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## ABSTRACT

As part of its work for the Citizens' Commission on Planning for Enrollment Growth, the Institute for Urban and Minority Education (IUME) conducted research to assess the impact of overcrowding on the students of New York City schools. All five of the City's boroughs have experienced recent enrollment growth that has been closely linked to changing demographics, including a significant increase in the immigrant population. Increases in enrollment have been compounded by a dramatic increase in the number of students enrolled in special education. These trends show no signs of changing, and it is likely that by the 2002-03 school year the City will have to accommodate one and a quarter million students. More carefully controlled research is necessary to identify the complex effects of overcrowding, but most sophisticated studies find a negative connection between increased class size and student achievement. The IUME used school board profile data, site visits to four overcrowded schools, and interviews with 599 students and 213 teachers to identify the negative effects of extreme overcrowding. A total of 62.6 percent of all students felt that their schools were overcrowded, and almost 50 percent felt that their classrooms were too crowded. The three most important concerns of teachers were student overcrowding; the need for adequate classroom space; and staff stress management related to overcrowding. Strategies for relieving overcrowding generally focus on finding new space or using time to use existing space more fully. Suggestions include leasing space, collaboratives, relocating administrative space, and district-wide redistribution of space. Regardless of the approach taken, students are entitled to adequate space for learning, as a student "Bill of Rights" should outline. (SLD)

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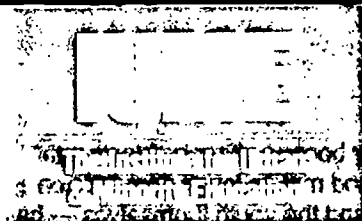
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## ENROLLMENT GROWTH AND OVERCROWDING IN NEW YORK CITY SCHOOLS

In January 1995, the Citizens' Commission on Planning for Enrollment Growth submitted a report, *Bursting at the Seams*, to then Chancellor of the New York City Board of Education, Ramon C. Cortines. In its report, the Commission, comprised of educators and policy-makers convened by the Chancellor to study the rapid and ongoing growth of student enrollment, outlined a series of proposals to offset the resultant serious overcrowding in New York City schools.

Because of a dramatic increase in immigration, the New York City schools are perhaps the hardest hit by overcrowding in urban schools in the United States; the city as a whole faces a projected enrollment of well over one million students by the year 2002. As a result of such growth, New York students find themselves trying to learn while jammed into spaces never intended as classrooms—libraries, gymnasiums, laboratories, lunchrooms, and even closets.

As part of its work supporting the Commission's report, the Institute for Urban and Minority Education (IUME) at Teachers College, Columbia University, conducted research designed to assess the impact of overcrowding on the City's students. A summary of IUME's findings is presented below.

### DEMOGRAPHICS

#### Overall

Many urban school districts across the United States have been subject to rapid growth in student enrollments, primarily as a result of steadily rising birth rates and increases in immigration into the cities. Between 1989 and 1993 alone, New York City's schools added a total of 77,082 new students to their rosters, with only minimal investment in new construction to help provide space for these students. During this period of rapid growth, only 27 new buildings were constructed citywide, providing seats for only 13,412 new students, leaving 63,670 students whose educational needs had to be met through existing space.

Although New York's enrollment growth has been rapid at all grade levels, it has been greatest at the high school and elementary levels; between 1984 and 1993, enrollment in elementary schools increased by nearly 50,000. Since 1989, growth has been particularly rapid in the City's high schools, with

nearly 40,000 new students entering the schools. Further, a rising number of schools have felt the impact of overcrowding. Among high schools, 91 of 111 buildings (82 percent) had to operate above their seating capacity during the 1993-94 school year. During the same year, 415 of 744 elementary school buildings (56 percent), and 51 of 184 middle schools (28 percent) were above capacity. Although all five of the City's boroughs have experienced rapid enrollment growth, it has been the greatest in Queens, where growth has proceeded at a rate of over 10 percent from 1988 through 1993.

#### Immigrants

This steady increase in the number of students in New York City's schools is closely linked to the City's changing demographics, and particularly to a significant increase in the City's immigrant population. During the 1980s, close to one million immigrants from over 160 countries moved into the City, a trend that has continued into the 1990s. In 1992 alone, it is estimated that 120,600 legal immigrants established residence in New York City.

These immigrants tend to be young in comparison to the general population, and a greater proportion of them have school-aged children, most of whom attend public schools. The New York City Board of Education's Emergency Immigrant Education Census (which only counts recent arrivals who are eligible for special assistance) reports that recently arrived immigrant students in the City's schools more than tripled between October 1989 and October 1992, growing from 36,000 to 124,827, or nearly 12 percent of the total school system enrollment. As many as 22 percent of the total student population in New York City schools are foreign-born, according to the 1990 Census. Furthermore, immigration accounts for all of the recent enrollment growth in the City, despite a reduction in the total enrollment of non-immigrant students between 1989 and 1993.

As significant as the sheer number of new immigrant students flowing into the City is, even more remarkable is the diversity in their countries of origin. They include the Dominican Republic, Russia and the rest of the former Soviet Union, Ja-

This brief is based on two reports. One, *Bursting at the Seams: Report of the Citizens' Commission on Planning for Enrollment Growth*, by Ricardo R. Fernandez and P. Michael Timpane, Chairmen, is available from the Office of the Chancellor, New York City Board of Education, 110 Livingston Street, Brooklyn, NY 11201. This report was produced with the collaboration of the Institute for Urban and Minority Education. The other, *A School System at Risk: A Study of the Consequences of Overcrowding in New York City Public Schools*, by Francisco L. Rivera-Batiz and Lillian Marti-Vázquez, is available from IUME, Box 75, Teachers College, Columbia University, New York, NY 10027. Further material for this brief was drawn from an ERIC Clearinghouse on Urban Education digest, *Overcrowding in Urban Schools*, by Gary Burnett, which is available from the ERIC Clearinghouse on Urban Education, Institute for Urban and Minority Education, Box 40, Teachers College, Columbia University, New York, NY 10027.

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maica, China, Guyana, Haiti, Mexico, Trinidad and Tobago, Ecuador, and Colombia. There are, in addition, approximately 120 different languages spoken by students, a fact that has led to a rapid increase in the number of Limited English Proficient (LEP) students who must be served by the City's schools.

### **Special Education**

Such increases in enrollment have been compounded by a concurrent dramatic increase in the number of students enrolled in special education programs throughout the City—from just over 115,000 students in 1988 to nearly 135,000 in 1992. This growth is of particular concern, for even if it is due to broadened definitions of educational disabilities rather than to an actual influx of new students, it has a direct and serious impact on the utilization of school space. Although the actual number of students in a given school may not increase, the smaller class sizes required in special education programs—6 to 12 students, compared to 25 to 35 students in regular classrooms—can lead to a drastic reorganization of space within a school, potentially resulting in serious overcrowding for students in regular programs.

### **Trends**

These trends show no signs of changing, so it is expected that increases in the public school student population will continue for the foreseeable future. According to The Grier Partnership, a group of demographers that has supplied the New York City Board of Education with short- and long-term projections of future student enrollments, the City's schools can expect nearly 125,000 new students to enter over the next five years, particularly in the elementary grades. It is likely that, by the 2002-03 school year, the schools will have to accommodate one and a quarter million students.

### **THE IMPACT OF OVERCROWDING**

By definition, a school is overcrowded when it must operate with an enrollment exceeding its capacity. The impact of overcrowding on student achievement is a complex matter, and is influenced by a variety of other variables, including the steps taken by the school to deal with overcrowding.

For instance, schools may absorb increases in enrollment by increasing class size. Surprisingly, research into the impact of class size on student achievement has been inconclusive: some studies suggest a negative relationship between the two; others suggest a positive relationship. It is even possible that high student achievement in a particular school may *cause* overcrowding and increased class size there, since its reputation as a desirable school will lead to increased enrollment. As a result, not all overcrowded schools have low levels of student achievement. However, most sophisticated longitudinal studies tend to find a negative connection between increases in class size and student achievement.

Schools may also absorb enrollment growth by using non-classroom space within existing buildings. Such spaces may include hallways, closets, offices, and even restrooms. While there is evidence that working in such cramped and un-

suitable spaces may have a negative impact on both teacher morale and student motivation—and, thus, on achievement—there has been little solid research on student performance in such settings.

A variety of factors must be considered in examining the relationship between overcrowding and student achievement. For instance, many overcrowded schools—as in New York—also serve large numbers of recent immigrant students, many of whom have limited English language skills, and, thus, often perform below others in English reading tests. A casual look at figures on overcrowding, achievement, and the proportion of recent immigrant students in different schools cannot disaggregate the effects of overcrowding from those of English proficiency on achievement. More carefully controlled research—including longitudinal studies—is needed before solid conclusions regarding such a complex tangle of factors can be adequately explained.

### **THE INSTITUTE FOR URBAN AND MINORITY EDUCATION STUDY ON OVERCROWDING**

The research carried out by IUME for the Citizens' Commission on Planning for Enrollment growth does not provide such a longitudinal study; it does, however, add to the growing body of existing evidence on the negative impact of overcrowding on student achievement. Thus, it can help provide a basis from which to undertake longer-term studies.

IUME's study used two different sets of data to explore the consequences of overcrowding in New York City's schools. First, school profile data on elementary and middle schools provided by the New York City Board of Education was used to examine the relationship between overcrowding and achievement. Second, IUME researchers visited four randomly selected schools in the New York City public school system, each operating at above 130 percent of capacity. These schools reflected the City's diversity, both in location and in educational level. Researchers interviewed students, teachers, and administrative staff; visited facilities; and distributed questionnaires. Their goal was to obtain the opinions and perceptions of students and teachers on the effect of overcrowding on the quality of life and the learning environments in school.

#### ***Overcrowding, Student Achievement, and Socioeconomic Status***

It has long been known that socioeconomic background has a strong impact on student achievement. In part because students from families with high incomes benefit from greater economic and educational resources at home, they tend to perform better on standardized achievement tests than poor students. In order to incorporate this consideration, IUME carried out separate analyses for schools with high proportions of students from families with incomes below the poverty line and those with high proportions of students with more privileged backgrounds. Student achievement was measured



by the percentage of students who met the minimum standards for passing city- and statewide reading and mathematics tests. The reading test was the Degrees of Reading Power (DRP) test, given across the City to students in grades 2 through 10; the math test was the Pupil Evaluation Program (PEP) test, a New York State-mandated test given in grades three and six. IUME examined test results at the third and sixth grade levels.

IUME's analysis of the New York City Board of Education school profile data revealed strong connections between overcrowding, achievement, and socioeconomic status. The major results of IUME's study are these:

- The proportion of students in overcrowded schools with low SES who passed the minimum standards for the standardized reading exam was between four and nine percentage points below that in schools not overcrowded.
- The proportion of students in overcrowded schools who passed the minimum standards for the math exam was between two and six percentage points below the proportion in schools that were not overcrowded.

In comparison, the results in schools with high socioeconomic status were reversed; students in overcrowded schools performed between two to four percentage points above similar students in schools that were not overcrowded, on both reading and math tests.

These results suggest that, among schools with high proportions of poor students, overcrowding has a clear negative impact on achievement. For schools with students from families with higher socioeconomic status, overcrowding is positively correlated with student achievement.

### ***Student and Teacher Perceptions of the Effects of Overcrowding***

IUME researchers surveyed 599 students and 213 teachers in overcrowded New York City schools. Their responses reveal some serious concerns regarding the impact of overcrowding on the quality of life in the City's schools.

The survey of **students** elicited the following significant information:

- A total of 62.6 percent of all students felt that there were too many students in their school. Only 1.2 percent felt that their school population was too low.
- Almost 50 percent felt that their classrooms were too crowded. Only 4 percent felt that there were too few students in class.
- Close to 40 percent said that they had trouble concentrating in their classes when learning something new.
- Although some students could still find quiet places to study in their schools, 43.9 percent said that they could not find such a place.
- In spite of overcrowding, 64.9 percent of students said that they could find a place to speak with teachers privately.
- Overall, almost half of non-graduating students (41.9 percent) did not want to remain in their current school next year, despite the fact that an overwhelming majority (88.3 percent) said that they had many friends there.

Like students, **teachers** in New York City schools are troubled by overcrowding. In the IUME survey, teachers were asked to rank in importance a number of factors that they believed should be addressed in their schools. Significant results from the teacher survey include the following:

- The three most important concerns of teachers were: student overcrowding (87.8 percent); the need for adequate classroom space (87.3 percent); and staff stress management related to overcrowding (62 percent).
- These issues, all related to overcrowding, were of more concern than any other issue, including sanitation, the need for more administrative personnel, maintenance, and violence, among others.
- More than 75 percent felt very strongly that overcrowding is seriously eroding learning and the quality of life in their schools, with a negative impact on classroom activities, instructional techniques, and student achievement.
- More than 70 percent also felt that the administration of daily activities was impacted by overcrowding, leading to staff burnout.
- Given these concerns, only about 50 percent looked forward to each working day in their school.

Although evidence on the connection between overcrowding and student achievement is not conclusive—either in IUME's study or in previous studies—the negative educational impact of absorbing large increases in student enrollment through increased capacity utilization or increased class size is likely to be strong. However, with the exception of IUME's study, none of the research has considered schools with the extreme overcrowding situation now facing many schools in New York City, a situation that is reaching crisis proportions.

### **STRATEGIES FOR RELIEVING OVERCROWDING**

Increases in a school district's enrollment may result from normal fluctuations in local birth rates, a one-time influx of new residents, or, more seriously, may be part of an ongoing trend. In cases where increases in school enrollment are expected to continue, the only guaranteed long-term means of relieving overcrowding is the expensive and time-consuming process of building new schools or of renovating and adding to existing schools, undertakings that can be nearly impossible in already underfinanced urban schools like those in New York City.

However, in cases where increases in enrollment may be temporary, or where stop-gap measures are needed while new schools are being built, there are a number of short-term solutions for districts. In general, these strategies fall into two broad categories: finding new space and using time to more fully utilize existing space.

#### ***Finding New Space***

**Leasing.** Leasing is a quick, cost-effective way of obtaining additional short-term space. Not only can spaces for leasing be identified and acquired in a fraction of the

time needed to acquire similar spaces through new construction, but leasing can represent a significant per seat savings over the cost of construction. Further, leases can be negotiated with lease-purchase agreements, allowing districts to buy spaces at the end of the lease period if necessary. Should there be a reversal in the trend toward rapid enrollment growth, leases need not be maintained indefinitely; thus, unlike newly built facilities, they need not become permanent—and possibly vacant—holdings of the school district.

**Collaboratives.** Local colleges and universities, businesses, and non-profit organizations may have spaces available for use, allowing students to receive instructional or non-instructional services in settings outside of traditional school buildings. Arrangements can range from work-experience programs to academic courses offered in the evenings and weekends. By developing collaborations with such organizations, districts can not only find needed space for students, but can also enrich their educational offerings.

**Relocating Administrative Space.** In some districts, administrative offices are located within schools. Moving them to a centralized location can free up space for instructional use. In New York, many such offices have been moved to central locations, but approximately 35 overcrowded schools still house Board of Education administrative offices.

**District-Wide Redistribution of Space.** New York City districts are atypical in the degree to which they offer students the option of attending a school outside of their own neighborhood; thus, the strategies used by the City to address its overcrowding problem—strategies designed to encourage students to enroll voluntarily in underutilized schools—may have only limited relevance for other urban districts as they now operate. However, those other districts may also be able to redefine the legal and geographical boundaries that determine which schools students are eligible to attend. In most overcrowded districts, it is likely that certain schools are significantly overutilized, while others house fewer students than their space could allow. By shifting district or zoning boundaries, building utilization can be equalized across the district, thus relieving some of the burden on overcrowded schools and making more efficient use of under-enrolled schools.

In addition, districts with magnet and special school programs that draw students from across the district can place these programs in underutilized schools, thus better distributing students within available space.

#### ***Using Time to More Fully Utilize Existing Space***

There are two fundamental methods of using time in order to ease the burdens caused by school overcrowding: extended day programs and year-round education.

**Extended Day Programs.** Schools can increase their capacity by beginning the school day earlier and ending it later, and by having students attend in shifts. In the most extreme version of extended day programs, half of a school's

students attend only in the morning, while the other half attend only in the afternoon, thus doubling the number of students taught in a single space during the day. Other types of extended day programs might comprise overlapping shifts.

However, there is some evidence that split shifts negatively affect not only student achievement, but also—and more radically—school climate. Thus, they tend to be used only as a last-chance option for relieving overcrowding.

**Year-Round Education.** By changing from a nine-month to a twelve-month calendar, schools can accommodate more students in existing buildings. With this strategy, all students attend school for the same number of days—180—every year, but take several short vacations rather than a single three-month-long summer break. Most programs divide students into three or four “streams”; while one group is on vacation, another uses the vacationing group's classroom space.

While year-round education relieves overcrowding and has some educational benefits (such as increasing students' retention of what they have learned), it also has some drawbacks: parents may resist changes in the traditional school year; school maintenance and student transportation costs may increase; and, in warmer climates—including New York—schools may have to be fitted with air conditioning for summer classes, which may be prohibitively costly, particularly for older buildings.

#### **CONCLUSION: A STUDENT SPACE “BILL OF RIGHTS”**

Providing adequate spaces for education is not simply a matter of ensuring a certain number of square feet of classroom space per student. For learning to truly take place, students must have access to spaces appropriate to their use. At the least, this means that classes should be held in rooms meant for instruction, not in makeshift spaces such as closets and hallways; science classes should be held in laboratories designed to support hands-on learning; and classrooms for the arts, the trades, and technology should be equally appropriately equipped. Schools should be able to provide quiet and safe places for individual testing and private counseling, as well as suitable common areas such as libraries, gymnasiums, and playgrounds. School facilities should be properly maintained and functional, and all areas should be accessible to people with disabilities.

All too often such accommodations are not recognized as fundamental educational necessities. However, if schools are to fulfill their education mission, adequate spaces for learning must be provided. This is especially true in urban areas, where students may not have access to a safe and orderly environment outside school walls.

— Gary Burnett