinely elicit higher student performance than teachers who majored in something else.”³⁷ The distribution of core classes not taught by highly qualified teachers to those schools with more Black, Latino, Black or Latino, and non-White students may therefore indicate that many students of color are not receiving teaching as effective as that received by their White peers within the school district.

**CORE CLASSES NOT TAUGHT BY HIGHLY QUALIFIED TEACHERS
BY SCHOOLS WITH A MAJORITY OF STUDENTS IN EACH CATEGORY
2009/2010 - 2011/2012 SCHOOL YEARS**



Notes:

Minimum, 25th percentile, median, 75th percentile, and maximum shown.

Schools with majority Black or Latino students and schools with majority non-White students include schools within the other categories.

Source:

Consolidated Appleseed Chart with Initial Data(5771312_6_NY).xlsx.

Percentage of Annual New Teacher Turnover

Overview

Annual turnover data for teachers with fewer than five years' experience was reviewed on a year-to-year basis covering two years of teacher turnover for academic years 2009-2010 and 2010-2011.³⁸ For the average school, 16.84% of teachers with fewer than five years' experience, hereafter described as "New Teachers," left their school annually. Multiple schools experienced 0% annual New Teacher turnover.

Racial and Poverty Effects

The annual turnover among New Teachers was higher in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. This difference is statistically significant for schools with majority Latino and majority Black or Latino students.

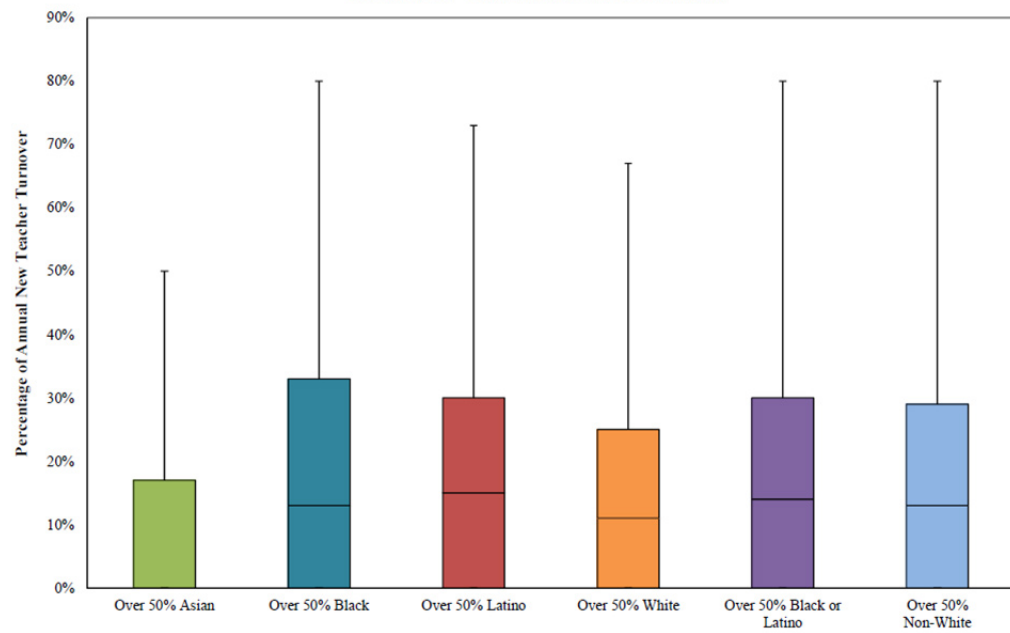
The annual turnover among New Teachers was also higher in schools with a majority of FRPL-eligible students, averaging 17.23%. The average for all other schools was 14.11%. This difference is statistically significant.

Analysis

FRPL-eligible students and students of color, particularly those attending schools with a high concentration of Black or Latino students, were more likely to lose their New Teachers as compared to other elementary-school students in New York City. This trend is consistent with the observation noted by education scholar Glenda L. Partee that "[t]he greatest churn of teachers—whether

ineffective or effective—happens at schools with high concentrations of low-income students and students of color and at low-achieving schools," which "contributes directly to the imbalance of inexperienced and ineffective teachers in these schools."³⁹ The fact that New Teachers are typically assigned to more challenging schools with more disadvantaged children, and are given multiple subjects, split grades, or out-of-field classes, "pose[s] obstacles to teacher retention, student achievement, and the development of cadres of potentially effective teachers at the schools that could benefit the most from their career development."⁴⁰ The destabilizing effects of New Teacher turnover make it more difficult for students in schools with a majority of low-income students and students of color to build lasting relationships with their teachers. Moreover, high rates of New Teacher turnover can often be a symptom of other problems in a school not captured in quantitative data. A report by the Alliance for Excellent Education highlights chronic gaps that remain in disadvantaged students' access to effective teaching, which not only harms students, but can also impact teachers. The press release for the report recognizes that teachers may leave "for a variety of reasons, including inadequate administrative support, isolated working conditions, poor student discipline, low salaries, and a lack of collective teacher influence over schoolwide decisions."⁴¹ As the press release concludes, "Without access to excellent peers, mentors, and opportunities for collaboration and feedback, teachers' performance in high-poverty schools plateaus after a few years and both morale and work environment suffer. Ultimately . . . these hard-to-staff schools become known as 'places to leave, not places in which to stay.'"⁴²

**ANNUAL NEW TEACHER TURNOVER
BY SCHOOLS WITH A MAJORITY OF STUDENTS IN EACH CATEGORY
2009/2010 - 2011/2012 SCHOOL YEARS**



Notes:

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Percentage of Annual Total Teacher Turnover

Overview

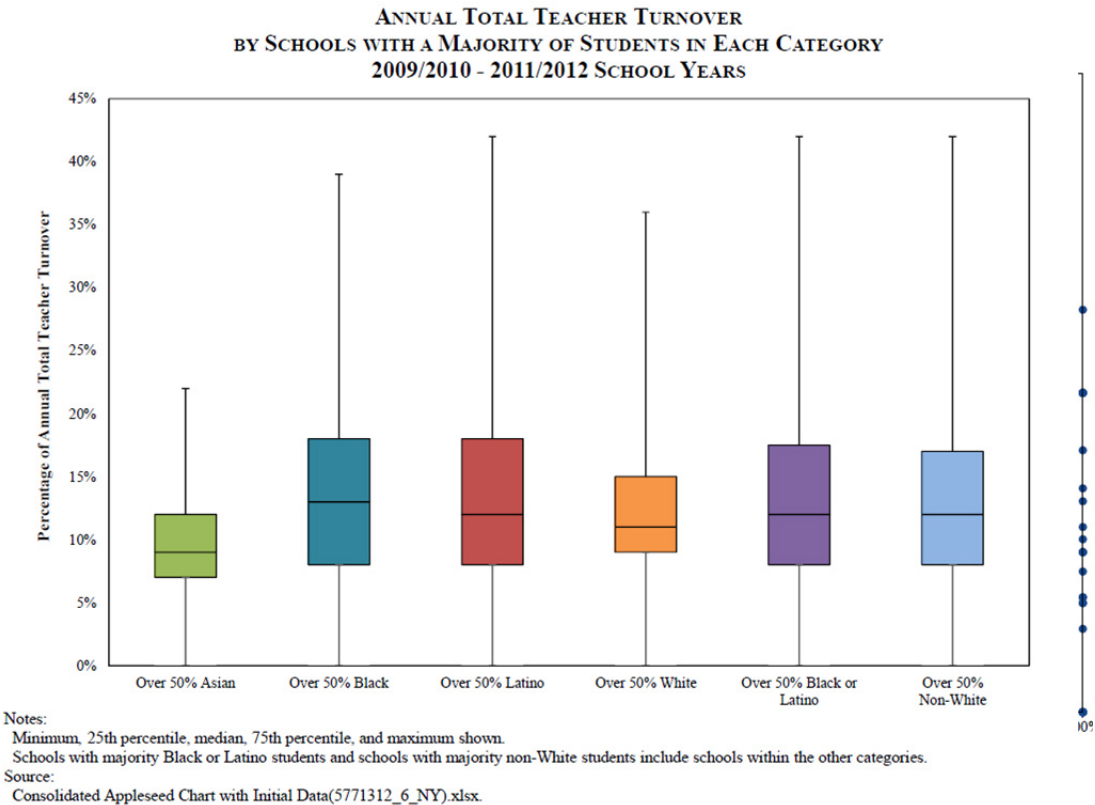
Annual total teacher turnover data on a year-to-year basis covering two years of turnover from the sample of schools for academic years 2009-2010 and 2010-2011 was reviewed.⁴³ For the average school, teachers in the sample changed positions 12.77% of the time. For the 25th to 75th percentile of schools, total teacher turnover ranged from 8% to 16%. While some schools experienced no year-over-year teacher turnover, several schools experienced high levels of turnover.

Racial Effects

As with New Teacher turnover, total teacher turnover was higher in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. This difference is statistically significant for each of these racial categories, except for non-White students. The result holds when comparing these schools to those with a majority of White students, although is not statistically significant for schools with a majority of Black or Latino students.

Analysis

Students of color, particularly those attending schools with a high concentration of Black or Latino students, were significantly more likely to lose their teachers than other public elementary-school students. As discussed above, the failure of a school to retain teachers can impede student achievement and stall the development of cadres of potentially effective teachers at schools where such teachers are needed the most.⁴⁴ Further, higher percentages of total teacher turnover occurring at schools with high concentrations of students of color may indicate that more teachers who are experienced or in leadership positions are leaving schools where teachers like these need to be retained. A high total teacher turnover rate among schools with the greatest populations of students of color may also indicate other kinds of instability that harms teacher performance and student achievement.



School Statistics

Student-to-Teacher Ratio⁴⁵

Overview

In New York City elementary schools, the average ratio of students per teacher was 13.37 to 1. The schools with the lowest 25% of student per teacher ratios had ratios at or below 11.95 to 1, while schools with the highest 25% of student per teacher ratios had ratios at or above 14.85 to 1.

Racial and Poverty Effects

The ratio of students per teacher was lower in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. This difference is statistically significant for each of these racial categories. The result holds when comparing these schools to those with a majority of White students.

The ratio of students per teacher was also lower in schools with a majority of FRPL-eligible students. The average ratio of students per teacher in schools with a majority of FRPL-eligible students was 13.19 to 1, while the average for all other schools was 14.48 to 1. This difference is statistically significant.

Analysis

Students of color and FRPL-eligible students had lower ratios of students per teacher relative to other elementary-school students. Studies have shown that smaller student-to-teacher ratios are associated with higher student achievement.⁴⁶ Thus, although this report has uncovered many disparities among elementary schools that do not favor low-income students and students of color, a disparity in ratios of students per teacher is not one of them. As with the related metric, average class size (discussed below), however, student-to-teacher ratio is an exception that proves the rule. First, the fact that high-poverty and racially isolated schools have lower student-to-teacher ratios is partly indicative of higher concentrations of students with disabilities (requiring additional teachers) in these schools. For example, in our data set, schools with a majority of Latino and Black or Latino students had higher percentages of students in Special Education, as compared to schools with a majority of White students, and the difference is statistically significant for each of these racial categories. Notwithstanding

the extra teachers, schools with a higher number of special-needs students face significant challenges and burdens, as compared to schools with lower numbers of these students. Second, the ability of parents to choose among different elementary schools allows parents to vote with their feet.⁴⁷ As a result, many of the city's most desirable schools are also its most overcrowded schools. Accordingly, low student-to-teacher ratios (while advantageous to students in themselves) are often a sign of a school's unpopularity in New York City.

Average Class Size

Overview

Related to the student-to-teacher ratio is average class size, which for the average elementary school was 24.1 students per class. The schools with the 25% smallest class sizes were at or below 22 students, while schools with the 25% largest class sizes were at or above 26 students.

Racial and Poverty Effects

Average class size was lower in schools with a majority of students who were Black, Latino, Black or Latino, and non-White. This difference is statistically significant for each of these racial categories. The result holds when comparing these schools to those with a majority of White students. For example, average class size was 23.69 in majority Latino schools and 24.96 in majority White schools.

Average class size was also lower in schools with a majority of FRPL-eligible students. The average class size in schools with a majority of FRPL-eligible students was 24.01, while the average for all other schools was 24.74. This difference is statistically significant.

Analysis

Students of color and low-income students have class sizes smaller than those of other students. As with student-to-teacher ratio, a smaller class size tends to create an environment that increases the potential for students to receive more individualized attention and have fewer distractions in the classroom. But again, the difference, while advantageous in itself, is indicative of the popularity of schools where students of color are not concentrated.

4 Conclusion

The data analyzed in this study revealed that, with two exceptions that essentially prove the rule, resource disparities run in only one direction—against those schools with heavier concentrations of students of color and low-income students.

With the exception of student-to-teacher ratios and average class size, our analysis of the data revealed that students at schools with higher populations of racial minorities and low-income students are at a resource disadvantage when compared to students at schools with predominately White and more affluent student populations.

When accounting for teacher experience, schools with a majority of Black, Latino, Black or Latino, or non-White students had higher percentages of less qualified teachers than did schools with a majority of White students, as measured by:

- (i) Teachers with a master's degree plus 30 academic credit hours of additional training or a doctorate degree;
- (ii) Teachers without a valid teaching certificate;
- (iii) Teachers teaching out of certification;
- (iv) Core classes not taught by "highly qualified" teachers;
- (v) Annual new teacher turnover; and
- (vi) Annual total teacher turnover.

As differences in teacher quality may represent the *single* most important school resource differential among schools with different racial compositions,⁴⁸ the current distribution of teacher quality in New York City's elementary school system is no doubt putting students of color and low-income students at an academic disadvantage, as compared to their peers at other schools. As Catherine E. Lhamon, the Assistant Secretary for Civil Rights, has articulated this issue, "The unequal provision of strong teachers and stable teacher workforces too often disadvantages the schools with the most at-risk students as well as schools with the highest enrollments of students of color."⁴⁹ The likely result is that disparities in educational resources compound

to cause students of color and low-income students to endure a persistent disadvantaged education.

It is important to note that limitations to the data collected may mask other discrepancies that exist in resource allocation among elementary schools. For instance, the data are limited to information publicly reported by schools and the elementary school system at large. These data do not account for additional resources that predominantly non-minority, wealthier schools may purchase with private funding and donations. The magnitude and variety of supplemental resources available to these schools are, in many cases, substantial. For example, the Parent Teacher Association of P.S. 87, an elementary school located in Manhattan's Upper West Side, raised \$1,570,000 during the 2009-2010 academic year.⁵⁰ As a result of this additional funding, P.S. 87's typical third-grade classroom contained "Mac computers, a printer, a 3-D digital projector, science kits, chess sets, new desk chairs, a dozen dictionaries and \$28.70 hardcover writing guides."⁵¹ In addition, the P.S. 87 Parent Teacher Association was "pay[ing] for a fitness coach during recess and a chef to assist the one hired by the Education Department, and [was keeping] the comfortable, well-lighted library stocked with books and computers."⁵² Resources such as these are not reported through the DOE website. Additional funds, and the resources bought with them, at these more affluent schools likely exacerbate the educational resource inequity that exists between schools in New York City's elementary school system.

DOE can take steps towards remedying the current resource distribution identified in this study. The Office for Civil Rights has suggested the following remedies to help attract and retain strong teachers, leaders, and support staff in schools: (i) increase effective teaching by focusing on supporting teachers through mentoring, peer support, and professional-development efforts; (ii) assign a school leader proven to be effective to a school that has fewer effective teachers; (iii) improve the entire

system of human capital management for a school district; (iv) improve working conditions and school environments; (v) provide additional planning time, monetary incentives, or other benefits to effective teachers in hard-to-staff schools and to those considering transferring to such schools; and (vi) revise school district and statewide hiring policies, administrative processes, and procedural rules.⁵³ It is important to recognize that schools with higher percentages of students of color and low-income students would likely require more financial support to be able to perform several of these recommendations, particularly attracting proven school leaders and effective teachers with financial incentives and improving working conditions and school environments. By working to improve teaching and instruction in these schools, DOE could take a big step in addressing disparities in access to educational resources.

The Office for Civil Rights also emphasizes expanding access to advanced academic programs and extracurricular activities, upgrading school facilities and designs, and increasing the availability of technology in the classroom as a means to create high-quality schools that provide students with the greatest opportunity to succeed in college and their chosen careers.⁵⁴

While these strategies are critical for our currently segregated elementary schools, the relentless consistency of the disparities running against racially isolated, poverty concentrated schools suggests that the true structural barrier to resource equality is segregation itself. Until the DOE exerts creative leadership and proactive policies to address this “Tale of Two Cities” and works towards a more integrated school system, we can expect that resource disparities will persist and will continue to run against our most educationally disadvantaged students.

Recommendations

DOE must adopt an official policy statement on the primary importance of diverse schools with accountability standards for schools and school districts. As described in our *Within Our Reach* series, one of the most important steps that DOE

can take now is to develop and adopt an official DOE policy statement insisting on the primary importance of diverse schools with accountability standards for schools and school districts. DOE should announce a policy that all schools must take specific steps to foster an environment of inclusion in which people of all races, cultures, and economic backgrounds are genuinely welcome and that will require officials to evaluate the impact of all major DOE actions on the diversity of affected schools. Specific accountability standards will require administrators to consider how each of the myriad administrative decisions they make each day lines up against the important goal of school diversity.⁵⁵ Pursuant to this official statement:

DOE must adopt accountability standards for both individual schools and community school districts on progress towards diversity goals. Schools should be encouraged to implement programs that appeal to a wide range of parents in quality and subject matter.

DOE should authorize even more dual-language programs in elementary schools across the city. Chancellor Fariña has strongly supported the need for expanded dual language programs, but the commitment must go even further.⁵⁶ These programs must be designed and managed carefully to prevent unnecessary segregation within a school. Dual language programs should rededicate themselves to the educational needs of English Language Learners (“ELL”) in their districts while allowing schools to modify their instructional model based on the actual populations within their schools. Since there are abundant models for dual language programs with ELLs representing more than half of the class, DOE should adopt a policy that ELL applicants should be given priority admission to a dual language program over non-ELL applicants. By selecting languages for study appropriate for local ELLs, marketing affirmatively to their communities, and removing admissions preferences that screen out rather than include, dual language programs can model integrated learning practices.

DOE must commit to work transparently and in good faith with community school districts, city council members, community boards,

community groups, and individual schools to develop appropriate student-assignment plans in furtherance of diversity goals. This commitment should extend to federal Magnet School Assistance Program grants. Failing to include the affected community in the development of the required desegregation plan, the DOE repeatedly misses golden opportunities to rally local communities around diversity with the prospect of increased resources for elementary schools.

This commitment should also extend to student-assignment policies for all new, unzoned elementary schools (including charter schools) and requires working with stakeholders to make sure that such schools respond to actual community needs.

DOE must adopt a policy of evaluating the impact on the diversity of nearby schools for all major actions, including proposals for zone-line changes (including unzonings), co-locations, school closings, opening new elementary schools, and providing space for charter schools.

DOE needs to work with community school districts to create parent-resource and information centers to ensure that all parents have access to the information they need to make informed choices for their children's elementary schools and to navigate the application process. Parent centers need to be accessible to all communities and provide translation services and informational materials translated into common spoken languages in each district.

As the Office for Civil Rights has articulated the crux of the problem of unequal resource allocation in schools, "Research confirms what we know intuitively – high-quality schools can make a dramatic difference in children's lives, closing achievement gaps and providing students with the opportunity to succeed in college and their chosen careers."⁵⁷ It is essential that educators, politicians, and parents alike act to ensure our schools provide every child, without regard to that child's race or socio-economic status, access to an education that includes the teachers, tools, and instruction necessary to nurture the potential for academic success.

Endnotes

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- ² Heather G. Peske & Kati Haycock, *Teaching Inequality: How Poor and Minority Students are Shortchanged on Teacher Quality*, The Education Trust, June 1, 2006, at 2, <http://edtrust.org/wp-content/uploads/2013/10/TORReportJune2006.pdf>. Peske and Haycock note that these children enter school substantially behind sometimes because of poverty, because they speak another language other than English, or other issues.
- ³ See Ford Fessenden, *A Portrait of Segregation in New York City's Schools*, N.Y. Times, May 11, 2012, <http://www.nytimes.com/interactive/2012/05/11/nyregion/segregation-in-new-york-city-public-schools.html>. Data based on percentage of students that would have to move to achieve integration among Blacks and Whites in the largest U.S. cities in 2009-2010.
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- ⁸ Roslyn Arlin Mickelson & Martha Bottia, *Integrated Education and Mathematics Outcomes: A Synthesis of Social Science Research*, 88 N.C. L. Rev., 993 (2010); Thomas F. Pettigrew & Linda R. Tropp, *A Meta-Analytic Test of Intergroup Contact Theory*, 90(5) J. of Personality and Soc. Psychol., 751-783 (2006); Douglas D. Ready & Megan R. Silander, *School Racial and Ethnic Composition and Young Children's Cognitive Development: Isolating Family, Neighborhood and School Influences*, in, *Integrating Schools in a Changing Society: New Policies and Legal Options For a Multiracial Generation* 91-113 (E. Frankenberg & E. DeBray eds., The Univ. of N. Carolina Press 2011).
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- ¹⁰ Eaton & Chirichigno, *supra* note 7.
- ¹¹ *The Same Starting Line: How School Boards Can Erase the Opportunity Gap Between Poor and Middle-Class Children*, Appleseed Foundation, Jan. 2011, <http://www.appleseednetwork.org/equity-and-diversity-resources/>.
- ¹² New York Appleseed, as the author of this report, would like to thank Latham & Watkins LLP for its assistance with data collection and editorial support.
- ¹³ Michael Holzman, *A Rotting Apple, Education Redlining in New York City*, Schott Foundation for Public Education, 2013, <http://www.otlcampaign.org/sites/default/files/resources/redlining-full-report.pdf>. See generally Schott Foundation for Public Education, <http://www.schottfoundation.org/>.
- ¹⁴ Gretchen Johnson, et al., *Availability and Distribution of Selected Program Resources in New York City High Schools*, New York City Independent Budget Office, http://www.ibo.nyc.ny.us/iboreports/2013hsresources.pdf?utm_source=hootsuite&utm_campaign=hootsuite.
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- ¹⁷ Chancellor Fariña and the Leadership Team, New York City Department of Education, <http://schools.nyc.gov/AboutUs/leadership/leadershipteam/Chancellor+Fariña.htm> (last visited Feb. 4, 2015).
- ¹⁸ Carmen Fariña, *Mayor's Management Report: Department of Education*, Mayor's Office of Operations, 179, <http://www.nyc.gov/html/ops/downloads/pdf/mmr2014/doe.pdf>.
- ¹⁹ See *Elementary Schools*, New York University, <http://www.nyu.edu/employees/life-wellness/family-care/education-options-supports/public-school-options/elementary-schools.html> (last visited Feb. 4, 2015).
- ²⁰ To qualify for a free meal, for example, a family of four must have a household income at or below 130% of the Federal Poverty Guidelines (130% of \$23,050). To qualify for a reduced price lunch, for example, a family of four must have a household income at or below 185% of the Federal Poverty Guidelines (185% of \$23,050). Child Nutrition Programs – Income Eligibility Guidelines, 77 Fed. Reg. 57 (Mar. 23, 2012).
- ²¹ For the 25th to 75th percentile of schools, the percentage of students eligible for FRPL ranged from 73% to 93% of students.
- ²² FRPL-eligible student population percentage of P.S. 006 Lillie D. Blake, located in Manhattan, during academic year 2011-2012.
- ²³ Elementary schools in parts of Brooklyn and the Bronx have student populations that are predominantly Black or Latino, such as P.S. 134 George F. Bristow in the Bronx, which had a Black or Latino student population percentage of 94% during academic year 2010-2011.
- ²⁴ Data was not collected for every elementary school in the school system because some of these schools did not report complete data across every grade level.
- ²⁵ Of those schools that did have pre-Kindergarten students, not all of those schools had pre-Kindergarten data for the entire period for which data was collected; however, data was available for all of those schools beginning in 2011.
- ²⁶ A 5% level was used to determine statistical significance here.
- ²⁷ Peske & Haycock, *supra* note 2, at 2.
- ²⁸ *Id.*
- ²⁹ *Id.* at 3.
- ³⁰ Linda Darling-Hammond & Laura Post, *Inequality in Teaching and Schooling: Supporting High-Quality Teaching and Leadership in Low-Income Schools*, in *A Nation at Risk: Preserving Public Education as an Engine for Social Mobility* 128 (Richard D. Kahlenberg ed., 2000), <http://www.teaching-point.net/News/LDH-Post-Inequality.pdf>.
- ³¹ *Id.*
- ³² *Id.* at 130.
- ³³ Peske & Haycock, *supra* note 2, at 2.

- ³⁴ Leslie S. Kaplan & William A. Owings, *Educational Foundations*, 382 (2d ed. 2014), <https://books.google.com/books?id=jErAAgAAQBAJ&pg=PT409&dq=lowest+paid+teachers+in+minority+schools&hl=en&sa=X&ved=0CDEQ6AEwAGoVChMI7oqHuM3YxwIVg6oeCh0bngNT#v=onepage&q=lowest%20paid%20teachers%20in%20minority%20schools&f=false>.
- ³⁵ New York State Report Card for academic year 2011-2012.
- ³⁶ Peske & Haycock, *supra* note 2, at 8.
- ³⁷ *Id.*
- ³⁸ The data for New Teacher annual turnover were not complete for all schools in the data set with 38 schools not providing data for academic year 2010-2011 and 26 schools not providing data for academic year 2009-2010.
- ³⁹ Glenda L. Partee, *Attaining Equitable Distribution of Effective Teachers in Public Schools*, CENTER FOR AMERICAN PROGRESS, 8 (2014), <https://cdn.american-progress.org/wp-content/uploads/2014/04/TeacherDistro.pdf>.
- ⁴⁰ *Id.*
- ⁴¹ Press Release, *Teacher Attrition Costs United States Up to \$2.2 Billion Annually, Says New Alliance Report*, Alliance for Excellent Education (July 17, 2014), available at <http://all4ed.org/press/teacher-attrition-costs-united-states-up-to-2-2-billion-annually-says-new-alliance-report/>.
- ⁴² *Id.*
- ⁴³ The data for annual total teacher turnover were not complete for all schools in the data set, with 7 schools not providing data for academic year 2009-2010.
- ⁴⁴ Partee, *supra* note 39.
- ⁴⁵ Note that the student-to-teacher ratio is not the same metric as class size. According to Ehrenberg et al., the “pupil/teacher ratio is a global measure of the human resources brought to bear, directly and indirectly, on children’s learning. . . . From an administrative or economic viewpoint, pupil/teacher ratio is very important, because it is closely related to the amount of money spent per child.” Ronald G. Ehrenberg, et al., *Class Size and Student Achievement*, 2 Am. Psych. Society 1, 2 (2001), http://www.psychologicalscience.org/journals/pspi/pdf/pspi2_1.pdf?origin=p.
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- ⁴⁷ “School choice” among elementary schools existed in varying degrees in all of the city’s community school districts during the years under study. For detailed discussion of the mechanics of school choice at the elementary-school level as it existed in 2013, see New York Appleseed, *supra* note 16, at 10-13.
- ⁴⁸ Darling-Hammond & Post, *supra* note 30 (emphasis added).
- ⁴⁹ Catherine E. Lhamon, UNITED STATES DEP’T OF EDUC.: OFFICE FOR CIVIL RIGHTS, *Dear Colleagues Letter: Resource Comparability*, 4 (2014), <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-resourcecomp-201410.pdf> (internal citation omitted).
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- ⁵¹ *Id.*
- ⁵² *Id.*
- ⁵³ Lhamon, *supra* note 49, at 22-23.
- ⁵⁴ *Id.* at 2.
- ⁵⁵ New York Appleseed, *supra* note 16.
- ⁵⁶ *Chancellor Fariña to Launch 40 Dual Language Programs in September*, NEW YORK CITY DEPARTMENT OF EDUCATION, <http://schools.nyc.gov/Offices/mediarelations/NewsandSpeeches/2014-2015/Chancellor+Fari%C3%B1a+to+Launch+40+Dual+Language+Programs+in+September.htm> (last visited Aug. 25, 2015).
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