

Class Size and the Contract for Excellence:

Are we making progress in NYC's public schools?

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United Federation of Teachers
A Union of Professionals

A report by the United Federation of Teachers,
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Executive Summary

Under the state-approved Contracts for Excellence (C4E), New York City agreed to reduce average class size systemwide in the 2007-08 school year, with a special focus on high-needs, low-performing schools. With \$258 million in new foundation aid from the Campaign for Fiscal Equity settlement, the city was to make class size reduction the priority. (Four other proven education reforms were also funded: increased student time on task, teacher and principal quality initiatives, middle school and high school restructuring, and full-day pre-kindergarten and kindergarten.)

The New York City Department of Education's (DOE) plan called for leaving class size reduction up to individual principals to implement. It was unwilling to instruct schools on how they should allocate their budgets. However, DOE did commit \$152.7 million of the new state foundation aid to class size reduction in schools and set targets of 20.7 students in grades K-3 and 24.8 students in grades 4-12 for the current year.

More detailed class size data have become available in the last two years. The United Federation of Teachers, the labor union representing New York City's 100,000 public school educators, commissioned an independent analysis of DOE data on its class size reduction plan and made the following key findings:

- Nearly half (48.5%) of 390 elementary and middle schools that received class size reduction funds did not reduce class size. Class sizes actually increased at about 34 percent of those targeted schools.
- In 43% of schools citywide with K-8 grades class sizes increased.
- Some 60 percent of middle schools citywide failed to meet the 24.8-student target

- Little progress was made in reducing class sizes in struggling schools. In low-performing elementary and middle schools on the state's list of Schools In Need of Improvement and Schools Requiring Academic Progress (SINI/SRAP), 51 percent saw some decreases in class size but 42 percent saw class size increase.
- In large high schools with 1,500-plus students there were four more students per class on average than in small schools with fewer than 1,500 students.

While the system's average class sizes did go down by a fraction – one-tenth of a student in K-3 schools and six-tenths of a student in grades 4-8 – the averages mask disturbing patterns. Class sizes were almost as likely to increase as to decrease, including in the highest needs schools, and spending was no predictor of class size reduction.

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Background

The “Contract for Excellence” (C4E), signed into law by the New York State Governor and Legislature in 2007, directed \$258 million new dollars of foundation aid to the New York City schools for the 2007-08 year. The new money was to be spent in five areas: class size reduction, increased student time on task, teacher and principal quality initiatives, middle school and high school restructuring, and full-day prekindergarten and kindergarten.

Of these five general goals, New York City, whose classes have been 10-60% larger than the rest of the state for many years, was to make class size reduction a priority. The city was required to submit a five-year plan to the state to reduce class sizes across the system, with a priority on low-performing and high-poverty schools.

The New York City Department of Education (DOE)’s plan chose to leave it up to principals how they would use the C4E funds. But the department allocated \$152.7 million of the new money to class size reduction (of which \$23 million was considered “maintenance of effort” money).¹

The new money had an importance beyond its dollar value. First, it was to continue—and increase—for four years, ensuring that by the 2011-2012 year, the state would increase education spending in the city by \$3.2 billion and the city contribution would rise by \$2.2 billion for a \$5.4 billion increase. In a state where the education budget is uncertain every single year, this guaranteed revenue would allow critical changes to take root.

Second, it was targeted to class size reduction and four other areas of prime need.

¹ <http://schools.nyc.gov/Offices/ChildrenFirst/CFE/ContractProposal/default.html>

The contracts required accountability: the C4E funds were to be spent on these five proven school improvement measures, and the districts had to report back on their results. While local control and budget flexibility are often good policy, in this case the state put forward clear guidelines based on the consensus of educators and experts.

Third, by requiring New York City to develop a class size reduction (CSR) plan, the state contract ensured that class size became a principal focus. The need for smaller classes has united educators and parents for years, as very large class sizes has emerged as a glaring disadvantage for the city's public school students.

Finally, each school district in the state that received C4E funds was to ensure that the programs and services predominantly benefited students with the greatest educational needs, such as students in poverty, students with disabilities, and those with limited English proficiency. They were to focus especially on Schools under Registration Review (SURR), and schools in need of improvement or requiring academic progress (SINI/SRAP schools).

Implementation: How New York City would comply

In November 2007, the city submitted its five-year class size reduction plan to the state with the ultimate goal of achieving average class sizes of 20 for kindergarten through 3rd grade, and 23 for all grades 4 through 12 by the 2011-12 school year.

For the 2007-08 school year, after negotiations with the State Education Dept. (SED), the DOE adopted, and SED approved, first-year goals for average class sizes of 20.7 students in grades K-3 and 24.8 students in grades 4-12.

As part of a budget and supervisory reform, New York City chose to allow its principals to decide whether and how to reduce class sizes, rather than mandating it. It did designate 72 “coaching schools” where supervisors would help principals lower class sizes, but even then principals were not absolutely required to spend their C4E funds on this reform.

The SED signed off on this plan for the first year, with a promise to review the results.

Assembling the data

The New York City Council passed legislation in December 2005 requiring the DOE to report average class sizes twice a year in each grade and subject, by school, district, borough and citywide.

The 2006-07 school year, then, was the first time that the Department reported class sizes by school, grade, program type (general education, collaborative team teaching [CTT], special education and gifted and talented) and high school core subjects, not just by broad averages. That fall 2006 report allowed an independent examination of

what the averages in a one-million-plus students system might conceal. But it was a first step and contained many inaccuracies.

The data for DOE's 2007-2008 *Class Size Report Summary and Analysis*, first published in December 2007 and revised in February 2008, contained more detail, including the register totals at each grade and school, the number of classes and the smallest and largest classes in each grade. One key change was assigning high school students to classes rather than grades to get a more accurate size of the actual core courses—English, math, social studies and science. This made the high school 2007-08 data not comparable to the year-ago data.²

Analyzing the results so far

Using the two years of data, the United Federation of Teachers commissioned an independent researcher to answer four general questions:

- 1. In schools that allocated funds to CSR, was class size reduced?**
- 2. Did average class sizes citywide go down? And by how much?**
- 3. How was class size reduction distributed across grades, schools and districts?**
- 4. Did the neediest schools reduce class sizes? Did “coaching” work?**

² There are still limitations to the 2007-08 data, including the likely over-counting of CTT classes because they have two teachers; counting middle school classes by homeroom rather than core subject; and a broader problem of linking CSR spending to actual reductions.

1. Not a Match: Class Size Spending and Class Size Reduction

The question of how class size money was spent is important for understanding the efficacy of the DOE's efforts in reducing class size. For this analysis we looked at schools with K-8 grades that were given \$50,000 (roughly the minimum necessary to hire one additional teacher) or more to reduce class size.

The summary table 1 shows the match of schools receiving a minimum of \$50,000 in CSR funding this year and schools that actually reduced class sizes.

Table 1: Class Size spending and Class Size Reduction

Schools that got 2007-08 C4E CSR Funding	Schools reducing class size	Schools with class size unchanged*	Schools with larger class sizes
390	201 (51.5%)	57 (14.6%)	132 (33.8%)

*Unchanged means $\pm <0.25$ student

In the City we found 390 schools that received CSR funds based on their stated intention to reduce class size. Of these, 132 schools (33.8%) actually increased their average class size. Another 57 schools remained the same (within plus or minus one-quarter ($\pm .25$) of a student), and 201 schools (51.5%) reported lower class sizes.³

The calculation was done using an Excel file created by DOE consultants Alvarez and Marsal in September 2007 showing all schools that received C4E funding for the 2007-08 school year for class size reduction ("C4E CSR"). This totaled \$129 million, plus another \$23.7 million in Maintenance of Effort money. (This file was spot-checked against a second DOE class size spending table that was available in PDF format.)

³ Because DOE did not report class sizes by dividing total registers by number of classes in 2006-07 as it did in 2007-08, we had to aggregate data at the school-level for '06-07. To make the comparison, we did the same aggregation for 2007-08 for this table. If we used the DOE's method for '07-'08 there would be a mean difference of 0.22 student per class.

Then, we matched schools receiving CSR funds with schools that reduced or did not reduce class sizes in the current year according to the final February class size report.

Looked at using a different analytic approach, dedicated C4E money was not a good indicator of class size reduction. In fact, the analysis suggests that class size actually increased as more money was spent in these schools. The correlation is small but statistically significant ($r^2=.075$).

This analysis used a regression model to see how money dedicated to class size reduction correlated with actual class size reduction. The overall trend in the model suggested that class size actually increases slightly as more money is spent in these schools.⁴ We wonder how schools could have increased in class size when receiving money for class size reduction.

II. Class size averages and class size reduction

In its February 2008 *Class Size Report*, the DOE makes the claims,

“These reports show measurable progress toward class size reduction goals, both across the City and in the schools targeted for coaching this year.”
and

“Preliminary class size shows measurable and substantial progress toward goals established in the Class Size Plan”

The *Report* supplies statistics to support these claims, mostly in the form of changes in class averages within the large groups (grade levels, for example) on which they report.

⁴ IV= spending, DV= Class size; Class size = 22.6 + (.000006)spending; r= .273

Using a variety of statistical lenses we examine the accuracy of the claim of “measurable and substantial progress” for reducing class size. We do this by looking at class sizes for a variety of disaggregated groups and by examining the relative impact of class size reduction for SINI/SRAP schools (those schools identified by the state as low-performing); and for schools receiving coaching help.

Systemwide Averages

The DOE summary report for 2007-08 shows average class size reductions for groups of grades across the city. From it we learn that average class sizes were reduced one-tenth (0.1) of a student in grades kindergarten through third grade, and six-tenths of a student (0.6) in fourth through eight grades. As discussed, in grades 9-12 the changes in methodology this year make comparisons with last year impossible.

Averages by grade and borough

While this aggregate data is useful, it is important to determine the distribution of class sizes across the city by grade, the degree to which DOE met its CSR targets, and the distribution of class sizes and class size reductions across community schools districts (CSDs).

Table 2 shows average class sizes as of the January 23, 2008 register in each grade and each borough, calculated by dividing the total registers for each grade by the total number of classes. Table 3 shows the percentage of classes that met the Year One average class size targets of 20.7 students in grades K-3 and 24.8 students in grades 4-8.

Table 2. 2007-08 NYC Average Class sizes by Grade and Borough

	Brooklyn	Manhattan	Queens	Staten Island	Bronx
Kindergarten	19.99	20	21.41	21.05	20.84
1st grade	20.79	20.5	21.36	20.75	21.45
2nd grade	20.36	21	21.67	21.21	21.41
3rd grade	20.22	20.95	21.74	21.28	21.1
4th grade	22.85	23.07	24.64	24.99	22.86
5th grade	23.48	23.41	25.44	25.79	23.34
6th grade	24.48	24.9	26.51	29.07	25.21
7th grade	25.17	25.07	27.25	29.06	26.49
8th grade	25.68	25.87	27.57	29.23	26.55

As is evident from Table 3, in almost every grade, more than half of classes did *not* meet the year-one targets. The fourth grade is a notable exception in that it has the highest success rate. Since C4E did not call for capping class sizes but only lowering the averages, it is to be expected that many classes will be over the target. But Table 2 shows a growing percentage of classes exceed the targets in each successive grade, until by 7th grade more than 60 percent of classes remained larger than the DOE’s target.

Table 3. Percentage of Classes Below and Above Year-One C4E Targets

Grade	CS <20.7	CS >20.7	CS <24.8	CS >24.8
Kindergarten	50.10%	49.90%		
1st	45.60%	54.40%		
2nd	44.80%	55.20%		
3rd	45.90%	54.10%		
4th			61.80%	38.20%
5th			54.00%	46.00%
6th			43.60%	56.40%
7th			37.90%	62.10%
8th			39.20%	60.80%

Middle school restructuring is a key goal of C4E, and the DOE has said middle school reform is a priority. However, the evidence suggests that one essential reform—class size reduction—was not implemented in the middle grades this year.

A third method for examining descriptive data on class size trends is to look at the numbers of classrooms that have lowered class size. This analysis can be accomplished by comparing 2006-07 class size data with 2007-08 class data matched for school, program type, and grade.⁵ Since missing data makes the comparison difficult, we have presented the comparisons of percentage increasing and decreasing classes both ways, with and without missing data.

Excluding missing data, more than 43% of classes got larger this year, despite the focus on class size reduction.

Table 4. Percentage of Classrooms with Changes* in Class Size

	Percentage including classes with missing data	Percentage excluding classes with missing data
Increase	34.5	43.1
No Change	5.9	7.3
Decrease	39.6	49.5
Total	79.9	100
Missing	20.1	
Total	100	

*Unchanged classes were those that changed less than ± 25 student. Missing classes are those that did not have data for both years. The majority of these missing classes were Collaborative Team Teaching (CTT) classes.

Data describing increases or decreases in class size seems consistent with data on meeting targets; about half the schools in the city either increased their class size or had no change. If the DOE goal is to have a substantial reduction in class size across the city, about half the city's classes are being left out.

⁵ For this analysis program type includes general education, collaborative team teaching and gifted and talented programs, grades K-8.

II. It Depends Where You Live: Distribution of CSR

Table 5 shows the average kindergarten through 8th grade class sizes for each of the community school districts (CSDs), ranked from largest to smallest in class size, excluding special education classes.

Table 5. Average K-8 Class Sizes* in Each Community School District (CSD)

CSD	Average class size	Rank (largest to smallest)	Borough
26	25.09	1	Queens
21	24.23	2	Brooklyn
24	24.21	3	Queens
20	24.17	4	Brooklyn
10	24.15	5	Bronx
31	24.14	6	Staten Island
29	24.03	7	Queens
25	24.02	8	Queens
02	23.96	9	Manhattan
11	23.85	10	Bronx
22	23.73	11	Brooklyn
30	23.54	12	Queens
28	23.44	13	Queens
08	23.42	14	Bronx
27	23.42	14	Queens
03	23.31	15	Manhattan
06	23.19	16	Manhattan
18	22.79	17	Brooklyn
09	22.48	18	Bronx
17	22.35	18	Brooklyn
05	21.87	20	Manhattan
23	21.71	21	Brooklyn
14	21.64	22	Brooklyn
32	21.6	23	Brooklyn
15	21.48	24	Brooklyn
07	21.24	25	Bronx
12	21.21	26	Bronx
04	21.14	27	Manhattan
19	20.87	28	Brooklyn
16	20.41	29	Brooklyn
13	20.05	30	Brooklyn
01	19.6	31	Manhattan

*Special education classes are not included

From Table 5 we see there is a wide average difference—approximately five students per class—in K-8 classrooms between the district with the largest average class size (District 26 in Queens with more than 25 students on average) and the smallest average (District 1 in Manhattan, with fewer than 20).

Table 6 shows the percentage of classes increasing or decreasing in size in 2007-08 compared with 2006-07 in each of the city’s districts, ranked in order from the largest percent decrease to the smallest.

Table 6. Year 1 Percentage of class sizes increased or decreased by CSD

CSD	Increased Class Size	No Change	Decreased Class Size	Rank by
	%	%	%	% decrease
18	29.20%	9.00%	61.80%	1
6	32.70%	7.30%	60.00%	2
19	38.10%	6.20%	55.70%	3
5	40.80%	3.50%	55.60%	4
17	40.80%	4.50%	54.70%	5
23	42.50%	3.90%	53.60%	6
13	41.40%	5.20%	53.40%	7
21	40.70%	6.40%	53.00%	8
32	40.90%	6.30%	52.80%	9
26	43.00%	5.20%	51.70%	10
31	40.30%	8.40%	51.30%	11
22	39.00%	9.80%	51.20%	12
4	43.00%	6.60%	50.30%	13
3	44.10%	6.20%	49.80%	14
7	43.90%	6.40%	49.70%	15
9	43.20%	7.60%	49.20%	16
29	44.50%	6.40%	49.10%	17
2	41.70%	9.70%	48.60%	18
14	48.30%	3.40%	48.30%	19
30	39.70%	12.00%	48.30%	19
16	46.40%	5.60%	48.00%	20
15	41.80%	10.50%	47.70%	21
10	45.50%	7.00%	47.60%	22
28	43.60%	8.90%	47.50%	23
27	45.50%	7.40%	47.00%	24
24	43.20%	10.60%	46.20%	25
25	46.90%	7.50%	45.60%	26

11	48.10%	6.40%	45.50%	27
20	51.20%	3.80%	44.90%	28
8	49.20%	6.00%	44.70%	29
12	48.50%	10.20%	41.30%	30
1	54.80%	6.00%	39.20%	31

There is a pattern, though not absolutely consistent, of the districts with the largest classes, those that most need to reduce class size, being among the districts reducing class sizes the least. Districts 10, 20, 24 and 25 are examples of this, with among the largest classes yet all of them in the bottom half for reducing class size. Conversely, the top five districts for reducing class size (18, 6, 19, 5 and 17, determined by the percentage of classes that went down in class size) were all in the half of districts with the smallest class sizes to begin with.

Two notable exceptions are District 21 and 26, with the biggest classes in the city, which were among the top third in reducing class size. However, it appears that in general those districts with the greatest capacity or priority for smaller classes continued those practices while those that had little space or made CSR a low priority made little headway.

IV. Targeting the neediest schools: SINI/SRAP and the coaching schools

The Campaign for Fiscal Equity’s (CFE) report *A Seat of One’s Own*⁶ explores the issue of class size reduction in Schools in Need of Improvement (SINI schools) and Schools Requiring Academic Progress (SRAP).⁷ CFE suggests that Department of Education efforts to reduce class size may be insufficient to the challenge for SINI/SRAP

⁶ Campaign for Fiscal Equity, Inc., November 2007
⁷ Collectively, these schools are known as SINI/SRAP schools.

schools. CFE’s careful analysis of space utilization makes a compelling argument for the creation of more classrooms to reach class size reduction targets.

Expanding school capacity involves years of building and comes under a separate budget, which is beyond the scope of this analysis. However, both SINI/SRAP and targeted coaching schools fall into the special categories of schools where class size reduction is most urgent. In the case of SINI/SRAP schools, class size reduction is considered a step on the road to improving student performance. Coaching schools are low-performing schools that fall into the quartile (25%) of schools with the largest classes—large enough in DOE’s estimation to warrant a special focus on reduction.

Table 7 demonstrates that in SINI/SRAP schools, class sizes are slightly smaller in kindergarten through fifth grade compared to non-SINI/SRAP schools, but SINI/SRAP schools have *larger* classes in the middle grades, 6th through 8th, compared to less-needy schools.

Table 7. Average Class Sizes in SINI /SRAP Schools vs. Non-SINI /SRAPs.

	SINI/SRAP Schools	non-SINI/SRAP schools
Kindergarten	20.09	20.77
1st grade	20.48	21.2
2nd grade	20.67	21.18
3rd grade	20.44	21.11
4th grade	22.09	23.83
5th grade	22.7	24.46
6th grade	25.69	25.26
7th grade	26.5	25.82
8th grade	26.73	26.36

We then looked at SINI/SRAP versus non-SINI/SRAP classes in the largest quartile (25%) by size. Our question was, *How many of the largest average class sizes could be found in SINI/SRAP schools?*

Tables 8 and 9 show the relative percentages of SINI/SRAP schools in the upper quartile for class size compared to non-SINI/SRAP schools. For K-3 a much smaller percent of SINI/SRAP classrooms were in the upper quartile compared with non-SINI/SRAPs, yet the proportions of classes in the highest 25% were almost equal in grades 4-8. While SINI/SRAP classes might have been smaller on average in the early elementary grades, by middle school they were virtually the same as the general population.

Table 8. Grades K-3: Percentage of SINI/SRAP and non-SINI/SRAP classrooms larger and smaller than the upper quartile

	SINI/SRAP	non SINI/SRAP
CS < top 25%	84.6%	73.3%
CS > top 25%	15.4%	26.7%

Table 9. Grades 4-8: Percentage of SINI/SRAP and non-SINI/SRAP classrooms larger and smaller than the upper quartile

	SINI/SRAP	non SINI/SRAP
CS < top 25%	75.5%	74.1%
CS > top 25%	24.5%	25.9%

We also looked at the impact of class size reduction on SINI/SRAP schools by determining the percentage of classrooms that increased, decreased, or stayed the same. This was done by matching classrooms for school, grade, and program type from the 2006-07 school year to the 2007-08 school year.

Table 10 shows the results. Slightly more than half of SINI/SRAP schools decreased in class size this year, a higher percentage than the general population. While this is hopeful, just under half (49%) of the SINI/SRAP schools stayed the same or increased in class size.

Table 10. Change in class size in SINI/SRAP Schools from 2006-07 to 07-08

% of classes that increased class size	41.7
% of classes that stayed the same	7.3
% of classes that decreased class size	51

If we compare the results in Table 10 with those in Table 3, we see that a virtually identical percentage of SINI/SRAP school classes grew in size or were unchanged as those systemwide. If students in SINI/SRAP schools are going to get the chance to raise their academic achievement, these schools must be a special focus of efforts to quickly and significantly lower class sizes. (This finding also underscores the importance of reporting class size data for subgroups. Averages can conceal as much as they reveal.)

Experiment with targeted coaching in schools

The Department of Education defines these schools as:

“... a selected group of low-performing schools with historically high class size as well as capacity in their buildings to permit immediate class-size reduction impact. Principals received direct, practical guidance in class-size reduction strategies, along with priority human resources support to fill vacancies generated through class-size reduction efforts. Among 64 elementary and middle schools in the coaching program, schools achieved an average reduction of 1.2 students per class, or 4.4% fewer students than last year.”⁸

(The number of coaching schools was reduced to 64 from the original 72 after the DOE excluded high schools, 6-12 schools and one school with a large number of “bridge” classes from its original list.)

Since these classrooms in the 64 coaching schools were particularly targeted for reduction, we wanted to see how successful the effort was and what would be the result if

⁸ http://schools.nyc.gov/Offices/mediarelations/NewsandSpeeches/2007-2008/20071219_class_size_report.htm.

it were continued. (Ideally we would have liked to compare the success rate in the coaching schools with the changes across all schools, but those data were not available.)

To measure the mean class size change in the coaching schools over two years, we regressed 2007-8 class size averages (K-8) onto 2006-7 class size averages. Figure 1 shows a scatter plot of this regression.

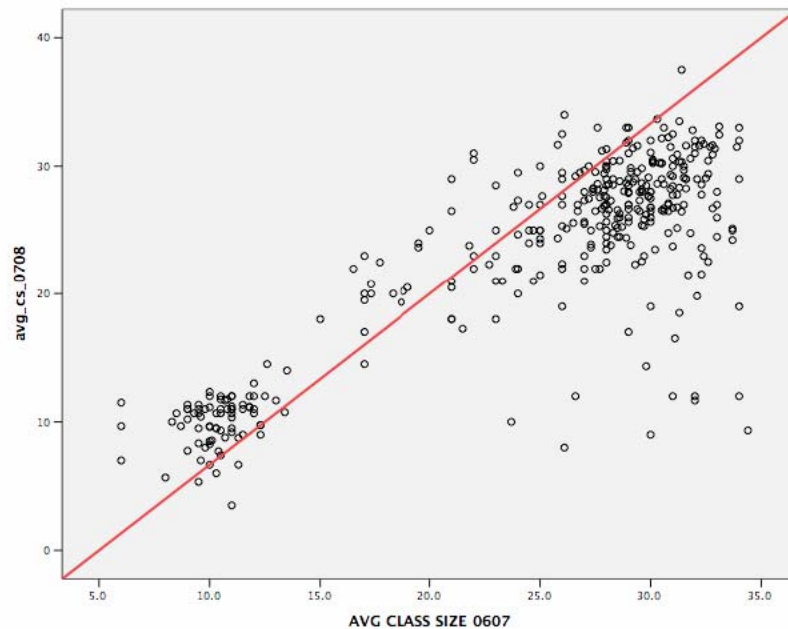


Figure 1: Scatter plot of average coaching class size for 0607 (DV) and 0708 (IV)

The equation that expresses the best-fit line in the scatterplot is:

$$\text{Average class size 0708(for coaching classes)} = 2.75 + .82(\text{average class size 0607})(\text{coaching classes})$$

This equation tells us the relationship of coaching-school average class sizes in 2007-08 to the average class sizes in those schools the previous year. The slope of the line in Fig. 1, which is measured as .82 in the equation above, indicates that class sizes in 07-08 will be 82 percent (plus a small amount, 2.75) of what they were the year before.

By using the equation, we can predict the average class size in coaching schools for 2007-08 and beyond. Table 11 contains the predictions for 2007-08 class sizes based on the results of this calculation.

Table 11: Average predicted class size for 2007-08 in coaching schools based on a regression of 2006-07 onto 07-08

average class size in 0607	20	23	25	27	30	33
predicted average class size in 0708	19.15	21.61	23.25	24.89	27.35	29.81

Based on this regression analysis, targeted coaching schools appear to be making substantial reductions in class size, especially at the higher levels. If the rate were constant over the next few years an average class size of 30 students could be at class size targets for grades 4-8 within three years. Of all the groups covered in this analysis, targeted coaching schools seem to be making the greatest strides toward lower class sizes, though whether that is because they received coaching or because they had the available space cannot be determined from this analysis.

High Schools Analysis

Analysis of high school data are less detailed than that of elementary and middle schools because class sizes were computed differently in the 0607 year than in the current 0708 year and so could not be compared from one year to the next. There is a problem with using CTT classes in the analysis because an undetermined number of schools counted CTT classrooms as two classes. This was an error. When CTT classes are included in the analysis, class size is significantly smaller (see table 12). With the anomalies in reporting, we have decided to use only general education classes in the

analysis. This changes class sizes to what we see in table 13.

Table 12: Average High School Class Size by Subject, including CTT classes

ENGLISH	24.83
MATH	24.66
SCIENCE	26.15
SOCIAL STUDIES	25.94

Table 13: Average HS Class Size by Subject, Citywide without CTT classes

ENGLISH	25.77
MATH	25.41
SCIENCE	26.78
SOCIAL STUDIES	26.86

When we look at high school class size by borough, Staten Island and Queens show the largest class sizes (Table 14).

Table 14: Average HS Class Size by Borough and Subject. Gen. Ed. only.

CORE SUBJECT	Brooklyn	Manhattan	Queens	Staten Island	Bronx
ENGLISH	26.08	24.33	27.37	27.29	24.64
MATH	25.61	24.3	26.79	25.5	24.61
SCIENCE	26.63	26.04	28.33	27.1	25.5
SOCIAL STUDIES	26.89	25.93	28.24	28.25	25.7

Table 15 shows the average class size at the district level. In order to make this amount of data understandable, we've ranked the districts by class size in each core subject and reported the top ten for class size in each (see tables 16-19).

Table 15: Average HS Class Size by CSD without CTT classes

CSD	ENGLISH	MATH	SCIENCE	SOCIAL STUDIES	BOROUGH
1	21.5	22.26	21.44	22.86	Manhattan (M)
2	24.14	24.19	26.49	25.82	Manhattan
3	25.25	25.46	26.75	27.25	Manhattan

4	24.61	25.04	27.36	25.99	Manhattan
5	23.98	22.11	23.48	24.5	Manhattan
6	26.02	25.73	26.02	26.9	Manhattan
7	23.31	23.45	25.26	24.67	Bronx (X)
8	24.52	25.18	26.84	26.61	Bronx
9	24.26	24.81	24.94	25.54	Bronx
10	25.47	25.08	25.35	26.05	Bronx
11	24.79	25.18	25.83	25.84	Bronx
12	23.93	23.39	24.85	24.6	Bronx
13	24.99	26.1	27.15	26.84	Brooklyn (K)
14	23.84	24.01	24.12	24.69	Brooklyn
15	22.99	23.02	25.58	23.86	Brooklyn
16	25.14	25.2	26.45	26.72	Brooklyn
17	24.76	24.42	24.85	25.44	Brooklyn
18	25.52	23.49	24.88	25.55	Brooklyn
19	24.76	24.54	25.57	24.67	Brooklyn
20	28.55	27.94	27.77	28.84	Brooklyn
21	27.88	26.1	27.57	28.77	Brooklyn
22	30.31	28.89	29.09	30.39	Brooklyn
23	25.64	24.91	27.35	26.42	Brooklyn
24	25.44	25.65	25.93	26.33	Queens (Q)
25	25.48	25.27	27.81	27.07	Queens
26	30.18	30.21	30.63	30.45	Queens
27	27.17	26.6	28.39	28.17	Queens
28	28.28	26.92	29.14	29.12	Queens
29	25.62	25.79	26.99	26.85	Queens
30	26.38	25.33	26.74	27.72	Queens
31	27.29	25.5	27.1	28.25	Staten Island (R)
32	22.93	22.77	25.08	24.83	Brooklyn
79	14.46	11.94	14	14.53	Alternative

Table 16: Top ten districts for class size: HS English

Rank	District	Avg Class Size	Borough
1	22	30.31	K
2	26	30.18	Q
3	20	28.55	K
4	28	28.28	Q
5	21	27.88	K
6	31	27.29	R
7	27	27.17	Q
8	30	26.38	Q
9	6	26.02	M
10	23	25.64	K

Table 17: Top ten districts for class size: HS Math

Rank	District	Avg Class Size	Borough
1	26	30.21	Q
2	22	28.89	K
3	20	27.94	K
4	28	26.92	Q
5	27	26.6	K
6	13	26.1	K
7	21	26.1	K
8	29	25.79	Q
9	6	25.73	M
10	24	25.65	Q

Table 18: Top ten districts for class size: HS Science

Rank	District	Avg Class Size	Borough
1	26	30.63	Q
2	28	29.14	Q
3	22	29.09	K
4	27	28.39	Q
5	25	27.81	Q
6	20	27.77	K
7	21	27.57	K
8	4	27.36	M
9	23	27.35	K
10	13	27.15	K

Table 19: Top ten districts for class size: HS Social Studies

Rank	District	Avg Class Size	Borough
1	26	30.45	Q
2	22	30.39	K
3	28	29.12	Q
4	20	28.84	K
5	21	28.77	K
6	31	28.25	R
7	27	28.17	Q
8	30	27.72	Q
9	3	27.25	M
10	25	27.07	Q

Viewing the data this way confirms that certain districts in Queens (26, 27, 28) and Brooklyn (20, 21, 22) have the largest high school core class sizes in the city. Staten

Island consistently has high class sizes at the borough level but only cracks the top ten in two of the four subjects.

More puzzling still are districts that have large high school class sizes in only one subject. District 3 makes the top ten in Social Studies, district 4 in science, but *only in these subjects*. Similarly districts 29 and 24 only make the top ten in math.

As we did with elementary grades, we investigated the presence and size of large classes. Large classes are defined as those in the top 25% for class size, which came out to be class sizes of 28.25 or more. There were 1,276 high school core classes in this category, citywide.

It should be noted that “classes” in the high school case refer to all the classes in a particular subject at a particular school. All the English classes in a school, for example, would contribute to the English class average for that school, even though those could include a number of very small selective English classes, such as advanced fiction-writing class, journalism, or and AP English class.

Finally, we looked at the difference in class size between large schools (more than 1,500 students) and small schools (less than 1, 500 students). The results of that analysis are found in Table 20.

Table 20: Class Size Average by High School Size

	Average Class Size
under 1,500 students	24.49
over 1,500 students	28.26

The overall size of the high school seems to have a significant effect on the size of the classes. We know that small schools had an explicit policy of keeping class sizes

small, and this appears to have worked. But it means that students in large high schools, representing the vast majority of high school students in the city, are denied the very real benefit of smaller classes.

The Next Phase of CSR

Based on the findings here, the “average” class size was reduced in New York City schools in the 2007-08 school year, but the reduction was small. More important, the distribution of class size reduction seemed to be unequal, or at best to follow no particular pattern. Some 40 percent of schools citywide *increased* class size, making the average reduction a matter of little more than statistical interest, especially for the many students in persistently large classes.

Future reports must track the spending of dedicated class size reduction dollars from the state. The current analysis suggests that many schools that received these funds did not reduce class size. But the analysis cannot answer the many questions that arise.

Prioritizing the neediest schools in the way DOE approached it did not appear to result in measurably different results for those schools. It appears that the priority was not implemented effectively except in 64 coaching schools where there was a stronger mandate.