

North-South Districts: the Geographic Distribution of Educational Success and Failure in New York City

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Abstract

This paper discusses geographically structured disparity between schools, particularly schools within the same administrative district. I describe how a school's academic quality is, to some extent, associated with geographic location. The distribution of New York City school-level performance on test results mirrors the distribution of socioeconomic background of students and neighborhood residents, but it also corresponds to the uneven distribution of school-level resources, such as teacher quality. What these inequities also reflect is a spatially structured *institutional* terrain, influenced by political power struggles and municipal and district policies, as well as the urban teacher labor market. This paper reviews, as background, New York City's decentralized administrative structure, and discusses spatial and social factors in districting and the creation and maintenance of low performing schools. New York's recent restructuring, merging districts into larger "Instructional Regions" and then non-geographic "Networks of Schools," has implications for shifting some of the structured disparity between schools, particularly schools in the neglected parts of some districts. How may the manipulation of boundaries affect the under-resourced, underachieving schools, given long periods of neglect? The results of the analysis presented here suggest the persistence of spatially structured inequity and the need for added measures in the new system to bring schools beyond the cumulative influence of local politics.

Introduction

How extensive are disparities among urban schools, and how do these disparities relate to spatial, social and political processes such as residential segregation? What is the connection to resource inequity? This paper discusses the connections between schools and their socio-spatial contexts. Spatial patterns in educational outcomes and school resources suggest the importance of intra-urban and intra-district location to life chances. A critical factor in these location effects is how *place* intersects with *institution* in the context of large urban school systems.

This paper reports on a study of school-level disparity within and across administrative sub-units in a large, decentralized northeastern school district. Beginning with a review of literature on neighborhoods and schooling, I outline an interdisciplinary discussion about educational inequity, addressed in the critical geography, sociology, political economy, and public policy literature. I then examine the social and political processes involved in school districting, and analyze a recent, system-wide restructuring that could entail a new geography of schooling for the entire city. I argue the importance of location to educational opportunity, and discuss whether recent efforts to remedy these inequities will yield useful results.

Orienting the investigation is the question: *How much of the disparities between schools has been spatially structured, between and within administrative boundaries?* I conduct a basic investigation of spatial patterns in school-level academic performance, and how these patterns relate to the underlying socioeconomic terrain. For example, geographic location in Bay area hills or flatlands could mean a difference of 508 in average school size (Whitman, 2003) or a 23 percentage point difference in credentialed teachers (Noguera, 2003). Similar disparities abound in Chicago, Los Angeles, and many other urban systems.

That there is a profound variation among neighborhoods on many indicators is obvious. Given geographic isolation of the poor and the longstanding “hypersegregation” of African American families (Wilkes and Iceland, 2004), particularly

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in large metropolitan areas, and given demonstrated links between neighborhood quality, school segregation and academic performance (Lee, 2004), a random or even distribution of educational outcomes is unlikely. No school administrator would expect such an equitable distribution. However, explicit discussion about the spatial nature of this distribution may help shift public policy initiatives away from sweeping numeric-based accountability and toward more democratic, community-driven practices. This paper attempts to contribute to such a shift by appealing for explicitly spatial analyses in educational research.

Focusing on the intersection between social and institutional factors, this study is also driven by the question: *How are these disparities reproduced?* At issue is the extent to which school based inequity extends beyond "compositional effects" (student background). The large amount of school effects research (Teddlie and Stringfield, 1993; Bryk, et al., 1990) generated in the decades since Coleman, et al. (1966) suggests that policymakers should not be too satisfied with the explanatory power of socioeconomic background alone.

More deeply entrenched institutional factors are also at play in intra-district school based disparities. Districts do have key control over several other factors that affect educational quality, including strategic targeting of monetary and other resources. Human resources, such as the limited number of quality teachers and principals a district may have, are subject as much to labor market forces as district-based programs to attract retain these key resources. At a minimum, benign neglect of schools in some areas translates disparity in neighborhood resources into disparity in the quality of schools. I regard all of the processes systemically and refer to them, for short, as "district practices." The effects of these practices exist in addition to the effect of socioeconomic background.

On a larger level, urban education systems serve as living laboratories for analyzing broader policy efforts toward increased accountability and reducing inequity. My discussion about institutional contributions to intra-district stratification leads to a third, policy relevant research question: *What happens when these systems are*

restructured, including governance and administrative arrangements, for spatial isolation and its relationship to poor outcomes?

Neighborhood Effects, Schooling, and Institutional Resources: What Some of the Social Science Literature Offers

An interdisciplinary array of social science literature offers several helpful perspectives on the geography of educational equity. The neighborhood effects literature in sociology offers useful discussion along two basic dimensions, social-interactional (including collective efficiency) and institutional. Neighborhoods, instead of simple aggregations of individuals, are *units in themselves*, affecting individual outcomes through multiple factors, “bundled together”, or through interactions among individuals, or through the quality of neighborhood institutions (Jencks and Mayer, 1990; Sampson, et al., 2002).

The problem with the neighborhood effects literature, however, is that the effects posited tend to emphasize social deprivation,¹ rather than some of the more policy-specific mechanisms. This line of thinking does not improve upon the school effects research of prior decades. More recent, survey-based investigations of social organization and how neighborhoods bring about change have included more relevant themes such as activism (citation).

Extensive social inequality, for example, is compounded by apparently inequitable policies and school resource allocation, given insufficient representation of certain neighborhoods on boards and other forms of local control. Such institutional explanations of school differentiation are compatible with collective efficacy models in the sense that parents and other advocates in more advantaged neighborhoods tend to demand better resources and more effective educational practices. That school districts ultimately respond to the vocal demands of organized poor communities (Mediratta and

¹ For instance, the meta-analysis by Jencks and Mayer (1990) mostly features mean SES for neighborhood or school as the independent variable. Although they found that, controlling for individual student SES, school-level SES has “an appreciable effect” on student performance, the inconclusiveness of their findings may have been the result of an overall lack of breadth in the quantitative *school-related* neighborhood effects literature of the time. Although increasing popularity of HLM and other innovations has allowed more detailed specification of neighborhood effects models, the absence of policy-relevant and locally specific covariates is appreciable.

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Karp, 2003) moves the current discussion away from concentrated poverty, per se, to political capital, collaborative engagement, and other social-interactional factors that can drive the distribution of quality teachers, fiscal resources, leadership, and other institutional factors. These factors, working together, amount to a different kind of *neighborhood effect*.

This mixed perspective on how failing schools are created and sustained is more in line with broader sociological analyses in now-classic examinations of inequality (Kozol, 1991; Wilson, 1987) and a few, more recent examinations (Roscigno, 1998; Condrón & Roscigno, 2003; Rankin & Quane, 2000). As Small & Newman (2001) explain, the resource model stemming from Wilson (1987), Brooks-Gunn, et al. (1997), and Jencks & Mayer (1990) defines neighborhood disadvantage as, among other things, the absence of quality institutions. The political alliances model stemming from the segregation analysis of Massey & Denton (1993) discusses the absence of the necessary public/political resources for these institutions.

These studies demonstrate the importance of "conceptualizing and modeling disparate outcomes as a function of multiple institutional processes and attributes, and at various levels" (Roscigno, 1998). The creation of the urban ghetto, a spatial formation created by historically-specific, race-based institutional processes (Wacquant, 1997), is related to the drawing of political boundaries such as school districts, some of which have remained in place since that time. Residential segregation and the lasting political and social boundaries that result are also products of institutional processes. The study of school inequity can benefit, moreover, from an explicitly institutional perspective, particularly the possibility for examining how local community forces combine with non-local, institutional forces (Arum, 2000). For a school, these forces include regulatory contexts and other factors that to some extent determine school characteristics and how they function. A school's teacher quality level, for example, is as much a function of district and state policy as of neighborhood or student characteristics.

The public policy literature offers useful models of the effect and distribution of resources. In an exploration of resource inequity, we would intuitively expect that fiscal

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resources would be positively correlated with performance (the *resources matter* argument). However, counterintuitive findings from the end of the last century have demonstrated that resource use has a more complex, possibly contradictory story (Hanushek and Rivkin, 1997; 2002). School expenditures tend to be negatively correlated with performance, mostly because Title I and other federal and state categorical funds are targeted based on student need. Studies based on expenditures disaggregated by revenue source (Condrón and Roscigno, 2003) may deepen our understanding of resource inequity, given the null hypothesis of no variation: "Operating revenue is intended to be allocated as a base upon which resources for special needs are added or supplemented, and, as such, we expect the base to exhibit a high degree of horizontal equity" (Iatarola and Stiefel, 2002). Thus, local tax-levy funds should be equal between schools. However, the initial level floor in local dollars may not exist. Spending disparities in these more basic measures reflect resource inequity, which, due to locally nuanced allocation formulae and lack of transparency in most urban districts, is "hard-wired into district policy" (Roza and Hill, 2003).

Urban studies and critical geography can deepen the discussion of schools and neighborhoods, and challenge us to analyze the role of space and *place* in social formations. With this perspective, social and institutional processes are influenced by where the school is located, and it is through *location-specific* expectations that schools experience resource and outcome inequity. "...[I]t is largely the organization of space, together with the often-unconscious experience of places, that facilitates and legitimizes any cultural production" (Gruenewald, 2003: 629). Thus, inequitable distribution of human resources stems, in part, from the undesirability of teaching jobs in certain locations, and the movement of experienced/senior teachers to schools in more preferable neighborhoods.

Furthermore, critical geography's uneven development thesis [changes to the theoretical discussion, encouraged by comments from Mazen, an actual geographer, go here], borrowed from analysis of global variation among countries and regions, is also applicable at this relatively small scale, particularly when employed to analyze how deprivation of one area could be instrumental to the excellence of another. Depending on the specific economic relations between areas, this leveraging of resources is an

active *practice* (Soja, 1989). The high-stakes, audit-type accountability evident in state and federal policies like No Child Left Behind only passively addresses equity, and fail to make the connection between schooling and places (Gruenewald, 2003:642), a critical factor in the distribution of school quality within districts.

The intersection between community organizing and institutional resources is another connection that is underdeveloped in the literature on neighborhoods and schools. The extent to which the interactions between local community groups and local administrators are collaborative has some bearing on the connection between schooling and place. When strong connections are forged, resources are allocated more effectively, patterns of neglect are addressed more explicitly, and the details of school reform implementation may be informed by actual community experiences and thus more place consciousness.

New York City School (sub)Districts

From 1970 to 2003, New York City public elementary and middle schools were organized into 32 community school districts (CSDs)², administered by a combination of district personnel and the central city Board of Education. This political structure involved varying degrees of autonomy for the local districts, which were governed by democratically elected school boards. Since their formation, CSDs developed into local political establishments with their own internal patterns of initiatives and pressures. Although New York City districts were more limited in their powers than traditional school districts, their policies and practices could make a profound difference in the educational experience at a school (see, for instance, Iatarola and Fruchter, 2004; Elmore and Burney, 1998). Even after some erosion of their official power over their schools in 1996, CSD offices continued to house the financial and operations specialists, the final arbiters of federal, state, and city funding streams.³

School districts, in a way more steadfastly than Census tracts or even the neighborhoods officially delineated by the city planning departments, have *social meaning*. In New York, CSDs persist as administrative boundaries, each containing 15-

² I use the terms CSDs and districts interchangeably, although CSDs are technically sub-districts; all of New York City is considered a district by New York State.

³ To be more precise, the Central Board of Education (now called the Department of Education) is the final arbiter, given its veto power over district expenditures. The CSDs, until 2003-04, were proximal arbiters.

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50 schools, some spanning several official and unofficial neighborhoods. According to the NYC Department of City Planning, "school district boundaries are co-terminus with borough boundaries but otherwise do not conform to any other jurisdictional boundaries in the city, including community districts or municipal, state, or federal election districts" (New York City Department of City Planning, 2003). This disjunction with other official boundaries suggests a spatially based localism that is highly political in nature.

While there is some mystery around the precise origin of the district boundaries,⁴ contemporary school district boundaries are historical, spatial representations of the city's social and political terrain at the time of their creation. In this way history, power, and wealth play out spatially. In places where there are adjacent but segregated communities, the drawing or re-drawing of district boundaries can fuel racial or ethnic tensions, as parents fight to maintain the level of access or seclusion they had before.⁵ Through their jurisdictional properties, i.e. the authority to make local policies that determine attendance zones and other operational details within their boundaries, school districts wielded a significant amount of influence.

New York City elementary and middle school attendance zones are mostly geographic. Thus parents, children, administrators, and even realtors have relied on

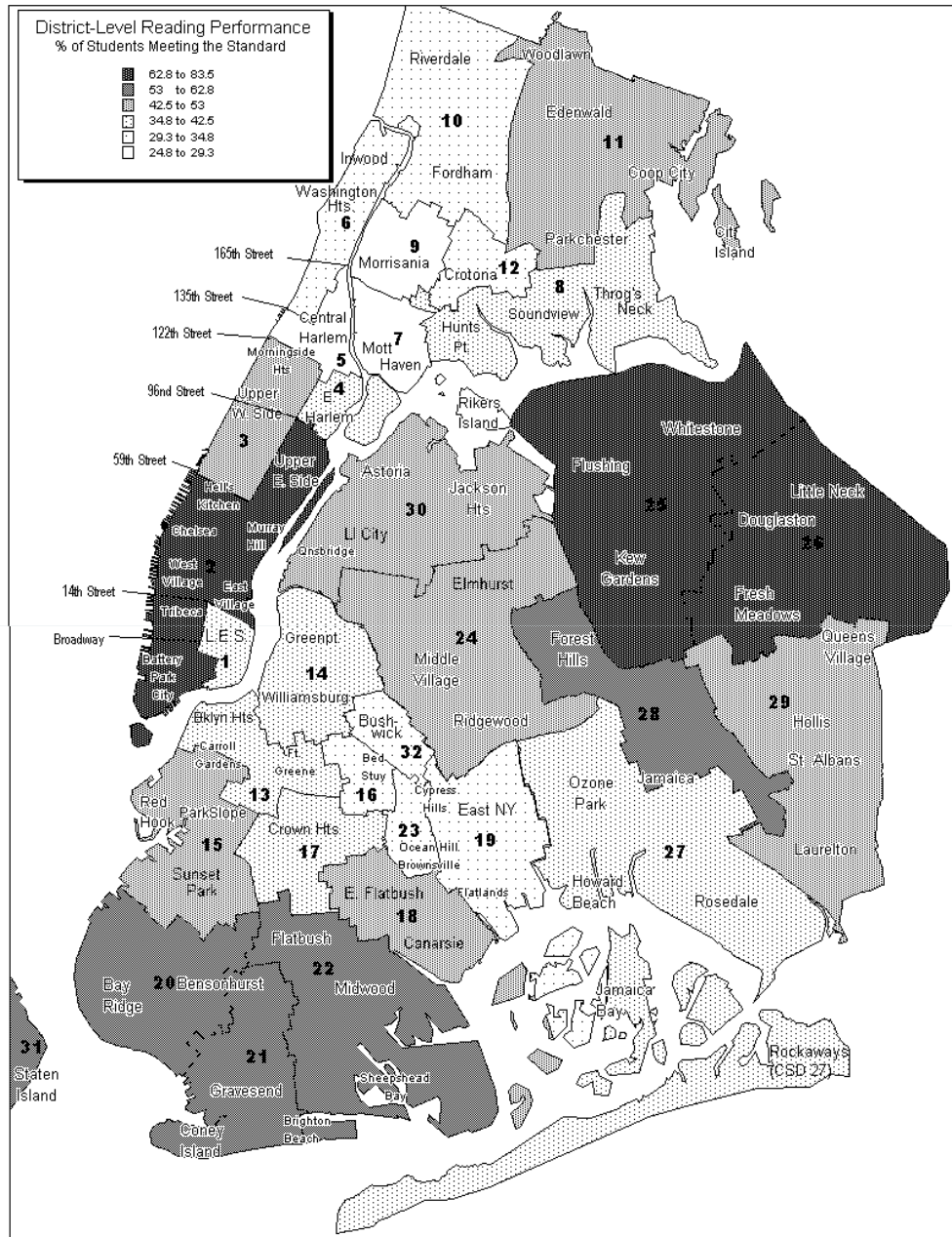
⁴ A brief history of the CSDs and their antecedents, in reverse chronology: The 1969 boundaries, as implemented by the New York City Board of Education mandated by the New York State legislature to decentralize (Section 2590-b(2)), were the results of extensive deliberation, based on several plans submitted to the legislature by the United Federation of Teachers, the Council of Supervisors and Administrators, the Board of Regents, and Mayor Lindsay's office (Zimet, 1972). While the plans recommended various district sizes and strategies for drawing their boundaries, the resulting boundaries, in the end, were a reiteration of boundaries drawn earlier in 1965, which were created to "achieve racially balanced pupil populations within districts (without necessarily integrating individual schools)" (State Charter Commission, 1974). Prior to that, in 1902, the city charter established a citywide school board. "About thirty" field superintendents oversaw schools at that time, "and there were advisory local school boards" (Folts, 1996). These school board jurisdictions were possibly inherited from the system of schools governed by ward trustees, starting in 1842 (absorbing the previous Public School Society, formerly known as the Free School Society run by "Quakers and civic leaders" (Folts, 1996)).

⁵ Such was the case with the creation of Brooklyn's District 23, where the new boundary excluded children from the Tilden housing projects from the schools they had attended in now neighboring District 18. As another example, the creation of District 32, added after the other districts in Brooklyn to alleviate overcrowding in District 16, split the Latino community of Bushwick from the African American community of Bedford-Stuyvesant. In another case, when Bronx District 8 was changed to include P.S. 48, the local school board contended that the addition affected the "ethnic balance" of the district (Bloom, 1970). According to the 1969 decentralization law, Community School District lines can be redrawn by the Board of Education in any odd year. School districts have the same flexibility as city council districts and some other administrative and political boundaries. However, the tenacity of these borders, and the legal battles concerning their block-by-block implications, suggests that they are much more meaningful.

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district-level policy and information for making personal or business decisions. A high performing district, such as District 2 in Manhattan or District 26 in Queens, holds a particular status, attracting the best teachers and otherwise exhibiting “pull factors” in the self-sorting of human resources. To live or to teach in such a district confers considerable advantage. The converse of this is the CSD that has eroded into a poorly managed institution with deteriorating conditions, unstable or overwhelmed faculty, and universally meager student outcomes. In these district level patterns we get a sense of how a school’s success is, to some extent, associated with geographic location.

Figure 1: Map of New York City Community School Districts



Source: New York City Dept of City Planning; NYC Dept of Education 2002 Annual School Report

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However, as units of analysis, CSDs can be as imprecise as Census tracts, congressional districts, or other administrative units—all institutional constructs which translate physical space into meaningful *places* only to the degree that they correspond to extant social and political structures and processes. Some administrative units develop into meaningful social and political units; others remain arbitrary and are used only for administrative purposes. School district boundaries, because they were jurisdictions, tend to be invested with meaning, but inequity across districts is just one of

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the layers of connection between schooling and social inequality. These patterns mask the narrower and possibly more invidious problem of school-based inequity and failing organizations that are geographically isolated within their districts. Districts that comprise several neighborhoods demonstrate the interplay/tension between managerial factors, represented by district boundaries, and the underlying social geography. Of particular interest is geographically structured inequity among schools *within the same* district, and how school quality often depends on where the school is located in the district.

Within some districts with overall high or average *district-level* performance on standardized measures, school-level achievement is low in clusters of schools, usually located in the districts' less privileged neighborhoods. These geographic *hot spots*, a term used to characterize areas of concern in epidemiology and criminology, may suffer "multiple forms of disadvantage" such as child poverty, crime or infant mortality (Sampson, et al., 2002: 446). In the case of school quality, we can identify these hot spots based on academic performance. The geographic distribution of low achievement reflects (to some extent) inequity in other school-level resources, such as teacher salaries. Educators, advocates, and policy makers informally refer to districts containing clear educational disparities among the diverse neighborhoods within them as *North-South* districts.

"North-South," a political term, refers loosely to Civil Rights-era spatial organization of social mechanisms, resources, and opportunity. The core concept is that inequality is spatially organized and fixed, although sometimes on east-west axes or other types of geographic patterns. This concept echoes the established tradition of neighborhood effects literature articulating the influence of concentrated poverty, contrasted with concentrated affluence. The use of the term in this way implies an advantaged area in the symbolic "north" of a district and disadvantaged areas in the symbolic "south." For the purposes of this paper, I define these areas of relative disadvantage as hot spots. What is important about these hot spots is that low performing schools in hot spots may suffer an extra disadvantage over low performing schools in less concentrated areas due to the imbalance of resources in their districts or other peculiarities of the local social order.

New York City's Children First Initiative

On July 1, 2003, New York City embarked on its largest restructuring effort in more than 30 years, disbanding the central and community school boards and subsuming the 32 local CSDs and six high school superintendencies into a new structure of ten instructional regions under centralized control. Responsibility for all non-instructional functions, including finance, personnel, facilities, and student support services, was centralized. Most importantly, schools now negotiate with central administrators for adjustments to funding allocation, new initiatives, or exemptions from centrally mandated instructional programs.

The Schools Chancellor assigned an instructional superintendent to each of the 10 regions, and charged them with dividing these regions into 10-15 smaller, "Networks of Schools,"⁶ each headed by a Local Instructional Superintendent. The innovation in this new system is the flexibility of these smaller administrative units: Networks could be non-geographic, crossing CSD boundaries; they could include—and were encouraged to include—schools of all levels, including high schools. Moreover, the larger instructional regions, under legal constraint to work around the CSD boundaries established in 1969,⁷ were each designed to include a mixture of high and low performing districts. Thus, the new Region 9 extends over the boundary between Manhattan and the Bronx, and contains the old CSDs 1, 2, 4, and 7.

Heavily influenced by the newly elected mayor, the new system attempts to increase accountability and scale up successful curricular practices. This mission, described in various speeches and press releases by the new schools Chancellor and Mayor, suggests a commitment to greater equity of outcomes, possibly reducing geographically based inequities.

The goal of Children First is to improve achievement across all schools and to address persistently low performing schools by moving innovation

⁶ A map of the regions and descriptions of these networks is available on the Department of Education website, www.nycenet.edu.

⁷ Another legal constraint and subsequent adaptation in the Children First initiative involved the State requirement that the CSDs continue to have some administrative reality: Student performance and demographics are still required to be reported by CSD. As another example, among the 10-15 Local Instructional Superintendents heading the smaller networks of schools, 32 of them serve a double role as CSD superintendent. The official capacity of this role is not yet clear.

and effective school change throughout the system. The Chancellor's team will examine best practices in instruction, management, and budget analysis, supporting the core purpose of instruction. Concrete action items will address the challenge of spreading the effective practices of successful schools. (NYC Dept. of Education, 2002).

As a systemic change, Children First holds some promise because of the potential for removing failing schools from their geographically embedded institutional environments and creating, through the dissolution of all school boards, the re-centralization of operations, and the "networks of schools," new forms of association for these schools.⁸ Thus, where there are two or more contiguous hot spots in separate districts, these areas may have independently experienced neglect by their respective districts but may fare better jointly within the new, larger administrative structures. Exemplary models that characterized some high performing districts, e.g., District 2 and its professional development initiative, could *scale up* to an entire region and affect practices in the low performing areas that are now merged with them. Pairing low performing schools with high, and organizing these networks into K-12 systems of professional development and other opportunities, could have the intended effect of getting schools from different areas to learn from each other and ultimately improve student performance.

On the other hand, new and larger areas of neglect may emerge from this systemic change, as entire districts may become hot spots within regions. Strong districts or powerful areas within them could compete with the rest of their region for resources. In the history of structural change to reduce inequity (decentralization, magnet programs, intra-district and inter-sector choice programs, etc.), such attempts have not reduced, and in most cases have contributed to increased inequity.

Furthermore, the social and political interactions influencing inequity under the old CSD system were longstanding but not necessarily formal parts of the districts' structure. Thus, the removal of formal district structure⁹ possibly leaves informal, geographically embedded modes of influence –the *éminence grise*, unchecked.

⁸ Some mystery surrounds the formation of these networks, their policy-making capacity, and their exact connections to leadership and social ties within the previous Community School District arrangement.

⁹ Note also that, partly because of legislative constraints, the districts are still vaguely in place although stripped entirely of their official power and instructional staff.

Whether the restructuring of districts will change the North-South differences has some bearing on whether political and social factors involved in the functioning of schools and other neighborhood institutions can be systematically addressed by massive, top-down administrative change.

Data and Methods

Variation in schools, to the extent that this variation is related to underlying social inequality, presents the opportunity for the “analysis of neighborhoods as important units of analysis in their own right, especially with regard to social-interactional and institutional processes” (Sampson, et al., 2002: 470).¹⁰ This includes, among other analytic prescriptives, “redefining neighborhood boundaries in ways that are more consonant with social interactions and children’s experience” (p. 470). In the current analysis, school-level performance serves as a barometer for children's experience, and, in the districts that have high intra-district variability in student performance, spatial clusters of elementary and middle schools¹¹ are used to loosely define “neighborhoods.” Of less concern are the static features of neighborhood composition or student background, although these features are discussed for their descriptive value. I first discuss within-district variability in school performance, then larger, cross-district patterns in my discussion about the new regional structure.

From school-level performance data published by the New York City Department of Education (DoE) annually, school-level scale scores and the number of fourth and eighth grade students scoring in various proficiency levels on the 1999-00 through 2001-02 state and city reading and math examinations provide the groundwork for the analysis of intra-district differences. From the same source come school-level student demographics, teacher experience, and school environment indicators, such as suspension rates and descriptions of special academic programs within each school. School-based expenditure data, also for 2001-02, provide per-pupil expenditures broken

¹⁰ For New York City school districts, this conflation of school and neighborhood is essentially appropriate because, as implied above, local elementary and middle school attendance is mostly geographically based. [\[\[\[Add note about correlation between school poverty measure and census tract poverty level...\]\]\]](#)

¹¹ Because zoning and selection for high schools is complex and largely non-geographic, schools spanning grades 9 through 12 were excluded from the analysis.

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down by major categories (instruction, building and ancillary, administrative, etc.) and sources (federal, and state/local), as well as average teacher salary. In addition, GIS data associate the schools and students, by address, with 2000 Census data for analysis of the underlying social geography, as measured by the percent of children ages 5-17 in poverty, community planning board districts boundaries, city council district boundaries and major streets/highways, representing the underlying political and socioeconomic terrain. Finally, a separate file containing test results for 2003-04, the first year after the restructuring and beginning of the Children First initiative, provides data for follow-up analysis.

Selection of schools. Of the 966 elementary and middle schools in the database compiled from the sources described above, [ck numbers:] 934 had valid records with complete addresses. These schools were geocoded with a 99 percent match rate. 868 of these schools were linked to their Census tract, based on the physical location of the school. 860 schools were linked to the Census through the addresses of students attending the school. Maps of school-level reading performance by general education students in all schools,¹² separated by grade level, were used to identify geographic areas where achievement levels are distinctly low in relation to other schools within the same school district.

I identified these hot spots using several factors: relatively low test performance, proximity to other schools with poor test performance, and location within district boundaries. Because the manual selection of schools based on a map can be subjective, a distance matrix calculated using the SAS Distance, Xmacro and Stdize macros and the Gower's D dissimilarity metric allowed within-district clustering based on location (x-y coordinates), three years of test results and district boundaries. These clusters along with detailed knowledge of many neighborhoods and social and political boundaries, acquired through technical assistance work with community-based organizations, guided the selection of hot spots within districts. Ultimately, hot spots were chosen based on a three year average of standardized student performance z-

¹² Despite the somewhat obvious need to be cautious about taking administratively reported data, including test results, at face value, I use reading and math results as indications of "school failure." These data represent not so much the precise cognitive development of individual students but a proxy ("barometer," as discussed above) for conditions at the school, relative to other schools.

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scores, and within-district location measured by x-y coordinates. A regression analysis of this standardized three-year average on x and y determined the selection of districts for spatial dependence. Maps, the cluster analysis based on school performance, the official administrative boundaries and background information aided the decision of where the "north" of a district ends and where the "south" begins within these north-south districts.

One hundred fifty two[?] low performing schools were in visually evident clusters within the boundaries of nine districts. These smaller, hot spot areas within districts were then treated as new geographic areas, i.e., coded and aggregated so that schools in these areas are compared to the other 792 non hot-spot schools, including 421 additional low performing¹³ schools outside of these hot spots, on teacher quality, discipline rates, school-based expenditures, teacher salary, and other variables.¹⁴ These comparisons, both by-district and citywide, demonstrate the extent to which being in a geographic hot spot also means resource deprivation for a school. Demographic comparisons elaborate on the racial, ethnic, and class differences between hot spot schools and other schools. Where differences in school-level student performance correlate with differences in resource variables, discussion of two forms of inequity among schools ("resource equity" and "output equity," Iatarola and Stiefel, 2002) follows. The presence of low performing and poor schools in the "non-hot-spot" category evens out comparisons that would otherwise be stark. Because hot spot schools were chosen based on their proximity to other low performing schools in their districts, resource and other comparisons show the effect of geographic *concentration*.

As follow up to the north-south patterns identified, maps of the new regions, also based on 2001-02 data, illustrate the geographically based differences within-regions and identify new hot spots within the larger administrative boundaries. Assessing the effects of the Children First reorganization on the schools that were in district-based hot spots entails looking at how these schools were placed in the new networks of schools,

¹³ Defined literally, as below city average.

¹⁴ Six schools physically within "hot spot" areas were in the Chancellor's District, a virtual district of schools taken over by the central administration due to low performance, and 19 schools were in other alternative/special citywide programs. These schools were included in the visual, map-based analysis because of the theoretical effect of low performing schools on schools nearby but, because these schools were not under local control (and special package of resources were given to these schools), they are not included in the comparisons presented below.

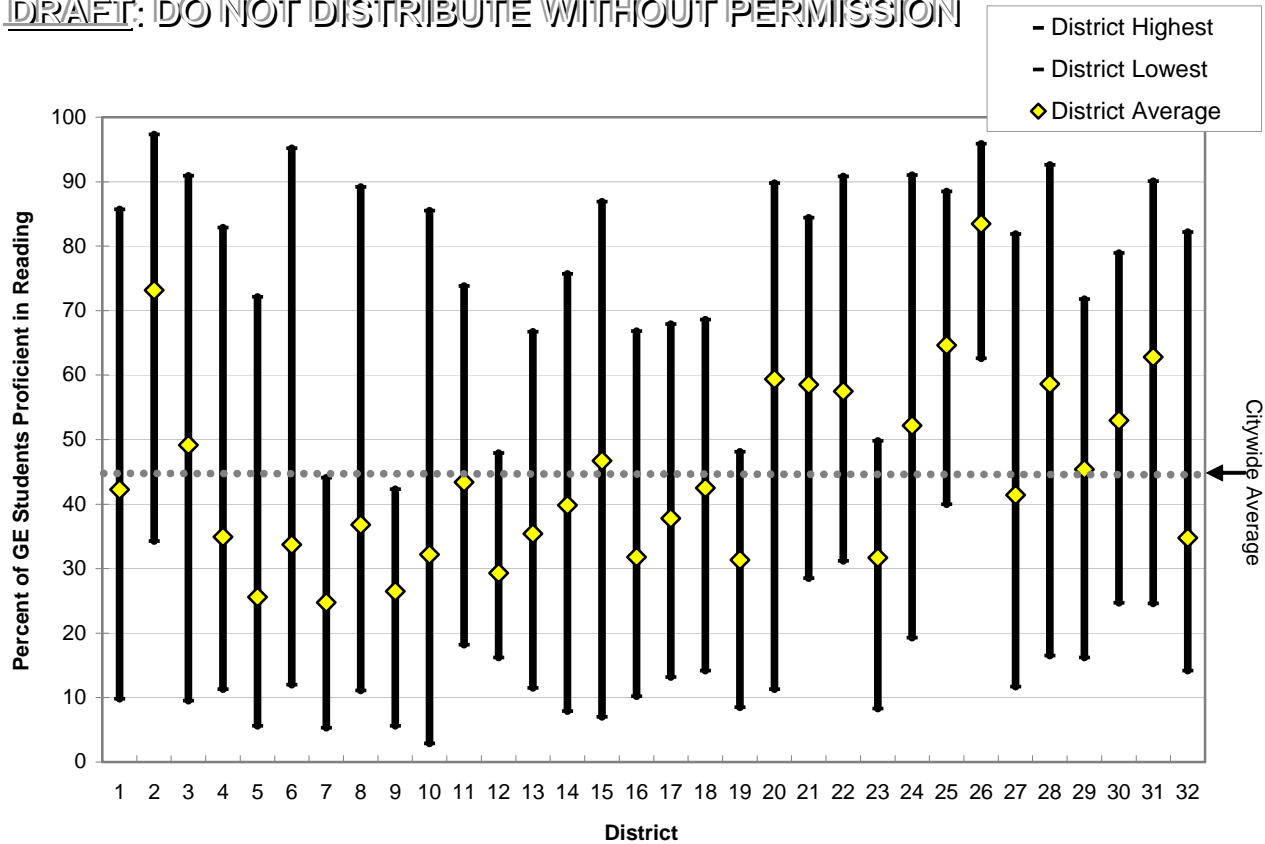
including the proportion of hot spot schools in each network, and associating the networks, through maps, with the geographic areas that they span. Maps of networks show the extent to which the networks are geographic (after all).

Finally, a brief analysis of 2003-04 academic performance outcomes, one year after the implementation of the massive changes described above, suggests the extent to which Children First affected geographically concentrated disadvantaged schools. Because no student demographic, resource or other data is available for statistical control (taking into account, e.g., changes due to gentrification or rezoning), this analysis of performance outcomes is extremely limited –merely suggestive of change over time.

Spatial Patterns in Performance and Resources: North and South

Figure 2 illustrates that the range of school-level performance in each district is large in some districts, small in others. While some districts have consistently high performance, others perform at such a universally low level that the highest performing school in the district still falls short of the citywide average. Still other districts have such variability that their highest performing schools double or triple the performance of the lowest performing schools.

Figure 2: Range of Reading Performance, by District



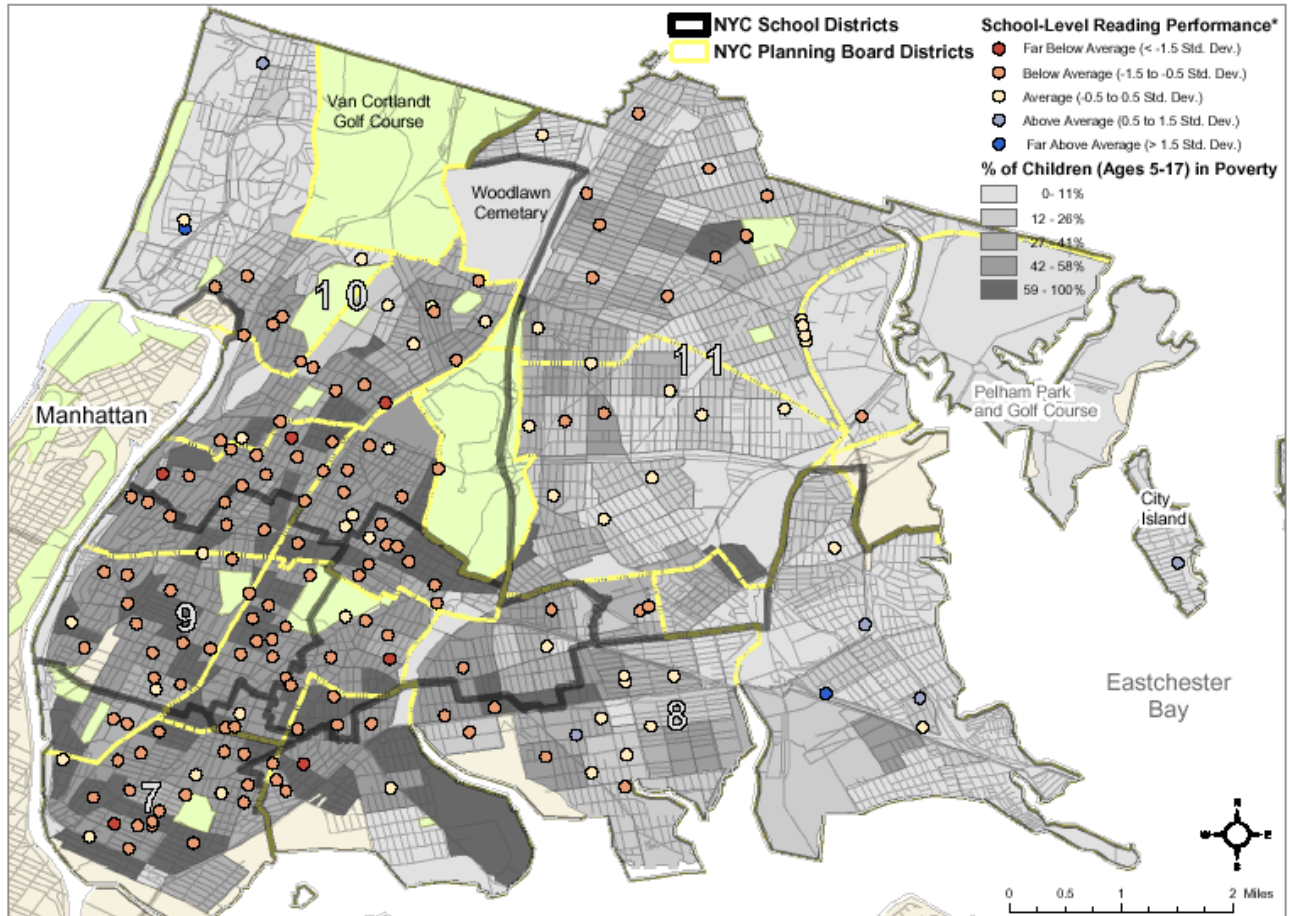
Figures 3 through 7 detail the spatial distribution of reading performance in New York's districts (1 map for each of 3 boroughs detailed here). Points on the maps indicate the location of each school and performance relative to the grade-specific citywide mean, ranging from far above the citywide mean (blue) to far below (red). District boundaries are represented by thick lines within each borough. The dashed lines show planning board district boundaries, as an illustration of the various political boundaries shaping the urban terrain around the schools. The gray shading indicates the percent of school-aged children below the poverty line (representing the underlying social geography) in 2000. Nine districts¹⁵ show distinct intra-district spatial patterns in performance.

While borough-wide performance in the Bronx is generally lower than in other boroughs, variation in two Bronx districts corresponds to intra-district dynamics that operate to the disadvantage of the poor neighborhoods within them. District 10, featured in Kozol's *Savage Inequality*, still looks like "two separate districts" (1991: 84),

¹⁵ Districts 3, 8, 10, 14, 15, 24, 27, 28, and 31.

with extremely high performance in its wealthier northwest section (Riverdale), and a

Figure 3: New York City Public Schools in the Bronx



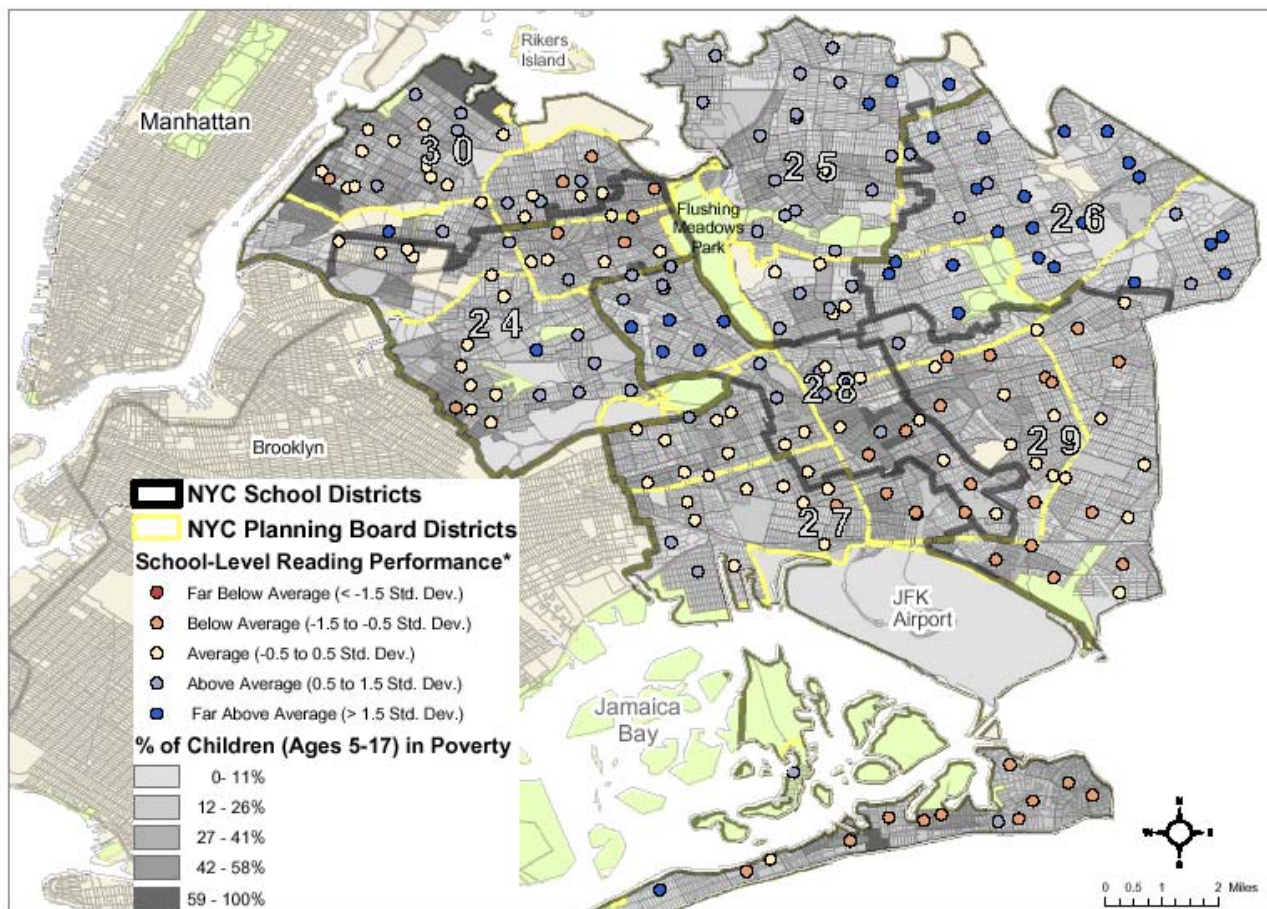
large number of poorly performing schools in the south. Conflicts in the district often stem from the influence of Riverdale on zoning and school restructuring plans by the school board, and how overcrowding in District 10's south limits the actions of the superintendent, school board, and others with a commitment to improve schools in the southern part of the district.

A similar pattern is evident in District 8, which spans three distinct neighborhoods. District 8's hot spot is Hunts Point/Longwood, an area where school performance has been so chronically low that all three middle schools in the area were taken over by the Chancellor for poor performance and two of them closed. Soundview, in the center of the district, has mixed performance at the school level. Throg's Neck, a wealthy area along the northeast coast of the district where performance is relatively

high, can be characterized by high levels of political capital, suggesting the relevance of the collective efficacy model of neighborhood differences.

The boundary on the district's southwest end, by extending into one of the south Bronx's poorest Black and Latino neighborhoods, has provoked the powerful response from the affluent and influential population on the other end. Although only four of District 8's twenty-seven schools were located in Throgs Neck, for instance, "five of nine school board members were elected from that neighborhood" (Mediratta and Karp, 2003). District 8 has a history of school board influence by Throgs Neck residents, who, "were politically well connected and had longstanding relationships with school district officials."

Figure 4: Public Schools in Queens



District 28, another of New York's "nominally integrated" (Garvey, 1999) CSDs, is physically *long*, spanning two distinct neighborhoods. Schools in the predominately

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White, middle class north end, Forest Hills, and schools in Jamaica, the predominately Black section, divide the district into two distinct halves. The northwest section of this district was the beneficiary of the District's decision to place magnet programs in an attempt to attract students from non-public schools (Garvey, 1999). Brooklyn's District 15 (not shown), by contrast, has considerably more variation throughout the district (partly due to the presence of several housing projects), and a relatively small low performing area, Red Hook.¹⁶

The patterns in these maps suggest that a set of interrelated socioeconomic and political forces play out spatially. In the districts described above, intra-district politics are the context for administrative decisions and teacher labor market patterns that favor schools in one end of a district over those in another. At a minimum, the patterns in the test results mirror the pattern of social disadvantage evident in neighborhood socioeconomic features, and mirror the political disadvantage evident in district history. A citywide analysis, described below, details some of the broader patterns in this relative disadvantage and inequity.

[Table 1 about here]

Citywide, low performing schools that are spatially clustered with other low performing schools in the same district show significantly poorer performance than schools that are not in these hot spots. Table 1 compares performance by schools in geographic hot spots to performance in other schools citywide. Hot spot schools, by definition, are lower in performance, and these difference tend to be fairly stark citywide. Moreover, the schools in hot spots are demographically very different from other schools. Poverty levels are consistently higher. Schools that are clustered in hot spots have high concentrations of African American and Latino students, and an extremely low percentage of White and Asian students. While the percent of students who are African American in all schools is fairly similar, and the percentage of White students in non-pocket schools is close to the overall citywide average, schools in the hot spots and

¹⁶ District 15, like the other districts, has experienced spatially structured racial tensions. However, in the school-level data, the spatial manifestations of these tensions are contained in relatively small areas. Outside of Red Hook, for example, the Wycoff Houses projects and the adjacent neighborhood, Carroll Gardens, have been the subject of zoning conflicts, as children from the projects have been zoned exclusively to P.S. 32, while P.S. 58, around the corner, continues to serve the predominantly Italian-American Carroll Gardens.

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other low performing schools have a notable *absence* of white students. These differences suggest that the schools outside of these hot spots are more integrated, while the hot spots demonstrate the ethnically based spatial behavior (i.e., residential segregation) characteristic of large urban areas.

[Table 2 about here]

On resources, schools in the geographic hot spots are higher in total per-pupil expenditure than the other schools. This pattern, although counterintuitive, is expected given federal and state poverty based funding. This is an indication that, like in other metropolitan areas, federal Title 1 and other money is going where it should (Condrón and Roscigno, 2003). However, local revenues show the opposite pattern in some measures. Expenditure patterns vary by district, but the overall, as Table 3 shows, classroom expenditures and expenditures on teachers are lower for hot spot schools, but this is also the case for other low performing schools outside of hot spots. This disparity in expenditures is related to the notable inequities in human resources. That is, teachers in hot spot schools are less likely to have credentials, are less stable, and are paid \$2,371 less per year (\$1,180 less than non-hot-spot low performing schools). As mentioned earlier, these differences suggest that the distribution of human resources is subject to pull factors, where higher paid and more experienced teachers are drawn to high performing schools with more easily managed classrooms –at times far from the hot spots to which newer teachers with fewer qualifications are routinely assigned. In addition, this resource difference is worse in geographically concentrated schools.

[Table 3: may be combined with Table 2]

As examples of within-district disparity, Figures 5 and 6 show differences between hot spot schools and other schools¹⁷ in school based expenditures of local dollars (net of Title I and other categorical funds and thus presumed equal, as described above) and teacher salary, respectively, by district. Negative values indicate that the hot spot schools are lower than non-hot spot schools; values above zero mean that the hot spot schools have higher levels than non-hot spot schools. In districts 8 and 10, for

¹⁷ The difference is calculated by simple subtraction of the mean for other schools from the mean for hot spot schools.

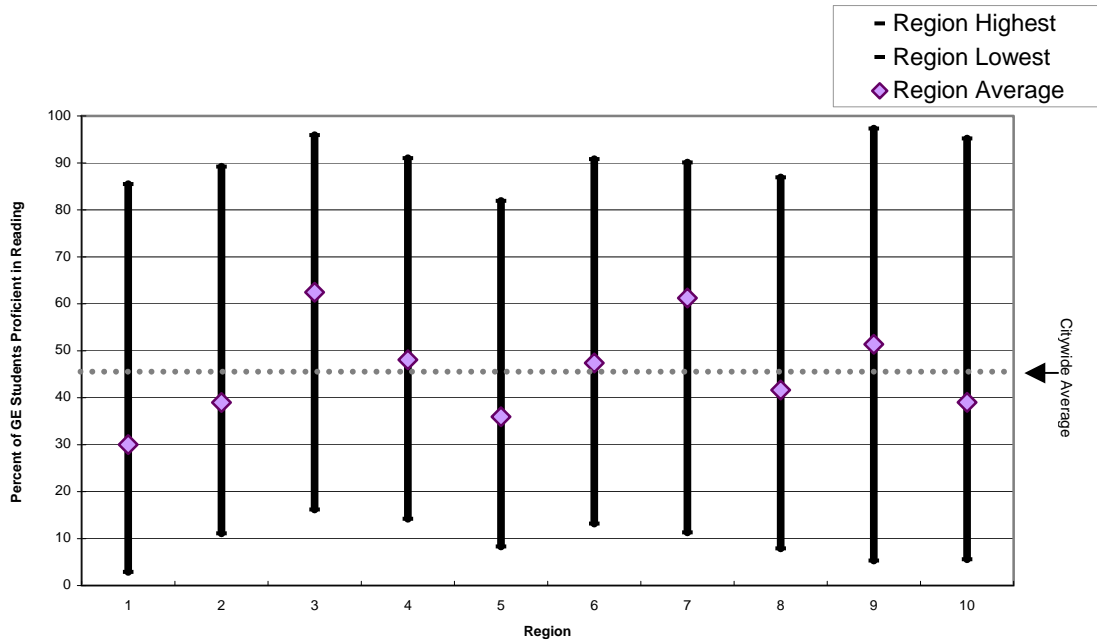
example, hot-spot schools have consistently lower expenditures; in districts 14 and 15, the resource profile for hot spot schools is more promising. The varying amount of resource disadvantage for hot spot schools, suggests that districts not only have a variety of socioeconomic situations to contend with; they also respond differently. Disparity in teacher salary, a function of teacher experience, tenure and education, is widespread among the districts, suggesting that the hot spots in each district share a similar *no go* status among experienced and stable teachers.

[Figures 5 and 6 here]

Spatial distributions after Children First. Figure 7 illustrates the initial range of performance in schools at the point when they were organized into the newly created regions.¹⁸ The lines indicate that, at baseline, school performance is more evenly distributed among regions than among the smaller CSDs, suggesting that the formation of regions involved a deliberate mixture of high and low performing districts, although the means show the effect of including several high performing districts with one north-south district in Region 3.

Figure 7: Range of Reading Performance, by Region

¹⁸ The test data presented here are 2001-02 performance, one year before the schools actually were operated under the regional structure.



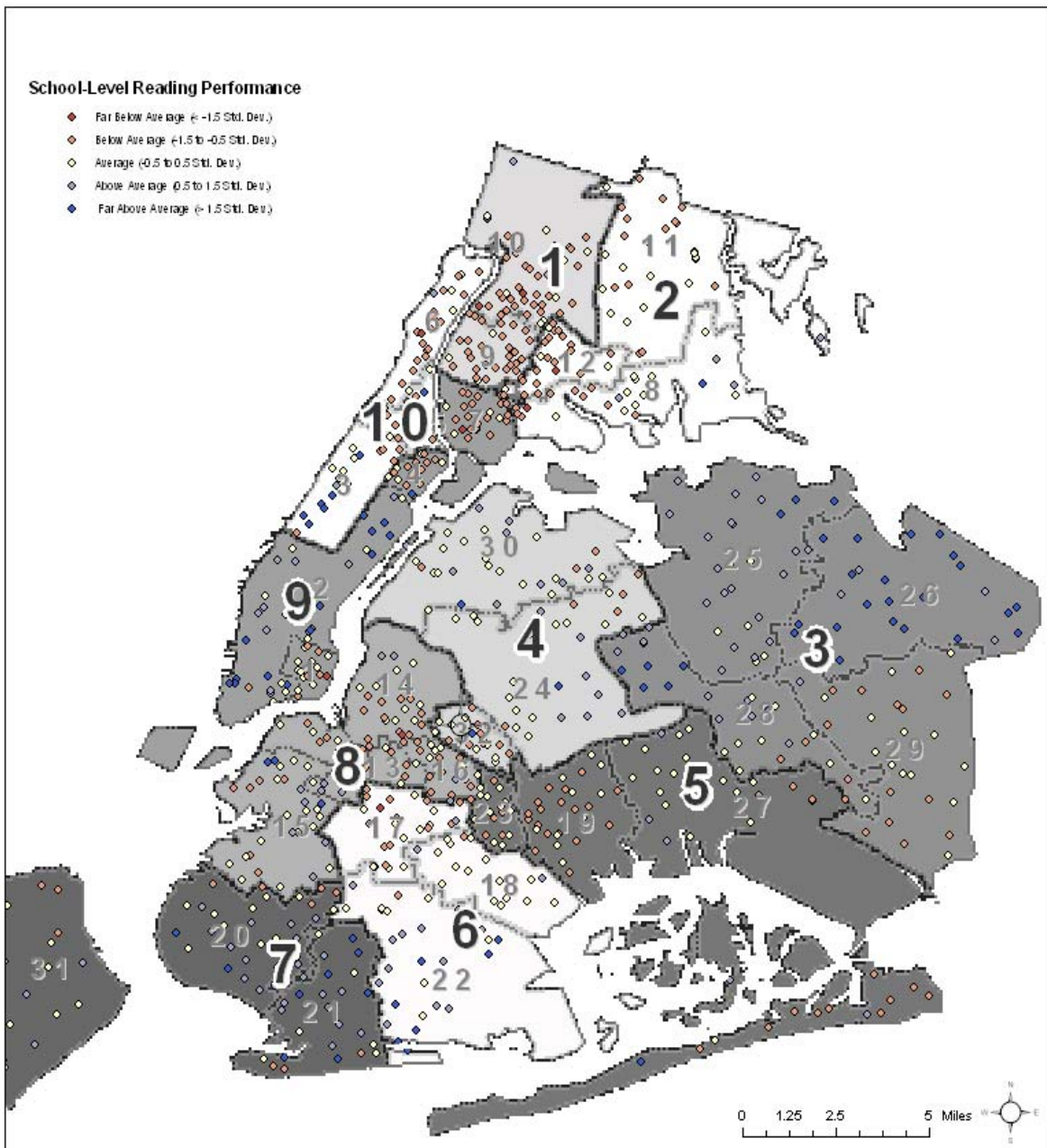
Source: NYC Department of Education, 2001-02 and 2001-03 Annual School Reports.

Figure 8 illustrates spatially how the districts were grouped into regions. This citywide map, with point locations for the schools, shows how large new areas become within-region hot spots. For example, District 29, an area with a relatively large proportion of middle-class African American residents, has joined the southern part of District 28 as the hot spot of Region 3. Region 10, also, contains a large vulnerable area. [[[I need to redo shading to reflect region-level performance; only school-level performance is reflected in the color scheme here]]].

Political possibilities, particularly community based school improvement campaigns, may have more positive implications. Because regions are larger geographic areas than districts, they may contain more neighborhoods in their entirety, and community leadership may more efficiently focus on one or two regional administrators, rather than several district heads.

Figure 8:

New York City Reorganized into Instructional Regions



Networks of Schools. As indicated in the description of New York's Children First initiative above, part of the promise of this restructuring are the new forms of association, "networks," for schools that may have suffered, in part, because of their geographic location. As Table 4 indicates, schools in geographic hot spots identified above are now in networks containing from zero to six hot spot schools. The networks with the largest number of hot spot schools are in Region 1 in the Bronx, home to District 10's disproportionately large hot spot. The distribution of hot spot schools across networks, by district (not shown here), also suggest that the networks are

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essentially non-geographic. There is evidence of some diffusion within regions. The hot spot schools, about 10 percent of the schools in the city, are placed in 34 percent of the 109 networks the created within the new regions. This suggests that hot spot schools have not been systematically arranged into the same networks.

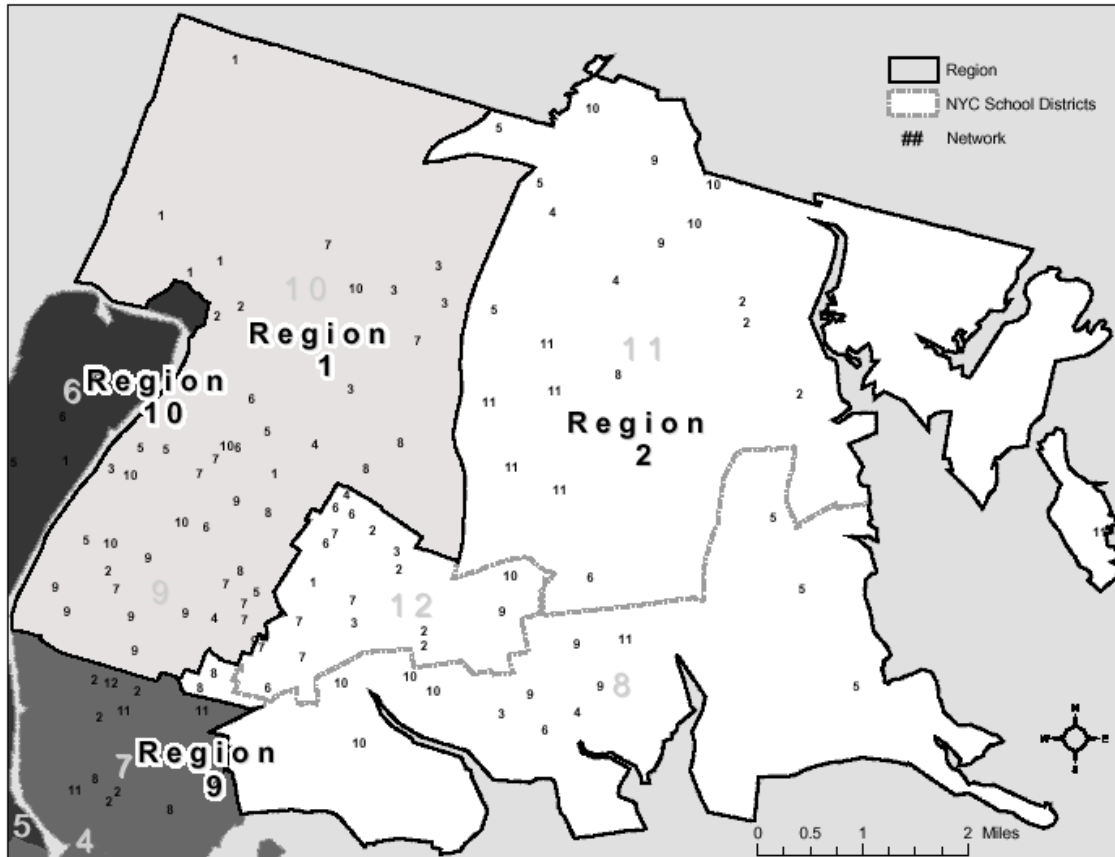
Table 4: Diffusion of Hot Spot Schools Across Networks Within Regions

REGION	Maximum # of Hot Spot Schools per Network
1	6
2	4
3	4
4	3
5	3
6	0
7	3
8	4
9	0
10	2

However, maps of the networks indicate a vaguely spatial structure. In the Bronx example presented here, all of the schools in Riverdale (District 10, discussed above) belong to the same network, suggesting a correspondence between the current network and regional structure and the previous CSD structure. One school from the southern part of the district, apparently, will benefit from the same professional development and other opportunities as Riverdale schools. This suggests schools in advantaged areas may have been grouped together, with one or two schools from other areas in the region, with only a nominal amount of geographic dispersion into other areas within a region.

Figure 9: Map of Networks of Schools within Regions

Networks of Schools within Regions



While it is not surprising that spatial arrangements persist post-reform, some new administrative arrangements, liberated to some extent from the CSD system of the last three and a half decades, do reflect potentially fruitful change.¹⁹ Of particular interest are the new institutional forms that emerge from large scale restructuring such as New York City's Children First. Such new forms of association for schools could result in

¹⁹ Some evidence of how the restructuring can involve new, positive forms of association comes from the Community Collaborative for the Improvement of District 9 (CC9) a collaborative project of several community-based organizations working to improve the schools attended by the children who utilize their services. As the restructuring was taking place, CC9 proposed, and was granted, a network for the set of ten schools where their organizers were in place. CC9, by incorporating the restructuring into its platform, developed an unprecedented, mutually collaborative relationship with the regional superintendent, and the privileged position of being the only community-based organization to sponsor an entire network of schools. While most of the schools in the CC9 network are low performing, several community-driven strategies have been initiated, including a successful petition to Central for the placement of lead teachers in each school.

new professional development and other new programs in hot spot schools, and possibly new resource allocation as a result.

However, given the strong tendency toward numeric based accountability focused on test results, the most essential evidence of restructuring impact is test score trend. Figure 10 shows the fourth grade test results.

[Figures 10, 11, and 12]

The trajectory for high performing schools in north-south districts is consistent with all New York City schools: these schools consistently perform higher, but increases or decreases in their performance are consistent with changes in the entire system. Hot spot schools, along with other low performing schools, are consistently below the systemwide average but, being a smaller group of schools, had amore erratic trajectory. In the end, hot spot schools performed no worse than other low performing schools, suggesting an early increase. Eighth grade results were more erratic, suggesting the extra disadvantage for hot spot schools is sensitive to the timing of the observation and the grade level of the school performance observed. These test results suggest that hot spot schools, some of the lowest performing schools in the city, would improved merely by regression to the mean regardless of the timing of the restructuring. A more extensive analysis involving more matching and comparison of schools based on detailed characteristics, along with more observations post restructuring, would help disentangle the effects of the change from random change patterns that might influence what we see here.

Conclusion

This study hopes to initiate more exploration of the invisible boundaries that persist where, by all official indications, the educational experience should be the same. Some high performing or average districts with high amounts of performance variation between schools also have under-performing, and sometimes under-resourced hot spots. Schools in these hot spots, consistent with institutional views of neighborhood

deprivation, often have lower levels of local resources, particularly teacher credentials and salary.

While it's obvious that variation in schools exists and that these differences are related to social realities outside the direct classroom experience, assumptions about the causal primacy of student background and poverty may continue to foster educational practices that fail to engage the spatial nature of school governance and political power. These spatialized interactions, as evidenced by the disparities within New York's CSDs, are as important for understanding why and how a school fails as the social background of its students. As the literature suggests, social processes such as institutional resources and collective efficacy drive some of the geographically based differences among schools.

Furthermore, given long periods of neglect for some under-resourced, underachieving schools in large cities, where politically contested space has already translated into concentrated areas of limited opportunity, school district restructuring presents new possibilities for these schools, provided that restructuring effort is mindful of the spatialized social forces that have compounded and even reproduced social inequality. The change described here represents a departure from a district structure—i.e., a set of political and administrative practices, at least 35 years in the making. The slow pace of change for the schools in within-district hotspots suggests either the persistence of local political and social forces on education or the imperviousness of these forces to large scale reform. However, only extended longitudinal analysis, with statistical controls for neighborhood change and gentrification, will tell the impact of restructuring. If in future years we see a relatively positive change in these schools, New York may have shared lessons on the importance of administrative boundaries as they interact with the underlying social geography, and local urban political processes.

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