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**The Effectiveness of Small High  
Schools, 1994-95 to 2003-04**

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## **Introduction**

Growing concern about the quality of public education in the United States has driven numerous educational reform efforts across the last three decades. These reforms include increased accountability as exemplified by *No Child Left Behind (NCLB)*, the introduction of new curriculum and instructional methods in response to the standards movement, and the redesign of American public high schools, including an increased focus on creating smaller schools and small learning communities.

The New York University Institute for Education and Social Policy (IESP) has conducted a two-year mixed methods study to explore the process and outcomes of small high school development in New York City over the past decades. Specifically we examine student and teacher demographic characteristics over time, student outcomes over time, and organizational and instructional practices that contribute to positive learning environments in small schools. We anticipate that our findings will have important implications for how new small high schools are established and supported, as more small high schools are created throughout New York City.

## **What Do We Know About Small High Schools?**

Early studies of the relationship between school size and student achievement suggest that there is a negative relationship between academic achievement and large school size (Barker & Gump, 1964; Kiesling, 1968), and that within both public and private schools, large school size has a "possibly" negative impact on achievement and on the affective outcomes of student participation and satisfaction with school (Chambers, 1972, cited in Fowler & Walberg, 1991). More recent research has confirmed these early findings; newer

studies suggest that students in smaller high schools do better academically, have better attendance, feel safer, experience fewer behavior problems, and participate more frequently in extracurricular activities (Lee & Smith, 1997; Wasley et al, 2000; Zane, 1994; Pittman and Haughwout, 1987; Raywid, 1997; Stockard and Mayberry, 1992).

Small school size has been shown to provide positive social as well as academic environments for students; research has shown more positive personal interactions between teachers and students, between teachers and teachers, and between teachers and administrative staff in small high schools, which may, in turn, contribute to small schools' higher student outcomes (Finn & Voelkl, 1993). Many researchers attribute this positive social and academic environment to the fact that teachers in small high schools interact with fewer students and are thus able to tailor their teaching to students' needs and provide personalized assistance to students who need additional help (Lee & Loeb, 2000; Wasley et al, 2000).

The positive social environment of small high schools extends to teachers as well. Teachers at small high schools are reported to have greater levels of satisfaction; they are more likely to collaborate with colleagues, and to engage in professional development they find valuable. Moreover, they demonstrate a greater sense of responsibility for ongoing student learning (Wasley et al, 2000). Relationships between teachers and administrative staff were also found to be more collegial at small high schools, contributing to a more pleasant work environment in small schools overall (Gladden, 1998).

Some research has shown that students in small high schools develop a sense of loyalty and commitment to their school that, in turn, positively influences student behavior (Raywid, 1997). Finn et al (1993) found higher levels of engagement at smaller schools and,

conversely, lower levels of attendance and participation among students at larger high schools. Research on large schools has shown that large student bodies may adversely affect the school climate and a student's ability to identify with the school and its activities, which, in turn, may affect student achievement (Fowler & Walberg, 1991).

In addition to the social benefits, some research has shown that students in small high schools have higher achievement outcomes than those in large schools. Lee and Smith (1995) found a positive relationship between student gains in reading, math, history and science, and small high school size. Moreover, small schools are more likely to be violence-free and have better-behaved students, that, in turn, has been found to contribute to higher attendance and lower dropout and truancy rates (Raywid, 1997; Wasley, et al. 2000).

Finally, one of the primary arguments against small high schools—that comprehensive high schools offer a more varied curriculum and cost-effective education—has been challenged. In a study of New York State schools, Monk et. al. (1985) found that size alone does not guarantee a more diversified curriculum; schools can offer an intensive diversified curriculum with breadth and depth with a student body as low as 400. Other researchers have argued that variety and diversity of course offerings are not as important as the quality of instruction, and that the quality of instruction has a more powerful influence on student achievement than the number of course offerings provided (Howley & Eckman, 1997). Lee and Loeb (2000) argue that the more focused curriculum in many small high schools enables almost all students to have similar academic experiences regardless of their interests, abilities or social background, resulting in higher academic achievement overall, as well as achievement that is more equitably distributed.

Current literature in the field, however, does acknowledge that small is not a guarantor of increased student achievement or a positive social environment: "Experience and research make very clear that school size does indeed matter - but they also make clear that 'small' is no silver bullet" (Fine & Somerville, 1998, p. 104). Lee and Smith (2001) argue that small size is a "facilitating factor for creating organizational features of schools that we have shown to be important determinants of learning" (p. 157). Therefore, it becomes important to understand the performance of small schools within their organizational context, especially since many small high schools, notably those created by recent reform movements, are start-up organizations.

### **History of the New York City Small Schools Movement**

In New York City, the relative success of the early alternative high schools for dropouts created between 1960 and 1980 has led to the plethora of new small schools developed during the past decade. This intensity of small high school development places New York City at the forefront of the debate about whether small schools can be an effective reform strategy for improving educational outcomes, especially since the current Bloomberg-Klein administration has committed itself to creating more than 300 new small schools and phasing out poorly performing large high schools.

Prior to the most recent push for small high schools that began in 2000, New York City had already established a system of small high schools structured to focus on the needs of individual students. These first alternative high schools began as street academies and storefront schools designed to meet the academic needs of students of color who were poorly served by traditional public high schools. These second-chance schools were supported by

the New York City Board of Education because the administration believed that only new institutional forms could redirect students alienated from traditional high schools. These so-called transfer high schools became institutional homes for students whose skill levels were often far below high school requirements, and whose attitudes and perceptions placed them at odds with, and often at war with, the codes of behavior, conduct and assumptions about instruction in traditional high schools.

During the late 1970s, several new high schools were created that significantly revised the second-chance definition of alternative high schools. Several community college campus high schools were formed for students at-risk for dropping out of high school. To access their student's academic potential and facilitate their graduation from high school, these new small schools developed supportive and challenging learning environments. By 1985, approximately a dozen of these alternative high schools, based on both second-chance and direct enrollment, were serving more than 5,000 students. Spurred in part by a new Chancellor of the New York City schools, the Board of Education created a new administrative unit to oversee these schools. This office standardized the admissions process and developed a variety of supports for teacher recruitment, curriculum formation and professional development. The office also formulated fiscal allocations tailored to alternative school need, and worked out start-up funding that allowed new schools to phase in their planning and staffing. Forms of assessment based on student performance, such as graduation by portfolio or exhibition, were developed as ways to reduce school reliance on standardized, norm-referenced high stakes tests, and as more effective ways to assess student mastery of what were often alternative curricula and pedagogy.



The development of direct enrollment alternative high schools, however, was unique to New York City. In other American cities, alternative high schools served only students who had dropped out of, or were forced to transfer from, traditional high schools. Because New York City's alternative high school sector developed both second-chance and direct enrollment high schools, the entire sector was not only far larger, but also far less isolated than alternative high schools in other urban districts.

By the early 1990s, some twenty alternative high schools were serving almost 10,000 New York City public school students. As the graduation and dropout rates at many large, traditional high schools continued to plummet (more than 50% of all NYC high school students failed to graduate within four years, and in many large high schools, the non-graduation rate was closer to 70%), there was increasing pressure to create more small schools based on the model of the alternative high schools. There was also increasing evidence that the alternative high school sector was more effective in raising student achievement levels than the traditional, large neighborhood high schools (Foley & McConnaughy, 1981).

In response to this pressure, two leading school reform organizations in New York City began to create new small high schools. In 1993, the Fund for New York City Public Education [hereafter the Fund] initiated a campaign to create new small high schools by distributing Requests for Proposals to a variety of organizations across the city. The Fund received more than 300 proposals and after a lengthy selection process, chose 16 finalists. By 1994, 15 of those finalists had created new small secondary schools called New Visions Schools. In 1995, the Fund initiated a second round of school creation, which resulted in the development of another 15 New Visions schools. (The Fund subsequently changed its name

to New Visions for Public Schools.) By 1998, New Visions had initiated almost 40 new small high schools in New York City.

Concurrent with the Fund's 1993 initiative, the Center for Collaborative Education (CCE), the NYC affiliate of the National Coalition of Essential Schools, had developed a membership of some 40 small schools of choice, mostly at the elementary level, throughout the city. CCE also launched a multi-year effort, in conjunction with the Board of Education, to close two large failing neighborhood high schools serving poor students of color and replace them with a series of new, small schools. By 1995, CCE closed two large high schools, one in Manhattan and one in the Bronx, and replaced them with two small elementary schools, ten small high schools, and a professional development center. Five of the new small high schools were created in leased space in contiguous neighborhoods, and the other five were located in the buildings that had housed the large failing high schools.

In addition to the more than 50 new high schools created by the New Visions and Coalition Campus projects, almost an equal number of small high schools were created across the city school system during the same time period. In 1995, New Visions, CCE, and two other school reform organizations launched the New York Networks for School Renewal (NYNSR) with a five year, \$25 million grant from the Annenberg Foundation, a large national foundation. The key goals of the NYNSR initiative were to create new small schools (not limited to high schools) and to develop system-wide structures to support their instructional effectiveness and accountability.

The NYNSR initiative reached the end of its Annenberg funding in December of 2001. At this point, close to 60 new, small high schools had participated in the NYNSR consortium, serving almost 40,000 students. Evaluation outcomes indicated that these new,

small high schools had higher graduation rates, and lower dropout rates, than traditional high schools, and that as a result, their costs per graduate were significantly lower. Thus what began in the 1960's as an effort to create alternative high schools for dropouts has evolved into the development of a citywide sector of small high schools serving almost 20,000 New York City public school students.<sup>1</sup>

There is now sufficient data on this early wave of small high schools to examine their effectiveness in educating New York City's high school students. This study examines student and teacher composition, outcome data, and school-level organizational and instructional practices in a sample of these new high schools.

## **Research Design**

To better understand the process of small school development over time and its relationship to student achievement, our research posed the following questions:

- What are the teacher and student characteristics and student outcomes in our sample of new small high schools?
- How do the student and teacher populations of our sample high schools change over time?
- What are the organizational and instructional practices that contribute to positive learning environments in small high schools?

We explored these questions using a mixed-methods framework. By including both quantitative and qualitative components, we deepened our understanding of specific organizational and instructional practices as they relate to teaching and learning and school culture.

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<sup>1</sup> Small schools enrollment will reach 45,000 when all schools are full to capacity (Huebner, 2005).

## Quantitative Analyses

### *Data*

Data for this study comes from the *Annual School Reports* (ASR), which are published yearly by New York City Department of Education, Division of Assessment and Accountability. Additional data on high school start dates come from the *School Based Expenditure Reports* (SBER), which are produced by the New York City Department of Education, and from a variety of websites.

### *Sample*

The sample consists of public high schools that opened between September 1993 and June 1998. We identified 80 high schools that opened during this time period.<sup>2</sup> The final sample for the analysis includes 67 schools. We define 41 of these schools as “small” (500 or fewer students in grades 9 through 12) and 26 as “medium” schools (between 500–1500 students in grades 9 through 12). (See Appendix A for the list of schools included in the analysis.)

We chose this sampling strategy for a number of reasons. First, the 1993-1994 school year marked the first year of New Visions and Coalition Campus small school creation. Second, schools that opened prior to the 1997-98 school year provide us with multiple years of demographic and outcome data; for each school in our sample we have at least two years of graduation data. Third, by including only those schools that opened after 1993, we are able to track changes in schools’ entering student populations over time.<sup>3</sup> Finally, we chose

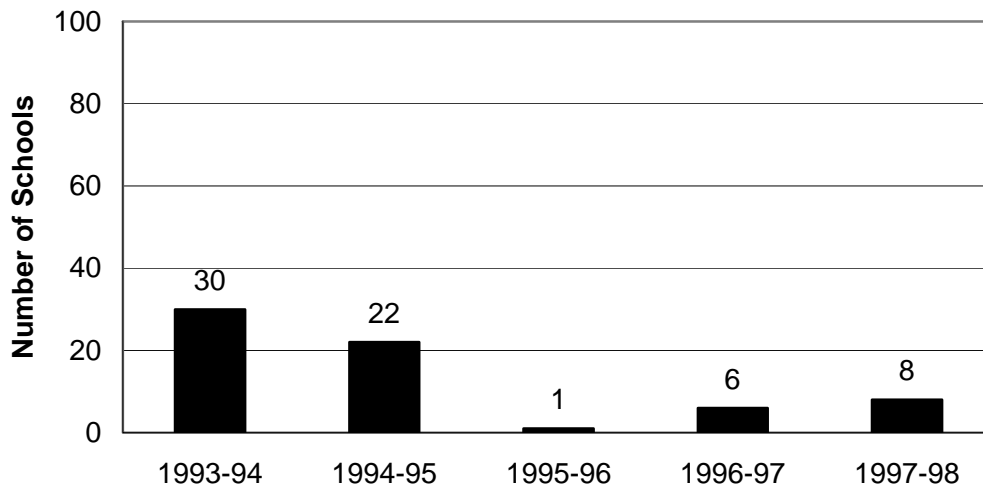
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<sup>2</sup> We excluded the schools known as transfer high schools—high schools that enroll only new immigrant students and high schools that enroll students only after they have left a traditional high school—from this analysis. These schools are excluded because the admissions process differs from that of the general high school population. Students are accepted into these schools only after they have been discharged from other academic or articulated city high schools.

<sup>3</sup> Data on entering students was not made publicly available in the *Annual School Reports* prior to the 1993-1994 school year.

this strategy because it allows us to compare small high schools to a set of larger schools that opened during the same time period, and therefore to control for some of the unobservable characteristics that, while common to newly opened schools, may influence school outcomes over time. For example, new schools often face complications—such as facilities that have recently been constructed or are undergoing renovation, lack of supplies, textbooks that have not been received before school begins, incomplete faculty and other school staffs, or limited curricula and administrative policies—that older schools do not. These unobservable characteristics will be more similar in schools that opened during the same time period. Whatever their size, new schools of similar age provide a better comparison group than schools that have existed over differing periods of time.

**Number of Sample Schools Opening between  
1993-94 and 1997-98**



### *Methodology*

We include a variety of analyses in this report. We examine schools on their total student characteristics, characteristics of their incoming 9<sup>th</sup> and 10<sup>th</sup> grade students, characteristics of each school’s teachers, and overall student outcomes. The analyses focus

on the differences between the schools in our sample and the citywide average, between small and medium-size schools, and between low and high- performing small schools.

We conducted an ordinary least squares (OLS) regression in three different models.

- **Model 1** examines whether small school size is a significant predictor of school achievement, controlling only for differences in each of the school years included in the model. Model 1 is:

$$(1) Y_j = \beta_0 + \beta_1 Small_j + \beta_3 SchoolYear_r + \varepsilon$$

where  $Y_j$  = is the outcome variable at school<sub>j</sub> <sup>4</sup>

$Small_j$  = a dummy variable that takes the value of 1 if a school has fewer than 500 students or 0 if it has more than 500 students in grades 9-12

$SchoolYear_r$  = dummy variable indicating the school year

- **Model 2** builds on model 1 by controlling for the characteristics of entering 9<sup>th</sup> and 10<sup>th</sup> grade students. The student characteristics were lagged to match the entering student cohort to the graduation cohort four years later. Model 2 is:

$$(2) Y_j = \beta_0 + \beta_1 Small_j + \beta_2 EnterStud_j + \beta_3 SchoolYear_r + \varepsilon$$

where  $EnterStud_j$  = characteristics of entering 9<sup>th</sup> and 10<sup>th</sup> grade students at school<sub>j</sub> <sup>5</sup>

- **Model 3** also builds on model 1 but controls for school-level teacher characteristics. This model considers whether small schools are a significant predictor of school achievement when controlling for differences in teacher experience and education. Model 3 is:

$$(3) Y_j = \beta_0 + \beta_1 Small_j + \beta_2 Teacher_j + \varepsilon$$

where  $Teacher_j$  = characteristics of teachers at school<sub>j</sub> <sup>6</sup>

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<sup>4</sup> Outcomes tested were percent of students graduating in four years, percent of students dropping out after four years, percent of students still enrolled after four years, average number of days students attended, number of days of teacher absences, percent passing the English Regents after four years.

<sup>5</sup> The characteristics of students include the percent of female students, percent of students eligible for free lunch, percent of students classified as English Language Learners, percent of students who are classified as special education, percent of students who are overage for grade, percent of students meeting standards in English Language Arts and Mathematics

<sup>6</sup> The characteristics of teachers include percent of teachers with masters degree, percent of teachers who are fully credentialed and permanently assigned, percent of teachers who have been at school for two years or more, and percent of teachers who have been teaching for five years or more, pupil-teacher ratio

## **Qualitative Analyses**

### *Sample*

In the spring of 2003, IESP identified 10-15 high-performing small New York City public high schools, and 10-15 low-performing New York City public high schools, using the following criteria:

- All sample schools enroll their students through non-selective criteria that do not discriminate by ability, attendance, behavior or other student characteristics.
- All sample schools serve populations of at least 80% students of color;
- All sample schools serve a population of 500 students maximum;
- All sample schools have an incoming students' 8th grade school lunch eligibility rate of at least 70%;
- High-performing sample schools have a graduation rate of at least 60% across the past three years;
- Low-performing sample schools have a graduation rate of no more than 40% across the past three years.

From this pool, we randomly selected four high-performing and four low-performing schools, and sought their participation in our study. When several schools declined to participate, we randomly chose other schools from the original pool. Two schools agreed to join through alternate routes; a teacher in a small school heard about our research and asked to join the study, and a colleague recommended a school. Ultimately, six schools, with student enrollments ranging from 200 to 500 agreed to participate; one of these schools was a "second chance" school. Although these six schools are more representative of the city's low-performing small schools than of the overall pool of small schools, we found considerable variation in teaching and learning within this group, which provided the rich data for our research.

### *Protocols*

During the first year of our study, we developed several qualitative research instruments for use in our qualitative study, including

- Two classroom observation protocols, one that allowed us to observe one classroom for a whole day, and one that allowed us to observe one class period at a time
- A teacher survey
- A principal and lead teacher interview protocol.

One teacher from each sample school worked with us to adapt the school assessment instruments that the research team created. These teachers were then provided training on the administration of these tools. They also helped with the data collection.

The primary data collection occurred through 2-day site visits to each school. During this time, four-person review teams, consisting of IESP staff and participating teachers, spent time in almost all classrooms in each of the six schools. Two site visitors moved from classroom to classroom for observations conducted throughout the school day. Two other site visitors observed one classroom for the entire day. Prior to these visits, we interviewed the principal and lead teachers within the school. Surveys of all teachers were administered at school wide staff meetings.

Once the data collection phase was complete, the research team, including the participating teachers, met to discuss the data collection and analysis process, and to begin developing the research findings. Data was then coded and a final data analysis completed.

## **Quantitative Findings**

### **High School Sample Compared to Citywide High School Average**

The demographic characteristics of the students attending our sample schools differ considerably from the composition of city high schools as a whole. Schools in our sample



have significantly lower rates of White and Asian students, and significantly higher percentages of Black students. On average, less than 16% of the students in our sample schools are White or Asian, compared to 30% citywide. While the percent of Hispanic students is also higher in our sample schools, this difference is not significantly different from the city as a whole.

The schools in our sample are also more likely to have poorer student populations than high schools citywide. Almost two-thirds of students in our sample schools are eligible for free lunch, compared to less than 55% in the city high schools as a whole. However, schools in our sample are also more likely to have lower percentages of students who are in special education, are English Language Learners (ELL), or recent immigrants. (See Appendix B, Table 1.)

We were also interested in comparing the characteristics of students entering our sample schools to those entering high schools citywide. This would enable us to determine whether our sample schools attract lower need and/or higher performing students than high schools citywide.<sup>7</sup> Across all study years, the students entering our sample schools were significantly more likely to be female and eligible for free lunch and significantly less likely to be ELL students, compared to city high schools as a whole. They were no more likely to be overage for grade than students in all the city's high schools.<sup>8</sup>

We found less consistent patterns across study years for entering students' achievement on 8<sup>th</sup> grade tests in English Language Arts (ELA) and Mathematics and their average daily attendance prior to their enrollment in a small school. In 2002-03, students entering our sample schools had significantly lower rates of attendance during their last

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<sup>7</sup> Race/ethnicity is not reported separately for entering 9<sup>th</sup> and 10<sup>th</sup> graders.

<sup>8</sup> Overage for grade is defined as one or more years birth year of cohort for grade.

semester in 8<sup>th</sup> grade, compared to the citywide average for entering high school students, although this was not statistically significant for other years.

The percent of entering students at our sample schools who met the standards on the 8<sup>th</sup> grade ELA was not significantly different from the citywide average for the 2000-01, 2001-02, and 2002-03 school years, but was significantly lower in 1997-98, 1998-99, and 1999-2000. In mathematics, however, the sample schools had significantly lower percentages of entering students meeting the standards in the 1999-00, 2000-01 and 2001-02 school years than city high schools as a whole. (See Appendix B, Table 2.)

Teachers in our sample schools had considerably less experience and education than teachers at other high schools across the city; students in our sample schools were being taught by teachers who were less likely to have a master's degree or be fully licensed. These patterns are consistent across all years of the data. In addition, significantly lower percentages of teachers in the sample schools had taught at the school for two years or more, or had five years or more teaching experience overall, than in city high schools as a whole. No significant differences were found for the average number of days teachers are absent in the sample schools, as compared to the citywide average. (See Appendix B, Table 3.)

Even with a student population more likely to be minority and poor and less likely to have met citywide standards upon entering high school, especially in mathematics, the sample schools have considerably better four-year graduation outcomes than city high schools as a whole. The first year that four-year graduation rates are available for the sample schools is 1996-97. Across most subsequent years, the sample schools had higher four-year graduation rates than city high schools; these differences are statistically significant in all but two school years. Between 2001 and 2004, over 60% of students at our sample schools

graduated after four years, compared to slightly over 50% of students citywide. In addition, the sample schools have statistically significant four-year dropout rates that are approximately half the citywide average across all years of the study. (See Appendix B, Table 4.)

Other outcome variables did not show consistent patterns across time. The percentage of students scoring 65 or higher on the English Regents examination did not vary significantly between the sample schools and the citywide average. The sample schools did have significantly higher rates of student attendance, but this was only significant in the 2001-02 and 2002-03 school years.

### **Small and Medium-size High Schools Compared to Citywide High School Average**

Separating our sample into small (fewer than 500 students) and medium-size schools (between 501 and 1,500)<sup>9</sup> and comparing each group to the citywide high school average yielded similar results to the analysis above, which grouped both types of schools together. Students in small and medium schools were less likely to be White and Asian, to require special education services or to be recent immigrant or ELL than students in citywide high schools. There were two notable differences between the separate and grouped analyses, however; medium-size schools had significantly higher percentages of Black students compared to the citywide average, while small schools had higher percentages of Hispanic students. Second, while the small schools had significantly higher percentages of students who were eligible for free lunch this difference was not statistically significant for medium-size schools. (See Appendix C, Tables 5 & 6.)

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<sup>9</sup> The largest school in this sub-sample had 1,484 students.

Characteristics of students entering small and medium schools were similar to the total sample along two variables; entering 9<sup>th</sup> and 10<sup>th</sup> grade students at both small and medium-size schools were significantly more likely to be female and less likely to be ELL students compared to the citywide average. In addition, small and medium-size schools had fewer students who met the standards on 8<sup>th</sup> grade ELA and Mathematics exams, though these differences were not always significant.<sup>10</sup> Although the small schools had significantly higher percentages of students eligible for free lunch than citywide high schools, the medium-size schools looked similar to the citywide schools along this variable. Finally, on the whole, students entering small schools had lower attendance rates for the semester prior to enrollment, compared to the citywide average, while medium-size schools did not differ from the citywide average on this variable. (See Appendix D, Tables 7 & 8.)

Also similar to the total sample, teachers at small and medium-size schools had less education and experience than teachers at citywide high schools and had significantly less teaching experience than high school teachers citywide. (See Appendix E, Tables 9 & 10.)

Even with students who are poorer and enter with lower academic credentials, and who are served by less experienced and educated teachers, both the small and medium high schools in our sample had significantly better four-year graduation outcomes and lower dropout rates when compared to the citywide average. There were no significant differences between the percentage of those scoring 65 or higher on the English Regents, or for the attendance rates between small or medium high schools and the citywide average. (See Appendix F, Tables 11 & 12.)

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<sup>10</sup> These differences are only significant for Mathematics in 2000-01 and earlier, and are not significant in English Language Arts in 2001-02 and 2000-01 school years for the small schools. They were not significant for the medium-size schools.

### **Small High Schools Compared to the Medium-size High Schools**

Some research suggests that there may be a cut-off point for school size—that medium-size schools may offer an intimate environment and the benefits of scale, and that what many reformers consider to be small (fewer than 500) may not actually be the most optimal size for a school (Lee & Smith, 1997). Thus, we were interested in exploring the differences between the small schools and the medium-size schools in our sample. There are few statistically significant differences among the student population between our small and medium-size schools. (See Appendix G, Tables 13-16 for results.) The small high schools have significantly lower percents of recent immigrant students and Black students compared to the medium-size high schools. The medium-size high schools, however, have significantly lower percentages of Hispanic students than the smaller high schools. Although the small high schools have higher percentages of students who are eligible for free lunch than the medium size schools, this difference is only significant in the 2001-02 and 1998-99 school years.

There are also a few significant differences between teachers at small schools and those at medium-size schools, although these differences are not consistent across all study years. In general, small high schools have teachers with less education and less experience than teachers at the medium-size high schools. Small high schools had significantly lower percentages of teachers who were fully licensed and permanently assigned, although this finding is not significant in all years. Small high schools also had fewer teachers who had been at the school for more than two years, and had significantly lower percentages of teachers with more than five years of teaching experience than the medium-size high schools, although these two variables were not significant across all years. However, the average

number of days teachers are absent is lower in the small high schools than the medium-size high schools, although this difference is only significant in the 2000-01 and 1998-99 school years.

There are also few significant differences between small schools and medium-size schools on student outcomes. The small high schools, however, do have lower four-year graduation rates and higher dropout and percent of students still enrolled than the medium-size schools, although these differences are only significant in the 1997-98 school years.

The small schools also have lower rates of students passing the English Regents with a 65 or higher than the medium-size schools, although again, this is only significant in the 1997 – 1998 school year.

These analyses suggest that small and medium-size schools have student populations that are poorer and more minority, and that their teaching staff is less experienced and less educated than the citywide average. Despite these challenges, however, small and medium-size school do well with their students; graduation rates were higher and dropout rates were lower than the citywide average. Although differences between small and medium-size schools were few, our analysis suggests that medium-size schools may produce higher achievement. We explore this further in the regression analysis presented below.

### **Regression Analyses**

We conducted ordinary least squares regressions to explore whether small school size is a significant predictor of achievement (see Appendix H, tables 17-22 for results). As previously described, we used three different models in this analysis:

**Model 1** examines whether small school size is a significant predictor of school achievement, controlling only for differences in each of the school years included in the model.

**Model 2** builds on model 1 by controlling for the characteristics of entering 9<sup>th</sup> and 10<sup>th</sup> grade students. The student characteristics were lagged to match the entering student cohort to the graduation cohort four years later.<sup>11</sup>

**Model 3** also builds on model 1 but controls for school-level teacher characteristics. This model considers whether small schools are a significant predictor of school achievement when controlling for differences in teacher experience and education.<sup>12</sup>

The results show that in the models controlling only for school year (Model 1), the small school variable is significant for all of the dependent variables, except for the percent dropout, although not in the direction expected. Consistent with the findings we presented earlier, graduation rates at the small schools are almost seven percent lower than at medium-size schools. While no significant difference was found for four-year dropout rates, small schools appear to do a good job of keeping students in school; while students at the small schools graduate in four years at lower rates than the medium-size schools, students do not drop out. Seven-year graduation rates, therefore, may be similar between small and medium-size schools. Unfortunately, data is not yet available to allow us to conduct analyses using seven-year graduation rates.

When we add additional control variables (Model 2 and Model 3), however, any significant differences between small schools and medium schools disappear. The percent of entering 9<sup>th</sup> and 10<sup>th</sup> grade students who are at or above the 50<sup>th</sup> percentile on the 8<sup>th</sup> grade Mathematics examination is a significant predictor of the graduation outcomes across all

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<sup>11</sup> The characteristics of students include the percent of female students, percent of students eligible for free lunch, percent of students classified as English Language Learners, percent of students who are classified as special education, percent of students who are overage for grade, percent of students meeting standards in English Language Arts and Mathematics

<sup>12</sup> The characteristics of teachers include percent of teachers with masters degree, percent of teachers who are fully credentialed and permanently assigned, percent of teachers who have been at school for two years or more, and percent of teachers who have been teaching for five years or more, pupil-teacher ratio

three graduation outcomes (percent graduated, percent dropped out and percent still enrolled).<sup>13</sup> The percent of students who are overage for grade upon entering high school is negatively and significantly related to the four-year graduation rate, and positively and significantly related to four-year drop out rates, but not to the percent of students still enrolled.

The percent of teachers who are fully credentialed (Model 3) is positively and significantly related to the four-year graduation rates and negatively related to four-year drop out and still-enrolled rates. The percent of teachers who have five years or more of teaching experience is positively and significantly related to four-year drop out and still-enrolled rates, but is negative and significant for four-year graduation rates. The results for pupil-teacher ratio show that it is positively and significantly related to four-year graduation rates, and negatively and significantly related to four-year drop out and still-enrolled rates.

The results for the percent of students passing the English Regents with 65 or higher are similar to the results for the four-year graduation rate. The small school variable is significant only in model 1 and shows that almost eight percent fewer students at small schools pass the English Regents with a 65 or higher. In model 2, the percent of entering 9<sup>th</sup> and 10<sup>th</sup> graders who scored at or above the 50<sup>th</sup> percentile in mathematics and who are overage for grade is significant, while in model 3 the percent of teachers who are fully credentialed and the pupil-teacher ratio are significantly and positively related to pass rates, while the percent of teachers with five years or more of experience is negatively and significantly related.

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<sup>13</sup> This regression was also conducted substituting percent of entering students at or above the 50<sup>th</sup> percentile in reading. This did not make any difference in the analysis.



The final student outcome we examined was the percent of days students attended school. The results are consistent with the results presented earlier; the small school variable is significant and negative in only in model 1. In model 2, the percent of students who are overage for grade is negatively and significantly related to attendance, while the percent of entering students who scored at or above the 50<sup>th</sup> percentile on the 8<sup>th</sup> grade Mathematics examination is also a significant predictor. In model 3, percent of teachers fully credentialed and pupil-teacher ratio are both positively and significantly related to attendance, while percent teaching five years or more is negative and significant.

Finally, we examined one teacher outcome variable – the average number of days teachers are absent. The results show that in all three models, the small school variable is a significant and negative predictor of teacher absences. That is, teachers at small schools are absent slightly fewer days than teachers at medium-size schools. The percent of entering students who are female or overage for grade are also significant predictors of teacher attendance, while none of the teacher characteristics or pupil-teacher ratio in model 3 are significantly related to teacher absence.<sup>14</sup>

Similar to the findings from our previous work on small schools (see Final Report of the Evaluation of New York Networks for School Renewal, December 2001), this analysis indicates that small schools have higher four-year graduation rates and lower drop-out rates when compared to the citywide average for high schools. This is especially important, given

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<sup>14</sup> We conducted two additional OLS regression analyses. In the first, the regressions presented above were weighted by total student enrollment. These results are similar to the unweighted regressions. The only major difference is that for the percent of students still enrolled after four years and percent of students passing the English Regents with a 65 or higher, the small school coefficient in model 2 is now significant. The second examined how these schools performed with the addition of a control variable for age of the school. Again, the results change very little from our original OLS regressions. Age of the school is positive and significant in model 1 for percent dropped out, percent still enrolled, and average number of days teachers attended, and negative and significant for percent of students who pass the English Regents with 65 or higher.

that the data also show that this group of small schools attracts students who are less likely to have met the citywide standards on 8<sup>th</sup> grade English Language Arts and Mathematics examinations, and are being taught by teachers who have less experience and less education than those citywide.

However, the results of our analyses also indicate that small schools do not do better than medium-size schools that opened during the same time period. Our analyses suggest that school sizes of 500 students or fewer that characterize small high schools in New York City may not be the most desirable. These findings support other research that suggests that the optimal high school size may be between 600-900 students (for example, Lee & Smith, 1997). More research is needed to investigate the differences between these two groups of schools.

### **High-performing Small High Schools Compared to Low-performing Small High Schools**

Finally, we also examined differences between high-performing and low-performing small high schools in terms of student and teacher characteristics.

We computed a mean graduation rate for each small high school that included the percentage of students who graduated in the years 2000-01, 2001-02, 2002-03 and 2003-04 (referred to as a mean four-year graduation rate). Two schools had missing graduation data for at least one year during this time period and are excluded from the analysis. The mean four-year graduation rate for the small high schools in our sample is 63.9%. The lowest four-year graduation rate is 30.2% while the highest is 96.7%. We then looked at the distribution of the four-year graduation rate and categorized the top 25% and the bottom 25% as high and

low-performing small high schools. The distribution of schools and the range for the categories is found below in Table 23.

**Table 23: Distribution of Small Schools by Graduation Performance Category**

	<b>Graduation Rate</b>	<b>Number of Schools</b>
<b>Low</b>	30.20% – 50.90%	10
<b>Average</b>	50.91% - 75.24%	19
<b>High</b>	75.25% - 96.70%	10

We analyzed the characteristics of entering 9<sup>th</sup> and 10<sup>th</sup> grade students. The higher performing small high schools are significantly more likely to have a greater percentage of entering students who have met the citywide standards on both 8<sup>th</sup> grade ELA and Mathematics examinations, and lower percentages of students who are overage for grade, ELL, or in special education, than the lower performing small high schools across all the years of our analyses. Average prior attendance was also higher among entering students at the high-performing small high schools than those at the low-performing small high schools. High-performing small high schools are also more likely to have lower percentages of students who are eligible for free lunch, although this finding is not significant in the 2002-03 school year.

We found no significant differences between the characteristics of teachers at high-performing small schools and their counterparts at lower performing small schools. A slightly higher percentage of teachers at the higher performing small schools have masters degrees and are fully certified, compared to teachers at the lower performing schools, although these results are not significant across all years. Surprisingly, in many of the years, a higher percentage of teachers at the lower performing small schools have five years or more of teaching experience than those at the higher performing small schools, although this

finding is also not significant. Teachers at high-performing schools have lower average number of days absent, but again, the differences are not significant, except in the 2000-01 school year.

The results indicate that the major differences between high- and low-performing small schools are in the characteristics of the entering class of 9<sup>th</sup> and 10<sup>th</sup> grade students. While no significant differences are found in the composition of the teaching staff between the two groups of schools, the characteristics of entering students differ on almost every variable. Low-performing schools have student populations who have traditionally been defined as harder to educate. Moreover, on average, less than 20% of entering students at the low-performing schools have met the standards on the 8<sup>th</sup> grade ELA and Mathematics, which likely effects these schools' ability to improve their students' achievement. From this analysis, we conclude that the differences in the entering student populations of high and low-performing small schools, particularly students' previous academic performance, their eligibility for free lunch, and their special education and language status, are critical factors in influencing the subsequent academic performance of the schools in our sample.

Although these analyses provide useful findings about the characteristics of students and teachers in schools of different sizes, they do not offer any insight into the teaching and learning at these schools. By visiting some of the schools in our sample and observing classes, we can begin to understand the organizational and instructional practices of small schools that may help boost student achievement.

## **Qualitative Findings**

Research on effective teaching and learning in schools—regardless of school size—has found that cohesion of school program is an important factor in creating a positive learning environment (Rutter, 1983; Fuller & Izu, 1986; Elmore, 2003; Westhuizen et al, 2005).

Cohesion, as we use it in this study, refers to a commonality of practice in the pedagogical as well as non-academic domains of a school—common beliefs about teaching and learning held by teachers and administration, the consistent application of instructional practice and learning routines across classrooms and grade levels, and the existence of school-wide norms and uniform rules and expectations for student behavior and achievement. All of these elements combine to create a “strong ‘ethos’ or ideological cohesion within a school [that] can boost teacher and student performance” (Fuller & Izu, 1986, pp. 527).

Cohesion of pedagogical as well as non-academic practices emerged as a primary concept during our qualitative fieldwork. Indeed, it was one of the features that distinguished the high-performing schools in our sample from the low-performing ones. Instructional practices (such as the use of tools to help build students’ analytic skills or the creation of routines that focused students on learning), as well as non-academic systems, (such as expectations about learning and behavior) were employed consistently across classrooms, disciplines, and grade levels in the higher performing schools. Yet these features remained varied and unevenly implemented in the lower performing schools in our sample. Using the concept of cohesion as an independent variable, we explore differences between the high and low-performing schools in our sample, and then discuss the organizational structures that helped promote and sustain this cohesion in the higher performing schools.

## **Instructional practice**

Teachers in the high-performing schools in our sample shared philosophical beliefs about teaching and learning, and, by extension, employed instructional practices that embodied this shared philosophy. In these schools, we observed an “internal coherence” across grade levels and classrooms that some research suggests is “a prerequisite for strong performance” (Elmore, 2003, pp. 9).

For example, teachers in one of the high-performing schools in our sample believed that part of their role was to help students develop critical thinking skills, and so they created tools to help students approach their academic work. Students in one of the classes that we observed were engaged in writing plays. As a precursor to writing, students completed character analysis forms that required them to chart the attributes and development of each of their characters. This tool forced students to think analytically about the relationship among the characters in their plays and the story line itself. In another class in the same school, a teacher used a pre-reading survey designed to introduce students to concepts and ideas they were about to encounter in a text. Both of these tools modeled analytical processes for students by helping them organize and deepen their thinking. Moreover, the use of these instructional techniques across grade-levels and academic disciplines in this school created a cohesive learning environment; critical thinking skills were reinforced throughout a student’s school experience as students practiced these skills in multiple arenas.

Instructional practice appeared to be disjointed in the low-performing schools in our sample. For example, in one school, a teacher supplemented students’ reading of a short story with a film in order to emphasize the importance of visualization, imagery, and context within a literary work. Students were engaged in an analytic discussion about the contrast

between the imagery they had anticipated while reading the story, given certain clues within the text, and the imagery presented in the movie. In contrast, another English teacher in the same school instructed students to use notes from the previous day's lesson to write a paragraph. Students were to use questions written on the blackboard to guide the structure of their paragraphs; the answer to question one on the blackboard was to be the first sentence of their paragraph, the answer to question two was to be the second sentence, and so on. This teacher did not demand analytic thinking from students, as students were essentially answering questions in paragraph form.

These classrooms illustrate what we observed in all of the low-performing schools in our sample—fractured learning environments in which some classes were academically substantive and some were not. During our observations, we noted that students were, in general, attentive and engaged in classes that demanded their serious attention. Yet, these same students were disruptive in classes that were less rigorous. By contrast, the high-performing schools in our sample offered fluid learning environments. Indeed, the “internal coherence” (Elmore, 2003, pp. 9) created by the consistent use of instructional practices embedded within a shared pedagogical philosophy appeared to facilitate both teaching and learning in the high-performing schools in our sample.

### **Learning routines**

Beyond specific instructional practices, we noted that the high-performing schools in our sample had also created - and consistently implemented - learning routines that focused students on their academic work. Students in one of the higher performing schools in our sample began independent work as soon as they entered the classroom: students selected

their folders from a filing cabinet in the back of the room and completed work begun the previous day. In another high-performing school, each teacher wrote an agenda on the board along with a quick assignment that students were to complete upon entering the room. In most classes, students settled in quickly to begin this assignment, and were then ready to engage in serious academic work for the rest of the period. These procedures help to maximize instructional time and also signaled an expectation of rigorous academic work in the classroom.

Other learning routines that we noted were much more simplistic; in one school, teachers used certain cue words to refocus students to their academic work when necessary. Because this technique was used systematically throughout the school, teachers reported that it reinforced and supported the school's academic culture. Indeed, we witnessed its effectiveness on several occasions, as teachers used this technique to reengage off-task students. Our fieldwork revealed more behavior problems in the schools that lacked consistent learning routines. Much instructional time in these schools was directed towards getting students to settle down as they entered the classroom, and then re-focusing them on the academic lesson throughout the class period.

The learning routines we observed in the high-performing schools seemed to allow teachers to focus on teaching and learning during lessons, rather than addressing issues of classroom management.<sup>15</sup> As such, they appeared to create a cohesive, school-wide structure within which learning could take place. Because these routines were used pervasively throughout the school, effective learning behaviors were emphasized and internalized as students continually practiced these behaviors in all of their classes. Moreover, the routines

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<sup>15</sup> Other research supports this finding. See Fisher, 2001.



appeared to facilitate instructional delivery by establishing a standard of conduct and respect throughout the school.

### **Rules and schoolwide norms**

Cohesion in the non-academic domains of a school—in our research, the systematic application of rules and the pervasiveness of schoolwide norms—distinguished the high-performing schools in our sample from the low-performing ones. Indeed, during our fieldwork, we noticed that schools in which rules were applied consistently had established a culture where expectations of students and teachers were clear and there were few instances in which classroom learning was disrupted by disorderly behavior.

The high-performing schools in our sample had consistent rules about lateness and student excuses from class. In one school, the responsibility belonged to the student; rather than being reprimanded, too many instances of lateness resulted in a student being marked as absent. In this school, students excused themselves for restroom breaks as necessary. Another school enforced strict rules about lateness and excuses from class. Students were required to have passes if they were late and to obtain permission to be excused from class. Although these two sets of rules reflect vastly different philosophies about student responsibility and maintaining order within a school, each worked for its respective school because each was implemented consistently. Expectations for behavior in these schools were clear. This clarity about, and the consistent application of, rules helped to create a stable environment within which teaching and learning could take place.

By contrast, there was less consistency in the implementation of rules in the low-performing schools in our sample. In one school, we noted that in some classes, student

lateness was ignored and students excused themselves from the classroom without asking permission. In other classes, lateness was reprimanded and students needed a pass from the teacher to be excused. In the classes where the rules were not enforced, we observed more incidents of lateness and disruption as students left and reentered the classroom. There was an undertone of informality and disorganization in these classes. For the school as a whole, the result was pockets of learning—classes in which teachers had crafted a serious academic environment—and pockets of distraction—where learning was continually interrupted.

Cohesion of instructional practices, learning routines and rules across classrooms and disciplines within a school seemed to create a framework that facilitated teaching and learning in the high-performing schools in our sample. We sought, then, to understand the organizational features that enabled these schools to create and then sustain this consistency of practice within their school.

### **Professional development**

Data from our fieldwork and survey of teachers suggests that professional development helped promote and sustain cohesion within the high-performing schools in our sample. Teachers in these schools reported participating in professional development activities that were closely coordinated among other teachers within the school. In one higher performing school, close to 70% of the faculty reported that they focused their professional development time in just three areas—collaborative group work, multiple learning styles and student behavior and discipline. Teachers in this school claimed that receiving professional development in the same areas as their colleagues created a common understanding that, in turn, facilitated the creation of a unified, schoolwide education plan for

students. In contrast, teachers in the low-performing schools in our sample reported receiving professional development in a wider range of topics and spending fewer hours in professional development overall. Teachers in these schools spoke of “operating in silos” and not communicating regularly with their colleagues.

Faculty in the high-performing schools in our sample also reported spending more time in professional development activities directed at school decision-making and team building than faculty in the lower performing schools. We were not surprised, then, to note more leadership opportunities for teachers in the higher performing schools. Interviews with administrators and teachers suggest that these opportunities were important tools for extending teachers’ focus beyond their classrooms to the school as a whole. Professional development in these areas seemed to engage faculty in schoolwide issues and helped create a schoolwide community.

## **Meetings**

Staff meetings were another mechanism the high-performing schools in our sample used to promote and sustain cohesion within their pedagogical and non-academic domains. For example, one school structured its schedule to allow for teachers to meet in grade-level teams three times a week. Teachers in this school reported that these meetings facilitated cross-curricular integration. Indeed, we observed this integration during our visits—in one unique example, we noticed that skills practiced in an English class were also exercised in the art class. Teachers in this school also met in mixed grade level and discipline groups, which, they reported, allowed for more general discussions of instructional practice, sharing of new ideas, and reflection on instructional strategies. Another school, in addition to grade

level meetings, held a common lunch period for all teachers, which served as social/community building time as well as an informal forum for discussing academic and professional issues. Teachers in all of the high-performing schools in our sample claimed that meetings helped promote common practices among teachers by providing a forum for planning and the exchange of ideas.

It is important to note, however, that meetings did not automatically promote cohesion of teaching and learning practices. Interestingly, one school prided itself on having structured its school day to accommodate multiple opportunities for teachers to meet. However, according to administrator and teacher interviews, the focus of these meetings was on students' personal and social growth, rather than on their academic progress. The academic culture in this school was not demanding, and behavior problems were rampant. This school was one of the lower performing schools in our sample.

Our findings suggest that providing forums for sharing professional practice is important for creating and sustaining schoolwide consensus around instructional practice as well as for promoting a sense of community and common goals among faculty.

### **Orientations/advisory**

Orientations for new students and advisory periods for current students were characteristic of the higher performing schools in our sample. According to administrators and teachers, orientations were used to acculturate new students to both the academic and non-academic norms and routines of the school. For example, students in one of our sample schools were required to attend a three-day orientation prior to enrolling in the school, and another school had a semester-long orientation class that addressed basic skills with new

students while simultaneously introducing them to schoolwide routines and expectations. In addition, students in this school attended an advisory group that focused on the personal aspect of their lives. Teachers and students reported that this sharing helped to establish a sense of trust and community across the school as a whole.

Our fieldwork suggests that the format of the advisory period is important; one of the higher performing schools in our sample allocated time for advisory each day, structuring the sessions so that students remained with the same group throughout their entire career at the school. One of the lower performing schools in our sample had no structure for its advisory period, and teachers used the time however they chose.<sup>16</sup> Although there seemed to be some value in the less structured advisories, they did not appear to serve the wider purpose of student support or schoolwide community building served by the more structured advisory format.

Orientations and advisories appeared to be mechanisms for perpetuating schoolwide norms and standards for achievement and behavior. And, as common features of the high-performing schools in our sample, they seemed to contribute to an internal cohesion that other research suggests is a precondition for high performance (Fuller & Izu, 1986; Elmore, 2003).

## **Conclusion**

Small schools research indicates that reducing school size does not, in itself, produce increased student outcomes. Rather, it can facilitate the creation of pedagogical practices and organizational forms that, in turn, promote student learning (Lee & Smith, 1997; Lee &

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<sup>16</sup> In one class, the teacher used the time to provide extra help to students. Another teacher let students choose how they would use the time—some students drew pictures to accompany a report on a foreign country, while others began working on the homework assignment.

Loeb, 2000). It becomes crucial then, to understand the instructional and organizational practices that contribute to positive learning environments in small schools, and how—given the characteristics of the student and teacher populations in these schools—school size might facilitate the creation of these practices.

Our quantitative analyses indicate that, on average, New York City small high schools attract less qualified teachers and serve student populations with greater needs than large high schools. Despite these apparent disadvantages, however, the small high schools in our sample had higher outcomes, as measured by graduation and dropout rates, than large high schools. Even though we did not find many significant differences between the two groups on other outcome measures, such as performance on ELA and mathematics exams or attendance, our analyses show that, overall, small high schools produce higher outcomes with harder-to-educate student populations and less qualified teachers than large public schools.

It is important to match this understanding of the composition and outcomes of small high schools with a perspective on the learning environments within these schools, particularly as the movement to create small schools continues to grow. Our qualitative research shows that cohesion of pedagogical as well as non-academic practices is a hallmark of high-performing schools. This cohesion extended from instructional practices that embodied a shared pedagogical philosophy, to the implementation of learning routines that focused students on academic work, and finally, to the consistent application of rules and procedures.

Our qualitative fieldwork also revealed several organizational features that helped promote and sustain cohesion in the higher performing schools. Professional development that was coordinated among teachers within a school created a shared base of knowledge;

staff meetings promoted common practices by providing a forum for planning and the exchange of ideas; and orientations and advisories offered support to students and perpetuated school wide norms and standards for achievement and behavior. Overall, our findings suggest that structures that encourage the sharing of professional practice among teachers, and provide academic and personal support for students, promote a sense of community and common goals, which, in turn, helps to create and sustain cohesion within a school. According to the principals and teachers we spoke with, the intimate environment of small schools facilitates the creation of such supportive structures.

These findings have important implications for policymakers committed to starting and sustaining small high schools. Our analyses indicate that the entering student population of high-performing small high schools is advantaged and higher performing relative to students entering low-performing small high schools. The high-performing schools are able to sustain these higher outcomes over time, while the low-performing schools have difficulty improving the trends defined by their incoming students. Policymakers and school administrators need to pay attention to the entering characteristics of students, and structure curriculum and pedagogy that is tailored to students' needs. Likewise, the cohesion of instructional practice, organizational norms and routines, and professional development that we observed in the higher performing small high schools may be the mechanism that helps high-performing small schools sustain high outcomes over time. Helping low-performing small schools—and new small schools—cultivate cohesion in these areas may allow these schools to provide positive learning environments that increase student achievement.

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## List of Appendices

Appendix A: Sample schools

Appendix B: High school sample compared to citywide average, Tables 1-4

Appendix C: Student characteristics: Small and medium high schools compared to citywide average, Tables 5-6

Appendix D: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Graders,  
Small and medium schools compared to citywide average, Tables 7-8

Appendix E: Teacher Characteristics,  
Small and medium schools compared to citywide average, Tables 9-10

Appendix F: Student Outcomes,  
Small and medium schools compared to citywide high school average,  
Tables 11-12

Appendix G: Small high school sample compared to medium high school sample,  
Tables 12-16

Appendix H: OLS regression results, Tables 17 – 22

Appendix I: Low-performing small high schools compared to high-performing small high schools, Tables 24-25

## Appendix A Sample schools

### Schools with Fewer than 500 Students

<b>BDS</b>	<b>School Name</b>	<b>Year Opened</b>
179469	Choir Academy of Harlem	1993-94
179409	Coalition School for Social Change	1993-94
379645	EBC-HS for Public Safety and Law (East New York)	1993-94
376685	El Puente Academy for Peace and Justice	1993-94
272520	Foreign Language Academy of Global Studies (FLAGS)	1993-94
171407	Institute for Collaborative Education	1993-94
179419	Landmark HS	1993-94
179429	Legacy School for Integrated Studies	1993-94
179439	Manhattan Village Academy	1993-94
171509	Martha Valle CMSP	1993-94
102412	NYC Lab School for Collaborative Studies	1993-94
477670	Robert F. Kennedy Community HS	1993-94
479560	Robert F. Wagner Jr. Institute for Art and Technology	1993-94
179690	School for the Physical City	1993-94
171519	Talent Unlimited School	1993-94
171670	Thurgood Marshall Academy	1993-94
179695	Urban Peace Academy	1993-94
179449	Vanguard HS	1993-94
174415	Wadleigh Arts Secondary School	1993-94
279680	Bronx Coalition Community HS	1994-95
379409	East New York Family Academy	1994-95
171450	East Side Community HS	1994-95
279682	Fannie Lou Hamer Freedom School	1994-95
379509	Freedom Academy	1994-95
279690	Monroe Academy for Business and Law	1994-95
279692	Monroe Academy for Visual Arts and Design	1994-95
102414	NYC Museum School	1994-95
477680	Queens Gateway to Health Sciences School	1994-95
376429	The Brooklyn School for Global Studies	1994-95
279686	The New School for Arts and Sciences	1994-95
179500	Unity HS	1994-95

<b>BDS</b>	<b>School Name</b>	<b>Year Opened</b>
279684	Wings Academy	1994-95
179531	New York City Public Repertory Company	1995-96
477575	Academy of American Studies	1996-97
171610	Young Women's Leadership Institute	1996-97
272530	Banana Kelly HS	1997-98
102411	Baruch College Campus HS	1997-98
171685	Bread and Roses Integrated Arts HS	1997-98
272505	Bronx School for Law, Government, and Justice	1997-98
171680	Heritage School	1997-98
171605	Humanities Preparatory Academy	1997-98

**Schools with between 501 – 1500 students**

<b>BDS</b>	<b>School Name</b>	<b>Year Opened</b>
179479	Beacon HS	1993-94
313670	Benjamin Banneker Academy	1993-94
272525	Bronx Leadership Academy	1993-94
379545	EBC-HS for Public Service (Bushwick)	1993-94
171499	Frederick Douglass Academy	1993-94
171420	Health Professions and Human Services HS	1993-94
171489	HS of Economics and Finance	1993-94
171425	Leadership and Public Service HS	1993-94
373535	Leon M. Goldstein School for the Sciences	1993-94
373590	Middle College HS at Medgar Evers College	1993-94
373419	Science Skills Center	1993-94
477496	Business, Computer Applications, and Entrepreneurship HS	1994-95
373479	Erasmus Hall Campus: HS for Business and Technology	1994-95
373469	Erasmus Hall Campus: HS for Humanities	1994-95
373459	Erasmus Hall Campus: HS for Science and Math	1994-95
272670	Health Opportunities School	1994-95
477498	Humanities and the Arts Magnet HS	1994-95
171529	Jacqueline Kennedy Onassis HS	1994-95
477494	Magnet School of Law and Government	1994-95
477492	Math/Science Research Tech Center	1994-95
376499	Acorn Community HS	1996-97
374477	HS for Legal Studies	1996-97
374478	HS of Enterprise, Business, and Technology	1996-97
374474	Progress HS	1996-97
477550	Arts and Business HS	1997-98
373690	Brooklyn Studio School	1997-98

**Appendix B: High school sample compared to citywide average**

**Table 1: Student Characteristics, High School Sample compared to citywide average, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
% White	<b>10.3</b> (16.9)	<b>15.2</b>	<b>10.9</b> (16.2)	<b>16.1</b>	<b>10.7</b> (16.5)	<b>16.2</b>	<b>9.7</b> (17.1)	<b>16.2</b>	<b>9.5</b> (16.6)	<b>15.7</b>
% Black	<b>44.1</b> (25.9)	<b>35</b>	<b>44.8</b> (25.7)	<b>35.1</b>	<b>45.2</b> (26.1)	<b>35.7</b>	<b>45.5</b> (27.4)	<b>35.9</b>	<b>45.8</b> (28.0)	<b>36.6</b>
% Hispanic	40.2 (23.5)	35.7	38.5 (22.5)	34.7	38.2 (22.9)	34.4	39.6 (24.7)	34.5	39.3 (25.2)	34.9
% Asian or other	<b>5.4</b> (8.9)	<b>14.1</b>	<b>5.9</b> (8.4)	<b>14.1</b>	<b>5.9</b> (8.0)	<b>13.7</b>	<b>5.2</b> (7.9)	<b>13.5</b>	<b>5.4</b> (7.4)	<b>12.7</b>
% Female	<b>55.2</b> (10.7)	<b>49.6</b>	<b>55.8</b> (10.0)	<b>49.6</b>	<b>56.0</b> (10.2)	<b>49.7</b>	<b>55.1</b> (8.1)	<b>49.5</b>	<b>55.4</b> (9.5)	<b>49.6</b>
% Special education	<b>4.1</b> (4.2)	<b>5.3</b>	<b>3.8</b> (3.1)	<b>5.9</b>	<b>4.1</b> (4.2)	<b>5.9</b>	<b>4.2</b> (3.6)	<b>5.9</b>	<b>3.7</b> (3.4)	<b>5.9</b>
% English language learners	<b>6.8</b> (5.4)	<b>12.9</b>	<b>5.9</b> (5.5)	<b>13.1</b>	<b>6.5</b> (6.3)	<b>14.0</b>	<b>8.1</b> (7.5)	<b>16.3</b>	<b>7.4</b> (7.3)	<b>15.3</b>
% Eligible for free lunch	<b>64.7</b> (21.3)	<b>53.9</b>	<b>64.5</b> (22.7)	<b>54.0</b>	<b>63.4</b> (25.8)	<b>51.3</b>	63.6 (22.9)	48.4	<b>63.0</b> (23.5)	<b>44.0</b>
% Recent immigrants	<b>5.1</b> (5.9)	<b>11.4</b>	<b>3.6</b> (4.8)	<b>9.7</b>	<b>3.3</b> (4.0)	<b>9.2</b>	<b>3.2</b> (3.3)	9.3	<b>3.4</b> (4.0)	<b>9.0</b>

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses



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	1998-99		1997-98		1996-97		1995-96		1994-95	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
% White	<b>8.0</b> (15.3)	<b>15.7</b>	<b>7.7</b> (14.5)	<b>15.4</b>	<b>7.1</b> (13.2)	<b>16.0</b>	<b>6.6</b> (13.6)	<b>16.4</b>	<b>6.2</b> (12.3)	<b>16.9</b>
% Black	<b>48.2</b> (27.4)	<b>36.7</b>	<b>46.4</b> (27.0)	<b>36.8</b>	<b>49.5</b> (27.6)	<b>37.0</b>	<b>51.6</b> (27.8)	<b>37.6</b>	<b>50.9</b> (29.3)	<b>38.1</b>
% Hispanic	39.2 (24.7)	35.2	39.9 (24.9)	35.1	38.1 (24.7)	34.9	38.5 (24.8)	34.9	38.9 (27.4)	34.4
% Asian or other	<b>4.6</b> (5.7)	<b>12.3</b>	<b>6.1</b> (6.1)	<b>12.7</b>	<b>5.3</b> (6.3)	<b>12.1</b>	<b>3.3</b> (4.5)	<b>11.0</b>	<b>4.1</b> (5.6)	<b>10.6</b>
% Female	<b>55.2</b> (9.9)	<b>49.8</b>	<b>55.6</b> (10.4)	<b>49.6</b>	<b>54.7</b> (8.8)	<b>49.7</b>	<b>54.3</b> (9.8)	<b>49.7</b>	<b>55.1</b> (11.8)	<b>49.8</b>
% Special education	<b>3.3</b> (31.1)	<b>6.5</b>	<b>2.1</b> (2.5)	<b>6.4</b>	<b>2.6</b> (3.9)	<b>5.5</b>	<b>2.8</b> (3.1)	<b>7.0</b>	<b>3.3</b> (3.2)	<b>6.7</b>
% English Language Learners	<b>8.1</b> (8.1)	<b>15.7</b>	<b>9.1</b> (9.3)	<b>16.0</b>	<b>7.6</b> (6.8)	<b>14.8</b>	<b>7.0</b> (6.9)	<b>15.2</b>	<b>7.0</b> (7.3)	<b>15.7</b>
% Eligible for Free Lunch	<b>60.4</b> (22.6)	<b>43.3</b>	<b>60.6</b> (23.4)	<b>52.6</b>	55.2 (24.7)	51.5	<b>59.7</b> (26.8)	<b>50.9</b>	<b>68.3</b> (26.4)	<b>52.6</b>
% Recent immigrants	<b>3.5</b> (5.1)	<b>8.6</b>	<b>4.8</b> (6.6)	<b>10.0</b>	<b>4.6</b> (5.5)	<b>10.1</b>	<b>3.4</b> (5.8)	<b>17.2</b>	<b>0.7</b> (1.4)	<b>12.0</b>

Bold: Differences are statistically significant at .05 level  
Standard Deviations in parentheses

**Table 2: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Graders, High School Sample Compared to Citywide High School Average, 1994-95 to 2003-04**

	2003-04		2002-03 <sup>d</sup>		2001-02 <sup>d</sup>		2000-01 <sup>d</sup>		1999-00 <sup>d</sup>	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
% Female	<b>53.8</b> (10.9)	<b>49.9</b>	<b>56.7</b> (10.9)	<b>50.9</b>	<b>56.7</b> (12.1)	<b>50.7</b>	<b>55.5</b> (13.1)	<b>50.9</b>	<b>56.0</b> (12.0)	<b>50.3</b>
% Special education	5 (5.7)	5.1	1.2 (2.1)	0.5	1.9 (3.0)	0.7	6.3 (4.1)	5.4	5.0 (5.5)	6.4
% English language learners	<b>7.9</b> (6.1)	<b>14.5</b>	<b>7.1</b> (6.2)	<b>13.9</b>	<b>8.3</b> (6.5)	<b>11.7</b>	<b>7.4</b> (6.9)	<b>13.7</b>	<b>8.5</b> (6.9)	<b>12.2</b>
% Eligible for free lunch	<b>68.9</b> (15.2)	<b>63.5</b>	<b>36.1</b> (17.1)	<b>29.5</b>	<b>67.4</b> (20.4)	<b>56.5</b>	<b>66.7</b> (17.8)	<b>60.3</b>	<b>72.7</b> (13.8)	<b>66.2</b>
% Overage for grade	27.8 (13.2)	27.5	24.8 (13.0)	25.6	22.5 (11.9)	24.9	23.9 (14.5)	25.7	25.9 (11.6)	27.9
Average daily attendance during prior semester	90.7 (2.9)	90.6	<b>91.0</b> (2.5)	<b>92.4</b>	92.1 (2.3)	91.8	92.5 (2.5)	92.6	90.4 (3.0)	91.1
<b>Grade level performance</b>										
English Language Arts	28.8 (20.8)	32.3	26.5 (20.0)	31.0	30.8 (21.4)	34.5	29.9 (20.3)	33.9	<b>27.3</b> (18.2)	<b>34.5</b>
Mathematics	31 (21.1)	34.1	26.7 (21.4)	31.0	<b>18.9</b> (19.8)	<b>24.6</b>	<b>18.0</b> (17.5)	<b>23.2</b>	<b>15.0</b> (15.1)	<b>22.0</b>

<sup>a</sup> Percent of entering class at or above 50 percentile

<sup>d</sup> Percent meeting standard

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

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New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
% Female	<b>55.6</b> (10.5)	<b>50.6</b>	<b>55.7</b> (11.371)	<b>50.2</b>	<b>56.3</b> (10.0)	<b>50.8</b>	54.3 (16.8)	50.8	52.8 (14.0)	50.9
% Special education	<b>2.6</b> (3.5)	<b>6.1</b>	<b>4.9</b> (3.2)	<b>6.6</b>	<b>2.2</b> (5.2)	<b>6.2</b>	<b>3.2</b> (5.2)	<b>6.3</b>	<b>3.1</b> (4.5)	<b>6.6</b>
% English Language Learners	<b>9.3</b> (7.9)	<b>12.4</b>	<b>10.6</b> (8.8)	<b>13.1</b>	<b>8.7</b> (6.9)	<b>13.0</b>	<b>8.3</b> (6.7)	<b>12.2</b>	<b>7.0</b> (8.3)	<b>11.4</b>
% Eligible for free lunch		n/a		n/a		n/a		n/a		n/a
% Overage for grade	28.4 (11.6)	28.5	29.6 (13.1)	29.6	29.1 (12.8)	31.1	33.3 (15.2)	33.7	<b>28.2</b> (18.3)	<b>34.4</b>
Average daily attendance during prior semester	<b>89.4</b> (3.1)	<b>87.7</b>	89.5 (3.5)	89.5	88.0 (4.5)	88.8	85.5 (13.4)	86.6	84.8 (7.2)	85.5
<b>Grade level performance</b>										
English Language Arts	<b>44.9</b> (16.0)	<b>49.5</b>	<b>37.7</b> (19.7)	<sup>a</sup> 43.4	36.8 (16.9)	<sup>a</sup> 41.5	41.0 (22.6)	<sup>a</sup> 46.8	<b>39.5</b> (19.67)	<b><sup>a</sup>50.4</b>
Mathematics	<b>50.6</b> (18.8)	<b>56.7</b>	<b>46.1</b> (19.4)	<b><sup>a</sup>51.2</b>	47.8 (18.1)	<sup>a</sup> 52.2	<b>35.1</b> (24.2)	<b><sup>a</sup>45.1</b>	<b>30.1</b> (22.9)	<b><sup>a</sup>41.0</b>

<sup>a</sup> Percent of entering class at or above 50 percentile

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

**Table 3: Teacher Characteristics, High School Sample Compared to Citywide High School Average, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
% Teachers with masters degree or higher	<b>74.3</b> (11.1)	<b>77.8</b>	<b>72.3</b> (11.4)	<b>77.9</b>	<b>62.6</b> (14.7)	74.7	<b>69.7</b> (13.0)	<b>79.8</b>	<b>72.5</b> (12.8)	<b>80.8</b>
% Teachers fully licensed/permanently assigned	97.1 (3.6)	97.3	<b>79.1</b> (11.0)	<b>87.0</b>	<b>70.3</b> (13.3)	82.8	<b>71.6</b> (12.6)	<b>83.9</b>	<b>63.7</b> (14.1)	<b>82.7</b>
% Teachers at school more than 2 years	<b>52.6</b> (13.9)	<b>60.7</b>	<b>56.0</b> (13.4)	<b>66.0</b>	<b>52.4</b> (16.1)	<b>68.3</b>	<b>51.2</b> (17.5)	<b>70.8</b>	<b>47.2</b> (18.4)	<b>72.8</b>
% Teachers with more than 5 years experience	<b>45.6</b> (13.8)	<b>57.4</b>	<b>43.8</b> (15.0)	<b>60.2</b>	<b>40.0</b> (16.2)	<b>61.2</b>	<b>40.3</b> (15.9)	<b>61.5</b>	<b>39.8</b> (16.5)	<b>65.3</b>
Average number of days teachers are absent	<b>10.5</b> (2.8)	<b>9.7</b>	10.1 (2.8)	9.5	8.5 (3.0)	8.9	9.4 (2.5)	9.7	8.6 (2.4)	9.0

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
% Teachers with masters degree or higher	<b>72.1</b> (12.8)	<b>80.1</b>	<b>70.7</b> (12.6)	<b>80.7</b>	<b>85.5</b> (8.0)	<b>90.4</b>	<b>70.4</b> (12.2)	<b>79.0</b>	<b>68.3</b> (14.8)	<b>75.9</b>
% Teachers Fully Licensed/Permanently Assigned	<b>61.3</b> (14.6)	<b>81.0</b>	<b>66.3</b> (15.2)	<b>81.5</b>	<b>63.6</b> (14.4)	<b>80.7</b>	<b>65.9</b> (17.0)	<b>83.1</b>	<b>60.4</b> (20.7)	<b>82.5</b>
% Teachers at school more than 2 years	<b>32.8</b> (15.5)	<b>69.5</b>	<b>42.0</b> (15.7)	<b>65.9</b>	<b>62.8</b> (14.6)	<b>76.8</b>	n/a	n/a	n/a	n/a
% Teachers with more than 5 years experience	<b>35.9</b> (16.8)	<b>65.3</b>	<b>37.4</b> (14.4)	<b>63.3</b>	<b>44.8</b> (17.8)	<b>69.0</b>	<b>49.9</b> (18.7)	<b>73.2</b>	<b>54.2</b> (21.7)	<b>77.5</b>
Average number of days teachers are absent	8.1 (2.7)	8.5	6.3 (1.6)	7.0	5.6 (2.0)	6.3	6.2 (1.5)	6.2	5.7 (1.5)	6.1

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

**Table 4: Student Outcomes, High School Sample Compared to Citywide High School Average, 1996-97 to 2003-04**

	2003-04		2002-03		2001-02		2000-01	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
<b>Graduation status after 4 years</b>								
% Graduated	<b>68.9</b> (16.5)	<b>54.4</b>	<b>64.9</b> (18.2)	<b>53.4</b>	<b>61.6</b> (20.0)	<b>51.0</b>	<b>61.9</b> (17.9)	<b>51.0</b>
% Dropped out	<b>7.2</b> (5.9)	<b>16.3</b>	<b>9.4</b> (7.5)	<b>20.3</b>	<b>10.0</b> (7.0)	<b>20.2</b>	<b>9.7</b> (7.7)	<b>20.4</b>
% Still enrolled	<b>7.2</b> (12.3)	<b>16.3</b>	25.8 (12.8)	26.3	26.9 (14.7)	28.8	28.4 (13.0)	28.6
% Scoring 65 or higher on English Regents	68.2 (19.7)	67.7	55.4 (22.3)	57.8	57.1 (21.8)	61.0	51.5 (23.7)	54.3
Attendance	<b>85.5</b> (5.2)	<b>83.3</b>	<b>86.3</b> (4.7)	<sup>c</sup> <b>84.7</b>	<b>85.3</b> (5.3)	<sup>c</sup> <b>83.7</b>	83.6 (6.2)	<sup>c</sup> 82.5

<sup>c</sup> Percent of days students attended

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1999-00		1998-99		1997-98		1996-97	
	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average	Sample	Citywide Average
<b>Graduation status after 4 years</b>								
Graduated	<b>57.1</b> <b>(18.0)</b>	<b>49.9</b>	53.2 (18.1)	50.1	51.2 (21.8)	49.7	<b>54.6</b> <b>(16.9)</b>	<b>48.4</b>
Dropped out	<b>10.9</b> <b>(8.2)</b>	<b>19.3</b>	<b>10.4</b> <b>(7.7)</b>	17.5	<b>10.0</b> <b>(8.7)</b>	<b>15.6</b>	<b>7.5</b> <b>(4.6)</b>	<b>15.9</b>
Still enrolled	32.0 (12.7)	30.8	36.4 (15.0)	32.4	<b>34.7</b> <b>(16.6)</b>	<b>34.7</b>	37.9 (14.5)	35.7
% Scoring 65 or higher on English Regents	<b>32.4</b> <b>(28.5)</b>	<b>51.5</b>						
Attendance	85.6 (4.7)	<sup>c</sup> 85.9	86.4 (4.7)	<sup>a</sup> 86.7	86.5 (4.6)	<sup>a</sup> 86.4	85.7 (5.47)	<sup>a</sup> 85.8

<sup>a</sup>Percent average daily student attendance

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

**Appendix C: Student characteristics: Small and medium high schools compared to citywide average**

**Table 5: Student Characteristics, Small High Schools Compared to Citywide High School Average, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
% White	10.0 (14.8)	15.2	<b>10.8</b> <b>(14.1)</b>	<b>16.1</b>	<b>10.6</b> <b>(14.6)</b>	<b>16.2</b>	<b>8.6</b> <b>(13.8)</b>	<b>16.2</b>	<b>9.6</b> <b>(14.9)</b>	<b>15.7</b>
% Black	35.9 (16.2)	35	39.2 (20.2)	35.1	39.6 (21.0)	35.7	37.3 (18.7)	35.9	39.8 (23.6)	36.6
% Hispanic	<b>48.3</b> <b>(17.9)</b>	<b>35.7</b>	<b>43.5</b> <b>(19.3)</b>	<b>34.7</b>	<b>43.2</b> <b>(20.2)</b>	<b>34.4</b>	<b>48.8</b> <b>(20.0)</b>	<b>34.5</b>	<b>45.0</b> <b>(23.2)</b>	<b>34.9</b>
% Asian or other	<b>5.8</b> <b>(11.2)</b>	<b>14.1</b>	<b>6.5</b> <b>(9.8)</b>	<b>14.1</b>	<b>6.6</b> <b>(9.4)</b>	<b>13.7</b>	<b>5.3</b> <b>(9.7)</b>	<b>13.5</b>	<b>5.7</b> <b>(8.5)</b>	<b>12.7</b>
% Female	<b>55.8</b> <b>(12.3)</b>	<b>49.6</b>	<b>56.0</b> <b>(10.6)</b>	<b>49.6</b>	<b>55.9</b> <b>(10.6)</b>	<b>49.7</b>	<b>55.4</b> <b>(7.6)</b>	<b>49.5</b>	<b>55.7</b> <b>(9.7)</b>	<b>49.6</b>
% Special Education	4.7 (4.9)	5.3	4.7 (3.3)	5.9	<b>4.0</b> <b>(4.6)</b>	<b>5.9</b>	<b>4.1</b> <b>(3.8)</b>	<b>5.9</b>	<b>3.7</b> <b>(3.5)</b>	<b>5.9</b>
% English Language Learners	<b>6.7</b> <b>(4.2)</b>	<b>12.9</b>	<b>5.5</b> <b>(4.8)</b>	<b>13.1</b>	<b>6.3</b> <b>(5.8)</b>	<b>14.0</b>	<b>7.3</b> <b>(6.1)</b>	<b>16.3</b>	<b>6.9</b> <b>(6.5)</b>	<b>15.3</b>
% Eligible for Free Lunch	<b>69.6</b> <b>(19.9)</b>	<b>53.9</b>	<b>67.9</b> <b>(22.2)</b>	<b>54.0</b>	<b>68.5</b> <b>(22.9)</b>	<b>51.3</b>	<b>67.5</b> <b>(22.6)</b>	<b>48.4</b>	<b>66.1</b> <b>(23.6)</b>	<b>44.0</b>
% Recent immigrants	<b>2.7</b> <b>(1.4)</b>	<b>11.4</b>	<b>2.0</b> <b>(1.4)</b>	<b>9.7</b>	<b>2.0</b> <b>(1.5)</b>	<b>9.2</b>	<b>1.8</b> <b>(1.6)</b>	<b>9.3</b>	<b>1.7</b> <b>(1.4)</b>	<b>9.0</b>

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
% White	<b>7.2</b> <b>(12.3)</b>	<b>15.7</b>	<b>7.1</b> <b>(11.7)</b>	<b>15.4</b>	<b>7.4</b> <b>(11.4)</b>	<b>16.0</b>	<b>5.8</b> <b>(11.1)</b>	<b>16.4</b>	<b>5.2</b> <b>(10.0)</b>	<b>16.9</b>
% Black	42.5 (22.7)	36.7	40.3 (21.8)	36.8	41.3 (22.6)	37.0	42.8 (23.3)	37.6	40.3 (25.8)	38.1
% Hispanic	<b>45.6</b> <b>(22.0)</b>	<b>35.2</b>	<b>46.9</b> <b>(21.3)</b>	<b>35.1</b>	<b>46.1</b> <b>(21.1)</b>	<b>34.9</b>	<b>49.0</b> <b>(21.8)</b>	<b>34.9</b>	<b>51.6</b> <b>(25.1)</b>	<b>34.4</b>
% Asian or other	<b>4.7</b> <b>(6.0)</b>	<b>12.3</b>	<b>5.7</b> <b>(6.0)</b>	<b>12.7</b>	<b>5.1</b> <b>(6.5)</b>	<b>12.1</b>	<b>2.5</b> <b>(3.6)</b>	<b>11.0</b>	<b>2.9</b> <b>(4.4)</b>	<b>10.6</b>
% Female	<b>55.4</b> <b>(10.6)</b>	<b>49.8</b>	<b>55.2</b> <b>(10.8)</b>	<b>49.6</b>	<b>54.1</b> <b>(8.2)</b>	<b>49.7</b>	<b>55.2</b> <b>(8.8)</b>	<b>49.7</b>	<b>56.5</b> <b>(13.5)</b>	49.8
% Special education	<b>3.1</b> <b>(2.9)</b>	<b>6.5</b>	<b>1.9</b> <b>(2.6)</b>	<b>6.4</b>	<b>2.2</b> <b>(2.7)</b>	<b>5.5</b>	<b>3.0</b> <b>(3.6)</b>	<b>7.0</b>	<b>3.6</b> <b>(3.8)</b>	<b>6.7</b>
% English Language Learners	<b>7.7</b> <b>(7.5)</b>	<b>15.7</b>	<b>8.1</b> <b>(7.6)</b>	<b>16.0</b>	<b>7.4</b> <b>(6.4)</b>	<b>14.8</b>	<b>7.3</b> <b>(7.5)</b>	<b>15.2</b>	<b>7.3</b> <b>(8.0)</b>	<b>15.7</b>
% Eligible for Free Lunch	<b>65.6</b> <b>(20.1)</b>	<b>43.3</b>	<b>64.0</b> <b>(22.9)</b>	<b>52.6</b>	54.8 (26.7)	51.5	<b>61.6</b> <b>(28.2)</b>	<b>50.9</b>	<b>77.9</b> <b>(23.1)</b>	<b>52.6</b>
% Recent immigrants	<b>1.6</b> <b>(1.3)</b>	<b>8.6</b>	<b>2.2</b> <b>(1.8)</b>	<b>10.0</b>	<b>2.7</b> <b>(3.0)</b>	<b>10.1</b>	<b>1.8</b> <b>(3.3)</b>	<b>17.2</b>	<b>0.3</b> <b>(0.8)</b>	<b>12.0</b>

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses



**Table 6: Student Characteristics, Medium High Schools Compared to Citywide High School Average, 1994-95 to 2002-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
% White	10.8 (19.3)	15.2	11.0 (19.4)	16.1	10.8 (19.4)	16.2	10.9 (20.2)	16.2	9.5 (19.3)	15.7
	<b>53.5</b>	<b>35</b>	<b>53.5</b>	<b>35.1</b>	<b>54.0</b>	<b>35.7</b>	<b>54.0</b>	<b>35.9</b>	<b>55.2</b>	<b>36.6</b>
% Black	<b>(31.6)</b>		<b>(31.1)</b>		<b>(30.9)</b>		<b>(32.4)</b>		<b>(32.0)</b>	
	30.8	35.7	30.7	34.7	30.4	34.4	30.0	34.5	30.4	34.9
% Hispanic	(25.9)		(25.3)		(25.0)		(25.9)		(26.1)	
	<b>5.0</b>	<b>14.1</b>	<b>4.8</b>	<b>14.1</b>	<b>4.8</b>	<b>13.7</b>	<b>5.0</b>	<b>13.5</b>	<b>4.9</b>	<b>12.7</b>
% Asian or other	<b>(5.5)</b>		<b>(5.5)</b>		<b>(5.2)</b>		<b>(5.5)</b>		<b>(5.2)</b>	
	<b>54.5</b>	<b>49.6</b>	<b>55.6</b>	<b>49.6</b>	<b>56.2</b>	<b>49.7</b>	<b>54.9</b>	<b>49.5</b>	<b>55.1</b>	<b>49.6</b>
% Female	<b>(8.6)</b>		<b>(9.3)</b>		<b>(9.6)</b>		<b>(8.8)</b>		<b>(9.3)</b>	
	<b>3.4</b>	<b>5.3</b>	<b>3.3</b>	<b>5.9</b>	<b>4.1</b>	<b>5.9</b>	<b>3.9</b>	<b>5.9</b>	<b>3.6</b>	<b>5.9</b>
% Special Education	<b>(2.9)</b>		<b>(2.4)</b>		<b>(3.6)</b>		<b>(3.4)</b>		<b>(3.1)</b>	
	<b>6.9</b>	<b>12.9</b>	<b>6.6</b>	<b>13.1</b>	<b>6.9</b>	<b>14.0</b>	<b>9.0</b>	<b>16.3</b>	<b>8.1</b>	<b>15.3</b>
% English Language Learners	<b>(6.5)</b>		<b>(6.6)</b>		<b>(7.1)</b>		<b>(9.0)</b>		<b>(8.4)</b>	
	58.7	53.9	59.3	54.0	55.5	51.3	<b>57.8</b>	<b>48.4</b>	<b>58.0</b>	<b>44.0</b>
% Eligible for Free Lunch	(21.7)		(22.8)		(28.4)		<b>(22.5)</b>		<b>(22.9)</b>	
	<b>7.9</b>	<b>11.4</b>	<b>6.1</b>	<b>9.7</b>	<b>5.4</b>	<b>9.2</b>	<b>5.2</b>	<b>9.3</b>	<b>6.0</b>	<b>9.0</b>
% Recent immigrants	<b>(7.8)</b>		<b>(6.9)</b>		<b>(5.5)</b>		<b>(4.2)</b>		<b>(5.2)</b>	

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
% White	9.1 (18.9)	15.7	8.5 (17.9)	15.4	<b>6.6</b> <b>(15.5)</b>	<b>16.0</b>	<b>7.8</b> <b>(16.6)</b>	<b>16.4</b>	<b>7.6</b> <b>(14.9)</b>	<b>16.9</b>
% Black	<b>56.0</b> <b>(31.5)</b>	<b>36.7</b>	<b>54.8</b> <b>(31.6)</b>	<b>36.8</b>	<b>59.7</b> <b>(30.2)</b>	<b>37.0</b>	<b>63.5</b> <b>(29.4)</b>	<b>37.6</b>	<b>64.0</b> <b>(28.6)</b>	<b>38.1</b>
% Hispanic	30.3 (25.8)	35.2	29.9 (26.7)	35.1	28.1 (25.7)	34.9	<b>24.4</b> <b>(21.7)</b>	<b>34.9</b>	<b>22.9</b> <b>(21.6)</b>	<b>34.4</b>
% Asian or other	<b>4.7</b> <b>(5.3)</b>	<b>12.3</b>	<b>6.7</b> <b>(6.3)</b>	<b>12.7</b>	<b>5.6</b> <b>(6.3)</b>	<b>12.1</b>	<b>4.3</b> <b>(5.7)</b>	<b>11.0</b>	<b>5.5</b> <b>(6.7)</b>	<b>10.6</b>
% Female	<b>55.1</b> <b>(9.1)</b>	<b>49.8</b>	<b>56.1</b> <b>(10.0)</b>	<b>49.6</b>	<b>55.5</b> <b>(9.7)</b>	<b>49.7</b>	53.1 (11.1)	49.7	53.5 (9.3)	49.8
% Special education	<b>3.6</b> <b>(3.5)</b>	<b>6.5</b>	<b>2.3</b> <b>(2.4)</b>	<b>6.4</b>	<b>3.1</b> <b>(4.9)</b>	<b>5.5</b>	<b>2.6</b> <b>(2.4)</b>	<b>7.0</b>	<b>3.0</b> <b>(2.3)</b>	<b>6.7</b>
% English Language Learners	<b>8.6</b> <b>(9.1)</b>	<b>15.7</b>	<b>10.4</b> <b>(11.1)</b>	<b>16.0</b>	<b>7.9</b> <b>(7.4)</b>	<b>14.8</b>	<b>6.6</b> <b>(6.2)</b>	<b>15.2</b>	<b>6.7</b> <b>(6.4)</b>	<b>15.7</b>
% Eligible for Free Lunch	52.8 (24.2)	43.3	55.7 (23.7)	52.6	55.7 (23.5)	51.5	56.9 (25.2)	50.9	55.8 (25.6)	52.6
% Recent immigrants	6.2 (7.0)	8.6	8.6 (8.9)	10.0	<b>6.9</b> <b>(6.9)</b>	<b>10.1</b>	<b>5.6</b> <b>(7.7)</b>	<b>17.2</b>	<b>1.1</b> <b>(1.8)</b>	<b>12.0</b>

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

**Appendix D: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Graders,  
Small and medium schools compared to citywide average**

**Table 7: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Graders, Small Schools Sample Compare to Citywide High School Average, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-00	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
% Female	<b>54.6</b> (11.5)	<b>49.9</b>	<b>57.6</b> (11.4)	<b>50.9</b>	<b>57.0</b> (12.8)	<b>50.7</b>	<b>55.7</b> (12.2)	<b>50.9</b>	<b>57.1</b> (12.6)	<b>50.3</b>
% Special education	5.7 (6.6)	5.1	<b>1.4</b> (2.4)	<b>0.5</b>	<b>2.5</b> (3.6)	<b>0.7</b>	<b>6.2</b> (4.8)	<b>5.4</b>	5.6 (6.3)	6.4
% English Language Learners	<b>7.9</b> (5.8)	<b>14.5</b>	<b>6.8</b> (5.8)	<b>13.9</b>	<b>8.9</b> (7.2)	<b>11.7</b>	<b>7.6</b> (6.9)	<b>13.7</b>	<b>9.2</b> (7.2)	<b>12.2</b>
% Eligible for free lunch	<b>71.7</b> (15.7)	<b>63.5</b>	<b>37.8</b> (19.8)	<b>29.5</b>	<b>70.4</b> (19.2)	<b>56.5</b>	<b>68.3</b> (17.2)	<b>60.3</b>	<b>73.6</b> (14.1)	<b>66.2</b>
% Overage for grade	29.7 (13.9)	27.5	26.3 (14.6)	25.6	23.0 (12.7)	24.9	24.0 (12.0)	25.7	27.2 (12.0)	27.9
Average daily attendance during prior semester	90.7 (2.9)	90.6	<b>90.7</b> (2.8)	<b>92.4</b>	92.1 (12.6)	91.8	92.2 (2.8)	92.6	<b>89.9</b> (2.8)	<b>91.1</b>
<b>Grade level performance</b>										
English Language Arts	27.3 (22.5)	32.3	<b>23.8</b> (21.4)	<b>31.0</b>	29.0 (23.5)	34.5	27.7 (21.6)	33.9	<b>23.7</b> (16.5)	<b>34.5</b>
Mathematics	29.4 (22.5)	34.1	24.5 (22.7)	31.0	17.8 (22.3)	24.6	<b>16.7</b> (18.8)	<b>23.2</b>	<b>12.5</b> (13.5)	<b>22.0</b>

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
% Female	<b>54.9</b> <b>(10.4)</b>	<b>50.6</b>	<b>56.0</b> <b>(12.2)</b>	<b>50.2</b>	<b>55.4</b> <b>(9.8)</b>	<b>50.8</b>	52.5 (19.4)	50.8	51.9 (15.6)	50.9
% Special education	<b>2.7</b> <b>(3.9)</b>	<b>6.1</b>	5.3 (3.9)	6.6	<b>.8</b> <b>(1.9)</b>	<b>6.2</b>	<b>3.5</b> <b>(5.9)</b>	<b>6.3</b>	<b>3.2</b> <b>(5.3)</b>	<b>6.6</b>
% English Language Learners	10.1 (8.6)	12.4	10.8 (8.9)	13.1	<b>9.6</b> <b>(7.4)</b>	<b>13</b>	9.6 (7.9)	12.2	8.0 (10.0)	11.4
% Eligible for free lunch		n/a		n/a		n/a		n/a		n/a
% Overage for grade	30.3 (10.9)	28.5	30.6 (14.1)	29.6	29.1 (12.4)	31.1	<b>35.0</b> <b>(16.0)</b>	<b>33.7</b>	<b>25.0</b> <b>(17.1)</b>	<b>34.4</b>
Average daily attendance during prior semester	<b>88.8</b> <b>(3.0)</b>	<b>87.7</b>	89.2 (3.6)	89.5	88.8 (4.2)	88.8	83.5 (17.1)	86.6	84.3 (8.6)	85.5
<b>Grade level performance</b>										
English Language Arts	<b>41.5</b> <b>(14.7)</b>	<b>49.5</b>	<b>36.0</b> <b>(21.0)</b>	<b>43.4</b>	35.6 (16.6)	41.5	<b>36.5</b> <b>(22.8)</b>	<b>46.8</b>	<b>33.8</b> <b>(17.6)</b>	<b>50.4</b>
Mathematics	<b>47.4</b> <b>(17.0)</b>	<b>56.7</b>	<b>45.0</b> <b>(19.0)</b>	<b>51.2</b>	47.7 (17.5)	52.2	<b>29.3</b> <b>(23.9)</b>	<b>45.1</b>	<b>23.6</b> <b>(18.2)</b>	41.0

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

**Table 8: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Graders, Medium High Schools Compared to Citywide High School Average, 1994-95 to 2003-04**

	2003-04 <sup>a</sup>		2002-03 <sup>a</sup>		2001-02 <sup>a</sup>		2000-01 <sup>a</sup>		1999-00 <sup>a</sup>	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
% Female	52.6 (10.1)	49.9	<b>55.4</b> <b>(10.1)</b>	<b>50.9</b>	<b>56.4</b> <b>(11.0)</b>	<b>50.7</b>	55.2 (14.6)	50.9	54.5 (11.1)	50.3
% Special education	3.9 (3.6)	5.1	0.8 (1.5)	0.5	0.9 (1.3)	0.7	5.3 (2.4)	5.4	<b>4.2</b> <b>(4.1)</b>	<b>6.4</b>
% English Language Learners	<b>7.9</b> <b>(6.6)</b>	<b>14.5</b>	<b>7.4</b> <b>(6.9)</b>	<b>13.9</b>	<b>7.4</b> <b>(5.2)</b>	<b>11.7</b>	<b>7.0</b> <b>(7.0)</b>	<b>13.7</b>	<b>7.6</b> <b>(6.5)</b>	<b>12.2</b>
% Eligible for free lunch	64.3 (13.3)	63.5	33.3 (11.3)	29.5	62.2 (21.8)	56.5	64.1 (18.7)	60.3	71.6 (13.5)	66.2
% Overage for grade	24.9 (11.4)	27.5	22.7 (10.0)	25.6	21.7 (10.7)	24.9	23.7 (17.9)	25.7	24.1 (11.0)	27.9
Average daily attendance during prior semester	90.6 (2.9)	90.6	<b>91.4</b> <b>(1.8)</b>	<b>92.4</b>	92.2 (1.9)	91.8	93.1 (1.8)	92.6	90.9 (3.2)	91.1
<b>Grade level performance</b>										
English language arts	31.4 (17.9)	32.3	30.6 (17.3)	31.0	33.6 (17.7)	34.5	33.5 (17.8)	33.9	32.6 (19.5)	34.5
Mathematics	33.6 (18.7)	34.1	30.2 (19.1)	31.0	20.7 (15.3)	24.6	20.3 (15.3)	23.2	18.7 (16.7)	22.0

<sup>a</sup> Percent of entering students who met standards in 8<sup>th</sup> grade tests

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
% Female	<b>56.5</b> <b>(10.7)</b>	<b>50.6</b>	<b>55.2</b> <b>(10.0)</b>	<b>50.2</b>	<b>57.2</b> <b>(10.3)</b>	<b>50.8</b>	<b>56.9</b> <b>(12.3)</b>	<b>50.8</b>	54.0 (11.9)	50.9
% Special education	<b>2.4</b> <b>(0.0)</b>	<b>6.1</b>	<b>4.5</b> <b>(2.3)</b>	<b>6.6</b>	3.5 (6.9)	6.2	<b>2.7</b> <b>(4.2)</b>	<b>6.3</b>	<b>2.9</b> <b>(3.3)</b>	<b>6.6</b>
% English Language Learners	<b>8.2</b> <b>(6.6)</b>	<b>12.4</b>	10.4 (8.8)	13.1	<b>7.7</b> <b>(6.3)</b>	<b>13.0</b>	<b>6.5</b> <b>(4.2)</b>	<b>12.2</b>	<b>5.6</b> <b>(4.8)</b>	<b>11.4</b>
% Eligible for free lunch		n/a		n/a		n/a		n/a		n/a
% Overage for grade	25.6 (12.2)	28.5	28.2 (11.6)	29.6	29.2 (13.4)	31.1	<b>30.9</b> <b>(14.0)</b>	<b>33.7</b>	32.4 (19.6)	34.4
Average daily attendance during prior semester	<b>90.3</b> <b>(3.1)</b>	<b>87.7</b>	89.9 (3.3)	89.5	87.3 (4.8)	88.8	88.3 (3.8)	86.6	85.5 (4.8)	85.5
<b>Grade level performance</b>										
English Language Arts	50.0 (16.7)	49.5	40.4 (17.7)	43.4	37.9 (17.5)	41.5	47.2 (21.3)	46.8	46.8 (19.9)	50.4
Mathematics	55.4 (20.6)	56.7	47.9 (20.1)	51.2	47.8 (19.1)	52.2	43.2 (22.8)	45.1	38.2 (25.9)	41.0

<sup>a</sup> Percent of entering students who met standards in 8<sup>th</sup> grade tests

<sup>b</sup> Percent of entering class at or above 50 percentile in 8<sup>th</sup> grade tests

**Bold:** Differences are statistically significant at .05 level or less

Standard Deviations in parentheses

**Appendix E: Teacher Characteristics,  
Small and medium schools compared to citywide average**

**Table 9: Teacher Characteristics, Small Schools Sample Compared to Citywide Average, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
% Teachers with Masters Degree	73.9 (13.5)	77.8	<b>70.9</b> <b>(13.1)</b>	<b>77.9</b>	<b>59.8</b> <b>(16.1)</b>	<b>74.7</b>	<b>67.4</b> <b>(14.3)</b>	<b>79.8</b>	<b>72.2</b> <b>(14.5)</b>	<b>80.8</b>
% Teachers Fully Credentialed	96.9 (4.2)	97.3	<b>76.5</b> <b>(12.4)</b>	<b>87.0</b>	<b>67.0</b> <b>(14.1)</b>	<b>82.8</b>	<b>68.8</b> <b>(13.2)</b>	<b>83.9</b>	<b>63.0</b> <b>(14.6)</b>	<b>82.7</b>
% Teachers at school more than 2 years	<b>50.9</b> <b>(15.1)</b>	<b>60.7</b>	<b>54.6</b> <b>(13.9)</b>	<b>66.0</b>	<b>48.9</b> <b>(16.6)</b>	<b>68.3</b>	<b>46.9</b> <b>(17.4)</b>	<b>70.8</b>	<b>43.3</b> <b>(18.2)</b>	<b>72.8</b>
% Teachers with more than 5 years experience	<b>41.4</b> <b>(14.6)</b>	<b>57.4</b>	<b>40.0</b> <b>(16.0)</b>	<b>60.2</b>	<b>35.7</b> <b>(16.7)</b>	<b>61.2</b>	<b>38.2</b> <b>(15.5)</b>	<b>61.5</b>	<b>37.4</b> <b>(17.3)</b>	<b>65.3</b>
Average number of days teachers are absent	10.4 (3.2)	9.7	9.9 (2.5)	9.5	8.2 (2.4)	8.9	<b>8.9</b> <b>(2.3)</b>	<b>9.7</b>	<b>8.3</b> <b>(2.3)</b>	<b>9.0</b>

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
% Teachers with Masters Degree	<b>71.0</b> (14.5)	<b>80.1</b>	<b>70.4</b> (12.4)	<b>80.7</b>	<b>84.3</b> (8.4)	<b>90.4</b>	<b>66.0</b> (11.3)	<b>79.0</b>	<b>61.4</b> (16.4)	<b>75.9</b>
% Teachers Fully Credentialed	<b>60.7</b> (12.5)	<b>81.0</b>	<b>65.8</b> (12.9)	<b>81.5</b>	<b>61.4</b> (10.7)	<b>80.7</b>	<b>63.6</b> (17.5)	<b>83.1</b>	<b>51.6</b> (17.9)	<b>82.5</b>
% Teachers at school more than 2 years	<b>29.7</b> (14.5)	<b>69.5</b>	<b>38.3</b> (15.6)	<b>65.9</b>	<b>60.4</b> (14.2)	<b>76.8</b>	24.4 (17.4)	n/a	29.7 (22.0)	n/a
% Teachers with more than 5 years experience	<b>31.9</b> (15.3)	<b>65.3</b>	<b>35.4</b> (13.2)	<b>63.3</b>	<b>40.3</b> (15.9)	<b>69.0</b>	<b>46.1</b> (18.5)	<b>73.2</b>	<b>45.7</b> (19.5)	<b>77.5</b>
Average number of days teachers are absent	<b>7.4</b> (3.1)	<b>8.5</b>	6.7 (1.9)	7.0	<b>5.3</b> (1.9)	<b>6.3</b>	6.6 (2.5)	6.2	5.5 (1.9)	6.1

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses



**Table 10: Teacher Characteristics, Medium High Schools Compared to Citywide High School Average, 1995-96 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
% Teachers with Masters Degree	75.1 (8.0)	77.8	<b>74.4</b> (7.7)	<b>77.9</b>	<b>66.8</b> (11.1)	<b>74.7</b>	<b>73.3</b> (10.1)	<b>79.8</b>	<b>72.9</b> (9.8)	<b>80.8</b>
% Teachers Fully Credentialed	97.3 (2.8)	97.3	<b>83.1</b> (6.9)	<b>87.0</b>	<b>75.6</b> (9.9)	<b>82.8</b>	<b>76.1</b> (10.4)	<b>83.9</b>	<b>64.6</b> (13.7)	<b>82.7</b>
% Teachers at school more than 2 years	<b>54.5</b> (12.2)	<b>60.7</b>	<b>58.0</b> (12.7)	<b>66.0</b>	<b>57.9</b> (13.8)	<b>68.3</b>	<b>58.0</b> (15.6)	<b>70.8</b>	<b>53.3</b> (17.4)	<b>72.8</b>
% Teachers with more than 5 years experience	<b>50.5</b> (11.3)	<b>57.4</b>	<b>49.9</b> (11.1)	<b>60.2</b>	<b>46.5</b> (13.2)	<b>61.2</b>	<b>43.6</b> (16.3)	<b>61.5</b>	<b>43.5</b> (14.8)	<b>65.3</b>
Average number of days teachers are absent	10.5 (2.3)	9.7	10.2 (3.1)	9.5	9.1 (3.6)	8.9	10.2 (2.6)	9.7	9.2 (2.6)	9.0

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
% Teachers with Masters Degree	<b>73.7</b> (10.0)	<b>80.1</b>	<b>71.1</b> (13.2)	<b>80.7</b>	<b>87.0</b> (7.3)	<b>90.4</b>	<b>72.0</b> (12.5)	<b>79.0</b>	<b>73.3</b> (11.7)	<b>75.9</b>
% Teachers Fully Credentialed	<b>62.1</b> (17.4)	<b>81.0</b>	<b>67.0</b> (18.2)	<b>81.5</b>	<b>66.4</b> (17.8)	<b>80.7</b>	<b>69.1</b> (16.0)	<b>83.1</b>	<b>71.5</b> (18.8)	<b>82.5</b>
% Teachers at school more than 2 years	<b>36.8</b> (16.0)	<b>69.5</b>	<b>49.1</b> (13.9)	<b>65.9</b>	<b>65.8</b> (17.0)	<b>76.8</b>	18.7 (9.7)	n/a	13.1 (10.8)	n/a
% Teachers with more than 5 years experience	<b>41.2</b> (17.4)	<b>65.3</b>	<b>40.1</b> (15.6)	<b>63.3</b>	<b>50.6</b> (18.7)	<b>69.0</b>	<b>55.3</b> (17.9)	<b>73.2</b>	<b>64.9</b> (19.9)	<b>77.5</b>
Average number of days teachers are absent	9.2 (1.7)	8.5	7.2 (1.0)	7.0	5.7 (2.2)	6.21	6.1 (1.2)	6.2	5.8 (1.0)	6.1

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

**Appendix F: Student Outcomes,  
Small and medium schools compared to citywide high school average**

**Table 11: Student Outcomes, Small Schools Sample Compared to Citywide High School Average, 1996-97 to 2003-04**

	2003-04		2002-03		2001-02		2000-01	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
<b>Graduation status after 4 years</b>								
% Graduated	<b>68.4</b> (17.5)	<b>54.4</b>	<b>62.7</b> (19.3)	<b>53.4</b>	<b>60.7</b> (21.7)	<b>51.0</b>	<b>60.9</b> (19.6)	<b>51.0</b>
% Dropped out	<b>7.1</b> (5.9)	<b>16.3</b>	<b>9.6</b> (8.2)	<b>20.3</b>	<b>10.5</b> (7.6)	<b>20.2</b>	<b>9.0</b> (7.9)	<b>20.4</b>
% Still enrolled	<b>24.5</b> (13.5)	<b>29.3</b>	27.7 (13.7)	26.3	26.3 (15.6)	28.8	30.1 (14.6)	28.6
% Scoring 65 or higher on English Regents	66.2 (22.6)	67.7	52.2 (24.0)	57.8	54.4 (23.5)	61.0	48.9 (26.3)	54.3
Attendance	85.1 (6.2)	83.3	85.8 (5.2)	84.7	85.1 (5.7)	83.7	82.7 (6.5)	82.5

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1999-2000		1998-99		1997-98		1996-97	
	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average	Small Schools	Citywide Average
<b>Graduation status after 4 years</b>								
Graduated	55.5 (19.9)	49.9	49.1 (17.3)	50.1	45.6 (21.6)	49.7	53.3 (18.6)	48.4
Dropped out	<b>10.7</b> <b>(8.8)</b>	<b>19.3</b>	<b>11.1</b> <b>(8.6)</b>	<b>17.5</b>	<b>11.5</b> <b>(9.8)</b>	<b>15.6</b>	<b>7.6</b> <b>(4.9)</b>	<b>15.9</b>
Still enrolled	33.8 (14.1)	30.8	<b>39.7</b> <b>(13.6)</b>	<b>32.4</b>	<b>39.5</b> <b>(18.1)</b>	<b>34.7</b>	39.1 (15.9)	35.7
% Scoring 65 or higher on English Regents	<b>28.5</b> <b>(31.9)</b>	<b>51.5</b>						
Attendance	85.4 (5.2)	85.9	86.0 (5.0)	86.7	86.2 (4.7)	86.4	85.0 (6.0)	85.8

**Bold:** Differences are statistically significant at .05 level  
Standard Deviations in parentheses

**Table 12: Student Outcomes, Medium High Schools Compared to Citywide High School Average, 1995-96 to 2003-04**

	2003-04		2002-03		2001-02		2000-01	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
<b>Graduation status after 4 years</b>								
% Graduated	<b>69.6</b> <b>(15.2)</b>	<b>54.4</b>	<b>68.3</b> <b>(16.1)</b>	<b>53.4</b>	<b>63.1</b> <b>(17.1)</b>	<b>51.0</b>	<b>63.6</b> <b>(15.1)</b>	<b>51.0</b>
% Dropped out	<b>7.4</b> <b>(6.2)</b>	<b>16.3</b>	<b>9.0</b> <b>(6.3)</b>	<b>20.3</b>	<b>9.1</b> <b>(5.9)</b>	<b>20.2</b>	<b>10.7</b> <b>(7.4)</b>	<b>20.4</b>
% Still enrolled	<b>22.9</b> <b>(10.3)</b>	<b>29.3</b>	22.7 (10.7)	26.3	27.8 (13.5)	28.8	25.7 (9.6)	28.6
% Scoring 65 or higher on English Regents	71.4 <b>(13.8)</b>	67.7	60.4 <b>(18.9)</b>	57.8	61.3 <b>(18.4)</b>	61.0	55.5 <b>(18.6)</b>	54.3
Attendance	<b>85.9</b> <b>(3.9)</b>	<b>83.3</b>	<b>86.9</b> <b>(4.1)</b>	<b>84.7</b>	85.6 <b>(4.7)</b>	83.7	84.5 <b>(6.0)</b>	82.5

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1999-2000		1997-98		1996-97		1995-96	
	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average	Medium Schools	Citywide Average
<b>Graduation status after 4 years</b>								
% Graduated	<b>59.2</b> <b>(15.4)</b>	<b>49.9</b>	<b>58.8</b> <b>(18.2)</b>	<b>50.1</b>	<b>59.3</b> <b>(19.8)</b>	<b>49.7</b>	<b>56.1</b> <b>(15.4)</b>	<b>48.4</b>
% Dropped out	<b>11.2</b> <b>(7.6)</b>	<b>19.3</b>	<b>9.3</b> <b>(6.3)</b>	<b>17.5</b>	<b>7.9</b> <b>(6.4)</b>	<b>15.6</b>	<b>7.2</b> <b>(4.3)</b>	<b>15.9</b>
% Still enrolled	29.6 (10.4)	30.8	31.9	32.4	28.8	34.7	36.7	35.7
% Scoring 65 or higher on English Regents	<b>37.8</b> <b>(22.5)</b>	<b>51.5</b>						
Attendance	85.9 (3.9)	85.9	86.9 (4.2)	86.7	87.1 (4.6)	86.4	86.6 (4.7)	85.8

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

**Appendix G: Small high school sample  
compared to medium high school sample**

**Table 13: Student Characteristics, Small High Schools Compared to Medium High Schools, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium	Small	Medium
% White	9.9 (14.7)	10.8 (19.3)	10.8 (14.1)	11.0 (19.4)	10.6 (14.6)	10.8 (19.5)	8.6 (13.8)	10.9 (20.2)	9.6 (14.9)	9.5 (19.3)
% Black	<b>35.9</b> <b>(16.2)</b>	<b>53.5</b> <b>(31.6)</b>	<b>39.2</b> <b>(20.2)</b>	<b>53.5</b> <b>(31.1)</b>	<b>39.6</b> <b>(21.0)</b>	<b>54.0</b> <b>(30.9)</b>	<b>37.3</b> <b>(18.7)</b>	<b>54.0</b> <b>(32.4)</b>	<b>39.8</b> <b>(23.6)</b>	<b>55.2</b> <b>(32.0)</b>
% Hispanic	<b>48.3</b> <b>(17.9)</b>	<b>30.8</b> <b>(25.9)</b>	<b>43.5</b> <b>(19.3)</b>	<b>30.7</b> <b>(25.3)</b>	<b>43.2</b> <b>(20.2)</b>	<b>30.4</b> <b>(25.0)</b>	<b>48.8</b> <b>(20.0)</b>	<b>30.0</b> <b>(25.9)</b>	<b>45.0</b> <b>(23.2)</b>	<b>30.4</b> <b>(26.1)</b>
% Asian or other	5.8 (11.1)	5.0 (5.5)	6.5 (9.8)	4.8 (5.5)	6.6 (9.4)	4.8 (5.2)	5.3 (9.7)	5.0 (5.5)	5.7 (8.5)	4.9 (5.2)
% Female	55.8 (12.3)	54.4 (8.6)	56.0 (10.6)	55.6 (9.3)	55.9 (10.6)	56.2 (9.6)	55.4 (7.6)	54.9 (8.8)	55.7 (9.7)	55.1 (9.3)
% Special education	4.7 (4.9)	3.4 (2.9)	4.1 (3.5)	3.3 (2.4)	n/a	n/a	n/a	n/a	n/a	n/a
% English language learners	6.7 (4.2)	6.9 (6.5)	5.5 (4.8)	6.6 (6.7)	6.3 (5.8)	6.9 (7.1)	7.3 (6.1)	9.0 (9.0)	6.9 (6.5)	8.1 (8.4)
% Eligible for free lunch	69.6 (19.9)	58.7 (21.7)	67.9 (22.2)	59.3 (22.8)	<b>68.5</b> <b>(22.9)</b>	<b>55.5</b> <b>(28.4)</b>	67.5 (22.6)	57.8 (22.5)	66.1 (23.6)	58.0 (22.9)
% Recent immigrants	<b>2.7</b> <b>(7.8)</b>	<b>7.9</b> <b>(1.4)</b>	<b>2.0</b> <b>(1.4)</b>	<b>6.1</b> <b>(6.9)</b>	<b>2.0</b> <b>(1.5)</b>	<b>5.4</b> <b>(5.5)</b>	<b>1.8</b> <b>(1.6)</b>	<b>5.2</b> <b>(4.2)</b>	<b>1.7</b> <b>(1.4)</b>	<b>6.0</b> <b>(5.2)</b>

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

Institute for Education and Social Policy, Steinhardt School of Culture, Education, and Human Development  
New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium	Small	Medium
% White	7.2 (12.3)	9.1 (18.9)	7.1 (11.7)	8.5 (17.9)	7.4 (11.4)	6.6 (15.5)	5.8 (11.1)	7.8 (16.6)	5.2 (9.9)	7.6 (14.9)
% Black	42.5 (22.7)	56.0 (31.5)	<b>40.3</b> <b>(21.8)</b>	<b>54.8</b> <b>(31.6)</b>	<b>41.3</b> <b>(22.6)</b>	<b>59.7</b> <b>(30.2)</b>	<b>42.8</b> <b>(23.3)</b>	<b>63.5</b> <b>(29.4)</b>	<b>40.3</b> <b>(25.8)</b>	<b>64.0</b> <b>(28.6)</b>
% Hispanic	<b>45.6</b> <b>(22.0)</b>	<b>30.3</b> <b>(25.9)</b>	<b>46.9</b> <b>(21.3)</b>	<b>29.9</b> <b>(26.7)</b>	<b>46.1</b> <b>(21.1)</b>	<b>28.1</b> <b>(25.7)</b>	<b>49.0</b> <b>(21.8)</b>	<b>24.4</b> <b>(21.7)</b>	<b>51.6</b> <b>(25.0)</b>	<b>22.9</b> <b>(21.6)</b>
% Asian or other	4.7 (6.0)	4.7 (5.3)	5.7 (6.0)	6.7 (6.3)	5.1 (6.5)	5.6 (6.3)	2.5 (3.6)	4.3 (5.7)	2.9 (4.4)	5.5 (6.7)
% Female	55.4 (10.6)	55.1 (9.1)	55.2 (10.8)	56.1 (10.0)	54.1 (8.2)	55.5 (9.7)	55.2 (8.8)	53.1 (11.1)	56.5 (8.8)	53.1 (11.1)
% Special education	3.0 (2.9)	3.6 (3.5)	1.9 (2.6)	2.3 (2.4)	2.2 (2.7)	3.1 (4.9)	3.0 (3.6)	2.6 (3.4)	3.5 (3.7)	3.0 (2.3)
% English Language Learners	7.7 (7.5)	8.6 (9.1)	8.1 (7.6)	10.4 (11.1)	7.4 (6.4)	7.9 (7.4)	7.3 (7.5)	6.6 (6.2)	7.3 (8.0)	6.7 (6.4)
% Eligible for Free Lunch	<b>65.6</b> <b>(20.1)</b>	<b>52.8</b> <b>(24.2)</b>	64.0 (22.9)	55.7 (23.7)	54.8 (26.7)	55.7 (23.5)	61.6 (28.2)	56.9 (25.2)	<b>77.9</b> <b>(23.1)</b>	<b>55.7</b> <b>(25.6)</b>
% Recent immigrants	<b>1.6</b> <b>(1.3)</b>	<b>6.2</b> <b>(7.0)</b>	<b>2.2</b> <b>(1.8)</b>	<b>8.6</b> <b>(8.9)</b>	<b>2.7</b> <b>(3.0)</b>	<b>6.9</b> <b>(6.9)</b>	<b>1.8</b> <b>(3.3)</b>	<b>5.6</b> <b>(7.7)</b>	<b>0</b> <b>(0.8)</b>	<b>1.1</b> <b>(1.8)</b>

**Bold:** Differences are statistically significant at .05 level or less  
Standard deviations in parentheses

**Table 14: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Grade Students, Small Schools Compared to Medium Size Schools, 1994-95 to 2003-04**

	2003-04		2002-03 <sup>a</sup>		2001-02 <sup>a</sup>		2000-01 <sup>a</sup>		1999-2000 <sup>a</sup>	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium	Small	Medium
% Female	54.6 (11.5)	52.6 (10.1)	57.6 (11.4)	55.4 (10.1)	57.0 (12.8)	56.4 (11.0)	55.7 (12.2)	55.2 (14.6)	57.1 (12.6)	54.5 (11.1)
% Special education	5.7 (6.6)	3.9 (3.6)	<b>1.4</b> <b>(2.4)</b>	<b>0.9</b> <b>(1.5)</b>	2.5 (3.6)	1.0 (1.3)	6.9 (4.8)	5.4 (2.4)	5.6 (6.3)	4.2 (4.1)
% English Language Learners	7.9 (5.8)	7.9 (6.6)	6.8 (5.8)	7.4 (6.8)	8.9 (7.2)	7.4 (5.2)	7.6 (6.9)	7.0 (7.0)	9.2 (7.2)	7.6 (6.5)
% Eligible for free lunch	71.7 (15.7)	64.3 (13.3)	37.8 (19.8)	33.3 (11.3)	70.4 (19.2)	62.6 (21.8)	68.3 (17.2)	64.1 (18.7)	73.6 (14.1)	71.6 (13.5)
% Overage for grade	29.7 (13.9)	24.9 (11.4)	26.3 (14.6)	22.7 (9.9)	23.0 (12.7)	21.7 (10.7)	24.0 (12.0)	23.7 (19.8)	27.2 (12.0)	24.1 (11.0)
Average daily attendance during prior semester	90.7 (2.9)	90.6 (2.9)	90.7 (2.8)	91.4 (1.8)	92.1 (2.6)	92.2 (1.9)	92.2 (2.8)	93.1 (1.8)	89.9 (2.8)	91.0 (3.2)
<b>Grade level performance</b>										
English/language arts *	27.3 (22.5)	31.4 (17.9)	23.8 (21.4)	30.6 (17.3)	29.0 (23.5)	33.6 (17.7)	27.7 (21.6)	33.5 (17.8)	23.7 (16.5)	32.6 (19.5)
Mathematics *	29.4 (22.4)	33.6 (18.7)	24.5 (22.7)	30.2 (19.2)	17.8 (22.3)	20.7 (15.3)	16.7 (18.8)	20.3 (15.3)	12.5 (13.5)	18.7 (16.7)

\* Percentages include only students who were tested for school years 1994-95 through 1998-99

<sup>a</sup> Percent at or above grade level

<sup>b</sup> Percent of entering class at or above 50 percentile

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses



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New York University

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium	Small	Medium
% Female	54.9 (10.4)	56.5 (10.7)	56.0 (12.2)	55.2 (10.0)	55.4 (9.8)	57.2 (10.3)	52.5 (19.4)	56.9 (12.3)	51.9 (15.6)	54.0 (11.9)
% Special education	2.7 (3.9)	2.4 (3.0)	5.3 (3.9)	4.5 (2.3)	0.8 (1.9)	3.5 (6.9)	3.6 (5.9)	2.7 (4.2)	3.2 (5.3)	3.0 (3.3)
% English Language Learners	10.1 (8.6)	8.2 (6.6)	10.8 (8.9)	10.4 (8.8)	9.6 (7.4)	7.7 (6.3)	9.6 (7.9)	6.5 (4.2)	8.0 (10.1)	5.6 (4.8)
% Eligible for free lunch	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
% Overage for grade	30.3 (10.9)	25.6 (12.2)	30.6 (14.1)	28.2 (11.6)	29.1 (12.4)	29.2 (13.4)	35.0 (16.0)	30.9 (14.0)	25.0 (17.1)	32.4 (19.6)
Average daily attendance during prior semester	88.8 (3.0)	90.3 (3.1)	89.2 (3.6)	89.9 (3.3)	88.8 (4.2)	87.3 (4.8)	83.5 (17.1)	88.3 (3.8)	84.3 (8.7)	85.5 (4.8)
<b>Grade level performance</b>										
English Language Arts	41.5 (14.7)	50.0 (16.7)	36.0 (21.0)	40.4 (17.7)	35.6 (16.6)	37.9 (17.5)	36.5 (22.8)	47.2 (21.3)	<b>33.8</b> <b>(17.6)</b>	<b>46.8</b> <b>(19.9)</b>
Mathematics	47.4 (17.0)	55.4 (20.6)	45.0 (19.0)	47.9 (20.1)	47.7 (17.5)	47.8 (19.1)	<b>29.3</b> <b>(23.9)</b>	<b>43.2</b> <b>(22.8)</b>	<b>23.6</b> <b>(18.2)</b>	<b>38.2</b> <b>(25.9)</b>

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

**Table 15: Teacher Characteristics, Small Schools Compared to Medium Size Schools, 1994-95 to 2003-04**

	2003-04		2002-03		2001-02		2000-01		1999-2000	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium	Small	Medium
% Teachers with masters degree or higher	73.7 (13.4)	75.1 (8.0)	70.9 (13.1)	74.4 (7.7)	59.8 (16.1)	66.8 (11.1)	67.4 (14.3)	73.3 (10.1)	72.2 (14.5)	72.9 (9.8)
% Teachers fully licensed/permanently assigned	96.9 (4.2)	97.3 (2.8)	<b>76.5</b> <b>(12.4)</b>	<b>83.1</b> <b>(6.9)</b>	<b>67.0</b> <b>(14.1)</b>	<b>75.6</b> <b>(9.9)</b>	<b>68.8</b> <b>(13.2)</b>	<b>76.1</b> <b>(10.4)</b>	63.0 (14.6)	64.6 (13.7)
% Teachers at school more than 2 years	50.9 (15.1)	54.5 (12.2)	54.6 (13.9)	58.0 (12.7)	<b>48.9</b> <b>(16.6)</b>	<b>57.9</b> <b>(13.8)</b>	<b>46.9</b> <b>(17.4)</b>	<b>57.9</b> <b>(15.6)</b>	<b>43.3</b> <b>(18.2)</b>	<b>53.3</b> <b>(17.4)</b>
% Teachers with more than 5 years experience	<b>41.4</b> <b>(14.6)</b>	<b>50.5</b> <b>(11.1)</b>	<b>40.0</b> <b>(16.0)</b>	<b>49.9</b> <b>(11.1)</b>	<b>35.7</b> <b>(16.7)</b>	<b>46.5</b> <b>(13.2)</b>	38.2 (15.5)	43.6 (16.3)	37.4 (17.3)	43.5 (14.8)
Average number of days teachers are absent	10.4 (3.1)	10.5 (2.3)	10.0 (2.5)	10.2 (3.1)	8.2 (2.4)	9.1 (3.6)	<b>8.9</b> <b>(2.3)</b>	<b>10.2</b> <b>(2.6)</b>	8.3 (2.3)	9.2 (2.6)

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

	1998-99		1997-98		1996-97		1995-96		1994-95	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium	Small	Medium
% Teachers with masters degree or higher	71.0 (14.5)	73.7 (10.0)	70.4 (12.4)	71.1 (13.2)	84.3 (8.4)	87 (7.3)	66 (11.3)	72 (12.5)	<b>61.4</b> <b>(16.4)</b>	<b>73.3</b> <b>(11.7)</b>
% Teachers fully licensed/permanently assigned	60.7 (12.5)	62.1 (17.4)	65.8 (12.9)	67 (18.2)	61.4 (10.7)	66.4 (17.8)	63.6 (17.5)	69.1 (15.9)	<b>51.5</b> <b>(17.9)</b>	<b>71.5</b> <b>(18.8)</b>
% Teachers at school more than 2 years	29.7 (14.5)	36.8 (16.0)	<b>38.3</b> <b>(15.6)</b>	<b>49.1</b> <b>(13.9)</b>	39.6 (14.2)	34.2 (17)	24.4 (17.4)	18.7 (9.7)	<b>29.7</b> <b>(22.0)</b>	<b>13.1</b> <b>(10.8)</b>
% Teachers with more than 5 years experience	<b>31.9</b> <b>(15.3)</b>	<b>41.2</b> <b>(17.4)</b>	35.4 (13.2)	40.1 (15.6)	<b>40.3</b> <b>(15.9)</b>	<b>50.6</b> <b>(18.7)</b>	46.1 (18.5)	55.3 (17.9)	<b>45.7</b> <b>(19.5)</b>	<b>64.9</b> <b>(19.9)</b>
Average number of days teachers are absent	<b>7.4</b> <b>(3.1)</b>	<b>9.2</b> <b>(1.7)</b>	6.7 (1.9)	7.2 (1.0)	5.3 (1.9)	5.7 (2.2)	6.6 (2.5)	6.1 (1.2)	5.5 (1.9)	5.8 (1.9)

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

**Table 16: Student Outcomes, Small Schools Compared to Medium Size Schools, 1996-97 to 2003-04**

	2003-04		2002-03		2001-02		2000-01	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium
<b>Graduation status after 4 years</b>								
% Graduated	68.4 (17.5)	69.6 (15.2)	62.7 (19.3)	68.3 (16.1)	60.7 (21.7)	63.1 (17.1)	60.9 (19.6)	63.6 (15.1)
% Dropped out	7.1 (5.9)	7.4 (6.2)	9.6 (8.2)	9.0 (6.3)	10.5 (7.6)	9.1 (5.9)	9.0 (7.9)	10.7 (7.4)
% Still enrolled	4.5 (13.5)	22.9 (10.3)	27.7 (13.7)	22.7 (10.7)	26.3 (15.6)	27.8 (13.5)	30.1 (14.6)	25.7 (9.6)
% Scoring 65 or higher on English Regents	66.2 (22.6)	71.4 (13.8)	52.2 (24.0)	60.4 (18.9)	54.4 (23.5)	61.3 (18.4)	48.9 (26.3)	55.5 (18.6)
Percent of days students attended	85.1 (6.2)	85.9 (4.1)	85.8 (5.2)	86.9 (4.1)	85.1 (5.7)	85.6 (4.7)	82.7 (6.6)	84.5 (6.0)

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

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	1999-2000		1998-1999		1997-1998		1996-1997	
	Small	Medium	Small	Medium	Small	Medium	Small	Medium
<b>Graduation status after 4 years</b>								
Graduated	55.5 (19.9)	59.2 (15.4)	49.1 (17.3)	58.8 (18.2)	<b>45.6</b> <b>(21.6)</b>	<b>59.3</b> <b>(19.8)</b>	53.3 (18.6)	56.1 (15.4)
Dropped out	10.7 (8.8)	11.2 (7.6)	11.1 (8.6)	9.3 (6.3)	11.5 (9.8)	7.9 (6.4)	7.6 (4.9)	7.2 (4.3)
Still enrolled	33.8 (14.1)	29.6 (10.4)	39.7 (13.6)	31.9 (15.9)	<b>39.5</b> <b>(18.1)</b>	<b>27.8</b> <b>(11.2)</b>	39.1 (15.9)	16.7 (13.3)
% Scoring 65 or higher on English Regents	28.5 (31.9)	37.8 (22.5)						
Percent of days students attended	85.4 (5.2)	85.9 (3.9)	86.0 (5.0)	86.9 (4.2)	86.2 (4.7)	87.1 (4.6)	85.0 (6.0)	86.6 (4.7)

**Bold:** Differences are statistically significant at .05 level or less  
Standard Deviations in parentheses

## Appendix H: OLS regression results, Tables 17 – 22

**Table 17: OLS Regression, Percent Graduated**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Small School	-6.987** (1.922)	-2.443 1.525	-2.809 1.992
Entering Students Female		0.173** (0.622)	
Entering Students Special Education		-0.826 0.197	
Entering Students ELL		0.208 0.130	
Entering Students Attendance		0.185 0.175	
Entering Students Overage for Grade		-0.398** (0.086)	
Entering Students 50 <sup>th</sup> Percentile - Math		0.376** (0.056)	
% Teachers Fully Credentialed			0.414** (0.103)
% Teachers School > 2 Years			0.116 0.069
% Teaching > 5 Years			-0.389** (0.071)
% Teachers MA Degree			-0.106 0.096
Pupil-Teacher Ratio			1.518** (-0.438)

School Year 1997-98	8.530		-2.74
	4.435		3.99
School Year 1998-99	10.447*	-1.387	-0.289
	(4.106)	2.940	3.692
School Year 1999-00	14.263**	-3.833	2.471
	(4.036)	2.926	3.785
School Year 2000-01	19.363**	-1.972	3.689
	(3.956)	3.134	4.085
School Year 2001-02	19.114**	-3.878	3.838
	(4.097)	3.011	4.636
School Year 2002-03	22.342**	11.224**	4.112
	(-3.955)	(2.847)	4.452
Constant	46.803**	30.368	24.398**
	(3.245)	15.721	9.043
Observations	421	282	387
R-squared	0.14	0.52	0.17

(i) Dependent variable is the percent of students who graduated in four years

(ii) Small School is a dummy variable that takes a value of 1 if the school has less than 500 students or 0 if it has 500 or more students in grades 9-12

(iii) Robust standard errors in parentheses

(iv) Characteristics of the entering students are lagged to match the entering student cohort to their graduation outcomes

**Table 18: OLS Regressions, Percent Dropped Out**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Small School	0.328	-0.144	-0.828
	-0.7189	-0.687	-0.751
Entering Students Female		-0.053	
		-0.033	
Entering Students Special Education		0.074	
		-0.11	
Entering Students ELL		0.096	
		-0.065	
Entering Students Attendance		-0.123	
		(0.057)*	
Entering Students Overage		0.203	
		(0.044)**	
Entering Students Math		-0.104	
		(0.030)**	
% Teachers Fully Credentialed			-0.117
			(0.042)**
% Teachers School > 2 Years			0.035
			-0.028
% Teaching > 5 Years			0.057
			(0.027)*
% Teachers MA Degree			-0.021
			-0.044
Pupil-Teacher Ratio			-0.721
			(0.169)**
School Year 1997-98	3.5528		1.825
	(1.4592)*		-1.582

School Year 1998-99	3.898 (1.3348)**	-0.789 -1.503	1.398 -1.358
School Year 1999-00	4.4601 (1.3316)**	1.39 -1.399	1.051 -1.619
School Year 2000-01	3.2119 (1.2308)**	1.965 -1.632	0.588 -1.595
School Year 2001-02	3.4682 (1.1549)**	2.533 -1.374	0.122 -1.719
School Year 2002-03	2.8727 (1.1975)*	-1.331 -1.532	1.106 -1.726
Constant	6.2877 (0.8376)**	20.524 (3.625)**	26.235 (3.577)**
Observations	421	282	387
R-squared	0.03	0.48	0.1

(i) Dependent variable is the percent of students who were dropped out after four years

(ii) Small School is a dummy variable that takes a value of 1 if the school has less than 500 students or 0 if it has 500 or more students in grades 9-12

(iii) Robust standard errors in parentheses

(iv) \* significant at 5% level; \*\* significant at 1% level

(v) Characteristics of the entering students are lagged to match the entering student cohort to their graduation outcomes



**Table 19: OLS Regression, Percent Still Enrolled**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Small School	3.1358 (1.5009)*	2.591 -1.334	3.248 (1.566)*
Entering Students Female		-0.12 (0.059)*	
Entering Students Special Education		0.009 -0.139	
Entering Students ELL		-0.304 (0.106)**	
Entering Students Attendance		-0.063 -0.152	
Entering Students Overage		0.195 (0.069)**	
Entering Students Math		-0.272 (0.046)**	
% Teachers Fully Credentialled			-0.286 (0.078)**
% Teachers School > 2 Years			-0.144 (0.051)**
% Teaching > 5 Years			0.31 (0.057)**
% Teachers MA Degree			0.116 -0.072
Pupil-Teacher Ratio			-0.731 (0.359)*
School Year 1997-98	-0.4297 -3.7421		0.69 -3.243

School Year 1998-99	1.3536 -3.6098	2.185 -2.503	-1.207 -3.194
School Year 1999-00	-3.0688 -3.3773	2.444 -2.275	-3.642 -2.951
School Year 2000-01	-6.7949 (3.3511)*	-0.004 -2.368	-4.536 -3.208
School Year 2001-02	-8.2801 (3.4770)*	1.331 -2.48	-5.759 -3.623
School Year 2002-03	-9.4219 (3.3361)**	-9.898 (2.203)**	-5.524 -3.441
Constant	33.2657 (2.8886)**	49.092 (13.669)**	49.299 (7.222)**
Observations	421	282	387
R-squared	0.07	0.38	0.2

(i) Dependent variable is the percent of students who were still enrolled after four years

(ii) Small School is a dummy variable that takes a value of 1 if the school has less than 500 students or 0 if it has 500 or more students in grades 9-12

(iii) Robust standard errors in parentheses

(iv) \* significant at 5% level; \*\* significant at 1% level

(v) Characteristics of the entering students are lagged to match the entering student cohort to their graduation outcomes

**Table 20: OLS Regression, Percent of Days Students Attended**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Small School	-0.948 (0.443)*	-0.483 -0.466	-0.283 -0.559
Entering Students Female		-0.015 -0.019	
Entering Students Special Education		-0.022 -0.061	
Entering Students ELL		-0.006 -0.038	
Entering Students Attendance		0.049 -0.044	
Entering Students Overage		-0.086 (0.028)**	
Entering Students Math		0.083 (0.020)**	
% Teachers Fully Credentialed			0.093 (0.029)**
% Teachers School > 2 Years			-0.003 -0.017
% Teaching > 5 Years			-0.064 (0.019)**
% Teachers MA Degree			0.009 -0.027
Pupil-Teacher Ratio			0.533 (0.107)**
School Year 1997-98	0.778 -0.714		0.919 -0.992

School Year 1998-99	0.595 -0.722	0.882 -0.862	1.075 -0.991
School Year 1999-00	-0.114 -0.707	-1.703 (0.854)*	0.976 -1.016
School Year 2000-01	-2.25 (0.975)*	-4.188 (1.272)**	-1.915 -1.267
School Year 2001-02	-0.424 -0.77	-3.302 (0.906)**	0.417 -1.222
School Year 2002-03	0.527 -0.768	0.771 -0.905	0.099 -1.19
Constant	86.307 (0.475)**	83.144 (3.759)**	72.936 (2.549)**
Observations	508	269	392
R-squared	0.03	0.41	0.15

(i) Dependent variable is the percent of days students attended

(ii) Small School is a dummy variable that takes a value of 1 if the school has less than 500 students or 0 if it has 500 or more students in grades 9-12

(iii) Robust standard errors in parentheses

(iv) \* significant at 5% level; \*\* significant at 1% level

(v) Characteristics of the entering students are lagged to match the entering student cohort to their graduation outcomes

**Table 21: OLS Regression, Percent of Students Passing the English Regents with 65 or Higher**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Small School	-7.744 (2.845)**	-4.533 -2.573	0.167 -3.109
Entering Students Female		0.121 -0.121	
Entering Students Special Education		0.249 -0.307	
Entering Students ELL		-0.138 -0.207	
Entering Students Attendance		-0.265 -0.182	
Entering Students Overage		-0.685 (0.163)**	
Entering Students Math		0.427 (0.131)**	
% Teachers Fully Credentialled			0.755 (0.159)**
% Teachers School > 2 Years			0.158 -0.113
% Teaching > 5 Years			-0.47 (0.111)**
% Teachers MA Degree			-0.193 -0.152
Pupil-Teacher Ratio			3.07 (0.681)**
School Year 2000-01	19.303 (4.596)**	10.506 (4.456)*	12.333 (4.446)**

School Year 2001-02	24.907 (4.453)**	16.928 (4.340)**	18.774 (4.817)**
School Year 2002-03	23.232 (4.495)**	28.442 (6.117)**	10.69 (5.026)*
Constant	36.889 (3.637)**	56.531 (9.982)**	-36.969 (13.231)**
Observations	262	197	262
R-squared	0.16	0.47	0.32

(i) Dependent variable is the percent of students scoring 65 or higher on English Regents

(ii) Small School is a dummy variable that takes a value of 1 if the school has less than 500 students or 0 if it has 500 or more students in grades 9-12

(iii) Robust standard errors in parentheses

(iv) \* significant at 5% level; \*\* significant at 1% level

(v) Results are calculated only for the school years from 1999 onward when it was required for graduation

(vi) Characteristics of the entering students are lagged to match the entering student cohort to their graduation outcomes

**Table 22: OLS Regression, Average Number of Days Teachers are Absent**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Small School	-0.801 (0.222)**	-0.839 (0.229)**	-0.61 (0.281)*
Entering Students Female		-0.02 (0.010)*	
Entering Students Special Education		0.02 -0.034	
Entering Students ELL		-0.017 -0.02	
Entering Students Attendance		0.018 -0.039	
Entering Students Overage		0.037 (0.014)**	
Entering Students Math		0.001 -0.007	
% Teachers Fully Credentialled			0.01 -0.013
% Teachers School > 2 Years			0.01 -0.008
% Teaching > 5 Years			0.01 -0.009
% Teachers MA Degree			-0.007 -0.013
Pupil-Teacher Ratio			-0.036 -0.067
School Year 1997-98	1.286 (0.274)**	1.193 (0.346)**	1.549 (0.419)**

School Year 1998-99	2.506 (0.367)**	2.546 (0.386)**	3.017 (0.463)**
School Year 1999-00	3.029 (0.345)**	3.271 (0.409)**	2.96 (0.502)**
School Year 2000-01	3.812 (0.349)**	4.01 (0.459)**	3.606 (0.534)**
School Year 2001-02	2.917 (0.407)**	3.256 (0.451)**	2.649 (0.636)**
School Year 2002-03	4.457 (0.385)**	4.713 (0.422)**	4.131 (0.567)**
Constant	6.087 (0.197)**	4.502 -3.672	5.601 (1.355)**
Observations	488	443	409
R-squared	0.29	0.32	0.25

(i) Dependent variable is the average number of days teachers are absent

(ii) Small School is a dummy variable that takes a value of 1 if the school has less than 500 students or 0 if it has 500 or more students in grades 9-12

(iii) Robust standard errors in parentheses

(iv) \* significant at 5% level; \*\* significant at 1% level

(v) Characteristics of the entering students are lagged to match the entering student cohort to their graduation outcomes



**Appendix I: Low-performing small high schools  
compared to high-performing small high schools**

**Table 24: Characteristics of Entering 9<sup>th</sup> and 10<sup>th</sup> Grade Students, High-performing Compared to Low-performing Small Schools**

	2003-04		2002-03		2001-02	
	High-performing	Low-performing	High-performing	Low-performing	High-performing	Low-performing
% Female	<b>65.1</b> (14.5)	<b>48.4</b> (11.0)	<b>67.9</b> (12.1)	<b>52.9</b> (12.9)	<b>65.8</b> (13.7)	<b>52.7</b> (13.5)
% Special education	<b>2.3</b> (5.2)	<b>9.1</b> (7.2)	<b>0.1</b> (0.2)	<b>3.1</b> (3.5)	<b>0.6</b> (0.7)	<b>2.7</b> (2.2)
% ELL	<b>5.7</b> (7.1)	<b>12.1</b> (4.8)	<b>3.2</b> (3.6)	<b>11.1</b> (5.2)	<b>5.4</b> (3.7)	<b>13.3</b> (5.1)
% Eligible for free lunch	<b>61.2</b> (19.9)	<b>80.9</b> (11.4)	29.3 (28.9)	42.6 (8.4)	<b>60.9</b> (22.2)	<b>81.3</b> (6.2)
% Overage for grade	<b>13.5</b> (9.7)	<b>41.1</b> (8.3)	<b>9.1</b> (6.3)	<b>39.7</b> (6.9)	<b>10.3</b> (5.5)	<b>32.6</b> (8.3)
Average daily attendance during prior semester	<b>94.3</b> (2.2)	<b>87.7</b> (1.4)	<b>94.3</b> (1.5)	<b>88.4</b> (1.5)	<b>95.1</b> (1.6)	<b>89.3</b> (1.7)
<b>Grade level performance</b>						
English Language Arts <sup>a</sup>	<b>54.8</b> (27.8)	<b>12.7</b> (3.3)	<b>51.8</b> (25.7)	<b>10.6</b> (25.7)	<b>53.9</b> (22.3)	<b>11.9</b> (3.8)
Mathematics <sup>a</sup>	<b>58.5</b> (25.9)	<b>15.2</b> (5.2)	<b>54.6</b> (26.7)	<b>9.7</b> (26.7)	<b>41.9</b> (27.4)	<b>3.5</b> (2.3)

**Bold:** Differences are statistically significant at .05 level or less

<sup>a</sup> Percent of entering students who met standards on 8<sup>th</sup> grade tests

Standard deviations in parentheses

**Table 25: Teacher Characteristics, High-performing Compared to Low-performing Small Schools**

	2003-04		2002-03		2000-01	
	High-performing	Low-performing	High-performing	Low-performing	High-performing	Low-performing
% Teachers with Masters Degree	76.8 (12.5)	69.8 (9.9)	72.9 (11.5)	73.4 (15.6)	68.3 (6.9)	56.2 (17.2)
% Teachers Fully Credentialed	98.4 (3.0)	97.3 (3.8)	76.5 (11.5)	77.3 (15.9)	74.9 (9.2)	63.9 (14.9)
% of Teachers at school for two years or more	54.0 (13.0)	50.1 (15.2)	57.2 (12.2)	54.3 (14.2)	48.2 (16.0)	46.3 (11.3)
% Teachers with more than 5 years experience	38.8 (18.6)	40.3 (12.5)	39.9 (18.7)	44.7 (13.4)	37.6 (21.3)	34.1 (14.4)
Average number of days teachers are absent	9.6 (2.1)	9.5 (2.2)	9.8 (1.1)	8.8 (1.8)	9.3 (1.8)	8.2 (2.4)

**Bold:** Differences are statistically significant at .05 level or less  
Standard deviations in parentheses