

Student mobility in Massachusetts

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The Department of Elementary and Secondary Education (ESE) recently released new measurements of student mobility, giving policymakers the ability to look at mobility rates in the context of school improvement efforts. Research shows that high rates of student mobility can impede student success and hinder efforts to turn around failing schools.

This brief reviews some of the research on the causes and consequences of student mobility, explains the new measures developed by ESE, looks at the demographics of student mobility, and compares the performance of mobile and non-mobile students. Among the findings:

- More than half of mobile students in Massachusetts are low income, a quarter are students with special needs, and 16 percent are limited English proficient (LEP).
- Mobility rates are highest in the early elementary and high school grades.
- Mobility is concentrated in the lowest performing districts and schools in the state.
- Mobile students are not as successful as non-mobile students on the MCAS, even after controlling for low income status. However, students who moved more than once during the school year performed no worse than students who moved once.

Causes and consequences

Mobility is defined as students moving between schools and districts for reasons other than grade promotion. Researchers have identified a number of causes of student mobility, including poverty and housing instability and academic, personal, and family issues. Mobile students are more likely to live in low income households, attend inner city schools, be from

migrant families, and have limited English proficiency. Low student performance, behavior problems, and absenteeism are also associated with student mobility.¹

Mobile students face disruptions in their course of study that can be detrimental to their academic achievement. Difficulty catching up with lessons and broken social connections can make changing schools challenging.² Movement between schools where curricula are not aligned can also impede learning.³

Students who change schools frequently do not attend any one school long enough for the school to have had a positive impact on their academic progress. As a result, information about the student may be slow to follow them through the system, which may cause repeated evaluations and delayed interventions.⁴

Schools that have a number of incoming students during the course of the year also face difficulties. Integrating new students in to the classroom can disrupt instruction and reduce teacher morale. Assessing the needs of incoming students can detract from the needs of other students. Also, significant turnover can undermine the efforts of teachers and administrators to implement a reform agenda in a school.⁵

Measuring mobility

ESE recently adopted three measures of student mobility: intake, churn, and stability.⁶ Mobility rates are calculated at the state, district, and school levels and count only mobility within a given school year, not from one school year to the next.

The *intake* rate measures the proportion of students that transfer-in to a district or school. For schools, the intake rate counts the students who entered the school after the beginning of the school year, including those who transferred from other schools in the same district, divided by the students enrolled in the district or school at any point in time during the

¹ Rumberger, R. W. (2003). The causes and consequences of student mobility. *Journal of Negro Education*, 72 (1), 6-21. AND Engec, N. (2006). Relationships between mobility and student performance and behavior. *The Journal of Educational Research*, 99 (3), 167-178.

² Engec (2006).

³ de la Torre, M. & Gwynne, J. (2009). Changing schools: A look at student mobility trends in Chicago Public Schools since 1995. Consortium on Chicago School Research.

⁴ Rumberger (2003).

⁵ Rumberger (2003). AND Rhodes, V. (2007). Student mobility: The elephant in NCLB's living room. *ERS Spectrum*, 25 (1), 1-10.

⁶ For a more complete explanation of ESE's mobility measures go to:
<http://www.doe.mass.edu/infoservices/reports/mobility/0709.pdf>

course of the school year.⁷ For districts, the numerator includes all students who enter from another district, a private school, or home schooling. For the state, the numerator includes all students who transfer-in from out of state. Because the school, district, and state rates have different numerators, a district's intake rate does not equal the average of its schools' rates and the state rate is not the average of the districts' rates.

The *churn* rate measures the extent to which students come and go at the district and school levels. It is the number of students that were mobile over the course of the school year divided by the total number of students enrolled during the same period. Mobile students include those who moved in or out of the district or school, with each student counted only once regardless of the number of transfers. Again, the school, district, and state rates each have different numerators.

Finally, the *stability* rate measures the extent to which students stay in the district or school for the entire year. It is the ratio of the total number of students enrolled during the school year divided by the number of students reported with days in membership in a district or school since the start of the school year.⁸

The data used in this brief is from the 2008–2009 school year, the most recent year for which mobility data are available. We rely most on churn data because they describe the total number of students who moved over the course of the year without double counting.

Student mobility trends

During the 2008–2009 school year, 101,013 students statewide moved in or out of a school at least once, making the statewide churn rate approximately 10 percent.⁹ Table 1 shows that, consistent with the research, student mobility in Massachusetts affects disadvantaged students more than other groups. More than half, 53.1 percent, of the students who moved were classified as low income; nearly a quarter, 24.1 percent, were students with special needs; and about 16 percent were limited English proficient (LEP). Hispanic and African American students also made up a larger share of the mobile student population than of the overall student population. In 2008–2009, 14.3 percent of all students were Hispanic and

⁷ Student Information Management System (SIMS) data is collected at three points during the school year: October 1, March 1, and at the end of the year. As a result, students who move out of a school and then return to that same school between collections are not counted as mobile students. This gap in reporting likely omits a small number of students from the statewide mobility count.

⁸ Note that this is not equivalent to the district or school's October 1 enrollment as reported in enrollment reports on the ESE website.

⁹ This figure was generated for the purposes of this brief and differs slightly from the official figure published by ESE, which is 100,994.

8.2 percent were African American, while these two groups made up 28.6 percent and 15.6 percent of the mobile student population, respectively.

Table 1: 2008–2009 mobile student demographics (churn data)

	Mobile student count	% of mobile population	% of statewide enrollment
State totals	101,013	100.0%	10.5%
Low income	53,616	53.1%	30.7%
Special education	24,327	24.1%	17.1%
Limited English proficiency	15,914	15.8%	5.9%
White	47,824	47.3%	69.9%
Hispanic	28,846	28.6%	14.3%
African American	15,753	15.6%	8.2%
Asian	5,753	5.7%	5.1%
Multiracial	2,239	2.2%	2.0%
Native American	426	0.4%	0.3%
Native Hawaiian	172	0.2%	0.1%

Looking at mobility rates by grade, Table 2 shows that mobility is most common among students in the early elementary grades and high school, particularly grade 9. In 2009, 11.5 percent of all students who moved at least once during the year were in preschool, representing the greatest share of mobile students. Ninth grade had the second highest share of mobile students with slightly less than 11 percent.

Mobility is concentrated in the state’s lowest performing districts. Recently, ESE identified 9 districts in which the 35 lowest performing schools in the state are located. These 35 schools are referred to as Level 4 schools. Within these 9 districts, 45,914 students moved at least once during the 2008–2009 school year, comprising 45 percent of all mobile students statewide. Table 3 shows that in some of these districts with Level 4 schools as many as a quarter of the students changed schools during the course of the year. Even Lynn, the district on this list with the lowest churn rate, was still well above the state average. Finding ways to cope with this challenge and ameliorate the effects of mobility will be a key part of the turnaround challenge for these struggling districts and their schools.

Table 2: 2008–2009 mobile student enrollment by grade (churn data)

	Mobile student count	% of mobile population
Preschool	11,574	11.5%
Kindergarten	9,442	9.3%
Grade 1	6,731	6.7%
Grade 2	6,165	6.1%
Grade 3	5,933	5.9%
Grade 4	5,529	5.5%
Grade 5	5,454	5.4%
Grade 6	5,385	5.3%
Grade 7	5,491	5.4%
Grade 8	5,637	5.6%
Grade 9	10,862	10.8%
Grade 10	7,769	7.7%
Grade 11	7,646	7.6%
Grade 12	7,103	7.0%
Special education beyond Grade 12	292	0.3%

Table 3: 2008–2009 churn rates in districts with Level 4 schools

District	District churn rate
Boston	25.3%
Fall River	22.9%
Holyoke	28.9%
Lawrence	24.5%
Lowell	16.0%
Lynn	15.4%
New Bedford	19.2%
Springfield	23.1%
Worcester	17.3%

Mobility and student performance

One major concern about student mobility is its potential impact on student performance. Our data show that Massachusetts students who move at least once during the school year perform worse, on average, than non-mobile students. Students who move more than once, however, perform similarly to those who move only one time during the year. A review of district level results shows that districts with Level 4 schools do not perform as well on the MCAS as districts with similar mobility rates that do not have Level 4 schools. While collectively these results do not demonstrate that mobility is the principal cause of low student performance, it is a contributing factor.

Looking at the population of students who moved at least once during the year, Table 4 shows that overall non-mobile students scored in the *Advanced* or *Proficient* categories at higher rates than mobile students on both the MCAS English Language Arts (ELA) and Mathematics tests in 2009, 24 percentage points greater in both cases. Median student growth percentiles (SGP) were also higher for non-mobile students on the ELA and Mathematics tests.¹⁰ Even among students of similar socioeconomic status, students who do not change schools during the course of the year performed better on both exams than those who moved at least once. Mobile low income students also had lower growth scores than their non-mobile peers.

Since the second highest rate of mobility occurs at grade 9, the performance of mobile and non-mobile students at grade 10 warrants particular attention, especially given the high stakes nature of the test. Table 5 shows that the performance differences between mobile and non-mobile students at grade 10 are greater than they are for the statewide population. On the grade 10 ELA and Mathematics tests, non-mobile students scored *Advanced* or *Proficient* at rates that were 24 and 28 percentage points greater, respectively, than the levels achieved by mobile students. Controlling for low income status, the performance differences narrow, but were still 16 percentage points on ELA and 17 percentage points on Mathematics. Differences in median growth rates between the two groups ranged from 6 to 9 percentile points on both exams, whether controlling for low income status or not.

¹⁰ The SGP is a new measure developed by ESE to determine how student performance on the MCAS changes from one year to the next. It compares each student to other students with similar score histories and assigns a percentile to rank based on how that student performed relative to his/her peer group. Higher percentiles indicate that the student out-grew more of their academic peers. When comparing groups of students, the growth score of the median student in each group is used as the basis of comparison. Median SGP differences that are greater than or equal to 10 percentile points are considered educationally meaningful.

Table 4: 2009 MCAS performance of mobile and non-mobile students, all grades

	ELA		Mathematics	
	% Advanced/ Proficient	Median SGP	% Advanced/ Proficient	Median SGP
Not mobile	69%	50	57%	50
Mobile	45%	42	33%	41
Not mobile low income	47%	46	35%	45
Mobile low income	33%	40	21%	37

Table 5: 2009 MCAS performance of mobile and non-mobile students, grade 10

	ELA		Mathematics	
	% Advanced/ Proficient	Median SGP	% Advanced/ Proficient	Median SGP
Not mobile	82%	50	76%	50
Mobile	58%	38	48%	36
Not mobile low income	64%	46	56%	46
Mobile low income	48%	38	39%	36

Tables 6 and 7 show that students who transfer between schools more than once during a school year perform similarly to students who transfer only once, suggesting that multiple transfers do not substantially lower performance. On the ELA test, students with one transfer scored *Advanced* or *Proficient* at a slightly higher rate than students with more than one transfer, but the opposite was true when only looking at low income students. Students with one transfer scored *Advanced* or *Proficient* at marginally higher rates than students with more than one transfer on the Mathematics test, whether controlling for low income status or not. The SGPs for both groups were virtually identical on the ELA test and separated by 4 percentile points on the Mathematics test.

Table 6: 2009 MCAS ELA performance of students with multiple transfers-in, all grades

		% Advanced/ Proficient	Median SGP
Statewide (n)	Transfer in once (20,483)	46%	43
	Transfer in more than once (1,349)	43%	41
Low income (n)	Transfer in once (11,730)	34%	41
	Transfer in more than once (884)	36%	41

Table 7: 2009 MCAS mathematics performance of students with multiple transfers-in, all grades

		% Advanced/ Proficient	Median SGP
Statewide (n)	Transfer in once (21,181)	33%	38
	Transfer in more than once (1,370)	29%	34
Low income (n)	Transfer in once (12,142)	22%	42
	Transfer in more than once (898)	23%	38

Table 8 shows that when compared to districts with the same range of district-level churn rates, between 15 percent and 29 percent, districts with Level 4 schools had smaller percentages of students score in the *Advanced* or *Proficient* categories on the 2009 ELA and Mathematics tests than districts with no Level 4 schools. On the ELA and Mathematics tests, districts with Level 4 schools scored *Advanced* or *Proficient* at rates that were 19 and 18 percentage points lower, respectively, than districts with similar churn rates. This indicates that while mobility is an important issue, it is not the only factor that affects MCAS performance. There are myriad other factors that contribute to performance, and these factors may be more pronounced in Level 4 districts.

Table 8: Comparison of districts with Level 4 schools and other districts with similar churn rates

	# of Districts	Range of Churn Rate	Average Churn Rate	% Advanced/Proficient	
				ELA	Mathematics
Level 4 districts	9	15.4% - 28.9%	21.4%	42%	31%
Comparable districts	37	15.4% - 28.9%	19.5%	61%	49%

Recommendations

This analysis corroborates research findings suggesting that mobile students perform worse than non-mobile students, even when looking only at low-income students. Further, many of the lowest performing schools in the state turned over 30 percent or more of their student populations during the 2008–2009 school year, which could make it difficult to institute change in these buildings.

Now that the state is in a position to track student mobility more accurately, schools and districts can begin to take steps to address it. For instance, districts could consider:

1. Aligning curriculum and pacing between schools as much as possible so that students who move have an easier time transitioning their academic coursework from one school to another.
2. Establishing or strengthening support service protocols specific to the needs of mobile students that identify and address potential emotional, behavioral, and social issues that may accompany academic transitions.
3. Incorporating student mobility as one of a number of risk factors for tracking and evaluating individual students.
4. Implementing student assignment policies that allow students who would otherwise be required to change schools within a district to stay in their original school, at least until the end of the school year.

As more years of data are collected, further analysis will be needed to understand how mobility affects students over time and how it relates to other factors that influence performance.*

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