RENNIE CENTER
for Education Research & Policy

POLICY BRIEF

Are Boys Making the Grade? Gender Gaps in Achievement and Attainment

Introduction

The national media have fixed their interest on a brewing controversy in public education. Lead stories in *Newsweek* and the *National Review,* as well as features on the *Today Show* and *PBS,* have recently declared a crisis in boys' achievement. After a generation of national panels, funding efforts, and policy interventions designed to remedy the problem of *girls* being shortchanged by the education system, a growing body of evidence suggests that the pendulum may be swinging in the other direction–that the practices of contemporary American schools may favor females at the expense of their male peers.

Though media attention to the issue has reduced it to sound bites designed to emphasize a single perspective, interpreting gender differences in education, and their consequences, is in fact a complicated task. Data exist to support certain advantages for females and others for males. Consider, for example, that colleges graduate 133 females for every 100 males.[1] Yet, women's earnings remain little more than 75% of men's. During the K-12 school years, girls have long tested better in reading and writing on national exams.[2] However, boys outperform girls in math and science tests, though the gap between the sexes is narrowing in these subject areas.[3] Disparities between the genders exist to be sure, yet is the picture as one-sided as the media portray?

The goal of this brief is to examine the gender gap in educational achievement and attainment, focusing specifically on students in Massachusetts. The primary question of this research is: *What differences in enrollment and achievement exist between males and females in Massachusetts public schools?* The research includes analysis of:

- MCAS[4] achievement in math in grades 4, 8, and 10;
- MCAS achievement in English language arts (ELA) in grades 4, 7, and 10;
- Dropout rates;
- Special Education placement; and
- Enrollment changes between grade levels during high school.

1 Peter, K. and Horn, L. (2005). *Gender differences in participation and completion of undergraduate education and how they have changed over time.* Washington, D.C.: U.S. Department of Education.

2 National Center for Education Statistics (2000). *Trends in educational equity for girls and women.* Washington, D.C.: U.S. Department of Education.

3 Viadero, D. (3/15/2006). Concern over gender gaps shifting to boys. *Education Week 25,27, p.2.*

4 MCAS refers to the Massachusetts Comprehensive Assessment system, the statewide standardized test administered annually to students at multiple grade levels in multiple subject areas.

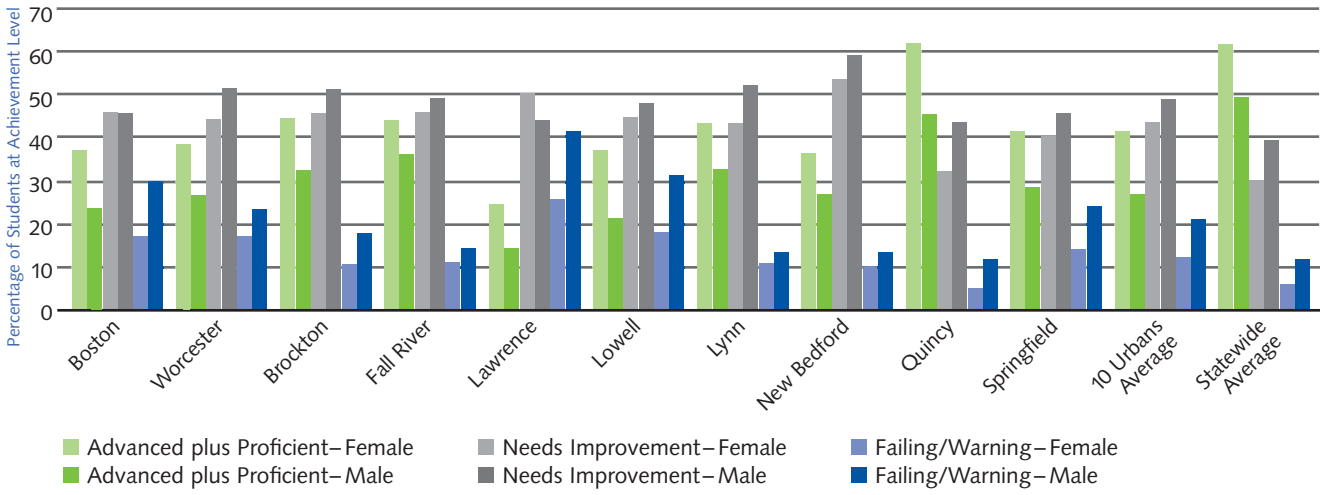
Because it is clear that gaps also exist between racial sub-groups of students, we extended our analysis to include this variable. We examine the intersection of race and gender, comparing the enrollment patterns of Black boys to Black girls, Hispanic boys to Hispanic girls and White boys to White girls. This research is based on data provided by the Massachusetts Department of Education for 2004 and 2005.

Analysis of Achievement on MCAS

Data from the National Assessment of Educational Progress (NAEP), which is administered to students across the nation, indicate that girls hold a growing advantage in English language arts, while they are narrowing the male advantage in math and science. We sought to determine whether these patterns held for students in Massachusetts. What we found was an even greater advantage for girls. In Massachusetts, the achievement of girls not only exceeds the achievement of boys in English language arts at all grade levels, girls are generally outperforming boys in math as well.

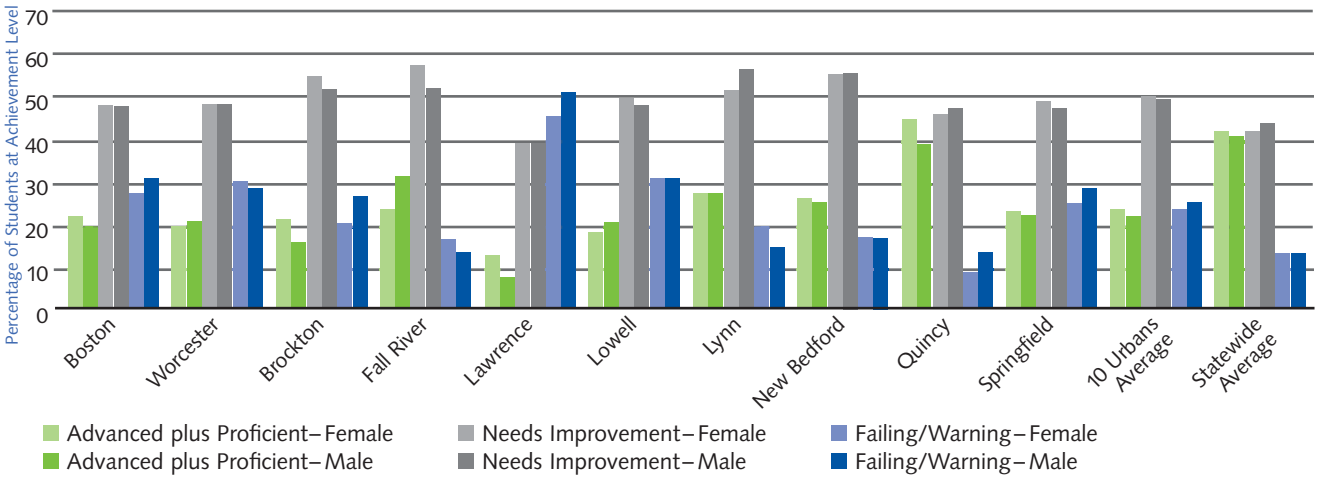
For each MCAS test category below, we present statewide means for all boys compared to all girls. Because it has been hypothesized that gender-based disparities in achievement may be particularly pronounced in urban areas, our reporting includes individual data from the ten largest urban districts in the state as well as the mean of those ten districts. Students earn one of four designations on MCAS: (1) Advanced, (2) Proficient, (3) Needs Improvement or (4) Failing/Warning. In this brief, advanced and proficient scores are grouped together.

MCAS Grade 4 ELA Results by Gender



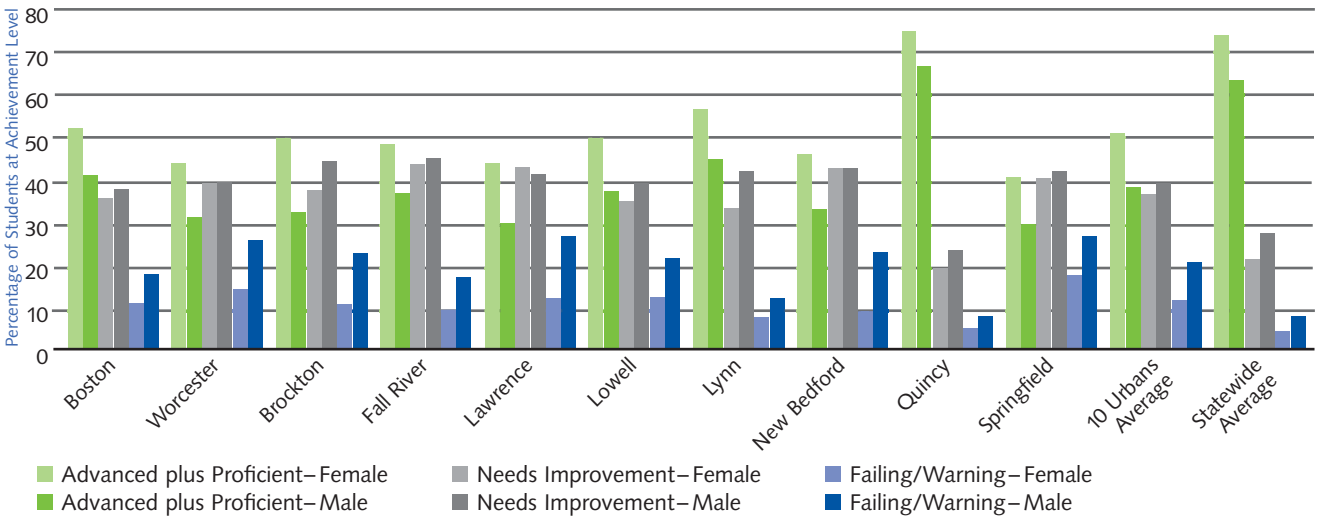
On the fourth grade ELA MCAS exam, girls consistently outperform boys. In each of the urban districts included here, a greater percentage of girls than boys scored proficient or above (41% of girls versus 29% of boys), and a greater percentage of boys did not pass the exam (12% of boys versus 7% of girls). This reflects a trend that exists statewide from urban to suburban to rural districts.

MCAS Grade 4 Math Results by Gender



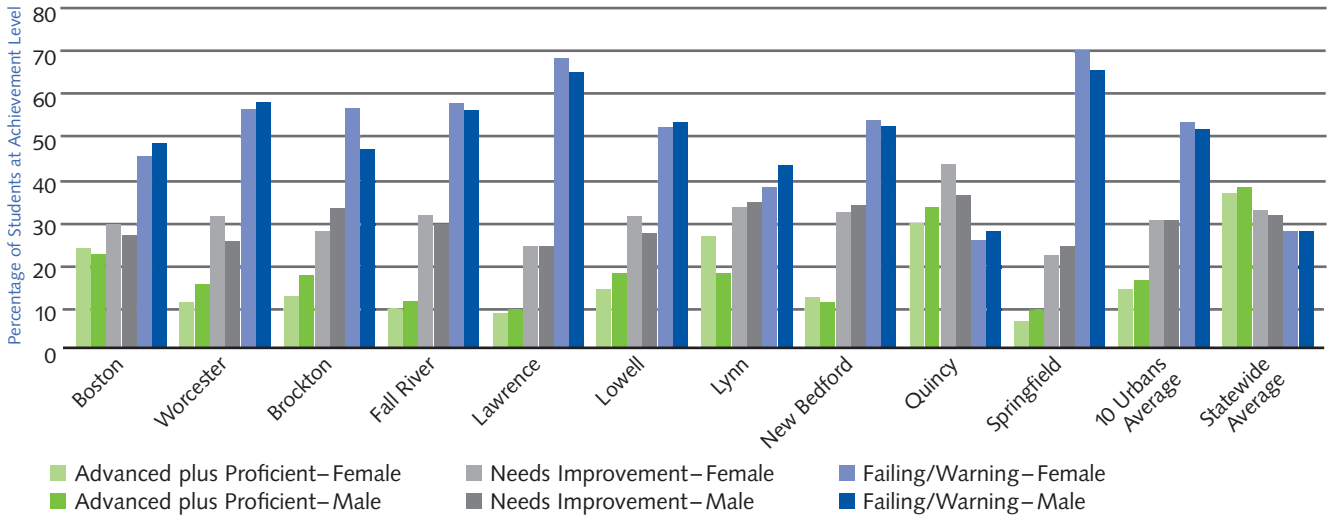
Statewide pass rates for males and females on the grade 4 math MCAS are roughly equivalent–86% of all boys and 86% of all girls earned passing scores. However, the percentage of girls scoring in the advanced and proficient categories edges out the percentage of boys, both across the state and in the majority of urban areas. Correspondingly, boys in urban areas are more likely than girls to score in the failing category. Only Worcester, Fall River and Lynn have greater percentages of boys passing than girls.

MCAS Grade 7 ELA Results by Gender



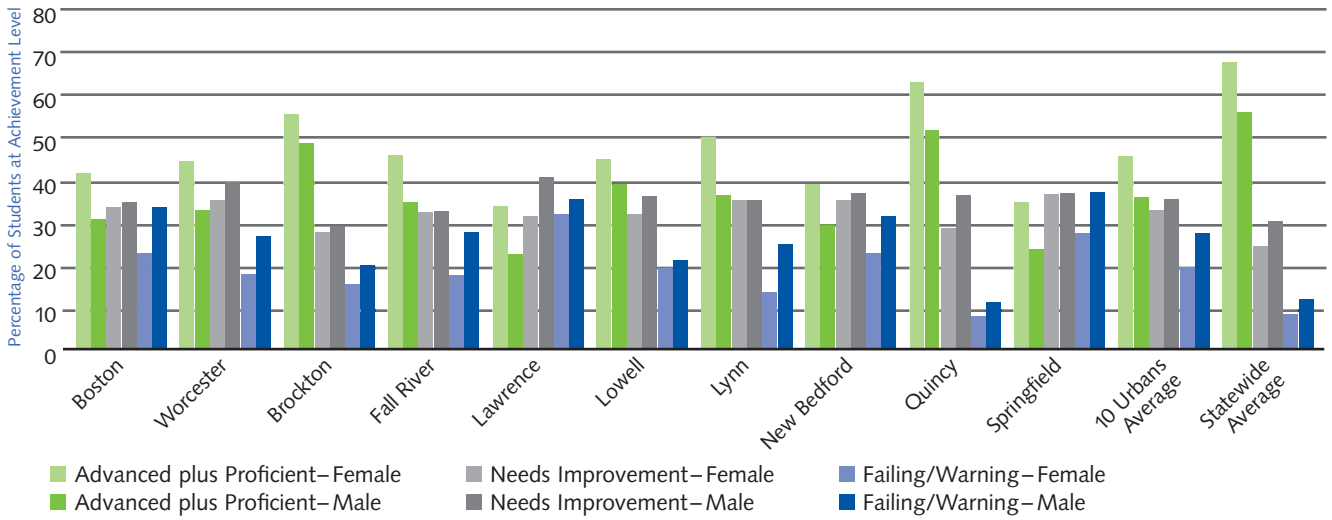
Girls substantially outperform boys on the grade 7 ELA MCAS exam. Boys are underrepresented in the advanced and proficient categories. Further, the percentage of boys in the failing category (9% statewide) is nearly double the percentage of girls (5% statewide). This trend is evident both in terms of the statewide mean as well as the mean in the ten largest urban areas.

MCAS Grade 8 Math Results by Gender



Statewide, 71% of males and 71% of females passed the 8th grade math MCAS. Despite this similarity, this is the one category in which boys' performance otherwise slightly surpasses girls'. According to statewide means, boys are more likely to demonstrate mastery by scoring in the advanced or proficient categories. In seven of ten urban districts, greater percentages of boys than girls score proficient or better and, in five of ten urban districts, boys pass at higher rates than girls.

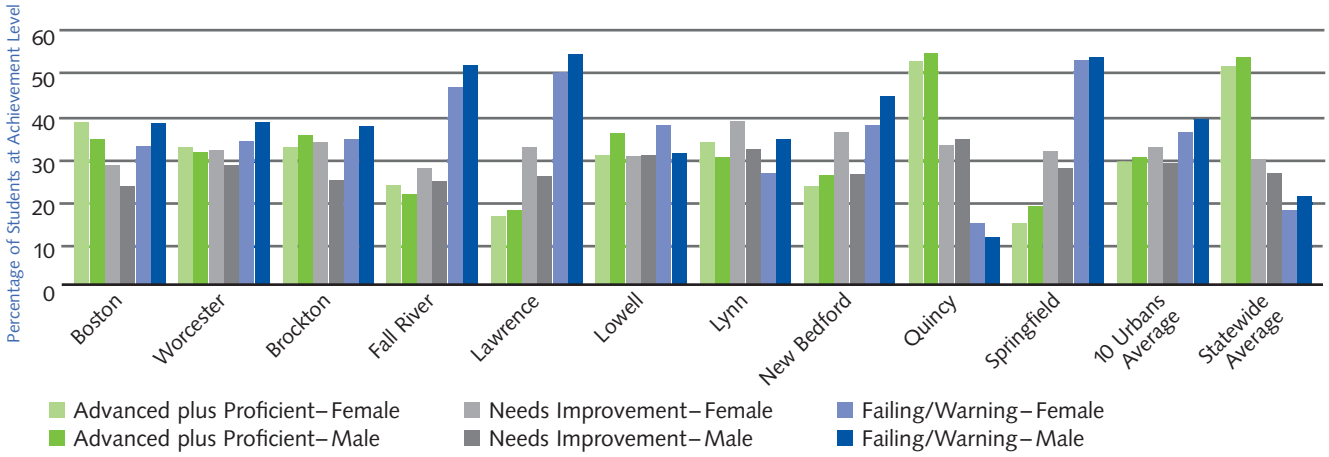
MCAS Grade 10 ELA Results by Gender



Girls – both in the ten largest urban districts and across the state – pass the grade 10 ELA MCAS at substantially higher rates than boys. All but two of the ten largest urban districts post double-digit differences between the percentage of girls scoring proficient or better and the percentage of boys scoring proficient or better (mean for girls in urban areas = 46% versus 36% of boys in urban areas).[5] Gaps between boys and girls on the grade 10 ELA MCAS are slightly greater in urban areas than the statewide mean.

5 In Brockton and Lowell girls hold a slightly smaller performance advantage.

MCAS Grade 10 Math Results by Gender



Both in terms of the mean of all students statewide and in terms of the mean among the ten largest urban districts, girls pass the 10th grade math MCAS at higher rates than boys. However, a slightly larger percentage of boys than girls are represented in the proficient and advanced categories (52% of boys versus 51% of girls statewide). Girls are generally more likely than boys to fall into the needs improvement category.

Summary of Achievement Data

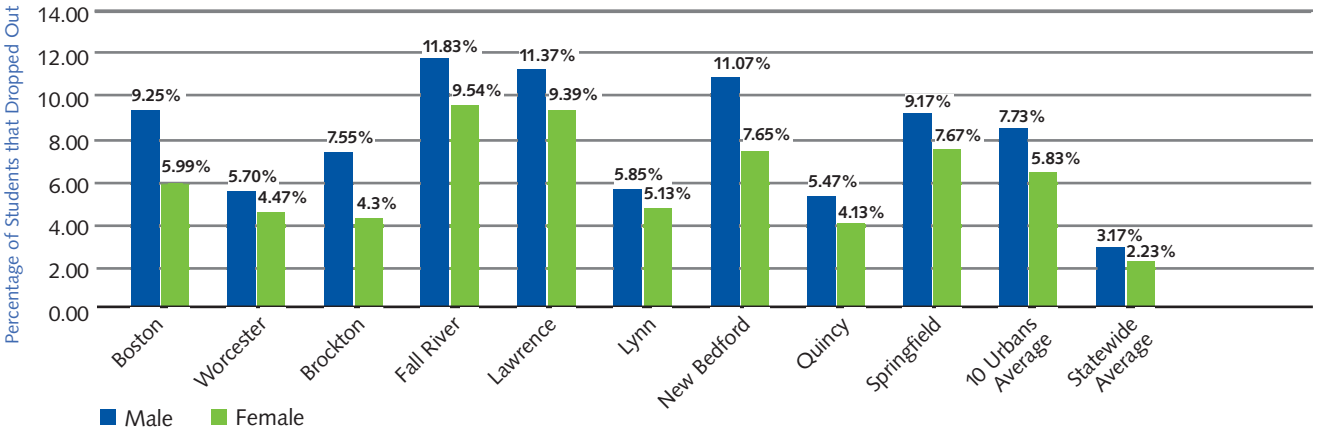
Massachusetts English Language Arts test data reinforce the conclusions of prior national research: girls hold a sizable performance advantage over boys across grade levels. However, the surprising finding of this analysis is that boys do not hold any advantage in mathematics on the MCAS. In terms of math testing, girls have caught up with–and in the case of performance at grade 10, actually surpassed–boys. Moreover, this research indicates that inequities between male and female students are greatest in high school. Girls' performance relative to boys' (in both math and ELA) is strongest in grade 10.

This gender-based achievement gap is not exclusively a concern for urban educators. Test scores for boys as well as girls in urban areas are lower than the statewide means for each respective gender. However, statewide means reveal that gaps between boys' and girls' achievement prevail in districts across the state.

Analysis of Enrollment Patterns

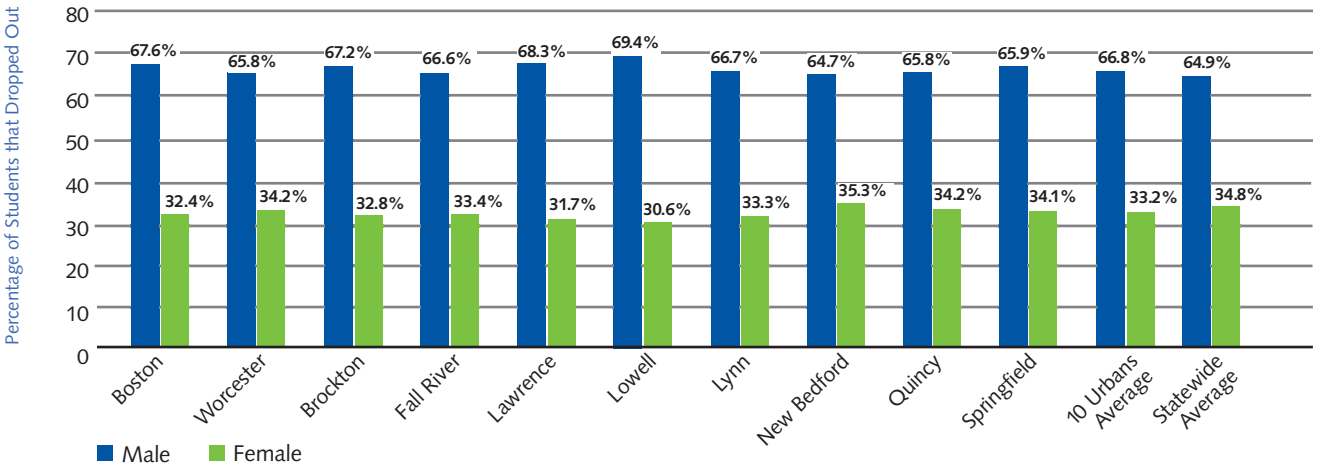
Achievement on the MCAS only captures the performance of students who remain in the public school system. To more fully understand the gender gap in education, it is also important to consider gender gaps in attrition from the system as well as whether the content of boys' educational experience differs from girls'. The following analyses of the gender difference in dropout rates, special education participation and student attrition further illustrate the extent of the gender gap in Massachusetts.

Dropout Rates by Gender



Across the state and, specifically, in the ten largest urban districts, dropout rates are higher for boys than girls. Dropout rates for both boys and girls in urban areas exceed the statewide average. For example, the dropout rate among urban girls is substantially higher than the state average for boys. New Bedford, Brockton and Boston have the greatest gaps between boys' and girls' dropout rates.

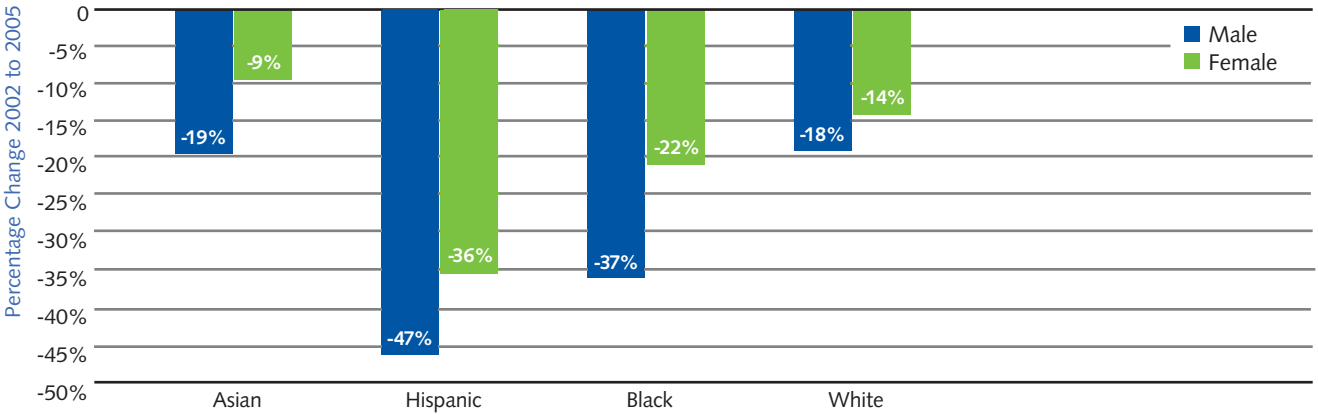
Special Education Participation by Gender



Statewide more than two-thirds of special education placements are males. There is remarkable consistency across urban districts on this statistic. In the top ten urban districts, the percentage of males in special education is only slightly higher than the overall state average. Recent research in the Boston Public Schools determined that most students in special education were males from minority populations. 84% of all special education students in the city are Black and Hispanic.[6]

6 Guiney, E.C., Cohen, M.A., and Moldow, E. (2006). *Escaping from old ideas: Educating students with disabilities in the Boston Public Schools.* Boston, MA: Boston Plan for Excellence.

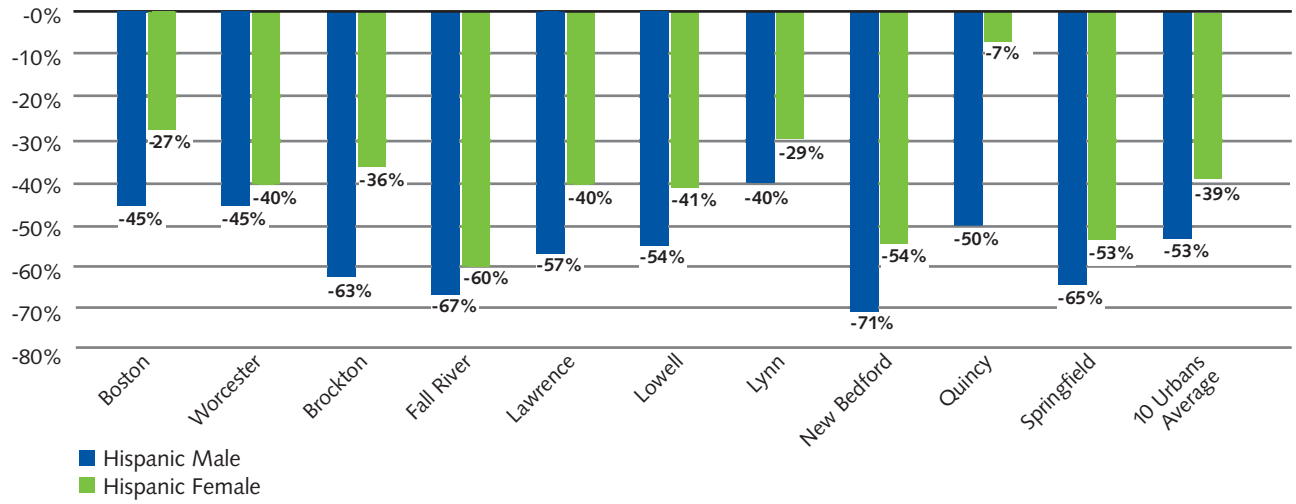
Enrollment Changes between Grades 9 and 12 by Gender and Ethnicity



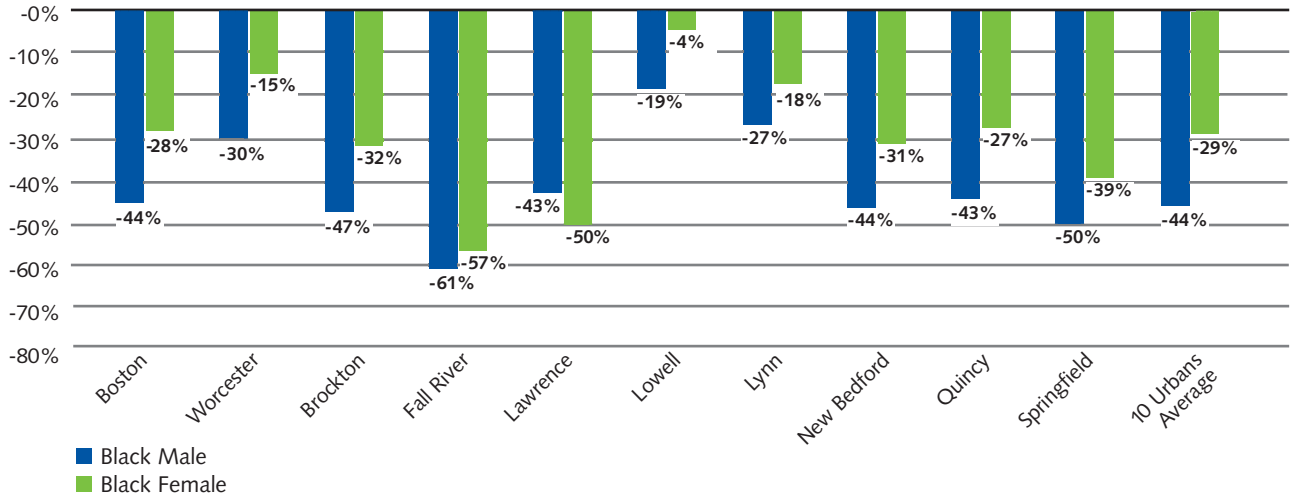
While dropout rates offer a snapshot of the number of students that leave a given school system in a given year across all high school grades, it is also possible to analyze a single cohort of students over time as they advance through the system. By tracking enrollment of the same class of students from grades 9 through 12, we are able to obtain a rough estimate of the attrition that occurs within one cohort of students over the four years of high school. Enrollment changes can be the result of pure attrition from the education system, but they also capture mobility (e.g. when a student moves from Massachusetts to another state, they are counted as enrolled in Massachusetts one year and not enrolled the next).

Regardless of the reason for attrition, it is evident that, among the Class of 2005, enrollment plummeted between the 9th and 12th grade years. There were 80,394 ninth graders in 2002, but only 63,852 twelfth graders four years later – a 21% change. Male enrollment declined 23%. However, when enrollment patterns are disaggregated by ethnicity, a clearer picture emerges. Blacks and Hispanics – especially males – account for much of the enrollment decline. The number of Hispanic males enrolled in Massachusetts schools in grade 12 (2,569) is barely more than half the number that had entered as 9th graders four years earlier (4,829).

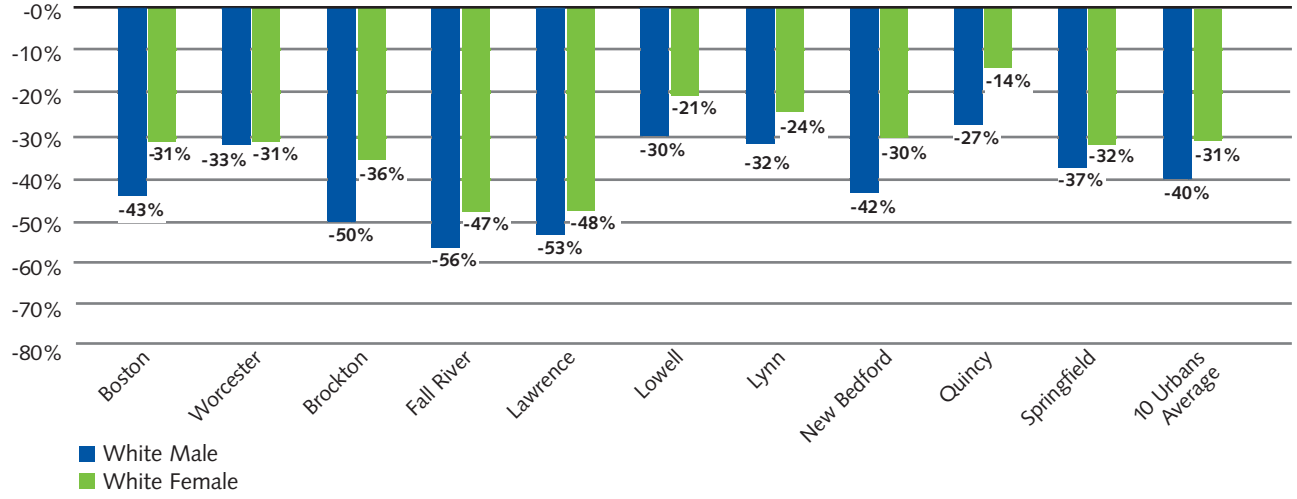
Hispanic Student Attrition between Grades 9 and 12



Black Student Attrition between Grades 9 and 12



White Student Attrition between Grades 9 and 12



Summary of Enrollment Data

Massachusetts student data on enrollment, special education placement and dropout rates reinforce concern that boys are falling behind girls in terms of educational attainment. In each case, our analyses revealed a decided gender gap that favored girls. Our data also indicate that Black and Hispanic boys may be at the greatest long-term disadvantage because they are departing the system prior to graduation in the largest numbers.

Conclusion

It is clear that girls are now matching and surpassing the achievement of boys, even in math–a subject traditionally believed to be male-dominated. Enrollment trends further support the notion that boys are struggling in our public schools. We offer the following recommendations to ensure that boys and girls are both receiving equitable educational opportunities.

Permit experimentation. While certain private schools tout the success of a single-sex education, such complete gender segregation is not a feasible response for the larger public system. However, the federal government is considering allowing more flexibility on single-sex instruction; and public schools in 32 states have begun to offer separate classes for boys and girls, largely on a pilot basis.[7] Massachusetts law (Chapter 76 Section 5) prohibits discrimination of any kind and the state Department of Education has interpreted that to include schools or classes made exclusively available to one gender. However, districts and schools might begin to experiment with single-sex instruction in extended day programs or enrichment activities. For example, a school might offer two parallel sections of an after-school MCAS remediation course–one designed for girls and a second designed for boys.[8] Such experiments with single-sex education could and should be researched thoroughly from the outset.

Incorporate information about gender differences into teacher training. Emerging research in cognitive science and developmental psychology informs us that males and females learn and mature in different ways and at differing rates. These differences have implications for what strategies will be most effective with them in the classroom. Moreover, boys and girls often develop different interests based on the gender cues that exist in the larger society. Aspiring teachers need to be trained to understand these differences and incorporate methods for engaging both genders equitably into their teaching.

Pay particular attention to certain sub-groups of boys. The effects of the gender gap exacerbate existing achievement gaps between students of different racial and ethnic backgrounds. The sharp declines in enrollment among Black and Hispanic males are just one indicator that these subgroups of boys need particular attention. Additional research clarifies that these subgroups of boys are typically at the lowest end of the achievement spectrum.[9] Black and Hispanic boys, especially, would benefit from stronger recruitment of minority male teachers and mentors. Dropout prevention and MCAS remediation efforts must focus heavily on these communities of males.

This brief outlines the challenges we face with male students in Massachusetts. The gender gap is real and has a negative affect on boys, most notably Black and Hispanic boys. Here, we mark a starting point in the research. We recommend the following future paths for research: (1) Much more needs to be done to understand how race and gender interact and produce joint effects on achievement. (2) Current experimentation in single-sex public education should be carefully examined. And, (3) enrollment changes, especially of Black and Hispanic boys, need to be more carefully tracked to determine what happens to these students after they leave the high school they attended in ninth grade. We urge these next steps in research as well as changes in practice to ensure that boys will be able to make the grade in Massachusetts in the future.

7 http://www.singlesexschools.org/schools-classrooms.htm

8 To comply with current regulations, if a boy wanted to enroll in a course designed for girls (or vice versa), the school would be legally bound to allow the boy into the class.

9 Schott Foundation for Public Education (2004). *Black boys: The litmus test for public school education*. Cambridge, MA: Author.

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In an effort to promote public discourse on educational improvement and to inform policy discussions, the Rennie Center periodically publishes policy briefs, which are broadly disseminated to policymakers and stakeholders in the public, private, nonprofit and media sectors. Policy briefs contain independent research on issues of critical importance to the improvement of public education. Briefs are designed to present policymakers and opinion leaders with just-in-time information to help guide and inform their decisions on key educational issues.

About the Rennie Center

The Rennie Center's mission is to develop a public agenda that informs and promotes significant improvement of public education in Massachusetts. Our work is motivated by a vision of an education system that creates the opportunity to educate every child to be successful in life, citizenship, employment and life-long learning. Applying nonpartisan, independent research, journalism and civic engagement, the Rennie Center is creating a civil space to foster thoughtful public discourse to inform and shape effective policy. For more information, please visit: www.renniecenter.org.

About the Schott Foundation for Public Education

The mission of The Schott Foundation for Public Education is to develop and strengthen a broad-based and representative movement to achieve fully funded quality preK-12 public education. The Schott Foundation wants to see all children graduating from excellent and well-resourced public schools capable of college success and full participation in a democratic society – especially children that school systems have historically failed such as poor children and children of color. To this end, Schott develops and supports extraordinary leaders who mobilize the public to demand high quality publicly funded preK-12 education. For more information, please visit: www.schottfoundation.org.

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