PIONEER EDUCATION

Attrition, Dropout, and Student Mobility in District and Charter Schools: A Demographic Report

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Introduction

In the past decade charter school opponents have offered several arguments to refute the academic success of charter schools. Few critiques have been as powerful as the claim that charters achieve strong academic results because they push "less able" students out of their programs and back into district schools.

In 2009 the MTA published a paper titled "Charter School Success or Selective Out-Migration of Low-Achievers? The Effects of Enrollment Management on Student Achievement."[1] The report profiles Boston's high-performing charter high schools and middle schools and calculates attrition rates for individual schools by looking at the number of students who enrolled in the "entry grade" at each charter and the number of students who "completed the curriculum," or made it to graduation. Based on data from these schools, the report contends that, in 2009, nearly half the students who enrolled in Boston charters did not graduate from them. It goes on to draw the following conclusion:

> *We have no idea what happened to the nearly 50 percent of students who didn't make it through these charter schools, but we could hazard a guess that MCAS performance and college-sending rates for the district schools would also be much higher if schools could establish requirements that encourage weaker students to leave. They cannot, nor should they, but charter schools can and do. This alone may be enough to explain any differences in MCAS scores and college acceptance rates, where they exist.*[2]

The report provides no quantitative, qualitative, or even anecdotal evidence as to *why* students leave charter schools, nor does it compare attrition at the individual schools it profiles to individual Boston public schools. It suggests that the strong academic performance of some charters is an illusion because those schools "encourage weaker students to leave," effectively blaming the lower MCAS performance of some Boston public schools on "weaker students" while at the same time accusing charter schools of unethical behavior.[3]

Charter school operators have long claimed that charges of "push out" are false. They acknowledge that students leave before graduation for various reasons, including because they may not wish to participate in the very rigorous programs that many high-performing charters offer. At the same time, many vehemently deny that they counsel students to leave or push students out for any reason, including in an effort to ensure higher test scores. Yet the idea that charter schools push students out is pervasive even today, more than seven years after the MTA report.

Fortunately, since 2010—the year in which the most recent charter school legislation was passed—the Commonwealth has become quite sophisticated in collecting and publicizing data about attrition rates for all schools statewide. These data are key to understanding whether claims of charter school push out are valid because they help us understand if students leave charter schools or move between them at higher rates than they leave or move among district schools.

In addition to increased data collection, the 2010 legislation required that the Department of Elementary and Secondary Education (DESE) shine a brighter light on student enrollment, retention, and the relationship between various subgroups of students and enrollment and retention.[4] DESE now collects and publishes data on how charter schools in particular recruit, enroll, and retain special populations of students (those that the MTA report characterized as weak), such as English language learners and students with disabilities.

This paper uses publicly available DESE data to explore student attrition and other forms of student movement, such as dropouts, within district and charter schools. It is not a direct response to the now dated MTA report, but it does explore the validity of the claim that Massachusetts charter public schools have higher attrition than their district counterparts because these schools "select out" or "push out" weaker students in an effort to produce higher test scores.

This report focuses mainly on Boston charter and district schools because Boston has the Commonwealth's largest concentration of high-performing charter schools in the state. Boston also has the highest demand for charters, with a charter school waitlist of over 10,000 students.[5] The report concludes with recommendations for policymakers and others to better understand and communicate the impacts of student mobility on schools, of which attrition is but one facet.

Student Mobility in Context

Students transfer out of schools for various reasons. In settings where students and families have some degree of school choice (as in Boston), moving between and among schools or school districts may be easier.[6] Within a large school district, for example, students could transfer because of a family move or to take advantage of a special curricular or extra-curricular opportunity at a given school. Some students also choose to leave traditional public schools for private schools or to be homeschooled. No matter the reason, when students leave one school for another, especially during the school year, both the sending and receiving schools will have to make some kind of accommodation or adjustment, whether to the budget or the delivery of curricula.

In recent years, the Department of Elementary and Secondary Education (DESE) has developed many different ways to track

and describe student movement between and among schools. These measures allow the state to more fairly ascertain whether a school or district should be held accountable for failing to retain students, especially certain sub-groups of students. If, for example, a given school enrolls a disproportionately low number of students with special needs or fails to retain black male students, the state could reasonably ask questions about whether that school is treating these populations fairly.

When capturing the different ways in which students move between and among schools, particularly between and among district and charter schools, it is important to note that the state considers each Commonwealth Charter School to be its own district.[7] Treating charters as districts has benefits and challenges. Because charters are considered districts, they are afforded certain autonomies that they might not have if they were a part of a larger bureaucratic entity. Alternatively, when the state captures and reports data about charter schools, because charters are considered districts, they are often compared to the sending district. In the case of Boston, for example, this means that one charter high school is compared to the entire Boston public school district or to the other 34 9-12 and/or K-12 schools in the Boston district.[8]

Such a comparison can make it difficult to understand the reality of how students move between and among schools. A student who leaves a charter school for a district school would count towards the charter school's attrition rate. However, a student who leaves one district school for another would not be captured in the district's overall attrition rate. This one example provides some insight into just how complicated it can be to track student movement and to fairly hold schools and districts accountable for retaining students when they can.

The following are definitions of the measures the state uses to describe and track various forms of student movement between and among schools. Each measure is important in its own right, but dropout rates have accountability ramifications for schools and districts; if a school or district has a high dropout rate, it can suffer sanctions from the state.[9] Other measures of mobility, such as attrition, are publicly available on the DESE website, which is another form of accountability.

Attrition: *Percentage of students from the end of the school year who are no longer attending October the following year. If a student leaves a school or district, regardless of the reason for leaving, they are counted in the attrition rate. NOTE: Attrition primarily measures students who leave between years but does not capture most students who leave during the year.*

Dropout: *Percentage of high school students in a class who do not attend school the following year and who did not transfer to another school. NOTE: Because the reasons for leaving a school depend on self-reports, it can be difficult to correctly classify dropout if, for example, a student leaves a district or charter school for a private school or another district.*

Graduation Rate: T*he percentage of students who graduate with a regular high school diploma within 4 or 5 years.*

Measures Of Student Mobility—Intake, Churn, And Stability

Intake Rate: *The number of students who enroll in a district (or school) after October 1 divided by all students enrolled at any point in time during the school year.*

Churn Rate: *The percentage of students transferring into or out of a district (or school) throughout a school year. It is the sum of all students who were mobile divided by all students enrolled at any point during the year.*

Stability Rate: *The percentage of students who remain in a district (or school) throughout the school year.*

District-Level Stability *compares the number of students enrolled in the district throughout the year to the total district enrollment as reported by school districts by October 1 of a given year.*

School-Level Stability *is based on students enrolled in a school throughout the year, as reported by districts in March, which is end of year for reporting purposes.*

Students leaving a school or district are best captured in three DESE measures: the attrition rate which primarily measures students who leave between years, the stability rate which measures students who remain at the same school during the year (and therefore indirectly measures students who leave during the year), and the dropout rate which measures students who leave without enrolling in another school. Attrition and the dropout rate overlap, as a higher dropout rate will raise attrition.

Attrition, Dropout Rates, and Graduation Rates in Boston Charter and District Schools

The type of student movement that receives the most attention in the charter v. district school debate is attrition. Because Boston has the highest concentration of high-performing charter schools, it is an interesting case to examine. If Boston charters lose more students than the district through attrition (students leaving charters to return to the district) then claims of high student achievement and college-going rates in charters could be inflated. Moreover, if attrition from Boston charters were greater than the district, it would be important to examine why charters lose so many students and whether the failure to retain them is due to unethical behavior.

Looking at student attrition from the Boston Public Schools in comparison to the state average provides perspective, given that Boston is a large urban district and tends to have higher

student mobility. Figure 1 shows that in most grades (K-12) Boston has slightly higher student attrition than the state average.[10]

As Figure 1 shows, there is also a noticeable increase in the attrition rate in Boston in grades 4 and 5. One reason for this could be the large number of charter and private school seats that become available in the fifth and sixth grades (if a student enrolls in a charter in the fifth grade, for example, it is counted as attrition from grade 4). Figure 2 shows enrollment by grade in the Boston Public Schools (BPS) and Boston charters illustrates this. State attrition rates, on the other hand, sharply increase at grade 8. This could be because in many districts, especially those without a large charter school presence, students have fewer options to switch schools before high school, when they may enroll in a regional school, a vocational-technical school, or even a private high school.

Figure 1: Attrition Rates by Grade, 2015

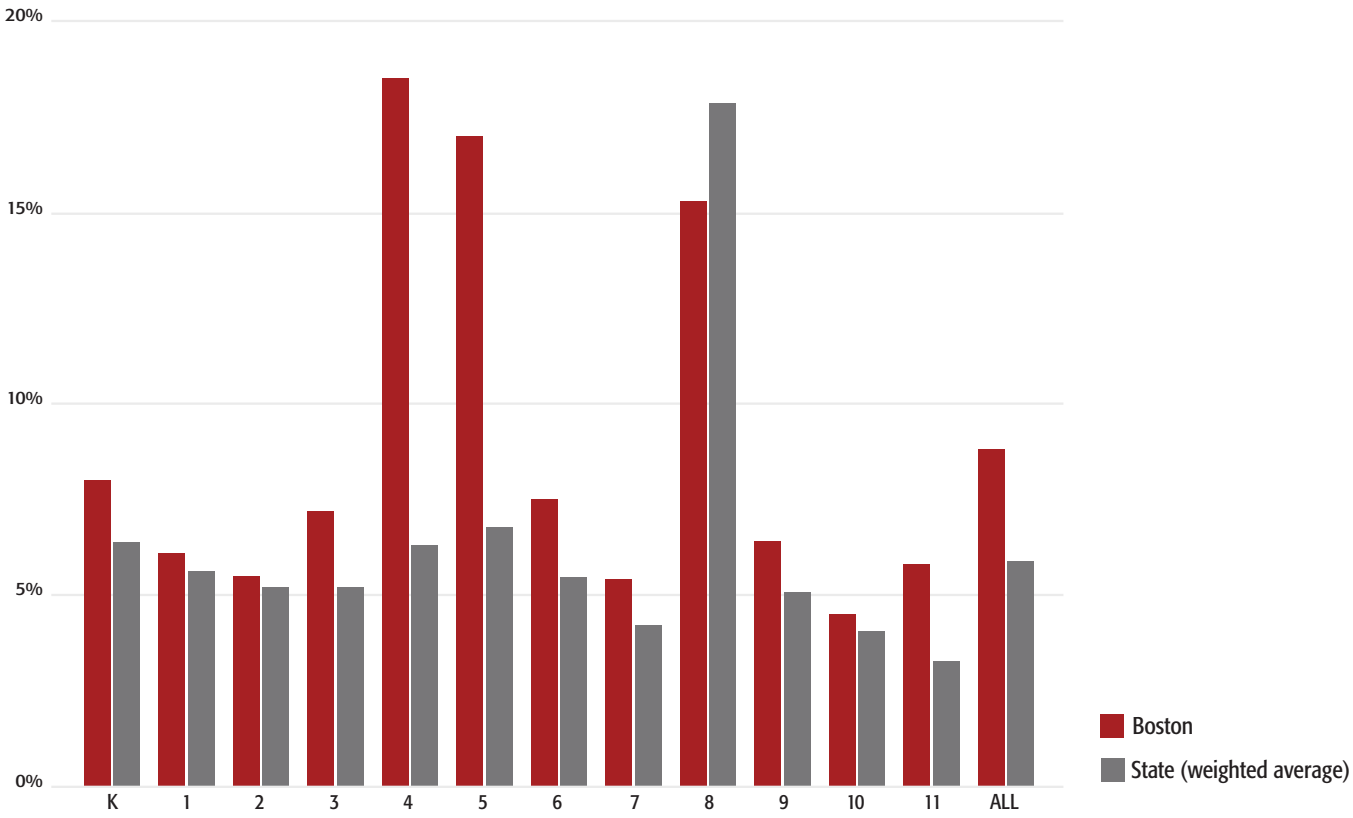
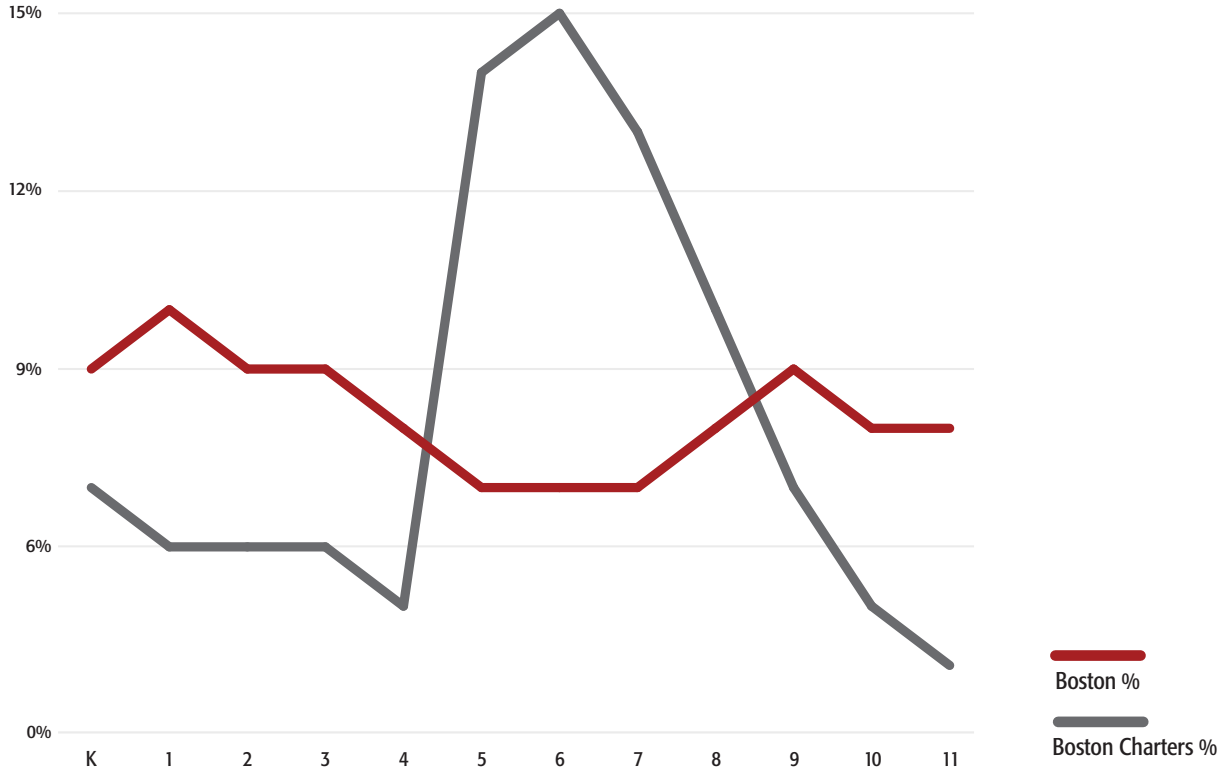


Figure 2: Enrollment by Grade, 2015



When comparing attrition rates between the Boston Public Schools and Boston charter schools, it is more meaningful to look at all 19 Boston charters compared to all schools in the district. The MTA report only looked at seven charter schools and concentrated on the attrition rate for those schools.[11] Of course, it is reasonable to expect that there has been a shift in attrition rates for all schools, but particularly charters, since the 2010 charter legislation discussed above. Figure 3 shows attrition rates for Boston Public Schools and Boston charters, as a group.

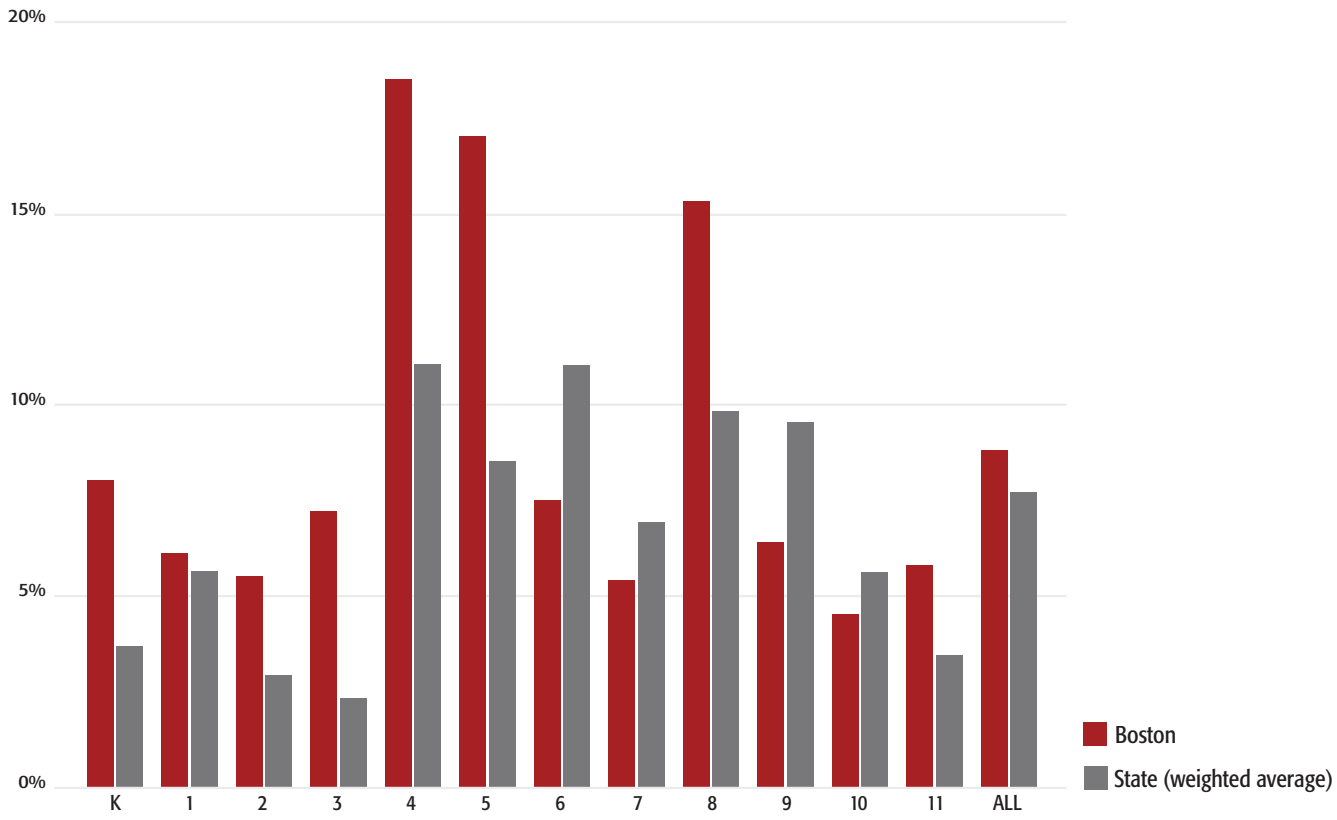
The attrition rate in Boston charters is lower than the attrition rate in BPS for 8 out of 12 grades in 2015, which gives Boston charters a lower attrition rate overall than BPS.

While charters have lower attrition than BPS in most grades, there are slightly higher rates in grades 6, 7, 9, and 10. The higher attrition in charters in these grades may reflect students leaving charter high schools soon after they enroll because they do not feel the charter approach, curriculum, or level of rigor is suited to their needs. Others may leave because some charter high schools do not practice social promotion. City on a Hill Charter Public High Schools, for example, states in its 2015 *Annual Report:* "There is no social promotion at City on a Hill. 100% of students promoted to the next level in each subject demonstrated mastery of the school's Common Core-aligned college prep curriculum by earning 70% or above on written and oral proficiencies."[12]

Whatever the reason for higher attrition from district and charter schools in certain grades, the data presented in Figure 2 obscure both higher and lower attrition rates for some schools (both charter and district). The state rightly holds individual schools accountable for high attrition rates by publishing them on an annual basis.[13] Moreover, districts are formally accountable for their dropout and cohort graduation rates at the high school level.[14] Both things factor into a district's overall accountability rating. For a charter school, a low accountability rating could result in its charter not being renewed.[15]

Perhaps most important in terms of attrition is whether, on average and from year to year, Boston charters have an attrition rate that is dramatically different from the state average or the sending district. Much higher attrition from year to year could suggest some degree of push out. But the data do not support this suggestion. (See Figures 4 and 5.)

Figure 3: Attrition Rates by Grade, 2015



The state has been carefully tracking attrition rates since the 2010 – 2011 school year and finds:[16]

> *The weighted attrition rate for Massachusetts charter schools statewide has declined and has approached the statewide weighted attrition rate. . . because charter schools are disproportionately located in urban areas, it may be expected that the statewide charter attrition rates would likely be higher than the overall statewide average, since urban school attrition rates are generally higher.*
>
> *The weighted attrition rate of Boston charter schools has remained lower than the weighted attrition rate of Boston district schools.*

Figures 4 and 5 on the next page illustrate the state's findings.

The relatively low attrition rates in charter schools suggest that the schools are not losing large numbers of students between years. As we will discuss below, this evidence is supported by the high stability rate in charter schools, indicating that the majority of students who start the year at a charter also finish at the charter.

Another important consideration when looking at attrition rates is whether they are significantly different for various subgroups of students, especially those who schools often characterize as more difficult to serve, such as English language learners and students with disabilities. (See Table 1.)

Since the most recent charter legislation was passed in 2010, both English language learners and students with disabilities have enrolled in Boston charter schools at much higher rates than they did before 2010. Many attribute the increase to a provision in the law that required districts to share student addresses with charter schools, making it easier for them to target recruitment to specific students.[17] It is also important to note that it was the 2010 charter legislation that specifically required charter schools to demonstrate efforts to recruit and retain these groups of students. This, too, could have had an important impact.[18]

According to DESE, the enrollment of ELL students in Boston charter schools has increased steadily over time and is approaching the district average (14 percent in Boston charters and 30 percent in the district). "The enrollment of new students who are ELLs has increased at a greater rate" in Boston charters—22 percent of new Boston charter students are ELLs, compared to 30 percent in the district.[19] If enrollment patterns continue in this way, Boston charters are on track to serve the same percentage of ELL students as their district counterparts. The same holds true for students with

Figure 4: Weighted Attrition Rates by Year, Statewide

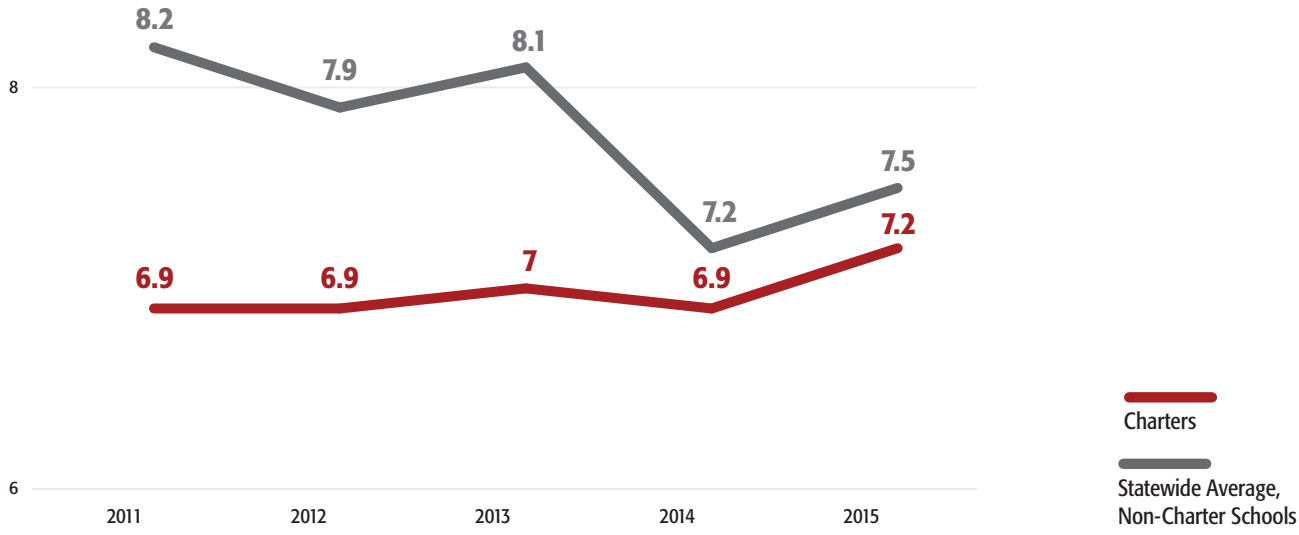
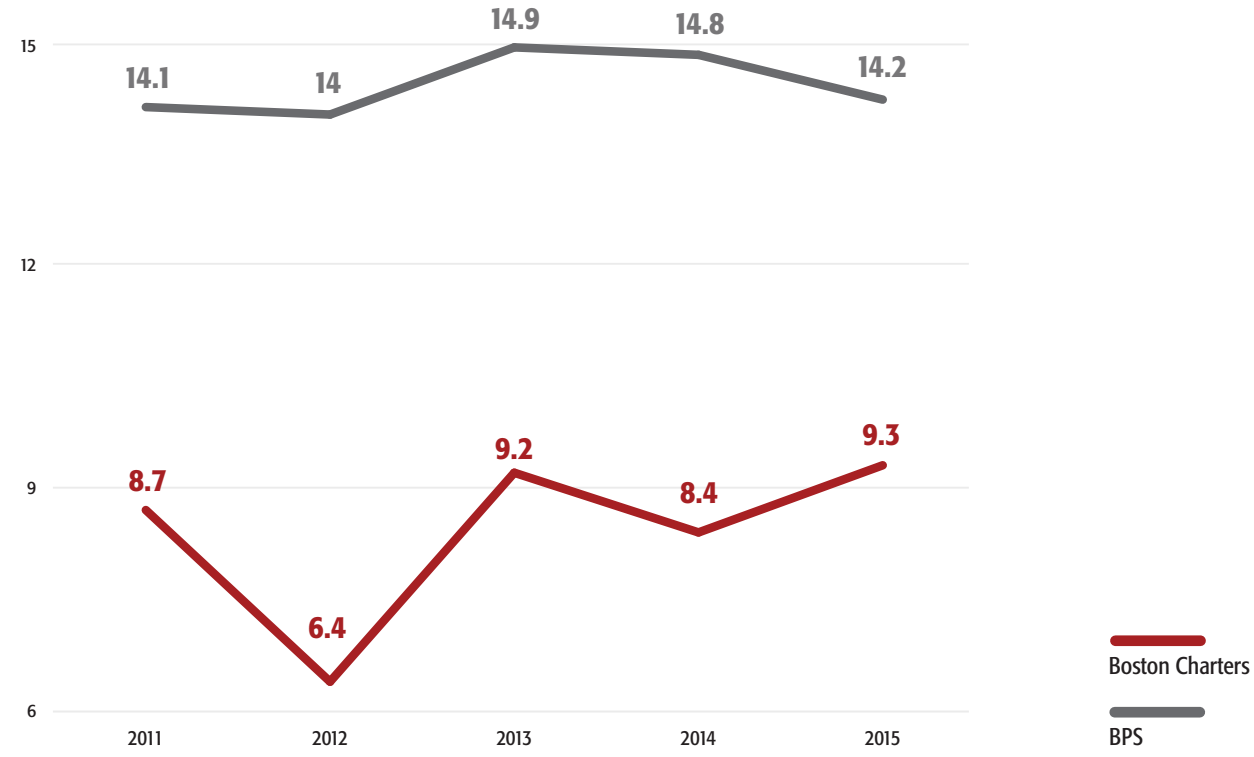


Figure 5: Weighted Attrition Rates by Year, Boston



disabilities. In 2016, 16 percent of students enrolled in Boston charters had disabilities, compared to 19 percent in the district. This is despite the fact that fewer new charter students are identified as having disabilities in charters, compared to the state average.[20]

And it appears that Boston charters are doing a good job of retaining these special student populations. In a 2015 study, MIT researcher Elizabeth Setren looked at enrollment, achievement, and mobility patterns for students with special needs in Boston charter schools. Comparing students who entered the charter controlling for selection bias by comparing students who entered the charter school lottery and accepted to those who entered and were not admitted, Setren finds that "special needs students are overall similarly or less mobile in charters." She further concludes that student attrition from charter schools is "unlikely" to drive the results that those schools achieve.[21]

And results are important to consider, given that the crux of the charter school "push out" critique is that charters achieve better results than their district counterparts because they counsel certain students to leave. If this reasoning is correct, it would be reasonable to expect that charter schools would see a decrease in test scores as they see an increase in the enrollment and retention of students with special needs.

Table 1 shows that this is not the case. Boston charter schools continue to outperform their district counterparts, even as they recruit and retain higher numbers of students with special needs. Again, in comparing lottery applicants who attended charters and lottery applicants who did not, Setren finds that Boston charter schools have an advantage over the district. She notes:

> *Charter school attendance has large positive effects for math and English state exam scores for special needs students. . . A year of charter attendance increases math test scores by over 0.223 standard deviations for middle and high school special education applicants and by 0.309 standard deviations for elementary school special education applicants. ELL students score over 0.307 standard deviations higher on math in charters relative to traditional public schools.*[22]

Table 1: Test Score Impact of Charter Attendance by Student Groups (from Setren)

	Special Education		ELL		Non-Special Needs	
	Math	ELA	Math	ELA	Math	ELA
Elementary	0.309	0.478	0.386	0.360	0.184	0.199
Middle	0.243	0.172	0.307	0.200	0.255	0.142
High School	0.223	0.148*	0.414	0.423	0.342	0.215

* Only difference that is not statistically significant

These data paint a positive picture for charter schools, but attrition is not the only measure of student movement to consider. At the high school level, dropout rates are also very important. Dropout rates formally factor into the state's accountability rating for all schools and districts, both traditional and charter.[23]

As Table 2 shows, the dropout rate in Boston and other urban centers is higher than the state average. Statewide, the dropout rate for economically disadvantaged students is also higher than for other students. Interestingly, the dropout rate for economically disadvantaged students in Boston is lower than the state average.

Table 2: Dropout Rates

	2014-15 Grade 9 to 12	**2014-15** Grade 9 to 12 ECON DISADV
Statewide	1.9%	3.3%
Boston Public	4.7%	4.3%
Boston Charters	4.2%	4.4%

Figure 6: Dropout Rates, 2011 to 2015

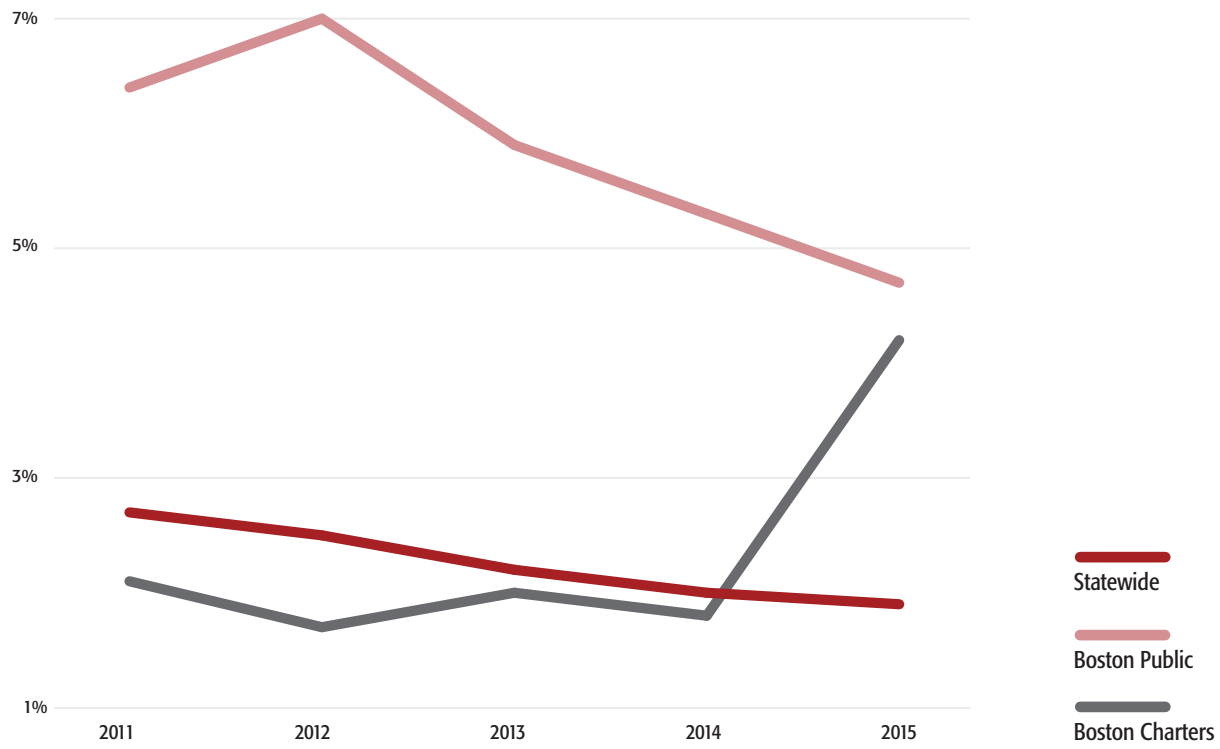
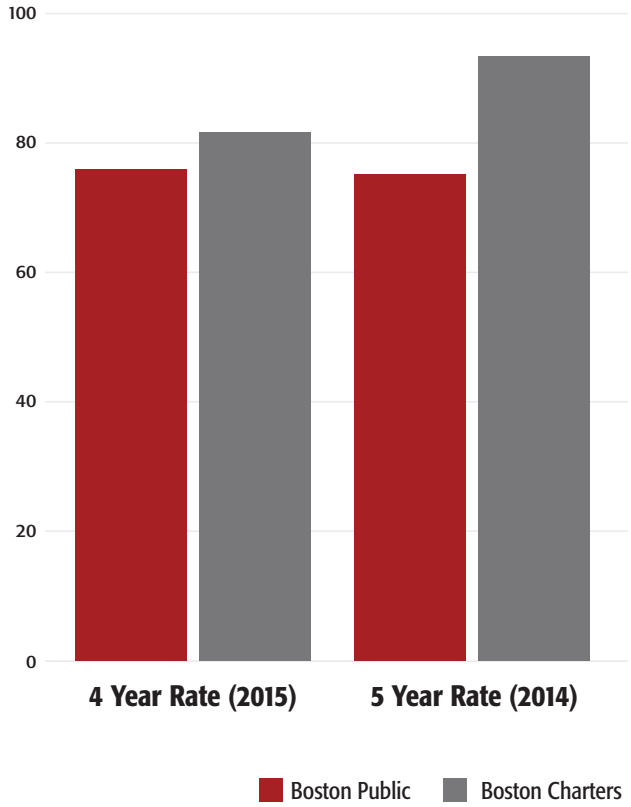


Figure 6 demonstrates that BPS has made progress in reducing its dropout rate, although it is still above the statewide average. At the same time, the dropout rate in Boston charters increased significantly in 2015 due entirely to a very high dropout rate at Boston Day and Evening Academy Charter. Boston Day and Evening is a school devoted to serving "off-track" learners—students who have already dropped out of school and want to reengage or who have a high risk for dropout.[24] The other charter schools in Boston had a dropout rate of less than 1% in 2014–15, despite recruiting more students with special needs who might be at greater risk of dropping out.

The lower dropout rates in Boston charter schools lead to higher graduation rates. Figure 7 shows that the four-year graduation rate at charters is roughly five percentage points higher than it is at BPS — 81% compared to 76%.[25] While charter schools have a higher share of students graduating on time, the four-year graduation rates understate the difference between charter schools and BPS. Many of the students who have not graduated after four years are still in school, and charters are able to graduate a much larger share of these delayed students. The five-year graduation rate is 92% at charter schools compared to only 76% at BPS.

Figure 7: Adjusted Graduation Rates



Student Mobility Measures and Impacts

Other measures of student mobility, such as those described at the outset of this report, help policymakers and schools understand how schools and districts fare in retaining students during the year, whereas attrition only looks at student movement from one year to the next. Student mobility throughout the year can have dire impacts on individual students, schools, and districts.

Research suggests, for example, that students who are highly mobile or transient are at greater risk of dropping out of school. In a 2015 policy brief on the causes and impacts of student mobility, University of California, Santa Barbara researcher Russell Rumberger[26] describes a metanalysis of 16 studies of student mobility conducted since 1990. Nine of the studies, according to Rumberger, were identified as "methodologically strong." The study found that "even one non-promotional school move both reduced elementary school achievement in reading and math and increased high school dropout rates, with the most pronounced effects for students who made three or more moves."

And student mobility doesn't only affect the individuals who leave schools; it also affects those who stay. In schools with very high "churn rates," defined previously in this paper as the number of students transferring into or out of a district throughout the year, non-mobile students experience the academic impacts of teachers and administrators having to attend to newly enrolled students; that is, schools feel the impacts not only of students leaving but of new students constantly arriving. In a study of more than 13,000 Chicago students, University of Chicago researcher David Kerbow found that "students in schools with high churn were a year behind those in more stable schools by 5th grade."[27]

It is important to point out that schools and districts may have little control over student churn. While it is true that students may leave schools because they are disengaged or otherwise unsatisfied with what the school has to offer (and dropout is a form of mobility), often the schools and districts that suffer from the highest mobility serve populations of students who are transient for reasons other than school satisfaction. These tend to be communities where "involuntary moves" among families are the norm. These communities have higher levels of immigration and poverty, and families might be forced to move more often because of job loss or home loss.[28] No matter the reason, mobility impacts the family, the student, the school that the student leaves, and the school that the student enters at some point during the year.

And while they may serve increasingly similar student populations in terms poverty rates and immigrant status, the existence and impacts of student mobility may be more pronounced in some districts than it is in charter schools. This is because, by law, Massachusetts charter schools are only required to "backfill" vacant seats from a waitlist (or in the case that a waitlist doesn't exist, by advertising vacancies within the catchment community) until February of each year. This means that if a charter school has vacancies after the midway point each year, they may choose not to admit and integrate new students. Furthermore, charter schools are not required to fill vacancies by adding new students to lower grades levels.[29] The rationale for this choice is that charter schools need not be subject to many of the regulations that bind district schools. Backfilling can make it more difficult, for example, to create a strong school culture, as schools are forced to acclimate new students throughout the year.

This does not mean that all charter schools take advantage of these regulations. According to DESE,[30] many charter schools voluntarily fill available seats after the February deadline, and the

> *Department strongly encourages schools to voluntarily adopt enrollment policies that provide as many entry points and to commit to filling vacant seats in as many grades as possible. In recent years, all new charter schools and expansions of existing charter schools adding new grades and significant numbers of seats recommended by the Department and approved by the Board have included commitments to grade- level entry and backfilling that exceed statutory and regulatory requirements.*

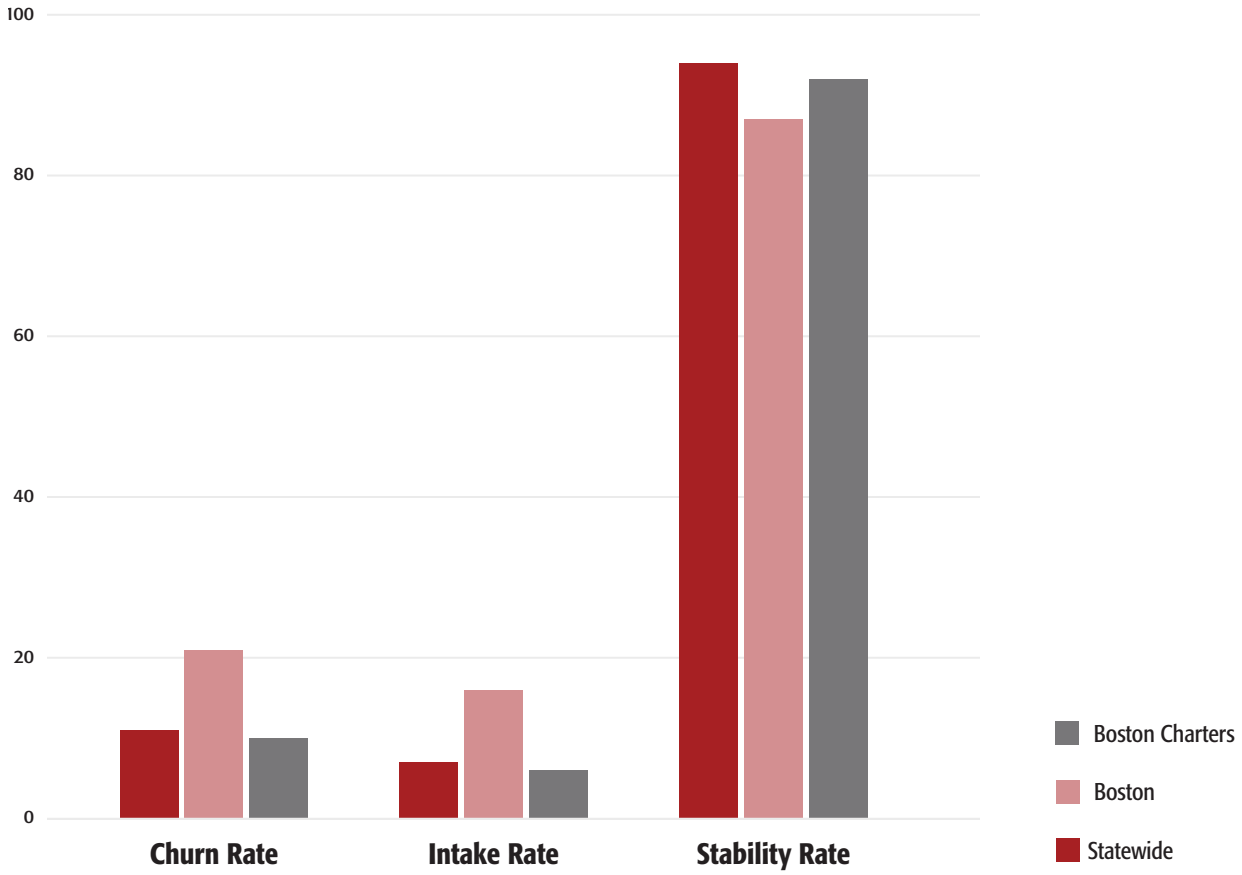
School districts, on the other hand, admit students at any time during the year, and in districts with high mobility, charters could have an unfair advantage if they do not backfill. In Boston, for example, the 2015-16 churn rate was 21 percent, whereas at one of the city's highest performing charter schools, Match Charter Public School, (serving grades Pk-12) the churn rate for the same year was 8 percent.

Similarly, as shown in both Table 3 and Figure 8, the intake rate in Boston was almost 16% while it was 5.8% at Match, indicating that BPS schools must deal with many more new students during the year. These lower churn and intake rates translate into higher stability rates for Match: 95 percent compared to 87 percent in the Boston Public Schools.

Table 3: Churn, Intake and Stability Rates, 2015-6

	Churn Rate	Intake Rate	Stability Rate
Statewide	10.5	6.5	93.6
Boston Public	21.0	15.7	86.6
Boston Charters	9.8	5.9	92.3

Figure 8: Student Mobility Measures, 2015-16



Even low student attrition rates, when combined with an inclination *not* to backfill open seats, can have a negative impact on how charter schools are perceived. When, for example, charter critics point out that many high performing charter schools graduate far fewer students than they began with in the freshman class (in some cases, 50 percent fewer), they may be noticing the impact of normal student attrition combined with a choice not to admit new students at multiple entry points throughout the school year.

In a district school, which must backfill, it may seem as though the student population remains relatively stable from freshman to senior year in terms of the number of freshman who started in a school and went on to graduate. But numbers alone do not tell the casual observer whether the entering freshman and graduating seniors are the same students.

Although it has no power to change charter school law, it would seem that DESE is wise to encourage charter schools to backfill available seats beyond statutory requirements, as doing so puts charters on more equal footing with their district counterparts. Increased backfilling would make more transparent the actual rates at which students move between and among schools and whether or not some schools are truly losing a disproportionate amount of students prior to graduation.

Conclusions and Recommendations

Though the vitriolic debate about whether to raise the charter school cap in Massachusetts is likely to continue despite a "No" vote on a November 2016 statewide ballot initiative, the data presented in this paper make it clear that at least one of the arguments that charter school detractors claim as a reason to keep the cap—student "push out" and attrition—is a non-starter.

Since DESE has tracked student attrition and mobility in all schools, charter schools have been more accountable than their counterparts for attracting and retaining all students, including those with diverse needs. The Department's own data show that in the districts with the greatest concentrations of charter schools (Boston and the Gateway cities), charter attrition rates are lower than the sending districts. Perhaps more importantly, charter schools are recruiting and retaining increasingly diverse student bodies and helping them achieve very strong outcomes. Similarly, charter schools also have lower dropout rates than their district counterparts, as well as higher stability rate and higher graduation rates.

Both charter and district schools must continue to address the dropout issue; though dropout rates in Massachusetts are

below the national average,[31] preventing dropout is something on which all schools should focus. Likewise, the state should continue to support schools and districts that face high levels of student mobility. It should also continue to provide encouragement and even incentives to charter schools to provide multiple points of entry for students regardless of what they are accountable to do under state law.

Recommendations

Encourage all schools and districts to minimize student attrition, to the extent possible, and provide schools with mechanisms to better capture why students leave from one year to the next: Charter detractors have long accused charter schools of having high attrition rates, and they have linked attrition rates to the theory that high-performing charters push students out. While the data suggest that attrition from Boston charter schools, in particular, is lower than the sending district, it would nonetheless be helpful to understand why students leave schools, whether district or charter. Many schools track these data internally, but it could behoove the state to help all schools track the data in a standardized and systematic way. This would allow schools with high attrition to better understand how they might decrease attrition rates and could expose any school, district or charter, that is counseling students to try another school option for the wrong reasons.

Prioritize dropout prevention for all schools, district and charter, and provide mechanisms for schools to collaborate: Both district and charter schools could do more to reduce dropout rates; holding schools accountable for dropouts is a positive step that the state has taken. But some schools do a particularly good job of preventing dropout from occurring or at helping students at risk of dropout reengage with school. Phoenix Charter Academies are one example of a charter network that is having great success with helping at-risk students and former dropouts graduate from high school and enroll in college. Providing a venue for Phoenix and schools like it to share best practices with schools that are struggling with dropout could be one mechanism for keeping dropout rates low.

Increase transparency about the effects of student mobility on individuals, schools, and school districts; support schools and districts with highly mobile populations: Research confirms that high rates of student mobility can have dire consequence for mobile and non-mobile students and schools. The state should continue to collect and publicize data on student mobility. It should also educate families and school personnel about some of the undesirable consequences of high mobility and how to cope with them. Finally, the state and individual schools and districts should continue to find ways to ameliorate student mobility (allowing students the choice to finish the year in one district should they move to another, for example) and to support schools and districts with high mobility rates that they may not be able to control (districts with large transient communities, including recent immigrants).

Examine charter school regulations pertaining to backfilling: Charter schools across the Commonwealth and in Boston in particular have proved that they can serve the same student populations as district schools and often produce superior academic outcomes. While many charters currently heed DESE's urging and accept students at any point in the year, it is worth considering the risks and benefits of holding all charter schools accountable for doing so. Accountability would ensure a more equal playing field, and many schools, both charters and district, are already proving that they can counter the impacts of high student mobility with innovative, rigorous programming, including extended school days and years.

Endnotes

1. Skinner, K.J. (2009) "The Effects of Enrollment Management on Student Achievement," Boston: Massachusetts Teachers Association.
2. Ibid, p. 34.
3. ibid
4. Massachusetts General Law, Chapter 71, Section 89, **https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter71/Section89**
5. Massachusetts Department of Elementary and Secondary Education, "Report of charter school waitlist," Appendix, March, 2016, **http://www.doe.mass.edu/charter/enrollment/**.
6. In BPS, students and families can rank their top school choices and submit to the district. After considering several different factors, such as keeping siblings in the same school if they wish and ensuring enrollment equity within each school, BPS will hold lotteries to admit students to oversubscribed schools. Some schools within BPS also maintain waitlists. For more information about BPS choice and enrollment: **http://www.bostonpublicschools.org/Page/654**.
7. Massachusetts Department of Elemenatry and Secondary Education (2015) "Questions and answers about charter schools in Massachusetts," **http://www.doe.mass.edu/charter/about.html**.
8. MA DESE, School and District Profiles, **http://profiles.doe.mass.edu/accountability/report/district.aspx?linkid=30&orgcode=00350000&orgtypecode=5&**.
9. All definitions have been provided by the state based on publicly available data and communications between state department personnel and the authors.
10. Unless otherwise noted, all data included in this report are based on the authors calculations derived from data provided by the Massachusetts Department of Elementary and Secondary Education.
11. Schools included in the report were: City on a Hill, Codman Academy, Match High school, Academy of the Pacific Rim, Boston Collegiate High School, Boston Preparatory, and Roxbury Prep middle school.
12. City on a Hill Charter Public Schools 2014-15 Annual Report, **http://www.cityonahill.org/wp-content/uploads/2015/08/City-on-a-Hill-2014-15-Annual-Report-Final.pdf**, accessed October 10, 2016.
13. See Massachusetts Department of Elementary and Secondary Education School and District Profiles: **http://profiles.doe.mass.edu**
14. The cohort graduation rate "tracks a cohort of students from 9th grade through high school and represents the percentage of the cohort that graduates within a certain amount of time." From: MA DESE website, "Information services, statistical reports," "Annual dropout rate v. cohort graduation rate," **http://www.doe.mass.edu/infoservices/reports/gradrates/dropoutvsgrad.html**.
15. Massachusetts Executive Office of Education "School leaders guide to the 2016 accountability determinations," **http://www.mass.gov/edu/docs/ese/accountability/annual-reports/school-leaders-guide.pdf**, accessed October 12, 2016.
16. MA DESE, "Charter school enrollment data, annual report" (2016), p. 13, **http://www.doe.mass.edu/research/reports/2016/02CharterReport.pdf**, accessed October 10, 2016.
17. See, for example, Ardon, Ken & Candal, Cara, (2016) "Massachusetts charter public schools: English language learners, demographic and achievement trends," Pioneer Institute White Paper No. 156.
18. Massachusetts General Law, Chapter 71, Section 89, **https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter71/Section89**
19. MA DESE, "Charter school enrollment data, annual report" (2016), p. 28 (Appendix C)
20. ibid, p. 31 (Appendix C)
21. Setren, Elizabeth (2015) Special Education and English Language Learner Students in Boston Charter Schools: Impact and Classification, pp. 15-16.
22. Setren, Elizabeth (2015) Special Education and English Language Learner Students in Boston Charter Schools: Impact and Classification, p. 8.
23. Massachusetts Executive Office of Education "School leaders guide to the 2016 accountability determinations,"
24. **http://www.bacademy.org/missionandvision**
25. The graduation rates discussed in the text are "adjusted" graduation rates, which measure the # of students in a cohort who graduate divided by the cohort size, which is the number of students who began 9th grade four (or five) years earlier minus the number of students who transferred out.
26. Rumberger, Russell,W (2015) "Student mobility: Causes, consequences, and solutions," National Education Policy Center, Boulder, CO.
27. Sparks, Sarah, D. "Student mobility: How it affects learning," *Education Week* (online), **https://www.edweek.org/ew/issues/student-mobility/**, accessed October 12, 2016.
28. Rumberger, Russell,W (2015), p. 5.
29. MA DESE, "Charter school enrollment data, annual report" (2016), p. 14.
30. ibid
31. See: Kane, Michael, D. "Massachusetts high school dropout rates are down, graduation rates up," *The Republican*, January 21, 2016, **http://www.masslive.com/news/index.ssf/2016/01/massachusetts_high_school_drop.html**.

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