

A Longitudinal Comparison of Enrollment Patterns of SRSE in Urban Neighborhood and

Charter Schools

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Cite as

Waitoller, F. R., Maggin, D. M., Trzaska, A. (in press). A longitudinal comparison of enrollment patterns of SRSE in urban neighborhood and charter Schools. *Journal of Disability Policy Studies*.

*Authors note:*

The authors acknowledge the support of the Institute for Research on Race and Public Policy at the University of Illinois at Chicago and the invaluable support provided by Josh Radinsky. The authors are also grateful to the editors and reviewers of the Journal of Disability Policy Studies for their meaningful feedback. Funding agency endorsement of the ideas expressed in this manuscript should not be inferred.

### **Abstract**

The purpose of this study is to compare and examine special education enrollment trends across disability categories and grade spans for public neighborhood and charter schools in the City of Chicago. Using multilevel longitudinal data analysis methods, we examined annual school enrollment and demographic reports. Our findings indicated that neighborhood schools serve significantly higher proportions of students receiving special education services (SRSE) than charter schools at the aggregate grade level (i.e. elementary and high school enrollments) and at each grade level. In addition, we found that charter schools enroll equal or significantly higher proportions of students with learning disabilities (LD), speech and language impairments (SLI), other health impairments (OHI), and emotion disturbance (ED), and substantially smaller proportions of students with autism, sensory impairments (SI), and intellectual disabilities (ID), when compared to neighborhood schools. However, we found that these differences vary between grade levels. We discuss the implications of these findings for policies affecting charter school authorization and contract renewal, and for policies establishing special education enrollment targets in charter schools.

*Key words:* Special education, charter schools, education policy

A Longitudinal Comparison of Enrollment Patterns of Students Receiving Special Education  
Services in Urban Neighborhood and Charter Schools

This study addresses a critical and contemporary policy issue for students receiving special education services (SRSE)— their enrollment in charter schools. We present a longitudinal analysis of enrollment patterns of SRSE in urban public neighborhood and charter schools in the City of Chicago. In our analysis, we compare enrollments in each type of school (i.e., neighborhood and charter) while attending closely to differences across disability categories and grade spans (elementary and high school levels). Examining the enrollment of SRSE in charter schools is significant for several reasons. First, since their inception in 1991 in Minnesota, the charter school movement has been growing. For instance, from the 1999-2000 to 2011-2012 school years the student enrollment in charter schools has increased from 0.3 to 2.1 million students, accounting for 4.2 percent of the total national student enrollment in public schools (National Center for Education Statistics [NCES], 2014). In the 2009-10 school year, over eight percent of students enrolled in charter schools received special education services (U. S. Government Accountability Office [GAO], 2012). These numbers can be expected to increase as the Every Student Succeeds Act (Pub. L.114-95) provides funding to expand high performing charter schools. Therefore, it is likely that increasingly more students, with and without disabilities, will be educated in charter schools.

Second, while the number of charter schools continues to increase, advocacy groups, parents, neighborhood associations, state officials, and professional organizations have raised concerns about access and services for students with disabilities in these schools. One of the main concerns is the low enrollment of SRSE in charter schools in comparison to traditional public schools (TPS; GAO, 2012). This is an important issue as charter schools are expected to follow federal legislations that protect the rights of students with disabilities in public schools (Individuals with Disabilities Education Act [IDEA]; Section 504 of the Rehabilitation Act, and the Americans

with Disabilities Act [ADA]; Ahearn, Lange, Rhim, & McLaughlin, 2001). These laws ensure that students are provided with a free appropriate public education (FAPE); are educated in the least restrictive environment (LRE); and prohibit any form of discrimination and exclusion (Ahearn et al., 2001). Therefore, any systematic differences in the provision of education to SRSE in charter schools could have potentially serious legal and civil rights implications.

The aforementioned concerns are reflected in current litigation. For instance, the U.S. Department of Justice's Civil Rights Division is investigating a complaint against charter schools in Washington D.C. and a lawsuit is pending in U.S. District Court for the Eastern District of Louisiana (Southern Poverty Law Center *v.* Pastorek, 2010) charging charter schools of denying SRSE access to public education (Belway, 2010). In response, the U.S Department of Education and the Office for Civil Rights issued a guidance letter to increase charter schools' compliance with civil rights laws (Lhamon, 2014). The letter emphasized non-discriminatory admissions processes, FAPE, and non-discrimination in disciplinary measures. Furthermore, in 2010, lawmakers in New York State revised their state Charter School Act to require charter authorizers to establish attendance targets for SRSE in charters schools and track the efforts of charter schools to meet such targets (Lake, Gross, & Denice, 2012). In 2014 in IL, state representatives approved legislation to guarantee that charter schools follow *state* laws for special education with much more rigorous requirements than federal laws.

Third, the lower enrollment of SRSE in charter schools is an important issue particularly in large urban districts where the special education population is largely comprised of students who are Black or Latino (Blanchet, Klingner, & Harry, 2009). These students tend to experience compounding forms of inequities. These inequities include a lack of access to the general education curriculum and to meaningful learning experiences due to inadequate personnel and funding resources (Blanchett et al., 2009), and limited opportunities for them and their parents to participate

in key educational decisions such as those made during individualized education program (IEP) meetings (Harry & Klingner, 2014). These existing forms of inequities may be further aggravated by the interplay of charter school expansion and closings of traditional neighborhood schools – a trend that is emerging in large urban cities such as Chicago, Philadelphia and New York (Lipman, 2011). For instance, Chicago Public Schools (CPS) closed 50 schools in the 2012-13 school year alone. On average, the schools that were closed enrolled higher proportions of SRSE (17%) than the district elementary schools (13%) (de la Torre, Gordon, Moore, & Cowhy, 2015), and the students served by the closed schools were disproportionately Black (87%; Radinsky & Waitoller, 2013). Thus, if charter schools enroll significantly lower proportions of SRSE and neighborhood schools continue to be closed, there might be fewer options and opportunities for these students to be educated in schools with their typically developing peers. This disproportionately affects low-income Black and Latino SRSE, as they tend to live in the communities most impacted by the closings of neighborhood schools and openings of charter schools (Lipman, 2011).

### **Research on the Enrollment of SRSE in Charter Schools**

Five main conclusions can be drawn from examining research on the enrollment of SRSE in charter schools. First, the bulk of this research has been disseminated through policy reports sponsored by think tanks and state agencies, while a very small number of studies has been published in peer-reviewed journals (Garcy, 2011). Think tanks tend to be polarized on the issue of charter schools with those in support often receiving funding from foundations that support charter schools expansion (e.g., Gates Foundation; Walton Foundation). Further, think tanks have been found to overstate their research findings (Powers, 2015). This one-sided position raises concerns about conflict of interest and the trustworthiness of such research. Furthermore, policy reports are published without a rigorous review process whereas studies included in peer-reviewed journals go

through peer review. More published studies in peer-reviewed journals are needed to ensure the quality of research on the enrollment of SRSE in charter schools.

Second, research on charter schools conducted with national-level data has documented that, since their inception, charter schools have enrolled lower proportions of SRSE in comparison to TPS. For instance, an analysis of all charter schools operating in the 1998-99 school year in the 27 states with charter laws indicated that SRSE accounted for 8% of the enrollment of charter schools, while accounting for 11% of the enrollment of TPS (Nelson et al., 2000). Fiore, Harwell, Blackorby, and Finnigan (2000) found that students with more significant disabilities were difficult to find in charter schools, with the exception of charters that were specifically serving these students. However, emerging research suggest that the special education enrollment gap between charter and TPS is decreasing. A report published from the GAO (2012) revealed that in the 2008-2009 school year charter schools were comprised of 7.7% of SRSE as compared to the 11.3% enrolled in TPS. By the 2009-10 school year, the proportion of SRSE in charter schools increased to 8.2% while the proportion of these students in TPS decreased to 11.2%. More recently, Rhim, Gumz, and Henderson (2015) found that in the 2011-12 school year this gap decreased to 2%. SRSE accounted for 10.5% and 12.5% of the charter and TPS school enrolment, respectively (Rhim et al., 2015).

Third, the special education enrollment discrepancies between charter and neighborhood schools vary across states and cities. The GAO report noted that while TPS had a higher percentage of SRSE in 75% of the states included in the study, 15% of the states sampled had higher enrollment rates of these students in charter schools. Rhim et al. (2015) found that the size of the special education enrollment gap varies across states, ranging from .12 in Pennsylvania to 6.5 in Oklahoma. Guarino and Chau (2003) found no statistical difference between the proportions of SRSE served in a sample of California charter schools and TPS. In addition, a study conducted in New York State (Lake et al., 2012) found that while at the state level charter schools served, on

average, smaller proportions of SRSE, the distribution and range of enrollment between charter operators and district-run schools were similar. In a more recent study, Winters (2015) found that in the Denver School District, not only the special education enrollment gap between neighborhood and charter schools existed but also increased over time. According to Winters (2015), almost half of this increase is due to the premise that neighborhood schools are more likely to identify students with disabilities than charter schools, and students with disabilities in charter schools are more likely to exit special education than their peers in neighborhood schools.

Fourth, a smaller number of research studies has accounted for enrollment differences across disability categories in charter and TPS, noting that these differences also vary across cities. Wilkens (2011) found that TPS enrolled higher proportions of SRSE than charter schools in urban areas of Massachusetts, from 2002-2010. Further, Wilkens (2011) found that charter schools enrolled significantly lower proportions of students in the category of SLD, ID, ED, SI, and autism, while accepting significantly higher proportions of students with traumatic brain injury (TBI) and multiple disabilities. There were no enrollment differences in the OHI and physical/orthopedic impairments categories. Winters (2013) reported similar enrollment trends in New York in the LD, ID, ED, and autism categories. However, he also reported that there were no significant differences in the proportions of students with TBI, and that charter schools enrolled *higher* proportions of students in the OHI category and *lower* proportions of students with multiple disabilities than TPS.

Finally, the special education enrollment gap between charter and TPS can vary across grade levels. Lake et al. (2012) reported differences in special education enrollment between the elementary grades and the upper grades in the state of New York during the 2011-2012 school year. Charter enrollment of SRSE was similar to that of district-run schools at the high school and middle school level, while it was significantly lower at the elementary level. Setren (2015) found that in Boston, TPS served higher proportions of SRES in middle school but found the opposite trend at the high

school level. Thus, it is imperative to examine the enrollment of SRSE in specific cities and across disability categories and grade spans, as aggregated data at the national and state level mask local and more nuanced patterns.

### **The Present Study**

Our study builds on prior research on several accounts. First, little research on special education enrollment patterns in charter schools has been conducted accounting for both disability categories and grade spans in a specific city. To address this issue, we examined enrollment patterns while attending closely to disability categories and age group in the City of Chicago. Studying city specific (e.g., Chicago) special education enrollment patterns can support or contest city and state level studies, strengthening or weakening their generalization of findings, and providing more nuanced understanding of local variations. Second, prior studies have relied heavily on examining the enrollment percentages of charter and neighborhood schools at one point in time. This approach does not capture the dynamics or persistent rigidity of special education enrollment patterns as charter schools grow over time. Further, comparing percentages presents a limited picture because percentages mask variance within each type of school (e.g., charter and traditional public school) over time. To address this issue, we conducted a longitudinal analysis using multilevel modeling that examined enrollment patterns as a function of time, age group, and disability category to demonstrate more systemic and persistent trends.

Third, prior research used TPS as the comparison group, which results in a conceptual ambiguity (i.e., what is a traditional school and what is not?). It is not clear if these studies included magnet schools or other types of schools that do not have attendance boundaries in the analysis. We specifically focus on neighborhood schools in the City of Chicago that have attendance boundaries as the comparison group, excluding magnets, special education, and selective enrollment schools. These latter schools have lottery systems or selective enrollment procedures to accept students.



Examining neighborhood schools as the comparison group is crucial as they are the only schools that provide guaranteed access and opportunity for SRSE to learn alongside their general education peers in a school near their home.

Our study answers the following research questions: (a) Are there differences over time in the enrollment of SRSE across different types of schools and do these differences vary across grade spans? And (b) Are there differences over time in the enrollments of SRSE in each disability category across different types of schools and do these differences vary across grade spans?

## **Method**

### **Context: Chicago Public Schools**

Chicago is a rich context for our analysis for at least three reasons. First, CPS is the third largest public school district in the nation, enrolling over 400,000 students most of whom are Latino (45%) or Black (40%) and qualified for free or reduced lunch (85%; CPS, 2015). Students who are White comprised only 9% of the student enrollment, while students from Asian background accounted for 3.5%. Students of Pacific Islander, Native American, and multiracial background accounted for less than 1% of the student body in the district. SRSE comprised 12% of the student enrollment (CPS, 2015). Further, in comparison to the total enrollment of CPS, charter schools enroll higher proportions of Black students (64%) and lower proportions of Latino (32%) and White students (3%). Chicago allows us to study the impact of charter school expansion on SRSE who are Black or Latino in one of the largest urban school districts in the country.

Second, Chicago is a quintessential example of charter school expansion. Chicago School Board of Education was an early adopter and testing ground for charter schools. In 2004, The Chicago School Board passed Renaissance 2010 (Renn2010), a plan to revamp Chicago Public Schools that called for closing 70 neighborhood schools and opening 100 replacement schools, most of these being charter schools operated by private organizations. Renn2010 also provided the mayor

of Chicago with complete control over the city's public schools. Since Renn2010, the number of charter schools in Chicago has increased dramatically. In the last five school years (2009-10 to 2013-14), the number of charter schools in CPS has increased by almost 50%, and now they serve over 55,000 students, almost one sixth of the district, including 6,800 SRSE (CPS, 2015). Third, CPS is the primary authorizer of charter schools. Thus, charter schools are part of CPS, and CPS assumes full responsibility for monitoring charter schools' compliance with federal disability laws (Ahearn et al., 2001). For this reason, our findings can have implications for school districts that are able to regulate charter schools.

### **Data Sources**

The questions for the current investigation were addressed using data drawn from two different sources. The first data source provided the information for comparing the overall enrollment rates of SRSE in neighborhood and charter schools over time. Specifically, the annual school enrollment and demographic data were obtained directly from CPS district reports, and they provided the total student enrollment and the total special education enrollment in each school from the 2009-10 school years to the 2013-14 year (5 year span). The second source provided the data for comparing neighborhood and charter school enrollment rates of students within the different disability categories. This information was drawn from the Funding and Child Tracking System (FACTS) from the Illinois State Board of Education (ISBE) that is used to track enrollment patterns by disability and racial categories 2005-06 school year to 2013-14 (9 year span). The report included enrollment data on 14 disability categories. Due to sample size issues, some of the categories were collapsed. As such, the categories included students with LD, SLI, ED, OHI, autism, sensory disabilities which included students with moderate or severe hearing and/or visual impairments, and ID which included students with intellectual disabilities, developmental disabilities, multiple disabilities, and traumatic brain injury.

### **Data Structure and Analysis Plan**

There were two general enrollment issues examined in this investigation, including (a) the overall proportion of students with an IEP enrolled as a function of grade level and school type and (b) the proportion of students within specific disability groups enrolled as a function of grade level and school type. Because enrollment patterns might naturally fluctuate on an annual basis, enrollment data were collected for each school across multiple years in which this data was available. It is important to note that the data collected to address the two enrollment questions were obtained from different sources and, therefore, the number of available years differed. Regardless, the longitudinal data structure allowed for a more accurate depiction of enrollment patterns than what would have been obtained from a single year. The dependent variable for all models was represented as a percentage with observations nested within each school. The longitudinal nature of the data required the use of multilevel modeling to control for the dependence of the enrollment data within each school (Rabe-Hesketh & Skrondal, 2008). Preliminary data analyses were conducted to determine the most appropriate model and to examine whether the data met the underlying assumptions for ordinary least squares (OLS) regression of which multilevel modeling is an extension. In terms of the selection of an appropriate model, both those with random intercepts and random slopes were compared in terms of model fit. These analyses indicated that there was no advantage to allowing a random slope to be estimated which was corroborated through examining the descriptive data and intraclass correlations, which provided support that the data were stable over time. The intraclass correlations and their interpretations are described below. As such, it was determined that a random intercept model was appropriate for all analyses.

The preliminary analyses related to the appropriateness of OLS regression assumptions revealed that the data collected to address the research question associated with overall IEP enrollments met all assumptions for OLS regression, although the data collected to examine

enrollments for specific disability categories did not. Preliminary estimation of those models with specific disability classifications as the primary outcome were not normally distributed which can make the standard errors, and subsequently hypothesis testing, inaccurate (Raudenbush & Bryk, 2002). Following this determination, all models were specified using a bootstrapping procedure in which the sampling distribution of the test statistic is constructed empirically by randomly resampling from the collected data with replacement. The advantage of using a bootstrap with data that violates the normality assumption of OLS regression is that it does not require distributional assumptions and, therefore, results in more accurate inferences (Hox, 2010). The results associated with the models with bootstrapped standard errors were compared to those that were not, which revealed very similar estimates providing additional support for the general accuracy of the models.

A total of four models were sequentially estimated for all analyses to allow for comparisons between more and less restrictive models. The initial model estimated was a null model in which only the dependent variable was included and provides insight into the basic partitioning of the variance between the two levels. The second model estimated included only the longitudinal variable indicating the school year to examine the trend of enrollment patterns over time before considering issues of school level and school type. The third model estimated included both the longitudinal and school level variables, which allowed for the differences in enrollment patterns across elementary and high school to be examined. For the current analyses, elementary schools were dummy coded as the referent making the intercept representative of the average enrollment pattern across elementary schools, and the coefficient associated with grade level representative of the average enrollments across high schools in relation to the intercept. The fourth model estimated included the longitudinal and school level variables as well as the type of school. This analysis provided insight into differences in enrollment patterns as a function of grade level and school type. Again, it is important to note that school type was dummy coded such that neighborhood schools were the

referent making the intercept representative of the average across neighborhood schools and the coefficient associated with school type representative of charter schools in relation to the intercept.

The extent to which each of the estimated models could be considered an improvement over previously specified models with fewer parameters was examined using the likelihood ratio test (LRT). The LRT is computed by comparing the difference between the deviance statistics of two related models. This deviance statistic is defined as minus twice the natural logarithm of the likelihood estimated through model specification (Snijders & Bosker, 1999). The difference in the deviance statistics between these models was then compared to a chi-square distribution with those models with more parameters demonstrating a significant difference deemed an improvement over the less restrictive models. The LRTs were used for all model comparisons. Given the large number of probability tests conducted, the research team used the Benjamini-Hochberg (Benjamini & Hochberg, 1995) procedure, which provides a more conservative  $p$ -value threshold for significance. Application of the procedure established a  $p$ -value of .01 as the criterion for statistical significance.

## Results

### Overall Enrollment Patterns of SRSE

**Descriptive statistics.** The means and standard deviations for the overall proportion of SRSE enrolled in either neighborhood or charter schools within the district are presented in Table 1. These overall enrollments are also presented as a function of grade level and school type. As can be seen, the total number of students being educated in these settings has steadily increased over the five-year period for which data was available. This increase is found across the total enrollment as well as within the neighborhood and charter schools regardless of the level of the school. These steady increases across all school types and levels contributed to an intraclass correlation of .89 (95% CI = .88 -- .91) indicating a substantial amount of stability in the data.

**Longitudinal data analysis.** The results of the longitudinal data analyses comparing enrollments as a function of school level and school type are presented in Table 2. The overall special education enrollment data within neighborhood and charter schools appear to have increased nearly a third of a percent per year which is not an inconsequential amount over five years. Moreover, the results associated with the third model analyzed indicate that special education enrollments tended to be over three percent greater in high schools than they were in elementary schools without consideration of school type. The fourth model provides evidence that even controlling for time and school level that charter schools tend to enroll two and a half percent fewer students with an IEP than neighborhood schools. All models analyzed improved on less restrictive models specified prior indicating improved fit to the data (see Note 1).

### **Enrollment Patterns of Students within Specific Disability Groupings**

**Descriptive statistics.** Descriptive analyses were undertaken to examine the means and standard deviations for the percentage of students within each disability category. Given the large amount of data, this information is not included in this manuscript, though this information is available upon request from the authors. Some notable trends were found regarding the proportion of students being served in either neighborhood or charter schools across the nine-year period. For instance, the proportion of students with LD, SLI, ED, and autism being served in these settings appears to have decreased over time. In contrast, the proportion of students with other health impairments and intellectual disabilities seem to have increased with the remaining categories being relatively stable.

**Longitudinal data analysis.** The results of the longitudinal analyses for the enrollment of specific disability groups within the district are presented in Table 3. As can be seen in these analyses, after controlling for changes in special education enrollment across time and grade level, charter schools appear to disproportionately enroll students from particular disability categories. For

instance, the data suggests that charter schools tend to enroll a greater proportion of students with LD, SLI, and OHI than neighborhood schools while enrolling a smaller percentage of students with autism, sensory disabilities, and ID. Additionally, these results suggest that school level might be an important factor in the proportion of SRSE enrolled. For example, students with LD make up a substantially larger proportion of SRSE in high schools than elementary schools after controlling for school type, whereas opposite patterns are found for students with SLI. These findings led the research team to examine enrollment rates as a function of school type.

Table 3 also presents the results examining enrollment as a function of grade level when controlling for school type. These analyses were repeated for the entire sample of schools and separately for elementary and secondary schools. As can be seen from the analyses of the full sample, secondary schools were more likely to enroll students with LD and ED while elementary schools appear to enroll more students with SLI, OHI, autism, sensory disabilities, and ID. The additional results reported in Table 3 provide information on the enrollment patterns of neighborhood and charter schools for the elementary and secondary sample. These results indicate that elementary charter schools tend to enroll a greater proportion of students with SLI and OHI while a smaller proportion of students with autism, sensory impairments and ID than neighborhood schools. Moreover, the likelihood ratio tests were significant for each of these disability categories. In contrast, it appears that that charter high schools tend to enroll a greater proportion of students with LD and a smaller proportion of students with ED and autism than neighborhood schools. For this latter analysis, the likelihood ratio tests were also all significant.

### **Discussion**

Our findings added complexity to the current understanding of enrollment patterns of SRSE services in charter schools. The contribution of our study to prior research is twofold. First, our analysis indicated that although the percentage of SRSE enrolled in charter schools has increased

each of the past five years, approaching similar percentages as those of neighborhood schools, these latter ones continue to serve significantly higher proportions of SRSE. This finding remains true at the aggregate level (i.e. elementary and high school enrollments) and when analyzing each grade level in a separate fashion. In this sense, our study supports the bulk of existing research on special education enrollment in charter schools using more sophisticated analysis methods than comparing enrollment patterns at a single, static point in time.

Second, our findings indicated that there are significant differences between the profile of SRSE (e.g., disability category and grade span) in charter and neighborhood schools. When examining aggregated data for both elementary and high schools, we found that charter schools enroll significantly higher proportions of students with LD, SLI, and OHI, and significantly smaller proportions of students with autism, sensory impairments, and ID, when compared to neighborhood schools. Neighborhood and charter schools serve similar proportions of students with ED. In this sense, our findings contradict the research conducted by Wilkens (2011) and Winters (2013), as both authors found that charter schools enrolled significantly lower proportions of students with LD an SLI. Further, in contrast to Wilkens (2011) and supporting Winters (2013), we found that overall charter schools enroll significantly higher proportions of students with OHI. The variation in findings across the different urban areas might be due to the unique political, economic, and socio-cultural context of each city and to the fact that Winter's (2013) sample included only 25 charter schools and elementary grades. However, it is important to point out that all three studies found that charter schools enrolled significantly lower proportions of students with more severe disabilities (e.g., autism, sensory impairments, and ID).

Furthermore, our findings boosted the importance of accounting for grade level when comparing the enrollments of SRSE by disability categories in neighborhood and charter schools. For instance, charter schools served higher proportions of students with LD and lower proportions



of ED at the high school level but not at the elementary school level, and higher proportions of students with SLI and OHI at the elementary but not at the high school level. Further, charter schools served significantly lower proportions of students with sensory impairments and ID at the elementary level but served equal proportions of these students at the high school level. These differences between grade levels are intriguing and not easy to explain. Future research should further examine this puzzling relationship between disability category and grade levels.

The aforementioned disparities in enrollment proportions by disability category in charter and neighborhood schools have remained constant over a nine-year period. This stability has been maintained in spite of the overall increase in proportions of SRSE in charter schools. That is, while the proportion of SRSE services in charter schools has grown over time, the profile of SRSE served in these schools has remained unchanged. This suggests a persistent pattern of differential access to schools for SRSE, and that these disparities are not temporary fluctuations, but rather endemic in the ways charter and neighborhood schools have developed in Chicago.

Our findings are relevant considering that charter schools have been criticized for cropping off services (Lacireno-Paquet, Holyoke, Moser, & Henig, 2002) and *counseling out* (Welner & Howe, 2005) SRSE as they are more costly to educate and tend to not perform well on accountability assessments. Our findings complicate this critique. On one hand, our findings indicate that charter schools may engage in cropping off services *within* the population of SRSE. That is, while charter schools have increased their overall proportion of SRSE, they have consistently enrolled higher or equal proportions of students with LD, SLI, and OHI and ED, who are more likely to be included in the general education classroom, perform better on high-stake assessments (Office of Special Education Programs, 2013), and are less expensive to serve than students requiring more extensive supports (Parrish, 2002). This is not only the case in CPS. Garcy (2011) found that, in Arizona, students with severe disabilities were less likely to attend charter schools and those “students with

more severe disabilities who were enrolled in charter schools were on average less expensive than those students enrolled in TPS [neighborhood schools]” (p. 19). On the other hand, differences found between grade levels in the proportions of students with ID and SI (see table 4) indicate that the hypothesis of cropping off services for SRSE has stronger support at the elementary school level. These findings merit further research.

Advocates of charter schools have argued that the differential enrollment of certain SRSE may reflect parental choice. However, this choice might not be based solely on the parents’ preferences for the type of school. Estes (2004) indicated that Texas charter school administrators described the school instructional model to parents and explained that no self-contained classrooms for children with disabilities were available. Although they were in favor of “zero reject” practice with respect to SRSE, they acknowledged that they were not prepared to address the needs of students with more significant disabilities. Thus, although the ultimate decision belongs to parents, the end result might be that parents of students with disabilities voluntarily do not send their children to charter schools because these schools do not have adequate resources to accommodate their needs (Rhim & McLaughlin, 2007). If charter schools’ missions, recruitment procedures, discipline policies, or counseling practices systematically result in excluding students with more extensive support needs, they are committing a severe violation of the spirit, if not the letter, of the IDEA and the ADA. Further research is needed to understand whether these violations are occurring.

### **Recommendations for Policy**

Our findings provided a more intricate description of special education enrollment differences between charter and neighborhood schools. This leads to a more accurate diagnosis of a complex problem by attending to students’ multiple markers of difference (e.g., disability diagnosis and age group). The search for a single policy solution for a multi-layered problem might result in

unintended consequences when the within group diversity is not taken into account. This is a significant issue considering that some states (e.g., New York) have turned to special education enrollment targets for charter schools. Based on our findings and other studies (e.g., Wilkens, 2011; Winters, 2013), we argue that if these targets are applied, they need to account for disability category and grade span, and be contextualized within each city. Otherwise, charter schools may comply with general quotas of SRSE while not enrolling students with the most intensive educational needs, or disparities at a grade level (i.e., elementary or high school) will continue to occur. We must acknowledge that any enrollment targets, even the most nuanced, could be counterproductive if they result in charter schools' over identifying students for special education to fulfill such targets. This may exacerbate the longstanding overrepresentation of Black students in special education, as charter schools in urban areas tend to disproportionately serve these students.

We recommend that charter authorizers conduct an independent investigation to examine the nature of the documented disparity in enrollments of SRSE. This examination should go beyond determining average rates of special education enrollment across types of schools. This research should include a combination of quantitative analysis and qualitative studies, including interviews with different stakeholders (e.g., teachers, administrators, parents, and students), direct observation of school practices, and the examination of charter contracts. Furthermore, the existing under enrollment patterns need to be considered in conjunction with the mass closings of public neighborhood schools, as they suggest a troubling trend of systematically eliminating school options for students with intensive support needs.

We also recommend establishing a more rigorous application process for opening charter schools and reauthorizing existing ones. Charter authorizers should require charter operators to specify their capacity to serve all students and should not reauthorize charter campuses in charter networks that serve disproportionately lower numbers of SRSE. If the expansion of this type of

authorization is not remedied, it will result in the continuation of lower proportions of students with extensive support needs in charters schools, placing increasing demands on neighborhood schools that do continue to serve these students. This could further aggravate already existing inequalities experienced by Black and Latino SRSE in urban school districts.

### **Limitations of the Study**

A primary limitation of this study is its reliance on district level data. CPS has a highly diverse student population, with Black and Latino students, most of who come from low-income families, accounting for the majority of the student enrollment. In addition, CPS has been one of the early pioneers in authorizing charter schools, and under mayoral control, the district continues to expand charter schools. Not all districts in the U.S fit this profile. Thus, our findings may only apply to educational contexts similar to CPS. Future research should study the enrollment of SRSE in charter and neighborhood schools accounting for disability category and grade span in other cities, states, and at the national level. Another limitation of the study is that we combined disability categories (i.e., sensory and intellectual disabilities) due to small cell sizes. Future research should study the enrollment of students with sensory and intellectual disabilities in a separate fashion to tease out differences between the disability categories aggregated under such labels.

Note 1. A linear prediction plot illustrating the differences in enrollment as a function of grade level and school type over time is available upon request. The plot is based on the results of the fourth model and includes estimates of the standard error across time though these are imperceptible. It demonstrates that the percentage of SRSE enrolled in neighborhood and charter schools does vary across grade spans.

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Table 1

*Mean Percentage of Students with Disabilities Enrolled in Special Education by Grade Level and School Type*

School Type	School Year				
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
	( <i>n</i> = 537)	( <i>n</i> = 546)	( <i>n</i> = 539)	( <i>n</i> = 536)	( <i>n</i> = 524)
Neighborhood Total	12.40 (5.33)	12.78 (5.60)	12.98 (5.53)	13.11 (5.58)	13.43 (5.53)
Elementary	11.92 (5.02)	12.32 (5.35)	12.53 (5.39)	12.62 (5.42)	12.87 (5.2)
High School	15.60 (6.21)	15.81 (6.27)	16.19 (5.46)	16.94 (5.31)	17.29 (6.18)
Charter Total	10.36 (4.30)	11.04 (4.47)	11.10 (4.23)	11.52 (4.30)	12.93 (4.38)
Elementary	7.84 (2.92)	8.43 (2.96)	8.87 (2.82)	9.17 (2.79)	9.90 (3.00)
High School	13.82 (3.39)	14.47 (3.75)	14.22 (3.90)	14.46 (4.06)	15.59 (3.61)

*Note.* Standard deviations are in parentheses.

Table 2

*Longitudinal Comparison of Percentage of Students with Disabilities Enrolled in Neighborhood and Charter Public Schools*

	Model 1	Model 2	Model 3	Model 4
<i>Fixed Effects Parameters</i>				
Intercept	12.80*	12.61*	11.92*	12.23*
	(.05)	(.04)	(0.04)	(0.05)
School Year		0.30*	0.30*	0.30*
		(0.03)	(0.12)	(0.10)
Grade Level <sup>a</sup>			3.28*	4.29*
			(0.12)	(0.12)
School Type <sup>b</sup>				-2.64*
				(0.05)
<i>Random Effects Parameters</i>				
Standard Deviation across Schools	5.06*	5.06*	4.88*	4.78*
	(0.07)	(0.07)	(0.07)	(0.07)
Standard Deviation within Schools	1.75*	1.68*	1.68*	1.68*

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	(0.07)	(0.06)	(0.06)	(0.06)
Likelihood Ratio Test		158.67*	41.65*	23.26*

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*Note.* <sup>a</sup>Elementary schools are the referent group making the intercept representative of the average elementary school and the coefficient indicative of high schools in relation to the intercept. <sup>b</sup>Neighborhood elementary schools are the referent making the intercept representative of the average neighborhood school and the coefficient indicative of charter schools in relation to the intercept.

\* $p < .001$ .



Parameters	LD	SLI	ED	OHI	Autism	Sensory	ID
Intercept	71.95**	2.80**	9.16**	2.11**	2.38**	1.11**	10.45**
School Year	-0.87**	-0.12	0.11	0.38**	0.40**	0.08	0.07
School Type	4.28**	-0.50	-2.10**	0.74	-1.03**	-0.39	-0.74
Likelihood Ratio Test	16.55**	2.28	8.56*	3.16	11.49**	3.56	1.43

*Note.* LD = Learning Disabilities; SLI = Speech and Language Impairments; ED = Emotional Disturbance; OHI = Other Health Impairments; ID = Intellectual Disabilities.

$p < .01 = *$ ;  $p < .001 = **$ .