EXECUTIVE PACKET

Incomplete Grade:

Massachusetts Education Reform at 15

MassINC

RESEARCH. JOURNALISM. CIVIC LIFE.

This report was made possible due to the generous support of the Bank of America Charitable Foundation and Bank of America, N.A., Trustee of the Lloyd G. Balfour Foundation.

MassINC's Mission

The mission of MassINC is to develop a public agenda for Massachusetts that promotes the growth and vitality of the middle class. We envision a growing, dynamic middle class as the cornerstone of a new commonwealth in which every citizen can live the American Dream. Our governing philosophy is rooted in the ideals embodied by the American Dream: equality of opportunity, personal responsibility, and a strong commonwealth.

MassINC is a non-partisan, evidence-based organization. We reject rigid ideologies that are out of touch with the times and we deplore the too-common practice of partisanship for its own sake. We follow the facts wherever they lead us. The complex challenges of a new century require a new approach that transcends the traditional political boundaries.

MassINC is a different kind of organization, combining the intellectual rigor of a think tank with the vigorous civic activism of an advocacy campaign. Our work is organized within four Initiatives that use research, journalism, and public education to address the most important forces shaping the lives of middle-class citizens:

- **Economic Prosperity** — Expanding economic growth and opportunity
- **Lifelong Learning** — Building a ladder of opportunity through the continuum of learning
- **Safe Neighborhoods** — Creating crime-free communities for all
- **Civic Renewal** — Restoring a sense of "commonwealth"

MassINC's work is published for educational purposes. Views expressed in the Institute's publications are those of the authors and not necessarily those of MassINC's directors, staff, sponsors, or other advisors. The work should not be construed as an attempt to influence any election or legislative action.

MassINC is a 501(c) 3, tax exempt, charitable organization that accepts contributions from individuals, corporations, other organizations, and foundations.

All of MassINC's research and *CommonWealth* articles are available free-of-charge through our website, www.massinc.org.

EXECUTIVE PACKET

Incomplete Grade:

Massachusetts Education Reform at 15

May 2009

Thomas Downes
Department of Economics
Tufts University

Jeffrey Zabel
Department of Economics
Tufts University

Dana Ansel, Ph.D.
Research Director
MassINC

MassINC
RESEARCH. JOURNALISM. CIVIC LIFE.

May 2009

Dear Friend:

MassINC is proud to present *Incomplete Grade: Massachusetts Education Reform at 15,* a report made possible by the generous support of the Bank of America Charitable Foundation and Bank of America, N.A., Trustee of the Lloyd G. Balfour Foundation.

In a world defined by rapid change and increasing global competition, education must be a top priority for Massachusetts and the nation. Fifteen years ago, Massachusetts made a bold commitment to raise the educational standards of all children in Massachusetts with the passage of the 1993 Massachusetts Education Reform Act (MERA). Since then, the state has more than doubled its investments in local aid to schools while also creating standards and assessments to measure the progress. These standards have become national models of rigor and quality.

Today, as the nation is looking to replicate the successes of Education Reform in Massachusetts, the time is ripe to analyze the results of the state's investment, while also asking what the priorities of the next generation of education reform should be.

This research provides new evidence that the state's investment has had a clear and significant impact on student achievement. Education Reform has been successful in raising the achievement of students in previously low-spending districts. Without Education Reform, the achievement gap would be larger than it is today. Nonetheless, the achievement gap still looms large. We have yet to reach the goal of educating every student to achieve high standards. Given the scale of the state's investment, these findings suggest that doing more of the same will not close the achievement gap.

Over the last 15 years, there have been significant changes in the characteristics of Massachusetts public school students. Most notably, the share of low-income students has grown considerably. Increasingly, low-income students are becoming concentrated in certain school districts. In some districts, more than three-quarters of the students are low-income. There has been the growth of Limited English Proficient (LEP) students in some districts as well. Education leaders face important questions about how public policy can most effectively help these students succeed at higher levels.

As Education Reform has been implemented, there has been an accumulating body of evidence about successful practices of high-performing schools that educate predominantly low-income students. In general, these schools use different methods from those of the typical public school. Their guiding premise is that low-income students will require a more intensive education experience than middle-class students. They need more time in class, better-trained teachers, and a rigorous curriculum to enable them to achieve at high levels.

Even with all of these reforms, there are still tough questions to be asked about the limits of schools. No school, principal, or teacher can substitute for a child's parents and their responsibilities. Education begins at home, and unless we can bring parents and communities into the process, the impact of any reforms will be limited.

We are grateful to Tom Downes and Jeff Zabel of Tufts University. As this project turned out to be more complicated than we imagined, they helped us understand its complexity, while pushing the project to completion. We would also like to thank the many reviewers whose critical insights have strengthened this report and our thinking about Education Reform. Finally, we would like to thank our sponsors at Bank of America, who have been generous partners.

We hope you find *Incomplete Grade* a timely and provocative resource. As always, we welcome your feedback and invite you to become more involved in MassINC.

Sincerely,

Greg Torres
President

Dana Ansel
Research Director

EXECUTIVE PACKET

Incomplete Grade:

Massachusetts Education Reform at 15

The full report is available at www.massinc.org

EXECUTIVE SUMMARY

Massachusetts lives by its wits. The state's competitive advantage is its skilled and educated workforce. The advantages of a highly educated population will likely be even more important in the future. Education is the lifeblood to economic growth. It is also the key for families' ability to succeed economically. In a world defined by rapid change and increasing global competition, educating more people and arming them with a stronger set of skills and an advanced degree must be one of the state's and nation's top priorities.

Recognizing the importance of a strong education, Massachusetts made a bold commitment to raise the education standards for all children with the passage of the 1993 Massachusetts Education Reform Act (MERA).[1] As part of the reform efforts, the state has more than doubled its investment in local aid to schools while also holding local entities accountable by creating standards and assessments to measure the progress of students. These standards have become national models of rigor and quality.

Fifteen years after the passage of this landmark legislation, at a moment when the nation is looking to replicate the successes of education reform in Massachusetts, the time is ripe to analyze the results of the state's investment coupled with high standards and accountability measures. This research seeks to answer three questions that are at the core of the state's education reform efforts.[2] Did the Massachusetts Education Reform Act:

1. Provide adequate funding to all school districts and reduce disparities in spending between districts;
2. Raise the level of achievement for all students; and
3. Close the achievement gap, so that a student's chance for success does not depend on his or her zip code?[3]

The state's success in meeting these goals is mixed, with both clear progress and also goals not realized. The disparities in spending per pupil between different districts have been reduced, although some of the gains were lost following the economic downturn of 2001. In terms of achievement, the state ranks at the top of the states on the national standardized test, National Assessment of Education Progress (NAEP). Further, Massachusetts is at or near the top globally in science and math, based on the results of the Trends in International Mathematics and Science Study (TIMSS). At the same time, the achievement gap between different students and schools still looms large.

The achievement gap notwithstanding, this research provides new evidence that the state's investment has had a clear and significant impact. Specifically, some of the research findings show

[1] Education reform was also the consequence of the 1993 court case of *McDuffy v. Robertson,* where the state's Supreme Judicial Court ruled that the Commonwealth had failed to meet its obligation to provide equal educational opportunity in the public schools for every child.

[2] To answer these questions, we rely on several data sets. Our analysis of spending is based on CCD data, which include all spending. Our analysis of performance is based on comparing results from the Massachusetts Educational Assessment Program (MEAP) exams that were a statewide exam from 1986 to 1996 and MCAS scores. Because the tests are not directly comparable, we standardize the test scores for each year. This allows us to compare performance of districts across years and across the MEAP and MCAS tests. This means that the estimates of the impact of Ed Reform are measured in standard deviations of test scores. Finally, it also means the majority of our analysis is measuring relative rather than absolute changes in performance.

[3] There are a number of ways in which impact could be measured, including share of students graduating from high school in four years or enrolling higher education (without need for remediation) or some other measures of learning. We choose to focus on achievement as measured by MEAP and MCAS test scores in part because other data are not available across districts over time. While test scores do not capture the full learning experience, they do allow us to make reliable comparisons between school districts and over time. Because we are relying on scores of many tests over many years, we believe this analysis accurately captures achievement levels.

how education reform has been successful in raising the achievement of students in the previously low-spending districts.[4] Quite simply, this comprehensive analysis documents that without Ed Reform the achievement gap would be larger than it is today.

Our analysis reveals that there has been a growing concentration of low-income students – those who are eligible for free or reduced-price lunches – in some school districts. In the districts that received the largest amount of state aid post-MERA, the growth of low-income students has been dramatic. As of 2006, in these districts, more than half of all students, on average, were low-income, which was a 23 percent increase since 1992. There have been similar trends in the share of Limited English Proficient (LEP) students, as well. Even with an additional infusion of resources, questions remain about the true impact of concentrated poverty on student achievement. As the state and nation debate the direction of education reform, urban education must be at the top of the agenda. While education reform in Massachusetts has raised the level of achievement across the board, our findings provide strong evidence that doing more of the same will not close the achievement gap.

Have Disparities in Spending Been Reduced?

A key element of Ed Reform was the creation of a new Chapter 70, which codified a new system of school financing. Prior to MERA, the amount of money that communities received was not determined by a consistent calculation of the need and fiscal capacity of a city or town.[5] In contrast, under MERA, Chapter 70 established a foundation budget system, which attempted to define both the minimum amount of funding that a community needed to provide an adequate education and the community's capacity to contribute to that amount. State aid became the difference between the foundation amount and the amount that the locality was expected to contribute.[6] The redesign of the financing system increased state aid to low-income and low-wealth communities.

The goal of MERA was to create a funding mechanism in which all districts had adequate funding to meet new higher standards of student achievement. As a matter of practice, achieving a consensus on adequacy of spending is difficult, and the courts and others use disparities in spending between different districts as a way of assessing adequacy of spending. Thus, in determining the impact of MERA, a central question is whether the disparities in spending were reduced after the law's enactment in 1993. Because there is no simple way to measure equality of spending, we use six different spending inequality measures. By every measure, spending was equalized throughout the 1990s.[7] This finding is consistent with other research that has found that implementation of court-ordered finance reforms, such as MERA, lead to more equal spending. These analyses generally conclude that the equalization occurs by bringing up the spending of districts at the bottom – often referred to as a leveling-up of low-spending districts.

The main beneficiaries of the increased state spending have been districts that educate large

[4] The term "low-spending" refers to the level of spending at the time of Ed Reform. One goal of MERA was to raise the level of achievement in low-spending districts by providing adequate funding and rigorous standards.

[5] In this research, we use the terms Ed Reform and MERA interchangeably. It is also important to note that because the additional money and the introduction of standards happened simultaneously in Massachusetts, we are not able to separate their effects. When we refer to education reform, we are referring to both the additional resources and the introduction of high standards and accountability.

[6] The funding formula was revised in 2007. Among other changes, the new formula increased money for English language learners and low-income students.

[7] These measures include all spending by school districts, including privately raised money.

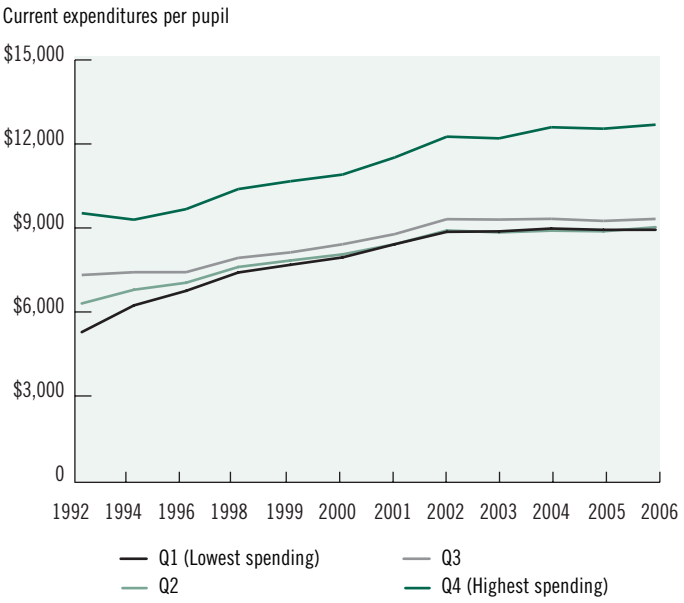
shares of low-income students (those who are eligible for free or reduced-price school lunches) and those that educate large shares of students who have limited English proficiency (LEP). State aid also grew the most in districts that had the lowest test scores at the time of Ed Reform. It is important to note that Ed Reform – responding to the court order of *McDuffy v. Robertson* – focused on making certain that low-spending districts had adequate funding to educate their students.[8] Low spending is not always the same as low performing or low income. In Massachusetts, as in other states, there are some districts, such as Boston and Cambridge, that are both relatively high spending and relatively low performing.

Although average spending per student has been equalized, a gap in spending remains between the highest-spending districts and other districts. We divide districts into quartiles based on the level of their spending in 1992. There has been a convergence in spending between the lowest three quartiles. Increases in state aid played a crucial role in bringing the average spending level of the lowest quartile up to those of the middle two quartiles. But, at the same time, a gap remains between the average of the highest spending quartile and the lowest three quartiles, and the size of this gap has remained essentially unchanged in real dollars since 1992 (ES Figure 1).

The recession in the early years of this decade led to declines in state aid for K-12 education in Massachusetts, and consequently, some of the initial gains in spending equality were lost. The districts that were most dependent on state aid suffered from the cuts, while the districts less dependent on state aid were able to continue at their previous funding levels. Despite this lost ground, as of 2005-06, the extent of spending inequality was still less than it was before Ed Reform. Yet, as the state and nation currently face a more severe and prolonged recession, there is a risk of additional cuts in state aid for K-12 education. Depending on the nature of these potential cuts and depending on the allocation of the federal stimulus money, we could return to greater inequality in the level of spending between districts, possibly back to the levels of inequality at the time of education reform.

ES Figure 1:

Trends in real spending per pupil (by quartiles of 1992 spending)



Where the Money Went

The districts that received the largest amount of state aid used the majority of these new dollars to increase spending on classroom services. This finding is consistent with research on education reforms nationwide. Classroom services

[8] With its 1993 decision in *McDuffy v. Robertson*, the Supreme Judicial Court in Massachusetts provided the impetus for major reforms in K-12 education. Within days of the court decision, the Massachusetts Education Reform Act (MERA) was signed into law. In the court decision, the court concluded that the Commonwealth had failed to meet its financial obligations, and that the state's fiscal support, or the lack of it, significantly impacts the quality of education that a child receives. The court found that "the reality is that children in the less affluent communities (or in the less affluent parts of them) are not receiving their constitutional entitlement of education as intended and mandated by the framers of the Constitution."

KEY FINDINGS

- Spending per student was equalized throughout the 1990s. Some of these gains have been lost because of cuts in state aid following the 2001 recession. Nonetheless, the extent of spending disparities is less than it was at the time of education reform.
- There is still a gap between the highest spending quarter of districts and the bottom three quartiles, while there has been a convergence among districts in the bottom three quartiles since 1992. The gap between the top quartile and the bottom three has remained essentially unchanged in real terms.
- The majority of the new money has been spent on classroom services.
- There has been a dramatic growth in the share of low-income students – those students eligible for free or reduced-cost lunch – in the quartile of districts that received the largest amount of state aid post-MERA. In 1992, nearly 40 percent of students in these districts were low-income. By 2006, more than half (54%) were low-income. In some districts, such as Chelsea, Lawrence, Springfield, and Holyoke, more than three-quarters of the students are low-income.
- In 2007, Massachusetts ranked first among all states on three of the four national NAEP exams. In an international standardized test (TIMSS), Massachusetts students ranked at or near the top in science and math in 2007.
- If the simple question – has the achievement gap between low-spending and high-spending districts closed – is asked, the answer is no. But that question does not take into account the performance trends of the different districts. At the time of education reform, the performance trends of districts appear to be on different tracks.
- If we account for these baseline trends, we see a positive and significant impact of education reform on the relative performance of the low-spending districts. In all of the 4th grade exams, we find evidence of increasing impact over time, which suggests a cumulative positive impact on student performance. Without education reform, the achievement gap would be wider than it is today.
- In order to compare results across time and different tests, the impact is measured in units of standard deviations. In general, economists tend to see an impact of 0.5 standard deviation or greater as evidence of a meaningful impact. The magnitude of the impact of education reform has been considerable, measuring from 0.7 to 1.4 standard deviations (depending on the grade and test).
- There are only two statistically significant differences in the characteristics of the low-spending districts that made the largest gains since the implementation of education reform compared with those that did not: growth in district size and declines in the percentage of limited-English-proficient (LEP) students between 1992 and 2006.

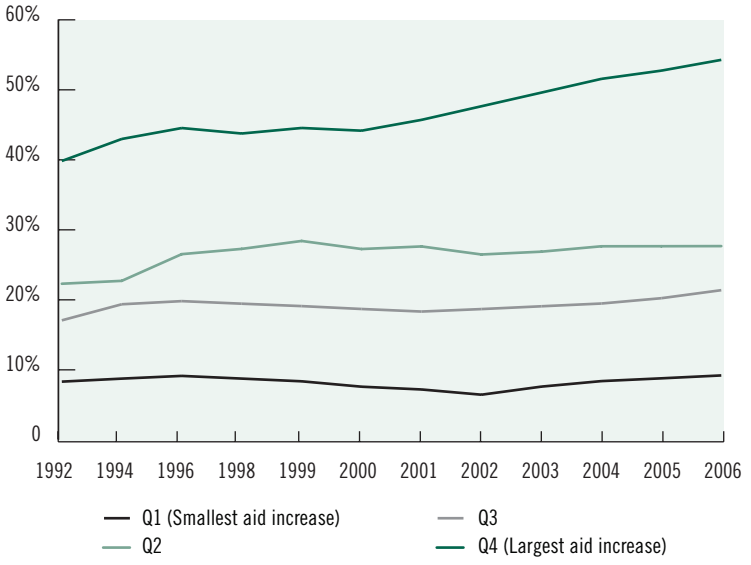
refer to instructional expenditures. In the Common Core of Data, which is our source of data on expenditures, instructional expenditures are "current operation expenditure for activities dealing with the interaction of teachers and students in the classroom, home, or hospital as well as co-curricular activities." Districts are asked to "[r]eport amounts for activities of teachers and

instructional aides or assistants engaged in regular instruction, special education, and vocational education programs. Exclude adult education programs."

At the same time, there is a statewide trend of growing special education costs. These costs have grown across low-spending districts as well as high-spending districts. In 1998, 16.7 percent of all education spending in the Commonwealth was devoted to special education. By 2006, that number had increased to 19.1 percent of all education spending. Since costs have grown everywhere, they do not explain differences in performance between the different districts. Nonetheless, it is noteworthy to flag special education costs as an issue that constrains districts' abilities to provide other services.

ES Figure 2:

Trends in Percent of Low-Income Students (by quartile of change in state aid)



Changing Student Demographics: Rising Number of Low-Income Students

Over the last 15 years, as education reform has been implemented, there have been significant changes in the characteristics of Massachusetts public school students. Most notably, the share of low-income students in the state's public schools has grown considerably. Between 1992 and 2006, the state average of low-income students increased from 22.3 percent to 28.0 percent. The increase, however, has not occurred equally across school districts. Rather, low-income students have increasingly become concentrated in the districts that received the largest increases in state aid post-MERA.[9] The concentration could be a result of increased poverty among new students or the loss of middle-class students. Most likely, it is a combination of both these factors. Between 1992 and 2006, the share of low-income students in these districts as of 1992 increased from nearly 40 percent to 54 percent (ES Figure 2). That is, more than half of the students in these districts are low-income.

The quartile with the largest increases in state aid consists of 53 school districts. While the average share of low-income students is 54 percent among these districts, large differences exist among these communities. In 2008, Chelsea, with 87 percent of the students qualifying for free or reduced-cost lunch, had the highest share of low-income students in the Commonwealth. It was followed by Lawrence, Springfield, Holyoke, and Lynn, districts in which three-quarters or more of students were low-income (ES Table 1).

INCREASINGLY, LOW-INCOME STUDENTS HAVE BECOME CONCENTRATED IN CERTAIN DISTRICTS

Other cities had high shares of low-income students at the time of education reform and have also experienced significant growth in low-income students since that time. Consider Brockton: Seventy-two percent of its students in 2008 were low-income, which was an increase of 103 percent since 1992. Everett and Randolph

[9] State aid changes were measured from fiscal year 1992 to fiscal year 1996.

ES Table 1:

Top 10 Districts with the Highest Share of Low-Income Students, 2008

	PERCENT
Chelsea	86.8
Lawrence	82.9
Springfield	78.5
Holyoke	76.7
Lynn	75.4
Brockton	71.5
Boston	71.4
Lowell	66.6
Fall River	66.5
New Bedford	66.0

Source: Massachusetts Department of Elementary and Secondary Education website
Note: These tables exclude vocational technical schools and charter schools because they were not included in our analyses.

ES Table 2:

Ten Districts with the Largest Percentage Point Increase of Low-Income Students, 1992 to 2008

	1992	2008	PP CHANGE*	%CHANGE
Brockton	35.2	71.5	36.3	103%
Everett	29.7	63.8	34.1	115%
Randolph	11.6	43.1	31.5	272%
Lynn	46.1	75.4	29.3	64%
Greenfield	28.3	55.6	27.3	96%
Springfield	51.5	78.5	27.0	52%
Southbridge	38	64.4	26.4	69%
Malden	27.4	52.8	25.4	93%
Somerville	39.8	64.9	25.1	63%
Revere	37.5	62.3	24.8	66%

* Percentage Point Change
Source: Massachusetts Department of Elementary and Secondary Education website
Note: These tables exclude vocational technical schools and charter schools because they were not included in our analyses.

are other school districts which experienced large increases in low-income students over the last 16 years (ES Table 2). Several towns in the lowest-spending quartile saw declines in the share of low-income students, but these towns were the exception. Overall, there has been a dramatic rise in the share of low-income students in certain school districts.

National and Global Leaders in Achievement

The backdrop for debates about education reform is a changing economy, with rising skill standards and heightened global competition. As a state with limited natural resources, the competitive advantage of Massachusetts has been the knowledge and skills of its workforce. In order for the state to keep its edge, rigorous standards calibrated to meet the changing demands of the global economy were a must. For some, this was the key goal of education reform. By this measure, Ed Reform has been remarkably successful. At the time of education reform, the proficiency levels of Massachusetts students were above the national average. But, the gains in performance of Massachusetts students as education reform has been implemented have outpaced those of their national peers.[10] Massachusetts leads the country in its performance on the national standardized test (National Assessment of Education Progress or NAEP). In 2007, Massachusetts ranked first among all states on three of the four tests and tied for first place on the fourth NAEP test. Moreover, Massachusetts students are getting stronger. Since 2005, Massachusetts students improved in three of the four tests. Average SAT scores of

[10] Charles D. Chieppo and James T. Gass, "Accountability Overboard," *Education Next*, Spring 2009, no. 2. In their article, they also note that during the 1980s, the average verbal and math scores on the SAT by Massachusetts students were below the national average. Math scores were below average as late as 1992.

Massachusetts high school graduates have also increased.

In an international standardized test, Massachusetts students also stood out for their performance. The Trends in International Math and Science Assessment (TIMSS) exam is administered every 4 years in 59 countries around the world. In 2007, Massachusetts students tied for first on the grade 8 science exam, while the United States as a whole ranked only eleventh. Massachusetts 8th grade students were sixth in math; 4th graders were also near the top in both science and math.

At home, Massachusetts students have also shown gains in the Massachusetts Comprehensive Assessment System (MCAS) tests. The share of 10th graders passing MCAS on their first try has increased significantly. Nearly 90 percent (87%) of the class of 2009 passed on their first try, compared with only 47 percent of the class of 2000. Nationwide and worldwide, Massachusetts student are leaders in achievement and have gotten stronger since education reform has been implemented.

Closing the Achievement Gap

As impressive as the state's overall performance has been, there are wide gaps in performance. A central goal of education reform was to raise the achievement level in previously low-performing school districts and, by implication, to close the achievement gap between different groups of students. The idea that the relationship between a student's zip code and his or her level of achievement would be substantially reduced was a truly bold vision. At 15 years into the work of reaching that vision, the results are decidedly mixed – with both evidence of Ed Reform's impact in raising the level of achievement of the students in the low-spending districts and a confirmation that a substantial achievement gap remains.

If the simple question – has the achievement gap closed – is asked, the answer is no. Controlling for student demographics that are known to influence student achievement, we isolate the impact of Ed Reform, which includes both additional dollars and accountability measures.[11] We compare the performance of low-spending districts with high-spending districts – seeking to answer the question of whether the money invested in low-spending districts coupled with the accountability measures had an impact on achievement in relative terms.

A SUBSTANTIAL ACHIEVEMENT GAP REMAINS

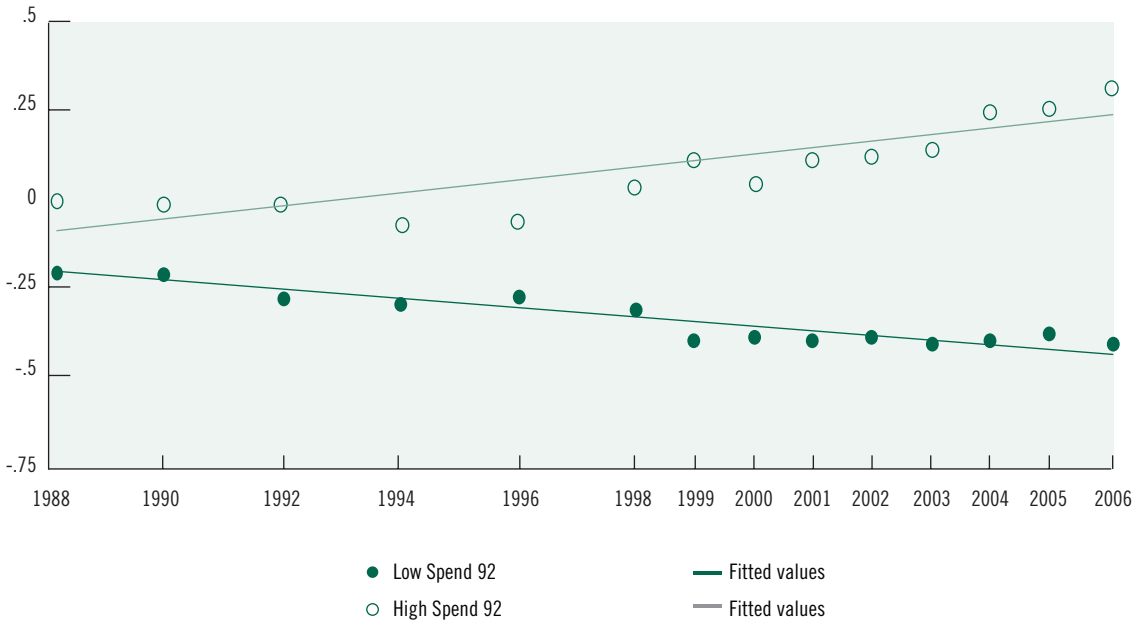
That is, compared with the performance of high-spending districts, did the performance of low-spending districts improve? We analyze all available results for 4th and 8th grade math and English tests. The initial analysis shows that the relative performance in districts that had relatively low spending prior to MERA was, at best, unchanged after MERA.

This simple question is, however, misleading, because it does not take into account the baseline trends in performance of the different districts. When we look at the average scores between 1988 and 2006, we find that the relative performance of the high-spending districts was on an upward trajectory at the time of education reform. At the same time that the trajectory of 4th grade exams in the high-spending districts was upward, there appears to be a slight decline in the relative performance of the low-spending on the 4th grade exams (ES Figures 3 and 4). If

[11] Because the infusion of funding and the introduction of standards occurred simultaneously, we cannot separate their impacts and we consider them together as Ed Reform.

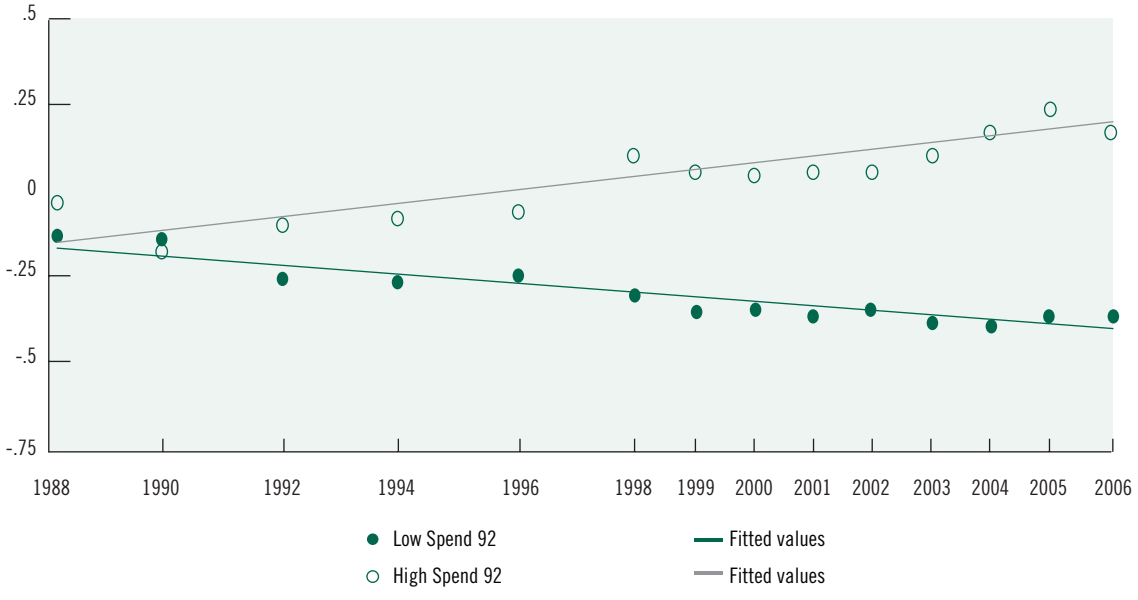
ES Figure 3:

Performance Trends of Top and Bottom Quartiles, Grade 4 Math



ES Figure 4:

Performance Trends of Top and Bottom Quartiles, Grade 4 Verbal



we want to truly isolate the effects of Ed Reform, it is important to control for these trends.

When we take into account these trends, the results are striking and demonstrate the significant impact of Ed Reform. These results indicate that the impact of education reform on the relative performance of low-spending districts has been positive. In fact, the results of three of the four exams (all tests except 8th grade math) show evidence of a positive impact of Ed Reform on the performance of low-spending districts. In the 4th grade exams, we find evidence of increasing impacts over time, which suggests a cumulative positive impact on student performance.

The magnitude of the impact is large and, in some cases, statistically significant. In order to be able to compare results across years and between two different tests (MEAP and MCAS), we measure the impact in units of standard deviations. To give a sense of scale, one standard deviation is roughly the size of the national black/white achievement gap. The difference between the achievement of the Brookline and the Boston public schools is slightly more than one standard deviation. More generally, economists tend to see an impact of 0.5 standard deviation or greater as evidence of a meaningful impact.

By 2006, the lowest-spending districts showed relative increases of 0.7 to 1.4 standard deviations when we account for baseline trends. These are all very large impacts. These findings provide evidence that education reform in Massachusetts had a positive impact on raising the performance of the lowest-spending districts.[12] The results do indicate that, because of the dramatically different trends of high- and low-spending districts at the time of Ed Reform, the achievement gap stubbornly persists. Yet, our analysis makes it clear: Without education reform, the achievement gap in Massachusetts today would likely be wider.

What are the Characteristics of the Top Performing School Districts?

Looking to the future of education reform, we ask whether there are any lessons to be learned from the districts that made the greatest improvements in achievement. For this analysis, we divide all the districts in Massachusetts into the top 25 percent and the remaining 75 percent of districts. The school districts in the top 25% made the largest gains in performance since the implementation of education reform. We compare the characteristics of the top performers (of the previously low-spending districts) with the characteristics of all the other previously low-spending districts, asking the question: Are there any statistically significant differences between the top performers and the other districts? We find two significant differences, which are: Growth in District Size and Share of Limited English Proficient (LEP) students.

Growth in District Size

The top-performing school districts had greater growth in student enrollment between 1992 and 2006 than the other districts. This finding suggests that larger districts are not a barrier to gains in performance. Our findings are consistent with other research that argues that districts can take advantage of the benefits of scale without sacrificing performance. District consolidation allows districts to streamline administration and management structures and thus reduce costs. Our findings also highlight an important caution concerning consolidation. The gains from consolidation are achieved through reducing administrative costs. We find that larger schools were less likely to be the top performers. Thus, if policies encouraging consolidation of administration are pursued, a focus should be on the consolidation of districts, not schools. Merging schools can reduce or eliminate the gains from consolidation.

[12] These results are likely an upper bound on the impact of MERA since the linear trends are based on only a few data points and the impacts themselves are generally not individually significant at the 5% level.

ES Table 3:

Top 10 Districts with the Highest Share of LEP Students, 2008

	PERCENT
Lowell	30.4
Lynn	25
Holyoke	24.2
Lawrence	23.5
Worcester	20.6
Boston	19.1
Chelsea	18.8
Somerville	17.7
Brockton	14.8
Framingham	14.7

Source: Massachusetts Department of Elementary and Secondary Education website
Note: These tables exclude vocational technical schools and charter schools because they were not included in our analyses.

ES Table 4:

Ten Districts with the Largest Percentage Point Increase of LEP Students, 2001 to 2008

	2001	2008	PERCENTAGE POINT CHANGE
Lowell	13.4	30.4	17
Worcester	6.5	20.6	14.1
Lynn	13.3	25	11.7
Quincy	3.3	12.5	9.2
Tisbury	0	8.9	8.9
Brockton	7.6	14.8	7.2
Edgartown	0	7.1	7.1
Revere	4.6	10.2	5.6
Provincetown	0	5.6	5.6
Randolph	3.5	8.7	5.2

Source: Massachusetts Department of Elementary and Secondary Education website
Note: These tables exclude vocational technical schools and charter schools because they were not included in our analyses.

Limited English Proficient (LEP) Students

The growth or decline in limited English proficient students is the other significant characteristic. The top-performing districts experienced a **decline** in the percentage of limited- English-proficient (LEP) students, while the remaining districts experienced an **increase** in the percentage of LEP students during the same time period.

Across the state, there are large differences between school districts regarding the share of the students with limited English proficiency. At 30.4 percent, the Lowell school district has the highest share of LEP students, followed by Lynn (25%), Holyoke (24.2%), and Lawrence (23.5%) (ES Table 3). Some schools districts have also experienced large changes in the share of LEP students over the last seven years.[13] Consider the Lowell school district, where the share of limited English proficient students increased from 13.4 percent to 30.4 percent. Worcester, Lynn, and Quincy have also experienced large increases as well (ES Table 4).

Previous MassINC research, in *The Changing Face of Massachusetts,* has documented the increase in the number of immigrants in Massachusetts, their importance to the economic health of the state, and the increasing numbers that have limited English speaking abilities.[14] In that research, we quantify the economic importance of the ability to speak English for workers participating in the labor market. For workers in the Massachusetts economy, we find that a good education alone is not enough. The ability to speak English well has also become a key ingredient for economic success. Immigrant youth (those between the ages of 16 and 24) who did not speak English well or at all were more likely to be high school dropouts than those immigrants who spoke English proficiently. Similarly, a recent study found that in Boston Public Schools

[13] Districts started consistently reporting the share of Limited English Proficient Students in 2001.

[14] Andrew M. Sum *et al., The Changing Face of Massachusetts.* Boston: MassINC, June 2005.

there has been a widening of the achievement gap between English learners and native English speakers.[15] This research shines a light on the need to think about the expanded role of K-12 schools and ways that English language classes can be integrated into the public schools. These findings also raise questions about the adequacy of resources for schools that educate large shares of LEP students.

Opportunities for Cost Savings

The passage of education reform triggered a huge state investment in K-12 education. Previous MassINC Research, in *Point of Reckoning: Two Decades of State Budget Trends,* identified education as one of the state's key spending priorities over the last 20 years. Between 1987 and 2006, state aid to schools climbed 44 percent to a total of $4.3 billion in 2006. State leaders kept their promise to provide an additional $1.1 billion of additional education aid annually by the year 2000. Despite the declines in spending in the early years of this decade, annual spending for K-12 education in 2006 was still more than $1 billion above 1987.[16]

Going forward, unless the state is prepared to write a blank check for education, attention to opportunities for cost savings is as important as strategies to increase performance levels. This was true even before the current economic downturn. The current recession and the state's large budget gap have, however, intensified the need for immediate cost-saving actions. In June 2008, the Administration assembled the Readiness Finance Commission, a group of business leaders, elected officials, and education experts and charged them with finding ways to fund education. As part of its charge, the Commission identified six specific opportunities to save costs. Our research adds evidence to their recommendations around regionalization and consolidating costs. Their other recommendations offer a good starting point for identifying cost savings opportunities. Specifically, the Commission recommends:

1. Reducing municipal employee health insurance costs by moving municipalities into the Group Insurance Commission (GIC) or programs with equivalent or better rates and enabling this action by granting plan design authority to municipal managers;
2. Reducing retiree benefit costs by moving retired teachers into Medicare;
3. Increasing efficiency and capacity through regionalization;
4. Maximizing federal Medicaid reimbursements for special education costs and exploring other avenues to reduce or spread costs;
5. Reducing procurement costs through procurement reform, enhanced use of collaboratives, and coordinated purchasing; and
6. Reducing energy costs through the use of energy savings companies (ESCOs), conservation campaigns, and better purchasing.[17]

The longer that the state waits to enact cost savings, the more severe the spending cuts will have to be. Thus, there is a real urgency for policymakers to take immediate action on cost-saving measures.

---

[15] Miren Uriarte, Rosann Tung, *et al., English Learners in Boston Public Schools in the Aftermath of Policy Change: Enrollment and Educational Outcomes, AY2003-AY2006*, Mauricio Gaston Institute for Latino Community Development and Public Policy, University of Massachusetts Boston, April 2009

[16] Cameron Huff, "Point of Reckoning: Two Decades of State Budget Trends," MassINC, March 2008, especially pp 12-13.

[17] The full Readiness Finance Commission report can be accessed at: http://www.mass.gov/Eeoe/Readiness%20Finance%20Commission%20Final%20Report.pdf

Concluding Thoughts

This research provides evidence that education reform has made a positive difference in raising the achievement of the previously low-spending districts. Without Ed Reform, the achievement gap in Massachusetts would likely be larger than it is today. At the same time that we acknowledge the accomplishments resulting from the state's investment and accountability measures, the existing achievement gap still looms large. We have yet to reach the goal of educating every student to achieve high standards. Given the state's significant investment in K-12 education, the reality is that doing more of the same will not close the achievement gap. This conclusion leads to difficult questions regarding what should be the priorities of the next generation of education reform. The findings of this research should create an urgency and renewed commitment to K-12 education, especially in districts with large numbers of low-income students.

DOING MORE OF THE SAME WILL NOT CLOSE THE ACHIEVEMENT GAP

During the past 15 years, as education reform in Massachusetts has been implemented, there has also been a body of evidence accumulating from across the nation about successful practices. Nationally, researchers have sought to understand the key elements of high-performing schools in poor communities, and their findings must inform state policymakers. Our state's future prosperity depends on it, and so do our families. To close or narrow the achievement gap, we must be willing to place different ways of thinking on the table for immediate action. More targeted spending and additional resources may be necessary, but without dramatically new approaches, more money will not be sufficient to close the achievement gap.

There are real cost savings opportunities that should be enacted immediately, so that money can be strategically redirected. The findings of this research support efforts to consolidate districts without sacrificing the quality of education. In addition, others have identified ways that the Commonwealth can save significant dollars, including reducing health insurance costs by moving municipalities into the Group Insurance Commission (GIC) or programs with equivalent rates. While these issues are politically charged, they must be addressed in order to maximize the impact of the public's dollars. The money gleaned from these cost-saving measures should be directed toward policies and practices that will narrow the achievement gap.

Progress on student achievement will ultimately be limited until a central issue is truly addressed: the growing concentration of low-income and/or limited-English-proficient students in certain school districts. While the original state aid formula was designed to provide more resources to districts with growing share of low-income students, the adjustment is generally regarded as insufficient.

Richard Kahlenberg, a leading proponent of socioeconomic integration, argues that "students in middle-class schools are much more likely to be exposed to peers with high aspirations, teachers with high expectations, and parents who will ensure high standards."[18] He finds that a small number of school districts have begun using a student's family income as a factor in deciding where a student attends school. As of 2007, there were roughly 40 districts nationwide that took into account family income in school assignment. In Massachusetts, the city of Cambridge uses a system of "controlled choice" for school

[18] Richard Kahlenberg, "Economic School Integration," The Century Foundation, Idea Brief No. 2, February 2000, p. 4.

assignment, and this system integrates students primarily by family income.

In December 2001, the Cambridge school committee changed its requirements so that all public schools were within 15 percentage points of the district-wide percentage of students eligible for free or reduced-cost lunch. For instance, if 30 percent of students in Cambridge are eligible for free or reduced-price lunch, then all schools must have between 15 and 45 percent low-income students. The change in policy has led to greater socioeconomic integration. Because the change has been recent and the plan is being phased in one grade at a time, the full effects of socioeconomic integration are not yet known. But early indications suggest the plan is working well.[19] As positive as the Cambridge outcomes may turn out to be, the reality is that in Massachusetts there are huge limits on the potential of this approach within district lines because of the economic homogeneity of most school districts.

Education leaders must ask how public policy can address the challenges of concentrated poverty in schools. Are there ways in which the state can create incentives for cities and towns to integrate by family income? In the school districts with the high levels of poverty, it will be impossible to create middle-class schools within existing district lines. In those districts, are there lessons to be learned from the Metco Program, which sends students from Boston and Springfield schools to more affluent suburbs?[20] The state might consider creating a new obligation to provide more resources and services while also better integrating existing resources for low-income students and their families.

In general, high-performing schools that teach high-poverty students use radically different methods than those of the typical public school. In his article *What It Takes to Make a Student*, Paul Tough sums up the characteristics of the most successful schools: They set rigorous standards, keep students in school longer, and create a disciplined "can-do" culture.[21] A longer school day is essential, plus additional time for tutoring after a longer day and/or on the weekends, as well as shorter summer vacations. If students are behind grade level, it follows that they need more class time and extra teaching if they are to stand a chance of catching up. Through its Expanded Learning Time Initiative, Massachusetts is at the forefront of redesigning the school day with more time for learning and enrichment opportunities. Today, in Massachusetts, there are 26 schools serving more than 13,500 children implementing an expanded learning schedule. The early evaluations of these efforts show positive impact on teaching and learning.[22]

More time for learning may be an essential ingredient. The more general premise, however, is that low-income students require a more intensive education experience than that of many middle-class students. They need more time in class, better-trained teachers, and a rigorous curriculum to enable them to achieve at the same levels as middle-class children.

Of course, better than helping students catch up is preventing them from falling behind in the first place. Educators believe that 3rd grade is a critical marker in a child's education. By this grade, the signs of which children will struggle and be at risk of dropping out are clear. In 3rd

[19] Our description of Cambridge's integration plan comes from Richard Kahlenberg, "*Rescuing Brown v. Board of Education*: Profiles of Twelve School Districts Pursuing Socioeconomic School Integration," The Century Foundation, June 2007, pp. 28-34.

[20] For more on Metco, see Joshua Angrist and Kevin Lang, "Does School Integration Generate Peer Effects? Evidence from Boston's Metco Program," The American Economic Review, Vo. 94, No. 5 (Dec. 2004), pp. 1613-1634.

[21] Paul Tough, "What It Takes to Make a Student," *New York Times Sunday Magazine*, November 26, 2006, pp. 44.

[22] See "Redesigning Today's Schools to Build a Stronger Tomorrow: The Massachusetts Expanded Learning Time Initiative, 2007-2008 Annual Report," Massachusetts 2020.

grade, students transition from "learning to read" to "reading to learn."[23] After 3rd grade, students rely on literacy skills across all content areas. Other research confirms that by the end of 3rd grade, children must also have the math foundation skills for future success.[24] Early identification of at-risk students and aggressive intervention plans must be stepped up, realizing that in some schools the majority of students will need additional support. A focus on consistent assessment of student in early grades and intervention plans should be a priority.

Closer to home, there has also been a recent and influential study that compares the performance of students at Boston's charter, pilot, and traditional schools.[25] This research finds consistently positive effects for the city's charter schools on student achievement in all MCAS subjects at both the middle and high school levels. Currently, the state places several limits on the number and location of charter schools. Nationally, the Secretary of Education is targeting federal stimulus money toward states that embrace education reform, including removing the cap on charter schools. If Massachusetts raises or eliminates the cap on charter schools, this change could lead to new charter schools in a dozen communities, such as Boston, Holyoke, and Fall River, that are currently at the limit. In addition, the state should consider allowing effective charter schools serving high-poverty students to operate additional schools and thus allow for greater efficiencies and economies of scale. At the same time, the state should also be more aggressive about closing charter schools that are not working.

WE SHOULD REWARD TEACHERS WHO ARE EFFECTIVE IN INCREASING STUDENT ACHIEVEMENT

A robust system of vocational-technical schools with ties to job opportunities is important as another avenue of choice. The vocational-technical schools in Massachusetts have realized the importance of their students acquiring strong academic skills in addition to technical skills. A recent study finds that they have a better-than-average graduation and MCAS pass rate than similarly situated students. Moreover, almost all of the state's vocational and technical schools have waiting lists.[26] There are ways in which the Commonwealth could better leverage the resources of the voc-tech schools. Voc-tech schools could help increase the number of graduates in high-demand fields. The ability of voc-tech schools to offer technical associate degrees and certificates should be explored. In the meantime, the state should expand effective vocational-technical schools as one promising route to academic success.

Finally, there is a growing body of research that confirms what we all know to be true from our own experiences: Teachers make a huge difference in the quality of a student's education. Thomas Kane, professor of education and economics at the Harvard Graduate School of Education, and his colleagues have studied this issue extensively, quantifying the impact, or value-added, of teachers.[27] The research finds large differences between teachers' effectiveness but also that that teacher certification, a traditional crite-

[23] See WGBH-WBUR's Project Dropout series at www.projectdropout.org.

[24] Brett V. Brown *et al.*, "Pre-Kindergarten to 3rd Grade (PK-3) School-Based Resources and Third Grade Outcomes.," *Cross Currents*, Issue 5, August 2007.

[25] Thomas Kane *et al., Informing the Debate: Comparing Boston's Charter, Pilot, and Traditional Schools*, prepared for the Boston Foundation, January 2009.

[26] Alison L. Fraser, "Vocational-Technical Education in Massachusetts," A Pioneer Institute White Paper, No. 42, October 2008.

[27] Robert Gordon *et al.*, " Identifying Effective Teachers Using Performance on the Job," The Brookings Institution, The Hamilton Project, Discussion Paper 2006-01, April 2006.

rion of measuring teacher quality, is not an indicator of effectiveness. Perhaps, more important, this research shows how within the first two or three years of teaching, a teacher's effectiveness is clear and measurable. After that period, effective teachers actually get better, and the weaker teachers fall further behind. Similarly, a recent evaluation by Mathematica Policy Research finds that teachers with alternative certification are as effective as teachers with traditional certification.[28]

These findings should spur a rethinking of the teacher hiring, training, and tenure process. Lower barriers to hiring coupled with more rigorous evaluation of teacher impact will lead to a more effective teacher corps, which, in turn, is critical for student achievement. As part of state policy, we should reward teachers who are effective in increasing student achievement and support a differentiated pay structure to draw the most effective teachers into the schools where they are needed the most. Quite simply, we need to find ways to place the most effective teachers in high-poverty schools.

Even with all of these reforms, there are still tough questions to be asked about the limits of schools to influence student achievement. No school, principal, or teacher can substitute for a child's parents and their responsibilities – to read to their children, engage with their children's schools, and attend parent/teacher conferences. There might be new ways to engage communities more systematically, making them partners in learning. Leaders across the state from the governor and mayors to business, community, and religious leaders should use the power of the bully pulpit to reinforce the message about the importance of education and the need for responsible parenting. But overall, education begins at home, and unless we find ways to bring parents and communities into the process, the impact of education reform will be limited.

RECOMMENDATIONS:

- Reward teachers who are shown to be more effective in increasing student achievement
- Create incentives for policies that promote socioeconomic integration
- Create policies that place the most effective teachers in high-poverty schools
- Strengthen and expand policies to consistently assess students in early grades and provide intervention
- Promote policies that encourage longer school days for high poverty schools and create a targeted initiative around an expanded school year
- Raise the state cap on charter schools and consider allowing effective charter schools to operate additional schools
- Expand the capacity of effective vocational-technical schools
- Encourage cost savings measures, such as moving municipalities into the Group Insurance Commission (GIC)

The accomplishments of the Massachusetts Education Reform Act are clear, but the remaining challenges are large and demand new thinking. Since the time that Massachusetts enacted education reform, there is a growing body of work documenting success at educating low-income students to achieve high levels of success. The bottom line is that these schools use dramatically different approaches than those of the typical public school. If we are to meet today's challenges, we must be willing to support such efforts, even if they are controversial. The future of our state and our families depends on our ability to meet these challenges.

[28] Jill Constantine *et al*., "An Evaluation of Teachers Trained Through Different Routes to Certification," Institute of Education Sciences, U.S. Department of Education, NCEE 2009-4043, February 2009. Available at: http://www.mathematica-mpr.com/publications/pdfs/education/teacherstrained09.pdf

NOTES

NOTES

NOTES

NOTES

MASSINC SPONSORS

CHAIRMAN'S CIRCLE SPONSORS

Anonymous (2)
The Boston Foundation
The Highland Street Foundation
The John S. and James L. Knight Foundation
Nellie Mae Education Foundation

LEAD SPONSORS

AARP Massachusetts
Bank of America
Blue Cross Blue Shield of Massachusetts
Liberty Mutual Group
Madison Dearborn Partners
MassMutual Financial Group
NAIOP, Massachusetts Chapter
National Grid
Recycled Paper Printing, Inc.
Fran & Charles Rodgers
State Street Corporation
Verizon Communications

MAJOR SPONSORS

Anonymous
Ronald M. Ansin Foundation
The Bank of New York Mellon
Beacon Health Strategies
Bilezikian Family Foundation
Boston Private Bank & Trust Company
Citizens Bank
CSX
Irene E. & George A. Davis Foundation
The Deshpande Foundation
Dominion Resources
Edwards, Angell, Palmer & Dodge, LLP
Fallon Community Health Plan
Fidelity Investments
The Paul and Phyllis Fireman Charitable Foundation
Foley Hoag LLP
Harvard Pilgrim Health Care
Harvard University
Hunt Alternatives Fund
IBM
John Hancock Financial Services
The Lynch Foundation
MassDevelopment
Massachusetts Educational Financing Authority
Massachusetts Medical Society
Massachusetts State Lottery Commission
Massachusetts Technology Collaborative
MassHousing
The MENTOR Network
New England Regional Council of Carpenters
The Omni Parker House
P&G Gillette
Partners HealthCare
Putnam Investments
Savings Bank Life Insurance
Tishman Speyer
Tufts Health Plan
William E. & Bertha E. Schrafft Charitable Trust
State House News Service
Wal-Mart Stores Inc.

CONTRIBUTING SPONSORS

A.D. Makepeace Company
Altus Dental Insurance Co.
Arrowstreet
Associated Industries of Massachusetts
The Beal Companies LLP
Bingham McCutchen LLP
Boston Society of Architects/AIA
Boston University
Cabot Corporation
Carruth Capital LLC
causemedia
The Charles Hotel
Children's Hospital Boston
Citizens' Housing and Planning Assocation
Commonwealth Corporation
ConnectEdu
Delta Dental Plan of Massachusetts
Denterlein Worldwide
EduClean
EMC Corporation
EMD Serono
Federal Home Loan Bank of Boston
Philip & Sandra Gordon
Grossman Marketing Group
Holland & Knight LLP
Johnson Haley LLP
KPMG LLP
Massachusetts AFL-CIO
Massachusetts Association of REALTORS®
Massachusetts Bay Commuter Railroad Company
Massachusetts Building Trades Council
Massachusetts Convention Center Authority
Massachusetts Health and Educational Facilities Authority
Massachusetts High Technology Council
Massport
The MEKETA Group
Mercer Human Resource Consulting
Merrimack Valley Economic Development Council
Microsoft Corporation
ML Strategies LLC
Network Health
New Boston Fund, Inc.
Nixon Peabody LLP
Northeastern University
Nutter McClennen & Fish LLP
O'Neill & Associates
Paradigm Properties
Retailers Association of Massachusetts
RSA Security Inc.
Seven Hills Foundation
Carl and Ruth Shapiro Family Foundation
Skadden, Arps, Slate, Meagher & Flom LLP
The University of Massachusetts
Wainwright Bank & Trust Company
WolfBlock Public Strategies LLC
Zipcar

CITIZENS' CIRCLE

Anonymous (8)
David Abromowitz
William Achtmeyer
Nicholas Alexos
Tom & Marsha Alperin
Joseph D. Alviani &
Elizabeth Bell Stengel
Carol & Howard Anderson
Ronald M. Ansin
Marjorie Arons-Barron & James Barron
Jay Ash
Richard J. & Mary A. Barry
David Begelfer
The Bilezikian Family
Joan & John Bok
Kathleen & John Born
Frank & Mardi Bowles
Ian & Hannah Bowles
John A. Brennan Jr.
Rick & Nonnie Burnes
Jeffrey & Lynda Bussgang
Andrew J. Calamare
Heather & Chuck Campion
Marsh & Missy Carter
Neil & Martha Chayet
Gerald & Kate Chertavian
Meredith & Eugene Clapp
Margaret J. Clowes
John F. Cogan Jr.
Dorothy & Edward Colbert
Ferdinand Colloredo-Mansfeld
Franz Colloredo-Mansfeld
Philip & Margaret Condon
William J. Cotter
William F. Coyne Jr.
John Craigin & Marilyn Fife
Michael F. & Marian Cronin
Stephen P. Crosby & Helen R. Strieder
Bob Crowe
Sandrine & John Cullinane Jr.
Sally Currier & Saul Pannell
Thomas G. Davis
William A. Delaney
Richard B. DeWolfe
Gerard F. Doherty
Roger D. Donoghue
William & Laura Eaton
Philip J. Edmundson
James & Amy Elrod
Susan & William Elsbree
Wendy Everett
Scott D. Farmelant
Juliette Fay & Bill O'Brien
Fish Family Foundation
David Feinberg
Grace Fey
Newell Flather
Christopher Fox & Ellen Remmer
Robert B. Fraser
Nicholas Fyntrilakis
Chris & Hilary Gabrieli
Darius W. Gaskins, Jr.
John Gillespie & Susan Orlean
Paula Gold
Lena & Ronald Goldberg

Carol R. & Avram J. Goldberg
Philip & Sandra Gordon
Jim & Meg Gordon
Tom Green
Mr. & Mrs. C. Jeffrey Grogan
Paul S. Grogan
Kathleen Gross
Barbara & Steve Grossman
Paul Guzzi
Henry L. Hall, Jr.
Scott Harshbarger &
Judith Stephenson
Harold Hestnes
Arnold Hiatt
Joanne Hilferty
Michael Hogan & Margaret Dwyer
Liz & Denis Holler
Ronald Homer
Peter & Holly LeCraw Howe
Maria & Raymond Howell
Laura Johnson
Philip Johnston
Jeffrey Jones
Robin & Tripp Jones
Sara & Hugh Jones
Ronnie & Steve Kanarek
Martin S. Kaplan
Dennis J. Kearney
Michael B. Keating, Esq.
Dennis M. Kelleher
William E. Kelly
Tom Kershaw
Julie & Mitchell Kertzman
Klarman Family Foundation
Richard L. Kobus
Stephen W. Kidder & Judith Malone
Deanna Larkin
Anne & Robert Larner
Gloria & Allen Larson
Susan Winston Leff
Paul & Barbara Levy
Chuck & Susie Longfield
Carolyn & Peter Lynch
Kevin Maguire
John & Marjorie Malpiede
Jack Manning
Anne & Paul Marcus
William P. McDermott
The Honorable Patricia McGovern
Katherine S. McHugh
Ed & Sue Merritt
Dan M. Martin
Paul & Judy Mattera
David McGrath
Peter & Rosanne Bacon Meade
Mills & Company
Nicholas & Nayla Mitropoulos
James T. Morris
Gerry Morrissey
Edward Murphy & Ann-Ellen Hornidge
John E. Murphy, Jr.
Pamela A. Murray
Paul Nace & Sally Jackson
Bruce & Pam Nardella
Scott A. Nathan
Richard Neumeier
Fred Newman
Elizabeth Nichols
Paul C. O'Brien
Joseph O'Donnell
Andrew Paul
Randy Peeler
Hilary Pennington & Brian Bosworth
Finley H. Perry, Jr.
Daniel A. Phillips
Jenny Phillips
Diana C. Pisciotta
Michael E. Porter
R. Robert Popeo
John & Joyce Quelch
Mitchell T. & Adrienne N. Rabkin
John R. Regier
Richard Rendon
Thomas & Susan Riley
Mark & Sarah Robinson
Fran & Charles Rodgers
Barbara & Stephen Roop
Michael & Ellen Sandler
John Sasso
Paul & Alexis Scanlon
Helen Chin Schlichte
Karen Schwartzman & Bob Melia
Ellen Semenoff & Daniel Meltzer
Richard P. Sergel
Robert K. Sheridan
Richard J. Snyder
Alan D. Solomont &
Susan Lewis Solomont
Helen B. Spaulding
Patricia & David F. Squire
Harriett Stanley
John Stefanini
Mark S. Sternman
Tim Sullivan
The Honorable Jane Swift
Ben & Kate Taylor
Jean Tempel
David Tibbetts
M. Joshua Tolkoff
Gregory Torres & Elizabeth Pattullo
Thomas Trimarco
A. Raymond Tye
Tom & Tory Vallely
E. Denis Walsh
Michael D. Webb
David C. Weinstein
Robert F. White
Michael J. Whouley
Leonard A. Wilson
Ellen Zane
Paul Zintl

BOARD OF DIRECTORS

Ann-Ellen Hornidge, chair
Gregory Torres, ex officio
Jay Ash
David Begelfer
Andrew J. Calamare
Neil Chayet
Philip Condon
Jay Curley
Geri Denterlein
Mark Erlich
David H. Feinberg
Grace Fey
Robert B. Fraser
Tom Green
C. Jeffrey Grogan
Harold Hestnes
Joanne Jaxtimer
Tripp Jones
Elaine Kamarck
Bruce Katz
Paul Mattera
William P. McDermott
Melvin B. Miller
Michael E. Porter
Mark E. Robinson
Charles S. Rodgers
Paul Scanlon
Tom Trimarco
Eric Turner
David C. Weinstein
Karyn M. Wilson

MASSINC STAFF

EXECUTIVE

Greg Torres
President

RESEARCH & POLICY

Dana Ansel, Ph.D.
Research Director

Ben Forman
Senior Research Associate

COMMONWEALTH MAGAZINE

Bruce Mohl
Editor

Michael Jonas
Executive Editor

Robert David Sullivan
Managing Editor

Gabrielle Gurley
Senior Associate Editor

Alison Lobron
Associate Editor

Jack Sullivan
Senior Investigative Reporter

DEVELOPMENT

Robert Zaccardi
Director of Development

Lee Polansky
Foundation Relations Manager

PROGRAMS & OPERATIONS

John Schneider
Executive Vice President

David N. Martin
Director of Finance & Administration

Samantha Vidal
Program & Policy Associate

Krisela Millios
Office Manager & Development Assistant

Heather Hartshorn
Graphic Designer

COMMUNICATIONS

Marjorie Malpiede
Director of Communications & Outreach

Emily Wood
Director of Public Affairs

INTERNS

Kathleen Pendleton

Christine Prignano

MassINC

RESEARCH. JOURNALISM. CIVIC LIFE.

18 Tremont Street, Suite 1120
Boston, MA 02108

www.massinc.org

$10.00
union bug