

Family and Student Choices in Boston Public Schools



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Executive Summary

This report utilizes Boston Public Schools' student assignment process data combined with CCE's longitudinal student level database to answer questions about school choice by Boston families. Given the steady decline in BPS enrollment over the last decade, the introduction of more Pilot school and small school options, and recent data showing the successful engagement and performance of Boston Pilot school students, the research questions focus on whether or not families disproportionately choose one of the school types (BPS Pilot schools and other BPS schools) and what happens when families do not receive their first choices through the BPS choice system of student assignment. Key findings from this analysis include:

- ◆ Six of the ten most frequently chosen high schools for 2007-08 are BPS Pilot schools.
- ◆ In 2007-08, more than one quarter of families chose BPS Pilot schools as their first choice while approximately 11% of BPS students are in BPS Pilot schools. Demand for BPS Pilot schools exceeds the supply of available seats.
- ◆ First round BPS and BPS Pilot school choosers were similar demographically.
- ◆ At the major transition grades K2, 1, and 6, BPS Pilot school choosers who did not receive their first choice school were roughly two times more likely than BPS school choosers who did not receive their first choice school to leave the district.

Introduction

The Boston Public Schools (BPS) have a controlled choice plan, allowing families to select and rank order the schools they would like their children to attend. For most elementary and middle schools (except the few citywide schools), family choices are bounded by geographic parameters (North, East, and West Zones). Since, school by school, the demand for and supply of seats is not equivalent, an algorithm takes into account family preferences, proximity to school, and sibling status to determine student assignment. Many schools are oversubscribed and some are undersubscribed. In an effort to help more families receive one of their choice schools, the algorithm was modified beginning with registration for the 2006-07 school year. Even with the algorithm change, families are not guaranteed a seat in their first choice school or in any of their chosen schools.

The Boston Pilot schools were created, in part, to offer increased choice within BPS. Since their inception in 1997, the number of BPS Pilot schools has grown from five schools to 20 schools. Students in BPS Pilot schools now represent 11 percent of the total BPS enrollment. While there has been some research on student selection of BPS Pilot high schools (Doyle and Feldman, 2006), data comparing choice and enrollment patterns in BPS Pilot and other BPS schools has thus far not been analyzed. This brief report provides a quantitative description of student choice in BPS in recent years.

In contrast to the growth of the Pilot Schools Network, overall enrollment in BPS has declined about 10% since 2000, with the loss of about 6400 students.¹ About 27% of Boston's school aged residents attend school outside of the district, in private, parochial, charter, and METCO schools.²

Understanding the school choices that families make for their children will assist school and district personnel to not only meet Boston families' needs but also to create the options that will attract students to district schools, particularly those who choose non-BPS schools.

The guiding questions for this report are:

1. How are families' first choices for schools distributed between school types (BPS and BPS Pilot) and among individual schools?
2. How does whether one receives one's first choice correlate with enrollment in the district?
3. Do students selecting BPS Pilot schools differ demographically from students selecting other BPS schools?

Methods and Limitations

The BPS district provided CCE with student-level, first round, first choice data for Boston Public Schools students for four school years: 2004-05 through 2007-08. For the school years 2004-05 and 2005-06, CCE has corresponding Student Information Management System (SIMS) and Massachusetts Comprehensive Assessment System (MCAS) data for each student, allowing a deeper analysis of school choice and student characteristics. For the school years 2006-07 and 2007-08, CCE has the choice data but has not received the SIMS data. The SIMS data is necessary for identifying a student chooser's grade level, eventual enrollment status, and demographic information. Given space limitations and similarities in the data, we chose to present the data from two of the four school years. For analyses requiring corresponding SIMS data, we share the 2005-06 data. For items regarding the distribution of preferences only, we present the 2007-08 data.

The data from BPS includes first choice data from first round choosers. It does not include any choice data from later rounds of registration. Since the first round is reserved for grades K2, 1, 6, and 9, only data from those grades is included in this report.

The only BPS Pilot high schools included in the 2004-05 and 2005-06 choice data are TechBoston Academy and Another Course to College. Other Pilot high schools used a different process for enrolling students and were not listed as choices on the school selection forms. Therefore, the high school grade 9 choice data presented in this paper is limited to 2007-08, when all BPS Pilot high schools were listed on the school selection forms.

¹ Data can be found at <http://www.bostonindicators.org/IndicatorsProject/Education/Indicator.aspx?id=3432>.

² Data can be found at <http://www.bostonpublicschools.org/bps/bpsglance.asp>.

Table 1: Years of Data Available for this Report

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
CCE database, with SIMS	X	X	X	X	X		
Choice data from BPS				X	X	X	X

Data for this report was cleaned, coded, and analyzed using SPSS and Microsoft Excel consistent with the methods described in earlier research reports (Tung, Ouimette, & Rugen, 2006; Tung & Ouimette, 2007). First choice data was incorporated into the multi-year, student-level database used in the aforementioned reports. In addition to a “first choice school” variable, two other variables were created specifically for this analysis: “first choice school type” and “received first choice.” The “first choice school type” variable categorizes schools as either BPS Pilot schools or other BPS schools. The “received first choice school” variable indicates whether a student received his or her first choice school as determined by whether the student was enrolled in his/her first choice school as of the end of the school year.³

Some schools were excluded from the analysis. Given that exam schools have a separate admissions process, the choice data does not include exam school preferences; therefore, all exam school students were excluded from the analysis. In addition to exam school students, students attending special population schools were also excluded from the analysis.⁴ Four schools which are not listed on the choice form were also excluded from the analysis: two Horace Mann Charter Schools, Health Careers Academy and Boston Day and Evening Academy; and two schools specifically for overage students, Greater Egleston Community High School and Boston Adult Technical Academy. Two additional schools were excluded from the high school analysis for 2007-08: Josiah Quincy Upper School, a grades 6-12 school, and Boston International High School, a school which only enrolls newcomer English Language Learners.

Findings

Question 1: How are families’ first choices for schools distributed between school types (BPS and BPS Pilot) and among individual schools?

A. School Type Choices

In order to answer Question 1, we analyzed the school type choices for the most recent years available for each of the major transition grades. To provide context for the choice data, we also analyzed enrollment proportions by school type. BPS Pilot schools account for approximately 11% of the district enrollment.⁵

³ This includes students who were assigned to a district school but did not attend a district school in a given school year.

⁴ Students attending the following BPS special population schools were excluded from the analysis: Carter Center, Community Academy, Expulsion Alternative Program, Horace Mann, McKinley Schools, Middle School Academy, and Young Adult Center.

⁵ For the purposes of calculating 2007-08 total enrollment only, Gardner 2005-06 enrollment totals were added into the BPS Pilot totals.

Families' and students' first round, first choice preferences for the 2007-08 school year were analyzed by school type. Table 2 shows both the overall proportion of preferences by school type as well as the enrollment proportions of schools by grade span and school type. While 26% of all first choices were for BPS Pilot schools, only 11% of seats were in BPS Pilot schools. Therefore, families chose BPS Pilot schools for the current school year at a rate more than twice the district enrollment proportions for BPS Pilot schools.

Table 2: Proportion of All Choosers and Enrollment Proportion of Schools by School Type (in Percent), 2007-08

	Proportion of all First Round Choosers	Enrollment Proportion
BPS	74	89
BPS Pilot	26	11

First round, first choices are limited to the transition years of elementary, middle, and high school (Grades K2 and 1, Grade 6, and Grade 9). As shown in Table 3, BPS Pilot enrollment ranged from 6% to 17% of the total non-exam school population in the transitional grades. The first choices for these grades were analyzed by school type, as shown in Table 4. Comparing BPS Pilot school enrollment proportions at each grade level (Table 3) with proportion of choosers at each transition grade (Table 4), we find families choosing BPS Pilot schools at a rate 1.5 to 3 times their district enrollment proportion depending on the grade.

Table 3: Enrollment Proportion of Schools by Transition Grade and School Type (in Percent), 2005-06

	Grades K2 and 1	Grade 6	Grade 9
BPS	94	83	89
BPS Pilot	6	17	11

Table 4: Proportion of All Choosers by School Type for Transitional Grades (in Percent)

	2005-06 K2 and 1	2005-06 Grade 6	2007-08 Grade 9
BPS	87	73	64
BPS Pilot	13	27	36

The analyses captured by Tables 2-4 show that at each grade level, the rate of demand for BPS Pilot schools among first round, first choices exceeds the enrollment proportion in BPS Pilot schools. At the high school level, 36% of all first choices were BPS Pilot schools, while these schools only serve 11% of all non-exam high school students in Boston.

B. Individual School Choices, High School, 2007-08

Table 5 shows the number of students selecting each Boston high school for 2007-08 and the rank order of preference for each high school. The range of first choices for each individual school was from 377 students selecting Muriel S. Snowden International School at Copley to 5 students selecting Academy of Public Service. The six BPS Pilot high schools in the analysis were among the top ten highest chosen high schools in the district (shaded rows).

Table 5: High School Choices Ranked by Number of Choosers, 2007-08

2007-08 High School Choice	Number of Students Selecting as 1st Choice
Muriel S. Snowden International School at Copley	377
Madison Park Technical Vocational High School	360
Fenway High School	273
Boston Arts Academy	199
East Boston High School	194
Brighton High School	169
Another Course to College	147
New Mission High School	130
TechBoston Academy	120
Boston Community Leadership Academy	110
Parkway Academy of Technology and Health	86
Media Communications Technology High School	77
The English High School	72
Brook Farm Business and Service Career Academy	63
Excel High School	56
Urban Science Academy	47
Charlestown High School	39
Monument High School	37
The Engineering School	32
Social Justice Academy	25
Community Academy of Science and Health	24
Odyssey High School	23
Jeremiah E. Burke High School	19
Edward G. Noonan Business Academy	16
Academy of Public Service	5

Because high schools in Boston range in size, the next analysis corrected for school size by computing the ratio of school choosers to school size.⁶ In Table 6, high schools are ranked in order of family and student preference after this school size correction. Six of the top seven most chosen schools were BPS Pilot high schools when school size was taken into account. Twelve of the top thirteen most chosen schools were small schools, with the exception being Madison Park Technical Vocational High School.

Table 6: High School Choices Ranked by Number of Choosers After Correcting for School Size, 2007-08

2007-08 High School Choice	Rank of Preference After Correcting for School Size
Fenway High School	1
Muriel S. Snowden International School at Copley	2
Another Course to College	3
New Mission High School	4
Boston Arts Academy	5
TechBoston Academy	6
Boston Community Leadership Academy	7
Parkway Academy of Technology and Health	8
Madison Park Technical Vocational High School	9
Media Communications Technology High School	10
Brook Farm Business and Service Career Academy	11
Urban Science Academy	12
Excel High School	13
East Boston High School	14
Brighton High School	15
Monument High School	16
The Engineering School	17
The English High School	18
Social Justice Academy	19
Odyssey High School	20
Community Academy of Science and Health	21
Edward G. Noonan Business Academy	22
Charlestown High School	23
Jeremiah E. Burke High School	24
Academy of Public Service	25

The analogous individual school choice analysis for schools serving K-8 students was more complex because of the diversity of grades served, grades at which students enter the school, and lack of information about which grade students were choosing. The schools in the K-8 data set included Early Education Centers, Early Learning Centers, K-5, 6-8, and K-8 schools. In addition, most schools serving the elementary and middle grades are zone schools rather than

⁶ School size data was downloaded from <http://profiles.doe.mass.edu>.

citywide schools, which means that they serve one of three distinct populations of students within the city of Boston. Given the complexity of the data and lack of corresponding SIMS data, first round, first choice data for students entering grades K2, 1, and 6 are not shown in this report.⁷

In summary, the analyses by high school type and by individual school provide evidence that BPS Pilot high schools are more frequently chosen than many other BPS schools. At the high school level, after accounting for school size, all but one of the most frequently chosen schools are BPS Pilot schools.

Question 2: How does whether one receives one’s first choice correlate with enrollment in the district?

As shown in the previous section, given the distribution of first choice preferences, many families and students do not receive their first choice school. At each major transition grade, a comparison of students who did and did not receive their first choice schools revealed differences in the eventual enrollment in the district by school type.

The percentages of choosers who did not enroll in a BPS or BPS Pilot school are shown in Tables 8 and 9 for school year 2005-06. In grades K2 and 1, 7% of students who received their first choice BPS Pilot school “did not report” to a district school compared to 9% of students who received their first choice BPS school. However, students who did not receive their first choice BPS Pilot school “did not report” at 36%, compared with 16% for BPS choosers. BPS Pilot choosers who did not receive their first choice school left the district at more than twice the rate of BPS choosers who did not receive their first choice school.

Table 8: Proportion of Kindergarten and First Grade Choosers Who Subsequently Did Not Attend a District School, by School Type (in Percent), 2005-06

K2 and 1 in 2005-06	Did not receive first choice	Received first choice
BPS	16	9
BPS Pilot	36	7

At grade 6, the difference in enrollment between those who did and did not receive their first choice was somewhat less than at grades K2 and 1. Students who chose BPS Pilot schools but did not receive their first choice left the district at 24%, compared with 14% of students who chose BPS schools but did not receive their first choice.

Table 9: Proportion of Grade 6 Choosers Who Subsequently Did Not Attend a District School by School Type (in Percent), 2005-06

Grade 6 in 2005-06	Did not receive first choice	Received first choice
BPS	14	9
BPS Pilot	24	11

⁷ Boston Public Schools publishes its own school choice analysis for these grades at <http://boston.k12.ma.us/register/documents.asp>.

The same analysis was not conducted for Grade 9 choosers because in 2005-06, the last year for which we have corresponding eventual enrollment data, most Pilot high schools had a separate application process from the district student assignment policy and were not listed as choices on the registration form. The only Pilot high schools included in the regular choice process that year were TechBoston Academy and Another Course to College.

To summarize the analyses for question 2, families who did not receive their first choice schools left the district at greater rates than those who received their first choice schools. When analyzed by school type, more than one third of families who chose BPS Pilot schools for grades K2 or 1 and almost one quarter of families who chose BPS Pilot schools for grade 6 left the district if they did not receive their first choice. Families who chose other BPS schools left the district as well, but at far lower rates.

Question 3: Do students selecting BPS Pilot schools differ demographically from students selecting other BPS schools?

To obtain a profile of students entering 6th grade in 2005-06 (the last year for which we have SIMS data to match choice data), the 2004-05 demographics of all first round, first choice choosers were analyzed by school type. The data from 2004-05 was used because some relevant indicators may change from one school year to the next, including enrollment in a BPS Pilot school, special education classification, English language learner program status, and out of school suspensions. This analysis showed that students who enter the choice process for BPS or BPS Pilot schools at grade 6 are comparable across a range of indicators (Table 10).⁸

There were no large differences by eligibility for free/reduced-price lunch, gender, special education status, ELL program status, or suspension rates by choice of school type. The proportions of racial/ethnic groups were similar in the two school types, with the exception of Latino students, where there is an 8 percentage point difference. The greatest difference between the choosers of each school type was that BPS Pilot choosers were more likely to have attended a BPS Pilot school in grade 5.

⁸ For this analysis, students had to be enrolled in the district in the previous year. Therefore, the analogous analysis for grades K2 and 1 choosers is not included. Grade 9 choosers were not analyzed because only two Pilot high schools were included on the school selection form that year.

Table 10: Proportions of Grade 6 Choosers in Each Subgroup by School Type (in Percent), 2005-06

	BPS	BPS Pilot
Eligible for Free/Reduced-Price Lunch	85	81
Female	50	56
Asian	9	13
Black	44	46
White	13	14
Latino/a	34	26
Pilot Student	1	12
Not in Special Education	82	83
Not in ELL program	95	97
Suspended	6	5

Summary of Findings and Discussion

The Boston Public School district has experienced declining enrollment since 2000, with the loss of about 6400 students in that period. Over the same time period, about a quarter of Boston school-aged residents have annually chosen other options, such as private, parochial, charter, and METCO schools.⁹ For the more than 4,000 students who attended charter schools in 2007-08, BPS lost more than \$42 million (approximately \$8759/charter school student when tuition and reimbursements were taken into account).¹⁰

In contrast, Boston Pilot schools experienced tremendous growth from 1997-2004. In that time, the number of BPS Pilot schools quadrupled, and BPS Pilot school enrollment increased seven-fold. It is likely that the growth in the number and enrollment of the BPS Pilot schools prevented a steeper enrollment decline in the district's schools. In addition to being highly selected, Pilot schools have demonstrated success with their students at all grade levels, outperforming other BPS district schools across a range of indicators such as attendance, suspensions, retentions, mobility, MCAS, and graduation rates (Tung, Ouimette, & Rugen, 2006; Tung & Ouimette, 2007). Despite the impressive aggregate performance of BPS Pilot schools, only one new BPS Pilot school has been approved in the last four years. And that was after a two year delay.

The findings in this report show that the rate of demand for BPS Pilot schools exceeds the supply of BPS Pilot school seats by more than two-fold. These schools are some of the most highly chosen schools in the district, with the number of choices exceeding the schools' capacities at all grade levels. When BPS Pilot school choosers do not receive their first choice, they leave the district at far higher rates than other BPS school choosers. In summary, key results of the analysis are that:

⁹ Data can be found at <http://www.bostonpublicschools.org/bps/bpsglance.asp> and <http://www.bostonindicators.org/indicatorsproject/education/indicator.aspx?id=3402>.

¹⁰ Personal communication, J. McDonough, BPS Chief Financial Officer, June 11, 2008.

- ◆ Six of the ten most frequently chosen high schools for 2007-08 are BPS Pilot Schools.
- ◆ In 2007-08, more than one quarter of families chose BPS Pilot schools as their first choice while approximately 11% of BPS students are in BPS Pilot schools. Demand for BPS Pilot schools exceeds the supply of available seats.
- ◆ First round BPS and BPS Pilot school choosers were similar demographically.
- ◆ At the major transition grades K2, 1, and 6, BPS Pilot school choosers who did not receive their first choice school were roughly two times more likely than BPS school choosers who did not receive their first choice school to leave the district.

In previous analyses, CCE has shown that 8th graders from outside BPS enter the BPS school system in the 9th grade at higher rates to attend Pilot schools than to attend BPS schools: 25% of entering freshmen at BPS Pilot schools compared with 16% of entering freshmen at other non-exam BPS schools enter from outside the district (Tung & Ouimette, 2007). BPS Pilot schools attract new families if they get their first choice, and at the high school level, they bring families into the system who had previously sought schooling outside the district.

Clearly, there is an unmet need in Boston. Families choosing BPS Pilot schools, while similar demographically to those choosing other BPS schools, choose them at disproportionate frequencies relative to the available seats and leave the district at disproportionate rates if they do not receive their first choices. Currently, over 20,000 Boston residents attend schools outside the district. In a time of declining enrollment and increasing budget deficits, by creating more BPS Pilot schools the district would encourage families to stay in or return to Boston Public Schools.

References

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