

Why the Gap? Special Education and New York City Charter Schools

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September 2013





Acknowledgements

I am very grateful to the New York City Charter School Center, especially Michael Regnier and Daniel Hayman, for their assistance contacting charter schools. I am also grateful to Seth Andrew for his recruitment help. I am appreciative of the very helpful comments provided by Brian Gill, Lauren Morando Rhim, Joshua Cowen, Dick Carpenter, Brian Kisida, Jay Greene, and Ryan Marsh.

Funding for this project comes from the Walton Family Foundation. We thank the Foundation for its support but acknowledge that the findings and conclusions presented here are those of the author alone and do not necessarily represent the opinions of the Foundation.

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Executive Summary

The significant growth of charter schools in the United States has brought both praise for the excellent results achieved by some schools and criticism that charter schools may not be serving the most disadvantaged students.

These criticisms are bolstered by the gap in enrollment rates of special education students between charter schools and traditional public schools. A Government Accountability Office (GAO) study put the gap at 3 percent nationally (8.2 percent at charter schools versus 11.2 percent in traditional public schools). This gap is mirrored in New York: The Center on Reinventing Public Education (CRPE) at the University of Washington found a similar gap in New York State (14.3 percent versus 18.2 percent) and the New York City Charter School Center reports that 13.1 percent of city charter school students receive special education services compared to 16.5 percent in traditional public schools.¹

The difference between special education enrollment rates in traditional public and charter schools is of serious concern. Such differences provoked a class-action lawsuit in Louisiana.² In response to the seeming disparity in disability rates across sectors, state lawmakers revised the New York State Charter Schools Act to require charter authorizers to set enrollment and attendance targets for students with disabilities and consider the effort to meet these targets during renewal proceedings.³

To date, however, there has been little research on why this persistent three to four percent gap in special education enrollment rates exists. Critics contend that charters either don't admit or "push out" low-performing students, including those requiring special education services, who must then attend traditional public schools. Charter leaders assert that they are less likely to identify a child as needing special education services, preferring instead to use their autonomy to intervene in the child's learning or behavioral needs, so that she or he can participate fully in the regular classroom environment.

It is also possible that parents of students with special needs are less likely to choose to attend charter schools. They may be satisfied with their current schools or may perceive that certain or all charter schools do not or cannot serve students with Individualized Education Programs (IEPs).

This study, commissioned by the Center on Reinventing Public Education, attempts to ascertain why the disparity in special education rates exists. We use data made available from the New York City Department of Education and 25 participating New York City charter elementary schools to track students who participated in lotteries and discern whether there is a difference over time in special education rates between applicants who enrolled in charters and those who instead enrolled in traditional public schools.

We also use data on all elementary-grade students in New York City public schools to assess the influence of factors that could contribute to the special education gap, such as student mobility across sectors and the probability that a student is newly classified or is declassified as having a disability.

Our analysis reveals several important findings:

- The gap in special education enrollment exists primarily because students with disabilities—particularly those with autism or who have a speech or language impairment—are less likely to apply to charter schools in kindergarten than are regular enrollment students.
- The gap in special education rates between charter and traditional public schools grows considerably as students progress from kindergarten through third grade. A large part (80 percent) of the growth in this gap over time is that charter schools are less likely than district schools to classify students as in need of special education services and more likely to declassify them.
- The other 20 percent of the growth in the gap of special education rates is explained by students transferring between charter and district schools.

1. Robin Lake, Betheny Gross, and Patrick Denice, *New York State Special Education Enrollment Analysis* (Seattle, WA: Center on Reinventing Public Education, November 2012); "Students with Special Learning Needs and NYC Charter Schools, 2012-2013," (New York: New York City Charter School Center, April 2013).

2. Cindy Chang, "New Orleans special needs students file federal lawsuit against Louisiana Department of Education," *New Orleans Times-Picayune*, October 29, 2010.

3. See Joseph Belluck, "Memorandum to Members of the Charter Schools Committee," October 2, 2012.

- Surprisingly, the results do not suggest that charter schools are refusing to admit or are pushing out students with special needs. In fact, more students with previously identified disabilities enter charter schools than exit them as they progress through elementary grade levels. The 20 percent growth in the gap is driven by greater proportions of general education students entering charter schools between kindergarten and third grade, which has the effect of reducing the total proportion of students with special needs compared to the total number of students. In other words, the gap increases because the number of regular enrollment students in charter schools goes up as new students enroll, not because the number of students with disabilities goes down.
- The growth in the special education gap between charter and traditional public schools occurs mostly in what could be considered the most subjective categories of student disabilities: emotional disability and specific learning disability. By far, the most substantial growth in the special education gap occurs in the least severe category, that of specific learning disability. Rates of classification in what might be considered the more severe (and less subjective) categories of special education—autism, speech or language impairment, or intellectual disability—remain quite similar in charter and traditional public schools over time.
- There is great mobility among special education students regardless of whether they attend a charter or traditional public school. Nearly a third of charter school students who receive special education services leave the charter school by the fourth year of attendance. However, more than a third of traditional public school students who receive special education services leave their traditional public school before the fourth year of attendance.

Overall, the results of these findings, at least for this sample of schools, suggest that a significant portion of the special education gap occurs when children enter kindergarten. For whatever reason, students with identified disabilities (particularly students with autism and those with a speech or language impairment) are less likely to enroll in charter schools. We cannot discern the reasons for their parents' choices in a statistical analysis alone, and the issue deserves further study. It may be, for example, that these students were enrolled in specialized pre-school programs that feed into district elementary schools. It is also possible that the parents didn't view charter schools as an appropriate fit for their child, either because of their own assumptions or because they were discouraged from applying by counselors or by charter school staff.

Once a student enrolls in a charter school, the primary driver of the special education gap occurs because charter school students are significantly less likely to be newly classified as having a disability and are far more likely to have their IEP declassified than is the case in the traditional public school sector.

These results suggest that recent attempts to address the special education gap through legislated special education enrollment targets for charter schools are unlikely to yield meaningful results and could prove harmful to students. Regulations requiring charter schools to meet certain thresholds for the percentage of their students in special education could have the impact of forcing charter schools to push for a disability diagnosis for students who otherwise would have avoided the designation. Charter schools should be encouraged to recruit such students. However, it is difficult to hold them accountable for the free choice of individuals deciding whether or not to apply to the charter sector.

Policy attention may be more usefully spent identifying and replicating effective academic or behavioral intervention practices that allow charter and district schools to de-classify students with mild disabilities. As well, policymakers should track across sectors the satisfaction rates of parents of students with special needs and students' academic outcomes, particularly given this study's finding that nearly a third of students with special needs change schools before their fourth year of attendance, regardless of the type of school.

While the implications of this study deserve attention from the field, the results should be considered specific to the 25 schools participating in the study and may or may not apply more broadly. More research is needed to know if the results would be the same in other locales and in a broader sample of charter schools. We also need to know more about the schools' classification and intervention practices as well as what factors influence whether or not parents of children with special needs choose charter schools. The Center on Reinventing Public Education will conduct such studies in the coming year.

Introduction

Charter schools have rapidly expanded in New York and across the nation over the last decade. In the fall of 2013, there will be 183 charter schools operating in New York City, serving about 70,000 students.⁴ Another estimated 50,000 students applied to a New York City charter school but were denied due to a lack of available seats.⁵ Though the effectiveness of charter schools across the nation appears to vary markedly depending on location, prior research demonstrates that the average student attending a New York City charter school performs better on standardized tests than she would have had she been enrolled in a district-run public school.⁶ Additional empirical research demonstrates that the growth of New York City's charter sector has had a small positive impact on student performance in the traditional public schools from which it draws students.⁷

Critics in New York and nationwide have focused on charter schools' seeming failure to enroll a proportionate number of students with disabilities. Charter schools are subject to the same federal requirement to provide a free and appropriate public education (i.e., "FAPE") to students with disabilities that is imposed on traditional public schools under the 1975 Individuals with Disabilities Education Act (IDEA). However, it is common for charter schools to enroll a smaller percentage of special education students than nearby district-run public schools. A widely cited report by the federal Government Accountability Office (GAO) found that 8.2 percent of charter school students across the United States were eligible to receive special education and related services, compared to 11.2 percent of students in traditional public schools.⁸ According to a recent report by the Center on Reinventing Public Education (CRPE), the gap in the percentage of students who receive special education services is larger in New York State than it is nationally: 18.2 percent of

students in traditional public schools in New York receive special education services compared to 14.3 percent of charter school students.⁹

The difference in special education enrollment rates between traditional public and charter schools is of serious concern. Such differences provoked a class-action lawsuit in Louisiana.¹⁰ In response to the seeming disparity in disability rates across sectors, lawmakers in New York revised the state's charter schools act to require charter authorizers to set enrollment and attendance targets for students with disabilities and consider the effort to meet these targets during renewal proceedings.

Though it is commonly recognized that charter schools educate a smaller percentage of students with disabilities than do district-run public schools, to date there has been little empirical examination of potential causes of this phenomenon. While acknowledging the lack of evidence on the issue, the GAO report speculated about a variety of factors that could contribute to lower special education rates in charter schools. Some of the potential causes of the special education disparity offered in the GAO report were outside of a charter school's control. For instance, charter schools do not always have control over special education identification, some charter schools are located in areas with lower rates of identification, and parents of students with disabilities often prefer the services offered by district-run schools. On the other hand, the GAO report also suggested that schools might purposely limit the size of their special education populations because they believe they lack the facilities and/or funding to adequately serve students with special needs.

Thus far, the empirical consideration of the special education gap has not ventured past simple comparisons of the overall percentages of students with special needs in each sector. No hard evidence exists to definitively

4. *Charter School Facts 2013/2014* (New York: New York City Charter School Center, August 2013).

5. *New York City Charter Schools: 2012-13 Enrollment Lottery Trends* (New York: New York City Charter School Center, May 2012).

6. C. M. Hoxby, C. Murarka, and J. Kang, *How New York City's Charter Schools Affect Achievement, August 2009 Report* (Cambridge, MA: New York City Charter Schools Evaluation Project, September 2009); W. Dobbie and R. G. Fryer, *Getting Beneath the Veil of Effective Schools: Evidence from New York City*, NBER Working Paper 17632 (Cambridge, MA: National Bureau of Economic Research, 2011); W. Dobbie and R. G. Fryer, *Are High-Quality Schools Enough to Close the Achievement Gap? Evidence from a Social Experiment in Harlem*, NBER Working Paper 15473 (Cambridge, MA: National Bureau of Economic Research, 2009); CREDO, *Charter School Performance in New York City* (Stanford, CA: Center for Research on Education Outcomes at Stanford University Stanford, 2013).

7. M. A. Winters, "Measuring the Competitive Effect of Charter Schools on Public School Student Achievement in an Urban Environment: Evidence from New York City," *Economics of Education Review* 31 no. 2 (2012) pp: 293-301.

8. *Charter Schools: Additional Federal Attention Needed to Help Protect Access for Students with Disabilities* (Washington, DC: United States Government Accountability Office, June 2012).

9. Robin Lake, Betheny Gross, and Patrick Denice, *New York State Special Education Enrollment Analysis* (Seattle, WA: Center for Reinventing Public Education, 2012).

10. Cindy Chang, "New Orleans Special Needs Students File Federal Lawsuit Against Louisiana Department of Education," *New Orleans Times-Picayune*, October 29, 2010.



explain or quantify the disparity between special education enrollment rates in charter and traditional public schools. It is important not only to document the existence of the special education gap but also to understand the factors that are producing it. For instance, a different policy response is called for if the special education gap is primarily due to students with special needs exiting charter schools after a year or two rather than from differences in the ways that charter and traditional public schools classify students into special education.

In this paper, I track individual students in New York City charter and traditional public schools over time to determine the factors producing differences in the proportion of students in special education across sectors. I utilize data from kindergarten enrollment lotteries collected from a sample of charter elementary schools in order to compare the special education status of charter school students to that of the traditional public school students who applied to the charter sector. I also use data on the universe of elementary-grade students in the city to more fully map the composition of students receiving special education services across the sectors over time. The results provide new insight into the factors leading to differences in the percentages of special education students in the charter and traditional public school sectors. A variety of factors contribute to the gap, which occurs primarily because students with disabilities—particularly those who have autism or a speech or language impairment—are less likely to apply to charter schools in kindergarten than are regular enrollment students.

The gap in special education enrollment across the sectors grows considerably as students progress through school. Charter schooling itself significantly reduces the chances that a student will eventually receive special education services. I demonstrate that 80 percent of the growth in the special education gap between kindergarten and the third grade occurs due to differences across sectors in the probability that students are newly classified as having a disability or due to having their disability declassified—particularly in the category of specific learning disability.

Only 20 percent of the growth in the special education gap between kindergarten and the third grade across the charter and traditional public school sectors is caused by students changing sectors. Surprisingly, this is not primarily due to students with disabilities moving from a charter school to a traditional public school. In fact, as students with disabilities progress through elementary grade levels, more will enter charter schools than exit

them. Additionally, regular enrollment students are disproportionately likely to enter the charter school sector, thus reducing the percentage of all charter school students who receive special education services.

New York City Charter Schools

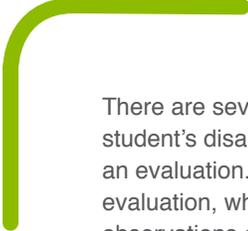
Charter schools are public schools located within school district boundaries but operated independently. The laws and regulations governing charter schools vary substantially across the United States. Though New York City's charter schools receive letter grades according to the district's accountability system, they are not bound by many school district policies. Further, charter schools are not required to employ unionized teachers and are not subject to the provisions of the district's collective bargaining agreement with the teacher union. Freedom from such regulations allows charter schools to experiment with a wide variety of academic programs and policies.

The New York charter school law permits three entities to authorize charter schools: the New York State Department of Education, the State University of New York, and the New York City Department of Education. Unlike traditional public elementary schools to which students are assigned based on their address, charter schools accept applications each spring for students planning to enroll in the fall. If more students apply to attend a charter school than there are seats available, the school is required to enroll students according to a randomized lottery. Students with siblings already enrolled in the school are given preference for enrollment.

Charter schools are located in every borough of New York City, but there are larger clusters of schools in a few neighborhoods with historically underperforming district public schools, most notably Harlem and the South Bronx.

Special Education

Under the IDEA, public schools (including charter schools) are required to provide students with disabilities a free and appropriate public education in the least restrictive environment possible. In practice, these key tenets of IDEA dictate that public schools must provide students who have disabilities with services and supports to ensure they have equal access to the general education curriculum, to the greatest extent possible, in the same manner as their peers without disabilities. The district must provide these services and supports free of charge to the student.



There are several steps involved in classifying a student's disability.¹¹ First, a parent or educator requests an evaluation. Then a district expert conducts an evaluation, which includes a social history for the child, observations of the student, and one of any number of tests. A team of professionals and the parent then meet to determine whether the student fits one of the eligible categories of a disability. If so, the team then develops an Individualized Education Program (IEP) for the student, which lays out the supports that the student needs to access the curriculum.

The severity of disability varies both within and across categories. The designation of special education includes services provided to students with potentially severe mental disorders (e.g., intellectual disability, autism, traumatic brain injury); those with communication challenges (e.g., speech or language impairment); and those with emotional or behavioral disorders, physical disabilities (e.g., deaf, visual impairment, orthopedic impairment), or challenges in learning material (e.g., specific learning disability).

Some categories have objective definitions and offer the evaluator little discretion when classifying a student. Other categories, however, rely heavily on the subjective judgment of the evaluator and are influenced by the student's previous academic performance. In particular, the classification of specific learning disability is often believed to be primarily determined by low academic achievement.^{12, 13}

Sample and Data

The analyses described in this paper were carried out using student-level longitudinal data provided by the New York City Department of Education (NYCDOE). The rich dataset includes information about student demographic characteristics as well as a flag for whether each student has an IEP in a given year and the student's disability classification. In order to coincide with the information collected about enrollment lotteries, the analysis is restricted to students in kindergarten through the third grade from school years 2008–09 through 2011–12.

Some descriptive analyses reported in this paper utilize data on all students enrolled in a New York City charter or traditional public school in the grade levels examined. These data allow for the mapping of special education status and movement of all students across sectors over time.

The analyses are designed to follow a group of students through school over time. In the case of the population of charter and traditional public school students, I identify those students who were enrolled in kindergarten during the 2008–09 school year. I then follow these students each year until 2011–12, when the majority are in the third grade. Students are compared according to each year after kindergarten rather than by grade level in order to account for students who are retained in a grade, which occurs more often in the charter sector than in traditional public schools.

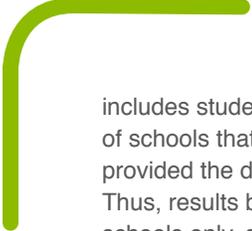
Analyses based on the population of students in elementary grades allows for informative description of the distribution of special education enrollments across sectors. However, there are likely to be important unobserved differences between those who apply for charter schools and those who do not. This analysis does not allow for the comparison between actual outcomes and potential outcomes had charter school attendees instead attended a traditional public school. Such analyses are important in order to assess whether any part of the difference in special education enrollments across sectors is due directly to the experience of attending a charter school, and not simply due to differences in the type of student who applies. For such an assessment, I collected data on the enrollment lotteries in a sample of charter elementary schools across the city.

The NYCDOE does not centrally collect the results of charter school enrollment lotteries. Thus, acquiring the necessary data required gaining the participation of charter elementary schools that were open during the years relevant to our analysis. I contacted each such charter school directly through an e-mail request and follow-up phone calls and e-mails. This restricted sample

11. [The Special Education Process](#), New York City Department of Education.

12. See, for instance, D. L. Macmillan and G. N. Siperstein, *Learning Disabilities as Operationally Defined by Schools*. Paper presented at the Learning Disabilities Summit: Building a Foundation for the Future, Washington DC, August 27–28, 2001.

13. Prior to 2004, students were often placed into special education because of an identified discrepancy between their IQ and academic performance. Under the 2004 revision of IDEA, the federal government began recommending that states abandon the discrepancy model in favor of a "response to intervention" approach, by which the school uses a systematic approach to assess whether the student responds to research-based general education interventions. See USDOE, "Commentary and Explanation About Proposed Regulations for IDEA," 2004, pg. 31.



includes students who participated in enrollment lotteries of schools that chose to participate in the study and provided the data necessary for inclusion in the analysis. Thus, results based on this sample strictly hold for those schools only, and not the New York City charter sector as a whole.

The analyses utilizing data from the sample of schools that supplied lottery information took a matched comparison group approach.¹⁴ The choice to apply to a charter school provides valuable pre-treatment information about a student. These analyses compare the later outcomes of successful charter school applicants to those of traditional public school students who also applied to a charter school but did not enroll, either because they were not offered a seat due to the lottery or for other reasons. The approach is similar in spirit to that taken in recent evaluations of the effect of charter schooling in New York City and elsewhere by the Center for Research on Education Outcomes. However, that prior research matched students primarily on demographic characteristics. The additional information in our dataset about the choice to apply to a charter school improves the comparison.

The sample includes data from 25 charter elementary schools. The charter schools provided data for each year that they held an enrollment lottery (or for which they had lottery data accessible) for kindergarten students from the spring of 2008 (for students to enroll in kindergarten for the fall of 2008) through the spring of 2011. The majority of schools that participated in the study are operated by charter management organizations that run multiple schools in the city.

I similarly track students in the lottery sample beginning in their initial kindergarten year. However, in the case of our lottery sample, students entered kindergarten in any year from the fall of 2008 through the fall of 2011. I make comparisons for each group of students in the individual years following their initial kindergarten year. Thus, for a student who entered a lottery to attend kindergarten in the fall of 2008, Year 3 would be the 2010–11 school year; for a student who entered a lottery to attend kindergarten in 2009, Year 3 would be the 2011–12 school year.

Table 1 reports the sample schools as well as their first lottery year included. The table also reports the 2011–12 total enrollment for each charter school in order to gauge the meaningfulness of the sample. Schools that participated in the sample at any point enrolled a total of 8,843 students in all grades in 2011–12. That year, New York City charter elementary schools enrolled 13,291 students.¹⁵

Each of the schools that opted to participate in the study provided information to the NYCDOE about the students who applied for their admission lottery in a given school year.¹⁶ Upon receiving the data, the NYCDOE developed a protocol to match the lottery information to student administrative records for each school year from 2008–09 through 2011–12. When available, students were matched according to name and date of birth. When necessary, the matching process used factors such as address to distinguish the match. About 70 percent of lottery students were accurately matched to their administrative records. NYCDOE then de-identified the data and provided it to the author. All analyses using the lottery sample are restricted to only those students who could be matched to administrative records.

Since students are followed for several years, attrition from the dataset is an important issue to consider when making comparisons using the lottery sample. Students exit the dataset if they left the New York City public school system, including area charter schools, entirely. Table 2 reports annual attrition rates for students who applied to each kindergarten cohort. Overall attrition rates are modest for both the treatment and comparison groups. Attrition from the dataset appears to be similar among those applicants who attended kindergarten in a charter or a traditional public school.

Analyses and Results

In what follows I provide a variety of analyses intended to address specific factors that could contribute to the differences in the percentage of students with disabilities enrolled in charter and traditional public schools. I address each of these issues separately.

14. Ideally, we have utilized information about which applicants “won” and “lost” the admission lottery in order to carry out a more traditional experimental evaluation of the effect of charter schooling. Unfortunately, in many cases this data element was incomplete, with the most common issue being that schools did not identify as “winners” those students who were enrolled according to a randomized waitlist.

15. Calculated using data from charter elementary schools as reported through the district’s Progress Report system.

16. The protocol did not allow for identifiable student information to reach the researcher. Rather, charter schools sent their lottery information directly to the Research and Policy Support Group at the New York City Department of Education. The Support Group then matched the lottery information to administrative records and provided a data file that excluded identifiable information to the researcher.

Table 1 Charter Schools in Sample

School Name	2011-12 Total Enrollment	First Lottery Year Included
Achievement First Crown Heights Charter School	695	2008
Bedford Stuyvesant New Beginnings Charter School	249	2010
Brooklyn Ascend Charter School	568	2008
DREAM Charter School	248	2008
Excellence Girls Charter School	313	2010
Explore Charter School	504	2011
Explore Empower Charter School	299	2011
Girls Preparatory Charter School of New York	475	2010
Girls Preparatory Charter School of the Bronx**	206	2010
Harlem Prep Charter School	287	2011
Harlem Success Academy 3 Charter School	625	2008
Icahn Charter School	332	2008
Icahn Charter School 2	252	2008
Icahn Charter School 3	216	2008
Icahn Charter School 4	181	2009
Icahn Charter School 5*	101	2011
KIPP Academy Charter School	265	2011
KIPP Infinity Charter School	322	2011
KIPP S.T.A.R. Charter School	306	2011
Leadership Prep Bedford Stuyvesant Charter School	470	2009
Leadership Preparatory Brownsville Charter School	278	2011
Leadership Preparatory Ocean Hill Charter School*	229	2010
South Bronx Classical Charter School	322	2008
Success Academy Charter School - Harlem 2**	475	2008
Success Academy Charter School - Harlem 3**	625	2008
Total 2011-12 Enrollment of Sample Schools	8,843	

Note: Unless otherwise noted, school enrollment data obtained from New York City Progress Reports.

*Enrollment obtained from New York City Charter Center website

**Enrollment obtained from National Center for Education Statistics

Table 2 Student Attrition from the Dataset

LOTTERY		DISTRICT	CHARTER	
2008	YEAR 1	1451	606	
	YEAR 2	1410	97.2% 581	95.9%
	YEAR 3	1359	93.7% 563	92.9%
	YEAR 4	1324	91.2% 540	89.1%
2009	YEAR 1	2214	879	
	YEAR 2	2126	96.0% 850	96.7%
	YEAR 3	2068	93.4% 826	94.0%
2010	YEAR 1	3417	848	
	YEAR 2	3296	96.5% 817	96.3%
2011	YEAR 1	3256	1227	

Note: Column indicates school attended in Year 1. Numbers included in Year 2 and beyond include those from the Year 1 group who remain in the dataset, regardless of the sector in which they are enrolled that year.

SPECIAL EDUCATION ENROLLMENTS BY YEARS AFTER SCHOOL ENTRY

I first track the issue by using the full dataset of elementary students in all public schools in New York City to describe special education enrollment rates by year for the cohort of students who were enrolled in kindergarten in 2008–09. I follow this cohort because it is the most recent that can be followed in the dataset for at least four years, and because it coincides with the earliest collected lottery cohort in the restricted sample. Table 3 compares the percentage of students who receive special education services overall and by disability classification for all traditional public school students and all charter school students, among those who were enrolled in a New York City public school kindergarten during Year 1 (2008–09).

I first consider the special education enrollments of students in Year 1, in which all students in both sectors are enrolled in kindergarten. There are meaningful differences in the rates of students receiving special education

services across sectors in their first year of schooling. Overall, 12.6 percent of students in traditional public schools received special education services in their first year, compared to only 5.7 percent of students in charter schools, for a gap of 6.9 percentage points. Unfortunately, it is impossible to know from the dataset how many students had an IEP prior to entry into kindergarten. Thus, it is important to keep in mind that some of the difference in special education enrollments in the charter and traditional public schools could be due to classification differences across the sectors that already exist in this first observed year.

The breakdown by disability classification is illuminating. More than half of the difference in special education rates across sectors comes from the percentage of traditional public school students classified as having a speech or language disability. Though smaller in number, the proportion of students with autism is meaningfully larger in traditional public schools than in charter schools. Enrollments in some categories are statistically different across sectors, but play a smaller role in the overall difference in special education rates.

The gap in special education enrollment expands another 1.4 percentage points (an additional 20 percent above the original gap) by the fourth year after initial

enrollment. For both sectors, the percentage of students with what we might consider to be “severe” disabilities such as autism or intellectual disabilities remains quite similar over time. In the case of speech or language impairment—the category for which the gap was largest in Year 1—the gap between the charter and traditional public school sectors actually decreases substantially over time. The growth of the proportion of students categorized as having an emotional disability is noticeably greater in the traditional public school sector than in the charter sector. However, by far the largest classification difference over time is found in the greater growth in the percentage of students classified as having a specific learning disability (SLD) in traditional public schools than is the case in charter schools.

WHO APPLIES TO CHARTER SCHOOLS?

Table 4 compares the special education rates of charter school applicants in our lottery sample to those of students in all New York City public schools who entered kindergarten in 2008–09. The table demonstrates a pattern similar to that seen in the universe of elementary school students.

Those who apply to charter school kindergarten lotteries in our sample are less likely to have an IEP than are kindergarten students in traditional public schools, with

Table 3 Disabilities by Sector – Universe of Charter and Traditional Public School Students

	2008–2009 YEAR 1			YEAR 2			YEAR 3			YEAR 4		YEAR 4– YEAR 1		CHANGE IN GAP	
	TP	Ch		TP	Ch		TP	Ch		TP	Ch	TP	Ch		
Autistic	1.1%	0.0%	***	1.2%	0.1%	***	1.3%	0.2%	***	1.3%	0.1%	***	0.2%	0.1%	0.1%
Deaf-Blind	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%
Deaf	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%
Emotional	0.5%	0.0%	***	0.9%	0.1%	***	1.1%	0.2%	***	1.2%	0.3%	***	0.6%	0.2%	0.4%
Hard of Hearing	0.1%	0.0%		0.1%	0.1%		0.1%	0.1%		0.2%	0.1%		0.1%	0.0%	0.1%
Specific Learning Disability	0.9%	0.4%	***	2.2%	1.1%	**	3.9%	1.9%	***	5.5%	2.3%	***	4.6%	1.9%	2.7%
Multiple Disabilities	0.2%	0.0%	***	0.3%	0.0%	***	0.3%	0.0%	***	0.3%	0.0%	***	0.0%	0.0%	0.0%
Intellectually Disabled	0.2%	0.0%	***	0.3%	0.0%	***	0.4%	0.0%	***	0.5%	0.0%	***	0.2%	0.0%	0.2%
Other Health	1.2%	0.5%	***	1.5%	0.9%	***	1.7%	1.0%	***	1.8%	1.4%		0.6%	0.9%	-0.3%
Orthopedic	0.1%	0.1%		0.1%	0.1%		0.1%	0.2%		0.1%	0.2%		0.0%	0.1%	-0.2%
Pre-School Disabled	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%
Speech and Language	8.1%	4.6%	***	8.8%	5.8%	***	8.9%	6.4%	***	8.4%	6.6%	***	0.2%	2.0%	-1.7%
Traumatic Brain Injury	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%
Visual	0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	0.0%
Percentage with IEP	12.6%	5.7%	***	15.6%	8.3%	***	17.9%	9.9%	***	19.3%	11.0%	***	6.7%	5.3%	1.4%
Number	71,323	3,456		66,791	3,792		64,003	3,956		61,756	3,889				

Note: Sample includes those students enrolled in kindergarten in 2008–09. Columns indicate sector enrolled in a particular year.

Table 4 Disabilities by Sector – Universe of Traditional Public School Students and Lottery Applicants

	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 4- YEAR 1		CHANGE IN GAP
	All NYC	Applied	All NYC	Applied							
Autistic	1.1%	0.3%	1.2%	0.3%	1.3%	0.3%	1.3%	0.3%	0.2%	0.1%	0.2%
Deaf-Blind	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Deaf	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Emotional	0.5%	0.3%	0.9%	0.7%	1.1%	1.2%	1.2%	1.2%	0.6%	0.8%	-0.2%
Hard of Hearing	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%
Specific Learning Disability	0.9%	0.5%	2.2%	1.0%	3.9%	3.3%	5.5%	3.3%	4.6%	2.8%	1.8%
Multiple Disabilities	0.2%	0.0%	0.3%	0.0%	0.3%	0.1%	0.3%	0.1%	0.0%	0.1%	0.0%
Intellectually Disabled	0.2%	0.0%	0.3%	0.1%	0.4%	0.1%	0.5%	0.1%	0.2%	0.1%	0.1%
Other Health	1.2%	0.7%	1.5%	1.3%	1.7%	1.7%	1.8%	1.7%	0.6%	1.0%	-0.4%
Orthopedic	0.1%	0.1%	0.1%	0.1%	0.1%	0.3%	0.1%	0.3%	0.0%	0.2%	-0.2%
Pre-School Disabled	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Speech and Language	8.1%	6.0%	8.8%	6.3%	8.9%	6.4%	8.4%	6.4%	0.2%	0.4%	-0.2%
Traumatic Brain Injury	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Visual	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percentage with IEP	12.6%	8.0%	15.6%	9.8%	17.9%	13.4%	19.3%	13.4%	6.7%	5.5%	1.2%
Number	71,323	13,914	66,791	9,094	64,003	1,869	61,756	1,869			
Lottery Years Included (Spring)		2008		2008		2008		2008			
		2009		2009		2009					
		2010		2010							

Note: Traditional public school sample includes those students enrolled in kindergarten in 2008–09. Applicant sample includes those who applied to kindergarten lottery in identified year. Columns indicate sector enrolled in a particular year.

the largest differences in the speech and language impairment and autism categories. This result suggests that the type of student who applies to attend a charter school is an important determinant of the difference in special education rates among traditional public and charter school students.

However, as was the case when considering the universe of elementary students, the gap in special education percentages between the two groups grows meaningfully over time. By far the most substantial growth in the special education gap between kindergarten charter school applicants and all traditional public schools in the city occurs in the SLD category.

Table 5 compares special education percentages over time of those kindergarten lottery applicants who attended charter or traditional public schools. Since students were offered seats according to randomized enrollment lotteries, we would expect that the disability classifications in kindergarten would be similar to one another, regardless of whether applicants enrolled in a charter or a traditional public school.¹⁷ The gap in kindergarten special education rates is much smaller among this group than is the case when considering all traditional public school students. Those applicants who have autism or an emotional disability or a speech or language impairment appear less likely to actually enroll in a charter school. This suggests that some students with disabilities who apply to charter schools are not gaining access to those schools, though the differences appear to be relatively small.

17. If all students who “won” a seat in a lottery actually enrolled in the charter school, we would suspect the characteristics of applicants attending charter and traditional public schools in kindergarten to be statistically identical to one another. However, applicants offered a seat often choose not to enroll in the school for a variety of reasons.

Table 5 Disabilities by Sector – Lottery Applicants

	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 4- YEAR 1		CHANGE IN GAP
	TP	Ch	TP	Ch	TP	Ch	TP	Ch	TP	Ch	
Autistic	0.3%	0.1%	0.4%	0.1%	0.4%	0.2%	0.4%	0.2%	0.0%	0.2%	-0.1%
Deaf-Blind	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Deaf	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Emotional	0.4%	0.1%	0.8%	0.2%	1.4%	0.0%	1.6%	0.0%	1.2%	-0.1%	1.2%
Hard of Hearing	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%
Specific Learning Disability	0.5%	0.4%	1.0%	0.7%	2.6%	1.2%	4.0%	1.3%	3.5%	0.9%	2.6%
Multiple Disabilities	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
Intellectually Disabled	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%
Other Health	0.8%	0.6%	1.3%	1.1%	1.6%	1.4%	1.9%	1.3%	1.1%	0.7%	0.4%
Orthopedic	0.1%	0.1%	0.1%	0.0%	0.1%	0.2%	0.3%	0.2%	0.2%	0.1%	0.0%
Pre-School Disabled	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Speech and Language	6.1%	5.7%	6.4%	5.9%	6.5%	5.9%	6.8%	5.3%	0.7%	-0.4%	1.1%
Traumatic Brain Injury	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Visual	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
IEP	8.3%	7.0%	10.3%	8.2%	12.9%	9.1%	15.1%	8.3%	6.8%	1.3%	5.5%
Number	10,353	3,561	6,891	2,203	3,514	1,313	1,401	468			
Lottery Years Included (Spring)		2008		2008		2008		2008			
		2009		2009		2009					
		2010		2010							
		2011									

Note: Applicant sample includes those who applied to kindergarten lottery in identified year. Columns indicate sector enrolled in a particular year.

Interestingly, the gap in special education rates across sectors increases substantially over time, and by a great deal more than is the case when comparing charter school students to all traditional public school students. Among kindergarten applicants, the gap in special education enrollments in Year 1 is only about 1.3 percentage points, but by Year 4 (when most students are in the third grade) the gap in special education classifications among those who attend charter and traditional public schools has grown five-fold to about 6.8 percentage points.

Once again, the gap’s expansion over time is attributable to greater growth in SLD enrollments in traditional public schools relative to charters. However, among charter applicants, the gap also grows considerably in the speech or language impairment and emotional impairment categories.

INFLUENCE OF CHARTER SCHOOLING ON PROBABILITY OF SPECIAL EDUCATION ENROLLMENT

The substantial growth over time in the special education gap between charter school students and traditional public school students who also applied to attend a charter school in kindergarten suggests that a meaningful part of the growth in the special education gap could derive from differences between charter and traditional public schools. I further consider this issue by analyzing whether the number of years that a student spends in a charter school influences the probability that the student is assigned to receive special education services.

For this analysis, I focus exclusively on the sample of lottery applicants. Restricting the analysis to include only those students who applied to attend a charter school in kindergarten improves the comparison between later outcomes of charter school students to traditional public

school students who are very similar to them. This sort of analysis goes a long way to account for the differences—many of which are unobserved in an administrative dataset—between the type of student who seeks to attend a charter school and the average student in a traditional public school.

I structure the panel dataset so that each observation is a student in a year. I analyze linear probability models in which the dependent variable is an indicator for whether the student was observed to be enrolled in special education during that year (SPED), and the independent variables include controls for student gender and race/ethnicity (a vector, X), indicators for the number of years since the lottery (a vector, δ), and a fixed effect indicating the kindergarten lottery (school by year) in which the student participated (λ).

I estimate two separate models in order to test the robustness of the findings. The variable of interest in the first model is an indicator that equals one if the student attended a charter school during Year 1, and equals zero otherwise (Charter1). That is, in this model students are categorized according to the school they originally attended throughout the sample period, even if they move across sectors. Formally:

$$(1) SPED_{ijt} = \alpha_0 + \alpha_1 X_{ijt} + \alpha_2 Charter1_{ijt} + \delta_t + \lambda_j + \varepsilon_{ijt}$$

The second model considers the effect of a year of charter schooling on the probability that a student is enrolled in special education. This model, similar in spirit

to that used in a recent analysis of the effect of KIPP charter schools on student test score performance,¹⁸ uses as the independent variable of interest the number of years to that point that the student has been enrolled in the charter school (ENROL_YRS). Formally:

$$(2) SPED_{ijt} = \beta_0 + \beta_1 X_{ijt} + \beta_2 ENROL_YRS_{ijt} + \delta_t + \lambda_j + \varepsilon_{ijt}$$

In the above formula, i indexes the student, j indexes the lottery, t indexes the year, and ε is a stochastic term clustered by the lottery in which the student participated. I am interested in the estimated coefficient β_2 , which represents the effect of a year of charter schooling on the probability that a student is enrolled in special education in a given year.

Table 6 reports the results of estimating (1) and (2) to explain the probability of special education placement overall as well as that of several individual special education classifications.¹⁹ Enrolling in a charter school in kindergarten decreases the overall likelihood that a student in the sample is observed in special education in a particular year by about 1.1 percentage points. A year of charter schooling decreases the probability that a student has an IEP by about 0.866 percentage points relative to if the student had attended a traditional public school.

Charter schooling has differing effects on rates of different special education classifications. Charter schooling significantly decreases the likelihood that a student is classified as having an SLD or an emotional

Table 6 Regressions – Effect of a Year of Charter Schooling on Probability of IEP

Enrolled in Charter Y1						* p < 0.10 ** p < 0.05 *** p < 0.01
	IEP	SLD	Emotional	Other Health	Speech	
Charter Year 1	-0.0111*	-0.00325*	-0.00565***	-0.000245	0.00111	
	[0.00583]	[0.00197]	[0.000899]	[0.00206]	[0.00496]	
Observations	29,969	29,969	29,969	29,969	29,969	
R-squared	0.038	0.01	0.009	0.012	0.023	
Years in Charter School						
	IEP	SLD	Emotional	Other Health	Speech	
Years in Charter	-0.00866***	-0.00304**	-0.00351***	-0.000267	-0.000158	
	[0.00301]	[0.00120]	[0.000492]	[0.00113]	[0.00247]	
Observations	29,969	29,969	29,969	29,969	29,969	
R-squared	0.039	0.011	0.01	0.012	0.023	

Note: Models estimated via OLS. Models also include a fixed effect for the enrollment lottery in which the student participated, student race/ethnicity, gender, and an indicator for number of years since enrolled in lottery. Robust standard errors clustered by student reported in brackets.

18. J. D. Angrist, Susan M. Dynarski, Thomas J. Kane, Parag A. Pathak, and Christopher R. Walters, “Who Benefits from KIPP?” *Journal of Policy Analysis and Management* 31, no. 4 (2012) pp: 837-860.

19. I exclude some special education classifications because too few students in the sample are observed in the category to allow for a meaningful analysis.

disability. However, it does not influence the likelihood that the student is classified as having a speech or language impairment or another health impairment.

The results from these regression analyses suggest that a meaningful part of special education gap is explained by the decreased likelihood that a charter school student is classified in special education. A decreased probability of classification into special education increases the special education gap, but does so in a seemingly positive way, as charter school students simply become less likely to be placed into special education than they would have had they instead attended a traditional public school.

Additional descriptive analyses are required, however, in order to understand the mechanism by which the differences in special education placements across sectors occur. Such differences could derive either from differences across sectors in changes to the number of students classified as disabled, or from movement of students across sectors over time.

CLASSIFICATION CHANGES

Differences across sectors in changes to a student's special education classification status could play a role in the growth of the special education enrollment gap. Such changes could occur either by a student receiving a new

IEP classification, or by the school determining that a student's IEP classification is no longer appropriate and declassifying the student's disability status.

I conducted descriptive analyses using the universe of New York City students as well as the sample of charter school applicants. In the universe analyses, students are categorized according to the sector they attended in 2008–09. Students in the lottery sample are categorized according to the sector they attended in their respective Year 1.

The top section of Table 7 reports the percentage of students who attended kindergarten in each sector who were not classified as disabled in Year 1 and were newly classified in special education by Year 4. Somewhat surprisingly given the prior analyses, when using the universe of students in New York City schools, the table shows no overall difference in the proportion of charter or traditional public school students who were newly placed into special education during this time period. There are, however, some differences in the classification of students by disability category.²⁰ Students who enrolled in a traditional public school in Year 1 were significantly and substantially more likely to be categorized as having an SLD by Year 4 than were students who enrolled in a charter school in Year 1. On the other hand, charter

Table 7 New IEP Classifications and IEP Declassifications by Sector

New IEP Classification						
	All Public	All Charter		Sample Public	Sample Charter	
IEP	8.4%	8.9%		9.8%	8.9%	*
Emotional	0.9%	0.6%		0.9%	0.2%	***
Specific Learning Disability	5.0%	2.9%	***	1.5%	1.0%	**
Other Health	1.3%	1.6%	*	1.2%	1.2%	
Speech or Language	2.8%	4.3%	***	6.3%	6.3%	
IEP Declassified						
	All Public	All Charter		Sample Public	Sample Charter	
IEP	11.1%	16.3%	***	8.1%	12.1%	**
Emotional	7.3%	4.5%				
Specific Learning Disability	4.0%	8.1%	**			
Other Health	14.1%	20.9%				
Speech or Language	15.5%	19.3%	*			

* p < 0.10
 ** p < 0.05
 *** p < 0.01

20. I exclude several categories because the number of new diagnoses or declassifications was too small to report without threatening student anonymity.

school students were significantly and substantially more likely to be identified as having a speech or language impairment by Year 4 than were students who originally enrolled in a traditional public school.

The results by category are similar when the sample is restricted to include students who participated in one of the observed enrollment lotteries. However, among lottery participants, those students who attended a traditional public school in kindergarten were more likely to receive a new IEP during the sample period.

The next set of results in Table 7 reports the percentage of students who had an IEP at some point during the sample period who were declassified out of special education services by Year 4. Those students who attended a charter school in Year 1 were significantly and substantially more likely to have their IEP classification removed by Year 4 than were students who originally enrolled in a traditional public school. Among those students who ever had an IEP during this period, 16.3 percent of those who attended a charter school in Year 1 had that IEP revoked, compared to 11.1 percent of students who attended traditional public schools that year. The overall result is similar when restricted to lottery applicants only.

In summary, when considering all students in the city, those who enrolled in charter or traditional public schools in kindergarten are similarly likely to get a new IEP. However, among those who apply to attend charter schools, those who enrolled in a traditional public school are more likely to be placed into special education by their fourth school year. IEP declassifications are much more likely in charter schools than in traditional public schools.

EXITING FOR ANOTHER SCHOOL

Commentators frequently suggest that charter schools encourage their students who have disabilities to leave for another school. I now address this issue by considering the exiting behavior of students with and without disabilities in charter and traditional public schools.

Table 8 reports the percentage of students in charter or traditional public school in kindergarten in Year 1 who moved to a different school by Year 4. The table reports the results from two comparison strategies. The first set of results compares the later exits of students who had a special education classification during Year 1. In order to account for later diagnoses, the second set of results compares those students who ever had an IEP at any point during the sample period to students who at no point in the sample period were observed to be receiving special education services.

Students with IEPs are significantly and substantially more likely to exit a charter school than are those who were never given an IEP during the sample period. Nearly a third of students who receive special education services at some point in their early elementary grades and attend a charter school in kindergarten leave that charter school by the fourth year of attendance.

However, the table also shows a similar pattern among students attending traditional public schools. Slightly more than a third of traditional public school students who receive special education services during the sample period exited for another school by the fourth year of enrollment. In fact, the results show that traditional public school students with IEPs are significantly more likely to leave their kindergarten school than are students with IEPs who attended a charter school in kindergarten.

Table 8 Percentage of Students Who Leave Kindergarten School by Year 4

Student Had IEP in Year 1					
	All Public	All Charter		Sample Public	Sample Charter
IEP in 2009	29.9%	23.3%	*	31.8%	20.7%
No IEP in 2009	28.4%	18.7%	***	26.5%	12.1%

Student Ever Had IEP During Sample Period					
	All Public	All Charter		Sample Public	Sample Charter
IEP by 2011	34.8%	31.9%		34.9%	28.4%
No IEP by 2011	27.0%	16.8%	***	24.0%	16.8%

* p < 0.10
** p < 0.05
*** p < 0.01

20. I exclude several categories because the number of new diagnoses or declassifications was too small to report without threatening student anonymity.



The results demonstrate that students with disabilities are a particularly mobile population, regardless of the sector in which they are educated. Students with IEPs do not appear to be leaving charter schools at higher rates than they leave traditional public schools. Such mobility tends to increase the special education gap largely because when a student leaves a charter school she is very likely to next attend a traditional public school. This result seems almost predetermined given that charter schools tend to accept fewer students in non-gateway grades.

DECONSTRUCTING THE GROWTH OF THE SPECIAL EDUCATION GAP

The analyses thus far point us toward the factors that are likely to influence the growth in the special education gap over time. However, it is difficult to assess from these analyses the magnitude of the effect of each of these factors on the gap.

I take advantage of the dataset following the universe of elementary students over time in order to deconstruct the factors producing the growth of the special education gap. I do this by identifying changes in the number of students with and without IEPs in each sector, either through changes in classification status or from movement of students between the charter and traditional public school sectors.

Similar to the prior analyses, we begin with students who were enrolled in kindergarten in 2008–09 and follow them through 2011–12 when most are in the third grade. In order to simplify the comparison, I further restrict this analysis to include only those students who are observed in the New York City school system in each of the four sample years, which eliminates the issue of students moving into and out of the dataset. That the overall percentages of students receiving special education services in each sector are very similar with this restricted sample as it is for the universe of students strongly suggests that any results are not driven by this decision.

I identify six potential factors that influence the percentage of students with an IEP within the charter or traditional public school sector. When the effect of a factor is disproportionate in one sector, it will lead to a change in the special education gap. These factors can

be separated into two categories: *classification changes* and *student movement across sectors*.

CLASSIFICATION CHANGES

New IEP

Student without an IEP the previous year is newly classified as having a disability. This factor would increase the special education gap if students in traditional public schools are more likely to receive a new IEP than are students in charter schools.

Declassified IEP

Student with an IEP the previous year is classified as no longer having an IEP. This factor would increase the special education gap if students in charter schools are more likely to have their IEP declassified than are students in traditional public schools.

STUDENT MOVEMENT ACROSS SECTORS

Regular Education Student Exits from a Sector

Occurs when a student without an IEP attends a traditional public school the prior year and then leaves that sector to attend a charter school, or vice versa. The exiting of such students decreases the total number of students in the sector without influencing the total number of students with IEPs in the sector. Thus, as regular enrollment students exit the charter school sector, the percentage of charter school students with IEPs increases, which would tend to decrease the special education gap.

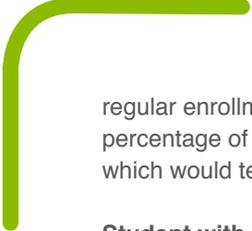
Student with IEP Exits from a Sector

Occurs when a student with an IEP attends a traditional public school the prior year and then leaves that sector to attend a charter school, or vice versa. Such movements influence both the total number of students in a sector and the number of students with IEPs in the sector. Thus, a student with an IEP exiting a charter school would decrease the percentage of charter students with an IEP, which would tend to increase the special education gap.

Regular Education Student Enters a New Sector²¹

Occurs when a student without an IEP attends a traditional public school the prior year and then enters a charter school, or vice versa. The entrance of such students into a new sector increases the total number of students in the sector without changing the total number of students with IEPs in the sector. Thus, as

21. Though they are different sides of the same coin, it proves important to model the entrance and exiting of students of each classification status separately. The reason is that the much larger number of students in traditional public schools relative to charter schools means that each movement has a larger impact on the special education percentage in the charter sector. For instance, the exiting of a student with an IEP from the traditional public school sector has an infinitesimal effect on the percentage of traditional public school students with an IEP, but that student's entrance into the smaller charter sector has a meaningful effect on the proportion of charter students with an IEP.



regular enrollment students enter the charter sector, the percentage of charter students with IEPs decreases, which would tend to increase the special education gap.

Student with IEP Enters a New Sector

Occurs when a student with an IEP attends a traditional public school the prior year and then attends a charter school, or vice versa. The entrance of such students into a new sector increases the total number of students in the sector as well as the number of students in the sector with an IEP. Thus, as students with IEPs enter the charter sector, the percentage of students with IEPs increases, which would tend to decrease the special education gap.

For each year, I map student movement in each of the six categories that influence the percentage of students in special education for a sector. I then calculate the change in percentage points for the percentage of students in that sector who have an IEP from one year to the next based on that factor. Finally, I can assess the effect of each factor on the special education gap by taking the difference of the effect of that factor on the percentage of students with an IEP in traditional public schools and its effect on the percentage of students with an IEP in charter schools.

The mapping process is detailed in Table 9. For illustration purposes, I now describe the factors related to changes in the percentage of students receiving special education services in the charter sector between 2009 and 2010.

The top of Table 9 reports information on students overall in the charter sector each year. There were 3,032 charter school students enrolled in kindergarten in 2009, and 178 of these students had an IEP, leading to a special education enrollment percentage of 5.87 percent. The following year, 3,488 of the students in the analysis were enrolled in a charter school, which represents a gain of 456 students. The total number of students with IEPs in charter schools increased by 113 and the number of regular enrollment students in the sector increased by 343. Consequently, the percentage of charter school students who were in special education increased 2.47 percentage points to 8.34 percent in 2010.

The next set of rows in Table 9 deconstructs the changes in the number of students in charter schools into each of the six factors. The final set of rows demonstrates that the deconstruction procedure accurately maps the changes in the number of IEP and regular enrollment students in charter schools. We know this because the

calculated number of new students in each category using the deconstruction numbers equals the true difference in IEP (113) and regular enrollment (343) students between 2009 and 2010.

Having determined the ways that new IEP and regular enrollment students enter the charter sector, we can now calculate the effect of each factor on the change in the percentage of students with IEPs in the charter sector. I utilize a formula—detailed in the Appendix—that determines the percentage point change in the percentage of students with an IEP associated with the number of students in each of the six factor categories. The results of this calculation for each factor are reported in the column next to the number of students in the category. For instance, the assignment of 108 new IEPs among charter school students itself increased the percentage of charter students overall with an IEP by 3.10 percentage points, while the 29 IEP declassifications decreased the overall IEP percentage in charter schools by 0.83 percentage points, and so on. Summing the percentage point changes associated with each factor yields an increase of 2.47 percentage points, which is exactly the increase in the percentage of charter students with IEPs observed using the total enrollment numbers (8.34 percent - 5.87 percent = 2.47 percent). I perform identical calculations for each year and sector. Finally, I calculate the effect of each factor on the special education gap. I do this by calculating the difference between that factor's influence on the percentage of students with IEPs in traditional public schools and its influence on the percentage of students with IEPs in charter schools.

The results of these calculations are reported in Table 10. For example, using the numbers from Table 9 we see that students with IEPs exiting traditional public schools for the charter sector in 2010 decreased the percentage of students with IEPs in traditional public schools by 0.06 percentage points, while students with IEPs exiting charter schools decreased the percentage of students in charter schools by 0.27 percentage points that year, and so this factor increased the special education gap between 2009 and 2010 by 0.21 percentage points ($-0.06 - (-0.27) = 0.21$).

The special education gap between traditional public and charter schools grew a total of 1.39 percentage points for these students over the four-year period. I calculate that 1.12 percentage points of that increase—about 80 percent of the growth in the gap over the time period—was due to factors related to classification changes. In particular, students attending traditional public schools were more likely than charter school students to receive

Table 9 Mapping Student Classifications and Movements Across Sectors

	Charter Schools				Traditional Public Schools			
	2009	2010	2011	2012	2009	2010	2011	2012
Total Students	3,032	3,488	3,774	3,857	61,661	61,205	60,919	60,836
Regular Enrollment	2,854	3,197	3,397	3,434	53,728	51,617	49,992	49,064
Students								
IEP Students	178	291	377	423	7,933	9,588	10,927	11,772
% IEP	5.87%	8.34%	9.99%	10.97%	12.9%	15.7%	17.9%	19.4%
Difference IEP Enrollment								
Difference Regular Ed. Enrollment	343		200	37	-2,111	-1,625	-928	
New IEP								
Declassified IEP	108	3,10%	109	2,89%	77	2,00%	2,055	3,36%
Regular Ed. Exit Charter	29	-0,83%	41	-1,09%	31	-0,80%	366	-0,60%
for Trad. Public								
IEP Exit Charter for Trad. Public	165	0,28%	161	0,36%	189	0,49%		
Regular Ed. Enter Charter	10	-0,27%	21	-0,51%	37	-0,86%		
from Trad. Public								
IEP Enter Charter from Trad. Public	587	-0,99%	429	-0,95%	272	-0,70%		
Regular Ed. Exit Trad. Public								
for Charter								
IEP Exit Trad. Public for Charter								
Regular Ed. Enter Trad. Public from Charter								
IEP Enter Trad. Public from Charter								
New IEP Calculated from Breakdown	113		86	46		1,655	1,339	845
New IEP - Declassified-IEP Exit + IEP Enter								
New Reg. Ed. Calculated from Breakdown	343		200	37		-2,111	-1,625	-928
New IEP + Declassified								
Difference in % IEP Calculated from Breakdown		2,47%		1,65%		0,98%		2,27%
						2,80%		1,41%

Note: Analysis includes all students enrolled in kindergarten in 2009 observed in the data set each year through 2012.

Table 10 Decomposing Factors Producing Growth in Special Education Gap

	2009	2010	2011	2012	TOTAL CHANGE
Percent IEP					
Charter	5.87%	8.34%	9.99%	10.97%	5.10%
Traditional Public	12.9%	15.7%	17.9%	19.4%	6.48%
Gap		0.33%	0.63%	0.44%	1.39%
Decomposing Changes in Gap					
Classification Changes		0.49%	0.43%	0.20%	1.12%
New IEP		0.26%	-0.08%	0.57%	0.76%
Declassified IEP		0.23%	0.50%	-0.38%	0.36%
Student Movement Across Sectors		-0.17%	0.20%	0.24%	0.27%
Regular Ed. Exit from a Sector		-0.15%	-0.25%	-0.41%	-0.81%
IEP Exit from a Sector		0.21%	0.46%	0.81%	1.48%
Regular Ed. Enter a New Sector		0.95%	0.91%	0.65%	2.51%
IEP Enter a New Sector		-1.17%	-0.92%	-0.81%	-2.90%

a new IEP, and charter school students were more likely to have their IEP declassified during this time period.

Only about 20 percent of the growth in the special education gap during this time period (0.27 percentage points) was due to movements of students across the traditional public and charter sectors. Students with IEPs exiting the charter sector—what might be considered the result of charter schools removing students from their rolls—increased the special education gap over this period by about 1.48 percentage points. However, more students with IEPs actually entered the charter sector during this period than exited it. That is, contrary to the common perception that the growth in the special education gap is occurring largely due to students with IEPs being removed from charter schools, the total effect of students with IEPs moving across sectors was to decrease the special education gap over this period.

Rather, student movement across sectors increased the special education gap because of the number of regular enrollment students moving in and out of charter schools. Also, as shown in Table 9, about twice as many regular

enrollment students entered charter schools during this period than exited them. This significantly increased the total number of students enrolled in charter schools without also increasing the number of students with IEPs enrolled. That is, the entrance of regular enrollment students increased the denominator when calculating the proportion of charter school students enrolled in special education, which decreased the percentage of students with IEPs in the sector.

In summary, I use information on the universe of students in New York City charter and traditional schools to precisely map the changes in special education rates in each sector. The analysis finds that the growth in the special education gap over time is not primarily due to students with IEPs leaving charter schools. Rather, the largest driver of the increase in the gap comes from differences across sectors in the likelihood that a student is newly classified as having an IEP or has their disability status declassified.

Summary and Conclusion

The analyses in this paper provide a comprehensive assessment of the factors related to the gap in the percentages of students with disabilities in New York City charter and traditional public elementary schools. The results provide several valuable insights that can be helpful to policymakers weighing the value of regulations intended to address the special education gap.

I confirm that there is a meaningful difference in the percentages of students in charter and traditional public schools who are enrolled in special education in New York City. The special education gap is relatively large in kindergarten, and it grows considerably as students progress through elementary grades.

The primary driver of the special education gap is the type of student who applies to attend a charter school in kindergarten. Students with a speech or language impairment or who have autism are particularly less likely to apply for a charter school lottery.

However, the growth in the special education gap over time occurs almost exclusively in the mild and subjectively diagnosed category of specific learning disability. Analysis of data on a sample of students who applied to enrollment lotteries demonstrates that attending a charter school itself leads to a significantly lower probability that a student will be in special education in a later year. That is, a meaningful part of the growth in the special education gap occurs because students who would be placed in special education were they to attend a traditional public school avoid the classification in a charter school—either because they are not newly classified or because their existing IEP is declassified.

Finally, I use data on the universe of students enrolled in kindergarten in 2008–09 to map the factors related to the growth in the special education gap over time. The results demonstrate that the movement of students with IEPs across sectors is not a major factor in producing the growth in the special education gap—in fact, such movements actually lead the gap to decrease over time. Rather, the primary drivers of the special education gap in New York City are that charter school students are significantly less likely to be newly classified as having a disability and are far more likely to have their disability declassified than is the case in the traditional public school sector.

The results of the analyses in this paper suggest that recent attempts to address the special education gap through legislation are unlikely to yield meaningful results and could prove harmful to students.

Regulations that fail to take into account the reality that students with disabilities—particularly students with autism and those with a speech or language impairment—are less likely to choose to enroll in a charter school can have only a minimal effect on the special education gap. Charter schools should be encouraged to recruit such students. However, it is difficult to hold them accountable for the free choice of individuals deciding whether or not to apply to the charter sector.

Our results suggest that regulations focusing on students who have already enrolled in charter schools are unlikely to succeed in closing the special education gap. The growth in the gap is not primarily determined by students with IEPs leaving the charter sector. Rather, the gap grows primarily because charter school students are less likely than traditional public school students to be newly placed into special education and are more likely to have their disability declassified. Absent an increase in the percentage of students with disabilities who apply to charter schools, regulations requiring charter schools to meet certain thresholds for the percentage of their students in special education could end up forcing charter schools to push for disability diagnoses for students who otherwise would have avoided the designation.

This paper provides new insight into the factors related to the existence and growth of the special education gap over time. Policymakers should consider the underlying causes of the special education gap when weighing policies intended to address it. However, while the implications of this study deserve attention from the field, the results should be considered specific to the New York City context and may or may not apply more broadly. More research is needed to know if the results would be the same in other locales.

Appendix: Deriving the Decomposition Formula

NOTATION

A_t = # IEP students at time t

N_t = Total # students at time t

NC_t = # Newly classified IEP

IN_t = # IEP students entered sector

RN_t = # Regular enrollment students entered sector

B_t = # Regular enrollment students at time t

DC_t = # IEP students declassified

IX_t = # IEP students exited sector

RX_t = # Regular enrollment students exited sector

CALCULATION

The fraction of IEP students in a given year is simply A_t/N_t . The change in the percentage of IEP students is calculated as $(A_t/N_t) - (A_{t-1}/N_{t-1})$. This will build our measure.

The two laws of motion between years take the form:

$$A_t = A_{t-1} + (NC_t - DC_t) + (IN_t - IX_t)$$

$$N_t = N_{t-1} + (IN_t - IX_t) + (RN_t - RX_t)$$

$$\frac{A_t}{N_t} - \frac{A_{t-1}}{N_{t-1}} = \frac{(A_t * N_{t-1}) - (A_{t-1} * N_t)}{N_t * N_{t-1}}$$

We can solve for the decomposition in percent changes:

After substituting, distributing and simplifying, the decomposition formula can be calculated as:

$$NC_t \left(\frac{1}{N_t} \right) - DC_t \left(\frac{1}{N_t} \right) + IN_t \left(\frac{B_{t-1}}{N_t + N_{t-1}} \right) - IX_t \left(\frac{B_{t-1}}{N_t * N_{t-1}} \right) - RN_t \left(\frac{A_{t-1}}{N_t * N_{t-1}} \right) + RX_t \left(\frac{A_{t-1}}{N_t * N_{t-1}} \right)$$

