EFFECTIVE SCHOOL DISTRICTS IN MASSACHUSETTS

A Study of Student Performance Relative to District Demography on the 2001 MCAS Assessments

The Fourth Annual Report

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OVERVIEW

The first analysis of school district effectiveness came out in February of 1999 and evaluated the 1998 MCAS in terms of district demography. Subsequent reports considered the 1999 and 2000 MCAS results. The central tool of these analyses is the Effectiveness Index methodology that examines the relationship between selected community demographic characteristics and educational outcomes. These characteristics include: average education level, average income, poverty rate, single-parent status, language spoken, and percentage of school-age population enrolled in private schools. These variables were chosen because they correlate with achievement and because the education literature identifies them as connected to academic performance. (See Appendix C for information on the Effectiveness Index.)

Researchers ranging from James Coleman in the 1960s to James Comer in the 1990s have demonstrated that community demographics play a major role in how well children do in school. Today the media and researchers often reference the role that demography plays in student achievement. The Effectiveness Index model provides a means of isolating the role played by community characteristics on student performance on statewide educational assessments. With a community's achievement context factored into its test results, it is possible to know how much value a school system adds to demographic expectations. In the absence of a methodology to control for the demographic diversity of Massachusetts, listing MCAS scores primarily demonstrates the relative advantage or disadvantage that community characteristics bring to student performance. Any raw ranking order of MCAS scores reflects district demography much more than it represents anything else. A sorting of MCAS results would tell us more about local real estate values or the percentage of luxury car ownership in a community than it would about school quality.

THE FOURTH EDITION

This fourth edition analyzes data from the first MCAS administration that counts as a graduation requirement for the class of 2003 - the 2001 tests. For the first time, scores improved dramatically across the Commonwealth. Students in schools in very different communities – cities and suburbs – scored significantly higher than students in previous classes.

There are several details of note about this report:

- Much of the analysis focuses on Grade 10 results. This is the first year the tests count as a graduation requirement and analyzing the progress of the Class of 2003 can help identify issues and perhaps help shape future policy.
- Small districts (those with fewer than 45 students taking MCAS exams in one grade) are not included in this report. This is not a reflection of a bias against small systems. Rather, small sample size can add significant error to any statistical analysis.
- Only Grades 4, 8, and 10 ELA and Math scores are evaluated in the study.
- This fourth edition covers 98% of the state's public school population in Grades 4 and 8 and 88% of Grade 10 students.[1] (Regional vocational-technical schools, which are not included in this report, educate 10% of the Grade 10 students.)

This report identifies school districts that add value to the learning readiness of their students as indicated by higher-than-demographically-predicted test scores. Identifying such systems is a first step to determining if they are indeed providing more effective educational services to their students. Identifying best practices in higher-scoring systems that are demographically similar to lower-scoring systems is

[1] Massachusetts students attend school in *district* systems and in *regional* systems. Most students attend district systems while regionals educate 9% of the Grade 4 students and 15% of the Grade 8 and Grade 10 students in Massachusetts. District school districts (e. g., Boston, Woburn, South Hadley) serve students from only one community. Regional systems serve students from several communities. For example, Nashoba Regional educates children from the towns of Bolton, Lancaster and Stow. In the case of evaluating the effectiveness of regional school systems, community demographics have been factored to reflect the regional school district characteristics.

the first step in helping other systems implement productive policies and practices to help all children learn.

While this report lists districts that over-performed expected scores, it also evaluates progress in different kinds of communities after four administrations of MCAS. We know that students all over the state made significant gains on the 2001 MCAS compared to the 2000 assessment. We also know that some Massachusetts school districts, despite having made solid score gains, still have many students who have not yet demonstrated mastery of the critical basic skills assessed by MCAS. In addition to assessing the 2001 MCAS scores of individual systems in terms of demography, this report evaluates the performance improvement over time for different kinds of school districts.

Year 4 of the MCAS has produced the first solid gains from one year to the next. While scores were generally up, the greatest gains were in Grade 10. While this report, like its predecessors, identifies those systems that over-perform based on demography, the dramatic improvement in scores provides an opportunity to expand the research to begin to make some observations about the overall efficacy of the 1993 education reform legislation.

PRIMARY OBSERVATION: SOLID IMPROVEMENT BUT DEMOGRAPHY STILL MATTERS

After four years of data analysis, one point emerges clearly: Districts that over-perform their demography tend to be middle-class or demographically advantaged communities. As was the case in previous years, upper-demography communities are about two times more likely to over-perform than are communities of lower demography.[2]

[2] I define upper demography communities as being in the top 25% of Massachusetts communities based on my demographic methodology; I define lower demography communities as those in the bottom 25% of the state in terms of such demography. See page 16 for more information on community demography.

The relative lack of capacity of lower demography communities to exceed their demographic characteristics on standards-based assessments remains a persistent point of concern. Even with much higher average scores on the 2001 MCAS compared to previous years, some demographically disadvantaged communities still have 40% of their students not passing MCAS. It is likely that schools in these districts will need to provide more robust interventions to help all students achieve the basic skills measured by the ELA and Math MCAS.

Based on the results of the 2001 MCAS, most of the students in middle and upper-demography districts perform well enough now to pass – achieve one point above Fail – the MCAS graduation requirement. Demographically disadvantaged districts have much more work to do to lift more of their students into success in school and on MCAS.

The greatly improved results of the 2001 MCAS confirm a basic fact of life for educational achievement: Without substantial changes in urban and other disadvantaged schools, a student's educational success will continue to be a function of zip code. The goal of education reform should be to change the finding of the Willis-Harrington Commission of 1965 that concluded that, concerning educational quality, "It matters vitally to every individual where the accident of birth and home locates him." Thirty-five years after the most comprehensive education study in state history spoke of the impact of demography and geography on achievement, we still face the challenge of neutralizing the impact of demographics on educational outcomes.[3]

[3] See Massachusetts General Court, *Special Commission to Investigate and Study Educational Facilities in the Commonwealth of Massachusetts* (Boston, 1965): 82. Also, Robert D. Gaudet, "The Willis Harrington Commission: The Politics of Education Reform," *New England Journal of Public Policy* 3(Summer/Fall 1987): 66-77.

2001 Grade 10 MCAS Performance by Demography*

	ELA GR10 Pass %	Math GR10 Pass %	Total # GR 10 Students	% of State
Advantaged Mass.	96%	93%	11,940	21%
Middle Mass.	90%	85%	21,727	37%
Challenged Mass.	82%	75%	11,240	19%
15 Cities	69%	60%	13,121	23%
STATEWIDE	82%	75%	58,028	100%

(* See page16 for information about demographic modeling.)

After eight years of the current education reform effort, several points are clear:

- Most Massachusetts schools districts are in good shape concerning teaching their students the basic skills measured by MCAS.
- On the Grade 10 MCAS, 121 districts had fewer than 10% of their students failing ELA; another 50 districts had Fail rates between 11% and 15%, which means that 171 districts out of 223 in the data set are in very good shape in terms of passing MCAS ELA.
- Concerning Math, 69 districts had fewer than 10% of their students failing, and another 50 districts had Fail rates of 11% to 15%. Another 49 districts had Fail rates between 16% and 20%, which means that 168 districts out of the 223 in the data set used for this report are in good shape in terms of passing MCAS Math.
- Demographically challenged districts are having a hard time implementing the dramatic school reforms needed for teachers to help students master the skills needed to be successful in life. Virtually all of the districts with higher percentages of students in Fail are demographically challenged. In the major cities, even with the solid improvement in MCAS scores in 2001, 40% and more of students did not pass MCAS.
- As was the case last year and the year before, there are many repeat performers in the Effective Districts list. Generally, about half of the sixty systems identified in each grade and subject in this report as adding value to the demographic characteristics of their students are repeaters from last year. This is not

surprising; a system that had organized itself to enhance student achievement in 2000 is likely to have kept that up in 2001.

THE MCAS:
THE MASSACHUSETTS COMPREHENSIVE ASSESSMENT SYSTEM

The chief objective of the state's education reform initiative is to enable public school students to achieve a certain level of knowledge and skill. The Massachusetts Department of Education has established this level by setting out what students are expected to learn in each basic subject. School districts are supposed to see to it that their students learn what they are expected to learn.

MCAS has three broad purposes: Performance Assessment; Diagnostics; and Accountability.

- The *Performance* aspect of the MCAS – the scores – has been the most publicized part of education reform. Newspapers and electronic media regularly report scores of districts.
- The *Diagnostics* built into MCAS give educators the capacity to identify specific learning weaknesses in individual students as well as target problems in curriculum and teaching that may impede achievement. School systems should be able to improve student learning through the use of these diagnostic tools.
- Finally, MCAS gives citizens an *Accountability* tool that measures how well schools are doing in moving their students towards high achievement. With MCAS data over time as a guide, we should be able to increase the accountability of individuals, schools, and systems.

MCAS has created some controversy. Citizens and students in some communities are not supportive of MCAS for various reasons. The Massachusetts Teachers Association has mounted several major media campaigns against MCAS as it now stands. Generally speaking, the opposition has come from the education industry and from people in very wealthy communities. On the other hand, many business leaders and several prominent newspapers support MCAS education reform. Public sentiment has been generally favorable.

The most comprehensive analysis of the MCAS is probably a recent study done by Achieve, Inc., a national independent non-profit education reform organization. The report, *Measuring Up: A Report on Educational Standards and Assessments for Massachusetts*[4], finds:

- Overall, Massachusetts' high standards and high school tests are of high quality and are aligned, providing a solid foundation on which to build state education policy.
- The grade 10 tests are rigorous yet reasonable – and are in fact the most challenging of the exit-level tests Achieve has reviewed.
- The mathematics standards generally are well organized, jargon-free, clear and precise.

[4] See *Measuring Up*…, Executive Summary, pages 5-6, available at www.achieve.org

MEASURING EDUCATIONAL EFFECTIVENESS

Student academic performance, including how students perform on MCAS tests, is affected by two broad sets of influences: school factors and non-school factors. The first entail what happens in school, and thus what is within the control of the school district itself. The second entails conditions outside the schools, such as the demographic profile of the students and the community. As we look at a given district's average score on an MCAS test, we have to be able to discern how much of the score is tied to school factors, and how much of the score is explained by non-school factors. School factors include sufficiency of resources (usually defined as how much money is spent on education); effectiveness of teachers; quality of curriculum, and such. Unfortunately, it is very difficult to measure any of these things except per-pupil spending.

In the research reported in this paper, *non-school factors* consist largely of the overlapping demographic conditions of family life and community life. This study uses six such conditions in a given school district: its median level of educational attainment, its median income level, its percentage of households above the poverty line, its percentage of single-parent families, its percentage of non-English-speaking households, and its level of private school enrollment. Statistical analysis shows that these factors form much of the non-school influence on how the state's students do on such standardized tests as the MCAS.[5]

[5]Other family and community conditions are crucial to student success, but are hard to observe and measure. One would have to monitor many families and communities closely over time to discern how family and community behavior affect school outcomes. How many books are read in the family? How much time is taken up by watching TV? How do the community's adults treat children other than their own? Does the community mentor its young people? It is hard to get reliable answers to such questions. But we do know that the children of advantaged families and communities are more likely on average to have resources and support, and children of less advantaged situations are less likely to have them. We use gross measures of such support as a proxy for answers to the more specific questions that are so hard to pursue.

IDENTIFYING OVER-PERFORMING SYSTEMS

Identifying systems that over-perform their demography is important in that such systems may have valuable lessons to offer similar systems in their efforts to boost student achievement. In fact, the state Department of Education and Mass Insight Education, a well-respected non-profit education reform organization, are working to identify exemplary schools to determine which specific initiatives have contributed to the outstanding performance of a school or district. (See the Mass Insight web site for more information on their Building Blocks initiative - www.massinsight.com.)

WHAT THE EFFECTIVENESS INDEX TELLS US: STATEWIDE RESULTS

The Effectiveness Index (EI) provides a measure of the school district's contribution to its student performance. The Effectiveness Index supplies a piece of crucial insight as to which school districts are more effective.

For a given district, the Effectiveness Index gauges the impact that school factors have on the average MCAS score. The greater the positive impact of the school factors, the higher the district's Effectiveness Index will be.

The Index is calculated in the following manner: For a given district, the six demographic factors are used as the basis for projecting a likely average score on the MCAS. The demographically likely score is then compared to the average score that the students in the district actually received. The Effectiveness Index is the number that represents the difference between the likely score and the actual score.

If the number is negative – if the actual score is lower than the likely score – then this suggests that what is happening in the schools in the district is not enabling its students to perform beyond the demographic expectations for them. If the number is a positive number – if the actual score is higher than the likely score – then this suggests that what is happening in the schools is helping the district's students to

surpass the demographic expectations for them. (For a fuller account of the development of the Effectiveness Index, please see Appendix C.)

This research applies the Effectiveness Index methodology to the MCAS scores of school districts in the state. One of the consistent findings of this analysis is that demography explains most of the variation in test scores from district to district.

It is important to understand that demography is not necessarily destiny. Where a person is born or raised does not dictate how successful or unsuccessful that person will be in life. Similarly, demography does not determine educational achievement in all cases. There are examples of successful urban schools where disadvantaged students do very well by any measure. However, demography does create the context in which schools operate and in which learning occurs. Other factors being equal, it is less likely that students from a disadvantaged environment will be as successful in educational achievement as will be students from advantaged situations. Demography is about *tendency*, not *destiny*.

EFFECTIVE AND NOTEWORTHY SCHOOL DISTRICTS

The Effectiveness Index lets us identify two types of school districts that are interesting in terms of education reform: Effective Districts and Noteworthy Districts.

An EFFECTIVE district meets two specifications:
1. Its Effectiveness Index is a positive number - that is, its actual score on the test is substantially higher than its demographically likely score.
2. Its actual score is equal to or higher than the average MCAS score for the state as a whole.

Thus, a district that meets both of these specifications invites further scrutiny to determine whether its practices provide a worthwhile model for other districts.

In this research, Braintree, Pembroke, and Woburn are districts who have consistently over-performed demography while scoring above state average. Orange, a demographically challenged Western Massachusetts district, has been identified consistently as moving students beyond their demography and scoring over state average. All of these districts kept up their performance on the 2001 MCAS and are identified as Effective. Other such districts include the following:

- Grade 4 solid performers include Marshfield, Arlington, Plymouth, and East Longmeadow.
- Districts that did particularly well in terms of their demography on the 2001 Grade 8 MCAS include Central Berkshire, Ayer, Palmer, Hadley, and Southern Berkshire in Western Massachusetts, and Norton, Brookline, and Hanover. Ipswich over-performed in Grade 8 ELA and continued its impressive performance on the Math Grade 8 MCAS.
- On the Grade 10 MCAS, Pentucket, Nauset, Masconomet, Stoneham, Lenox, and Northampton all performed consistently well in terms of demography.

A NOTEWORTHY district fits the first specification but does not fit the second. It does not score at or above state average. Since its performance helps its students to go beyond their demography, it is still worthy of note. What such a district is doing educationally can hold useful lessons for districts that are demographically similar, but do not outscore their demography. Such a district is more likely to deliver a return on future public investment than is an ineffective district.

Noteworthy districts are usually demographically challenged. Since the major goal of education reform is to lift all students up to a basic skills level in Math and English, Noteworthy districts have much to teach us about making schools more effective for all students. Here Everett continues to perform well, as do Ware and Clinton. Gardner and Ludlow perform very well on the Grade 10 MCAS.

Please see Appendix A for a listing of Effective and Noteworthy school districts on the 2001 MCAS.

EDUCATION ACHIEVEMENT AND BASIC KINDS OF COMMUNITY IN MASSACHUSETTS

It is very difficult to understand how well we are doing in terms of implementing education reform unless the various characteristics of Massachusetts' communities are factored into the evaluation. The Effectiveness Index research is based on a methodology that statistically analyzes demographic data so that individual school districts can be compared to their demographic peers. For purposes of this report, I will place the Commonwealth's school systems into four categories: Advantaged Massachusetts; Middle Massachusetts; Challenged Massachusetts; and the Fifteen Cities.[6] Each of these groupings is based on the demography of their communities.[7]

Advantaged Massachusetts communities (the top 50 in the state's demography) are characterized by high education levels, high incomes, and high property values. Weston, Hingham, Franklin and Natick are part of Advantaged Massachusetts. In terms of educational characteristics, per-pupil expenditures (PPE) are generous, averaging $6,217, with a range of $5,270 to $10,567. (These numbers are Fiscal Year 1999 figures. Current spending is higher.) State education reform aid tends to be low, averaging $648 per year compared to the state average of $955.[8] The range of this state aid is $245 to $1,797. (Please note that most districts in this cluster receive very little state aid, much less than the average. The most generous aid goes to regional school districts.) There are very few students (4%) who qualify for Free or Reduced Lunch, a measure of poverty. The statewide average for Free/Reduced Lunch is 26%. Almost all of the students speak English as a primary language.

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[6]Please note that in previous reports I set the 15 cities as a subset of the 50 Challenged Massachusetts communities. For this report, the 15 Cities are an independent cluster. Challenged Massachusetts includes the most disadvantaged 50 communities that are demographically above the 15 major urban areas that comprise the 15 Cities.

[7] The data here is for Grade 10. I am using Grade 10 (Class of 2003) because these students are required to pass MCAS in order to graduate.

[8] The amount of new education reform aid that is distributed as part of the Education Reform Act of 1993 is calculated in the following manner. I took the amount of Fiscal Year 1994 Chapter 70 funding (state education aid) for each district and divided it by the number of pupils in that district. I then took the amount of FY 1999 Chapter 70 district funding and divided that figure by the number of students in the district. The difference between the two produces a per-pupil figure that represents the new education reform aid. Chapter 70 data is available from the Massachusetts Department of Revenue.

Parents tend to have been successful in education, and they understand the importance of good schools.

Middle Massachusetts consists of about 110 communities clustered around the demographic center of the state. (The number of communities varies with grade due to the fluctuating number of regional systems as grade level changes.) In these typical Massachusetts hometowns, average is the norm. Middle Massachusetts is home to communities like Norwood, Beverly, Abington, and South Hadley. These districts average a $6,289 per-pupil expenditure. PPE's range from $5,261 to $9,557. Typically, each receives $833 per year per pupil in new education reform aid, compared to the state average of $955. The range of this state aid is $250 to $3,067. There are relatively few students (12%) who qualify for free or reduced lunch, a measure of poverty. The statewide average for Free/Reduced Lunch is 26%.

Challenged Massachusetts is made up of the 50 communities at the lower end of the state's demography. Districts in this category include communities such as Hull, Palmer, Waltham, Cambridge, and Holbrook, as well as many smaller cities. These districts average a $6,314 per-pupil expenditure with a range of $5,501 to $11,271. Typically, each receives $1,229 per year per pupil in new education reform aid, compared to the state average of $955. The range of state education reform aid is $233 to $2,476. Many students (33%) qualify for free or reduced lunch, a measure of poverty. The statewide average for Free/Reduced Lunch is 26%.

The Fifteen Cities are the 15 urban communities that are the most demographically disadvantaged in Massachusetts. This cluster includes cities such as Worcester, Boston, Fitchburg, and Lawrence. These districts average a $6,931 per-pupil expenditure with a range of $6,004 to $8,487. Typically, each receives $2,504 per year per pupil in new education reform aid, compared to the state average of $955. The range of state education reform aid is $1,559 to $3,643. Many students (58%) qualify for free or reduced lunch, a measure of poverty. The statewide average for Free/Reduced Lunch is 26%.

There are good reasons to focus on the Fifteen Cities:

- These 15 communities educate about one-quarter of our students. If the Massachusetts economy is to retain its vitality, and if we are to offer quality education for all, we must find some way to be more effective educating the 270,000 or so students in these systems.
- These systems have large percentages of students failing MCAS. In fact, 23% of the state's Grade 10 students attend school in the Fifteen Cities, but 46% of the students who failed the Grade 10 Math MCAS and 49% of the students who failed the Grade 10 ELA MCAS attend school in these 15 systems.
- These systems are remarkably similar in their demographic profiles. These 15 districts are large school systems that are home to 45% of the state's minority students and to most of the state's poor people. Since minority academic performance is a major concern of many people, reforming these systems is the key to boosting minority achievement.

MAKING THE GRADE ON THE 2001 MCAS

MCAS and the Class of 2003 Students who took last Spring's MCAS and are members of the Class of 2003 will have to pass MCAS – score Needs Improvement or better on both the Math and English Language Arts (ELA) tests – in order to graduate. Scores on the 2001 Grade 10 MCAS were much higher than scores on any previous administration, and, on a statewide basis, 82% passed ELA and 75% passed Math. This represents a 16% gain on ELA and a 20% gain on Math pass rates compared to the previous year.

A report I worked on in September 2001 with Mass Insight Education analyzed the 2000 MCAS in terms of pass rates for various student populations and found that thousands of Grade 10 students who did not pass the 2000 MCAS were within a few points of passing. The study also noted that many of the students who did not pass the 2000 MCAS were members of special populations - Special Education, Vocational Education, and Limited English Proficient students. In 2001, the pass arte improved dramatically for students in these groups. It is likely that the fact that the 2001 MCAS was the first one that counted motivated many students to take the test seriously. It also is likely that educators developed and implemented academic interventions that were successful in moving students who were close to passing up to passing.

(See *A New Commitment: Effective Remediation Strategies for High School Students*, Fall 2001, available at www.massinsight.com/meri/pdf_files/A%20New%20Commitment.pdf)

PROGRESS OF DIFFERENT KINDS OF SCHOOL DISTRICTS ON THE GRADE 10 MCAS

While it is interesting to evaluate individual districts in terms of how well they score relative to the demography of the community – the purpose of this report – ultimately education reform is about year-to-year improvement. Districts, students, and teachers are expected to boost performance over time.

Demographic analysis can be a valuable tool to determine how well education reform is doing in meeting the goal of boosting student achievement. At day's end, in Massachusetts on the 2001 Grade 10 MCAS, many students in many districts of differing demography did remarkably well. Analyzing how students in different kinds of communities performed may give us valuable insight into how well education reform has worked so far and what we can expect in the future.

Clearly, students who are fortunate enough to go to school in demographically advantaged districts are much more likely to achieve high scores on any assessment of academic skills including SATs, Stanford 9s, or MCAS. On the 2001 Grade 10 MCAS, Dover-Sherborn had 94% of its students in English and 82% of its students in Math at Advanced or Proficient on the assessment. Wayland reported 92%/85% in ELA/Math MCAS Advanced or Proficient. Lincoln-Sudbury, a hotbed of anti-MCAS sentiment in years when the test did not count, had 88%/92% of students in ELA/Math in Advanced or Proficient in 2001, the first year MCAS counted. Berlin-Boylston reported 90%/73% of students in Advanced or Proficient in ELA /Math. Pentucket had 76%/76% in Advanced or Proficient in ELA/Math.

While we celebrate the success of any student on any assessment, we are not surprised when students from advantaged circumstances perform well. What is more interesting is the performance of students from less advantaged communities. The results on the 2001 MCAS, administered two years before the class of 2003 students who must pass it graduate, shows that a solid majority of students in Massachusetts who are scheduled to graduate in 2003 have already passed MCAS. While we want all students to learn more and do better, the immediate challenge for many educators, policymakers and citizens is to focus on moving the students who have not yet passed MCAS up to passing. Because demography closely mirrors achievement, most of the students who have yet to be successful at MCAS attend school in districts characterized by lower demography.

The results of the 2001 Grade 10 MCAS demonstrated that students in many districts that do not enjoy demographic advantage or even demographic neutrality performed well. Dennis-Yarmouth, Gill-Montague, and Ayer, three demographically challenged districts, had 62%/52%, 60%/53% and 61%/42% of their students scoring Advanced or Proficient on the 2001 Grade 10 ELA/Math MCAS, well above the scores expected from such communities.

GRADE 10 MCAS PERFORMANCE PROGRESS IN DIFFERENT KINDS OF COMMUNITY

Clearly, educators in Duxbury (97%/96% Pass in ELA 10/Math10 on the 2001 MCAS and 80% Advanced/Proficient in ELA 10 and 70% Advanced/Proficient in Math 10) face different challenges in boosting educational achievement than do teachers and administrators in Lynn (67%/63% Pass in ELA 10/Math 10 and 29% Advanced/Proficient in ELA 10 and 26% Advanced/Proficient in Math 10).

Yet, despite the very different MCAS performances all over Massachusetts, all schools want to do better. Given that, let us look at how different kinds of communities have done improving achievement on the MCAS over the past four years.

While the overall goal of any education reform, including MCAS, is to increase the achievement of all students, strategies and tactics must reflect the specific needs of different kinds of communities. Many students in advantaged communities will strive to move up from Proficient to Advanced or from Needs Improvement to Proficient. In Middle Massachusetts and demographically challenged communities, the goal might be to move students up from Needs Improvement to Proficient or Advanced. In the 15 Cities, our urban core communities, moving students out of Fail is usually the initial goal.

The following assesses MCAS progress in terms of absolute scores from a base 1998/99 level to 2001. The base is the average of the 1998 and 1999 MCAS. Using two years of data provides a better base line against which to measure progress. The first year of anything or venture, be it a new car line or a new educational assessment, tends to have some problems. By using the average of the 1998 and 1999 MCAS assessments, we have a more accurate starting point against which to assess subsequent progress.

This analysis focuses on the Grade 10 ELA and Math tests because of the keen public interest in the scores and because the 2001 MCAS is the first one that counts.

Advantaged Massachusetts

This cluster includes the 50 most demographically advantaged communities in Massachusetts. Approximately 158,000 students are educated in classrooms in these districts, 17% of the total number of public school students.

On the 2001 Grade 10 MCAS, 77% of the students tested scored Advanced or Proficient in ELA with 19% in Needs Improvement and 4% in Fail. On the Math Grade 10 assessment, 72% scored Advanced or Proficient with 22% in Needs Improvement and 7% in Fail. While work needs to be done to help the students who did not pass, a better mark of success would be tracking the progress of students in moving up to Advanced or Proficient over time.

Strong performers in absolute gains on the Grade 10 2001 MCAS compared to the base 1998/99 average include:

- In ELA, Swampscott reduced the Fail rate from 19% in the base to 2% in 2001, a gain of 17 points from the base years (1998/99 average); Hopkinton had a 15-point gain in moving students out of Fail; Longmeadow and Mendon-Upton had 13-point gains; and Burlington a 12-point gain in boosting students to passing MCAS in 2001 compared to the 1998/99 base.
- In Math, Easton had a 34-point improvement, moving from a 42% base Fail rate in 98/99 to 8% in 2001; Burlington gained 34 points; North Reading 33 points; Swampscott 31 points; and Natick improved 30 points in reducing the number of students in Math Fail 2001 compared to the 1998/99 base.
- Looking at the other side of the scoring range, in ELA, Swampscott had a 32-point gain in the percentage of students in Advanced or Proficient, up from 49% in the base to 81% in 2001 (combined percentages in Advanced and Proficient); Longmeadow had a gain of 27 points over base; Mendon-Upton 26 points; Hopkinton 25 points; and Lincoln-Sudbury 24 points.

- In Math, Westford had a 39-point gain in the percentage of students in Advanced or Proficient, up from 40% in the base 98/99 to 79% in 2001; Easton and Longmeadow had gains of 37 points; Hopkinton 34; and Swampscott, Groton-Dunstable, and Burlington posted 33-point gains between the 98/99 base and 2001.

Middle Massachusetts

This group includes the 110 or so communities that represent the middle demography of Massachusetts. About 326,000 students attend school in these communities, 35% of the total.

On the 2001 Grade 10 MCAS, 61% of the students tested scored Advanced or Proficient in ELA with 29% in Needs Improvement and 10% in Fail. On the Math Grade 10 assessment, 54% scored Advanced or Proficient with 31% in Needs Improvement and 15% in Fail. While work needs to be done to help the students who did not pass, another mark of progress would be tracking the success of students in moving up to Advanced or Proficient over time.

Strong performers in absolute gains on the Grade 10 2001 MCAS compared to the base 1998/99 average include:

- In ELA, Mashpee with a 21-point gain in boosting students out of Fail, moving from a 34% Fail rate in 1998/99 to 13% in 2001; Somerset and Quabbin improved 20 points; Abington and Dighton-Rehoboth, 19 points; Beverly, Middleborough, and Millis improved 18 points in moving students out of Fail in 2001 compared to the 1998/99 base.
- In Math, Granby showed a 46-point improvement, moving from a 60% Fail rate in 1998/99 to 14% in 2001. Sutton gained 43 points, Mashpee 41; Somerset 40; and Abington and East Bridgewater improved 39 points in moving students out of Fail between the base 1998/99 and 2001.
- On the other side of the achievement ledger, in ELA, Gateway Regional had a 39-point gain in the percentage of students in Advanced or Proficient (combined percentages in Advanced and Proficient) between the base and 2001. Granby

had a gain of 35 points; Abington 32; Somerset and Northampton, 30 points each; East Bridgewater 29; and Mashpee and Quabbin showed 28-point improvement in moving students into Advanced/Proficient combined between the base and 2001.

- In Math, Sutton had a 46-point improvement in moving students into Advanced or Proficient, up from 20% in 1998/99 to 66% in 2001. Foxborough had a gain of 41points; Somerset, Danvers, Newburyport, Braintree, Ashburnham-Westminster, Tyngsborough, and Tewksbury each posted 40-point gains between the base and 2001.

Challenged Massachusetts

This group of 50 districts represents communities that are broadly middle-class yet are demographically challenged in some ways. Property values, incomes and education levels are below state average, and schools must work hard to ensure that all students learn. These systems educate approximately 182,000 students, 20% of the total.

On the 2001 Grade 10 MCAS, 48% of the students tested scored Advanced or Proficient in ELA with 35% in Needs Improvement and 17% in Fail. On the Math Grade 10 assessment, 40% scored Advanced or Proficient with 36% in Needs Improvement and 24% in Fail. While substantial work needs to be done to help the students who did not pass, another mark of progress would be tracking the success of students in moving up to Advanced or Proficient over time.

Strong performers in absolute gains on the Grade 10 2001 MCAS compared to the base 1998/99 average include:

- In ELA, Narragansett Regional, reducing Fail by 24 points (from 37% in 1998/99 to 13% in 2001); Taunton with a 22-point improvement; Southern Berkshire Regional and Easthampton with 20-point jumps out of Fail; Fairhaven improving 20 points; Attleboro and Ludlow, each with a 17-point gain in 2001 compared to the 1998/99 base.

- In moving students up and out of Math Fail, Easthampton improved 47 points between the base years (1998/99 average) and 2001; Medford, Taunton, and Quincy each improved 38 points; and Clinton, North Brookfield and Haverhill each moved up 37 points in moving students out of Fail between 1998/99 and 2001.
- Looking at the other end of the scores, in ELA, Southbridge had a 38-point gain in moving students into Advanced or Proficient in (combined percentages in Advanced and Proficient), up from 13% in the base to 53% in 2001; Easthampton had a gain of 28 points; Gardner and Ralph Mahar each improved 27 points; and Clinton was up 26 points in boosting students into Advanced/Proficient between 1998/99 and 2001.
- In Math, again Southbridge did very well, showing a 38-point improvement in moving students into Advanced or Proficient between 1998/99 and 2001; Clinton had a gain of 37 points; Gill-Montague 34 points; Easthampton 33; and Ludlow and Waltham, 30 points each between base and 2001.

THE 15 CITIES

The 15 Cities are the most urban communities in Massachusetts. They are generally large in population with many residents having low incomes and limited educational credentials. The 15 Cities are home to most of the Commonwealth's immigrants and minority citizens. These communities educate approximately 256,000 students, 28% of the total.

On the 2001 Grade 10 MCAS, 30% of the students tested scored Advanced or Proficient in ELA with 36% in Needs Improvement and 34% in Fail. On the Math Grade 10 assessment, 24% scored Advanced or Proficient with 33% in Needs Improvement and 43% in Fail. While the primary effort in these districts is to move students up to passing, another mark of progress would be tracking the success of students in moving up to Advanced or Proficient over time.

One system dominated in improving performance between 1998/99 and 2001. Brockton had the greatest gains in both moving students out of Fail and in boosting students up to Advanced/Proficient. Strong performers in absolute gains on the Grade 10 2001 MCAS compared to the base 1998/99 average include:

- In ELA, Brockton reduced Fail from 43% to 24%, a 19-point change between 1998/99 and 2001. New Bedford and Boston posted 16-point improvements; and Chicopee and Somerville improved 15 points in moving students out of ELA Fail between 1998/99 and 2001.
- In Math, Brockton gained 41 points between 1998/99 and 2001, moving from 76% Fail to 35% Fail. Somerville posted a 38-point gain; Fall River and Lynn improved 32 points each; and New Bedford posted a 31-point improvement between 1998/99 and 2001 in moving students out of Fail.
- In moving up to ELA Advanced/Proficient (combined percentages in Advanced and Proficient), Brockton had a 19-point gain between 1998/99 and 2001. Somerville, Lowell, New Bedford, and Chicopee posted 14-point improvements in boosting students into Advanced/Proficient between 1998/99 and 2001.
- Brockton had a 21-point gain in boosting students into Math Advanced or Proficient. Somerville and Revere each had a gain of 20 points; New Bedford 19 points; and Lowell 17 points between base 1998/99 and 2001.

Please see Appendix B for a listing of other top performers in different kinds of districts in improving MCAS results over four years.

MCAS AFTER FOUR YEARS: THE LESSONS FROM DIFFERENT KINDS OF SCHOOL DISTRICTS

Overall MCAS performance in 1998, 1999, and 2000 was relatively flat. While there was slight overall gain, and some districts made solid gains, on average scores did not vary too much from year to year in most districts. That changed with the 2001 MCAS. Scores for Grade 10 were up across the board. The rate of Fail was reduced 16% and 20% in ELA and Math respectively. The gains in Grade 4 Math and Grade 8 English and Math were less robust.

MCAS Scaled Scores 1998-2001

	1998	1999	2000	2001
G4E	232	233	233	241
G4M	236	237	238	237
G8E	239	240	242	244
G8M	230	229	232	235
G10E	235	233	234	242
G10M	226	226	232	240
		Change 98 - 99	**Change 99-00**	**Change 00-01***
G4E		1	0	**8**
G4M		1	1	-1
G8E		1	2	2
G8M		-1	3	3
G10E		-2	1	**8**
G10M		0	**6**	**8**

** Please note that the state Department of Education changed the scaled score calculations for 2001 which may affect comparisons with previous years.*

Some of the gain in Grade 10 scores was the result of students taking the test seriously since the test finally counted as a graduation requirement and some of the gain may be attributable to a change in calculating scaled scores by the Department of Education in 2001. But after seven years of education improvement activities and billions of dollars in new funding, some of the gain is probably the result of sound reforms that districts have implemented. Next year's results will provide valuable information about how much of the dramatic improvement on the Grade 10 MCAS in 2001 was attributable to more focused students and how much could be attributed to more effective teaching practices.

LOOKING BEYOND THE OVERALL AVERAGES

Working with overall averages can sometimes be helpful in increasing our understanding of data, but it is more helpful in education reform analysis to break down aggregates into smaller data sets. For example, when assessing the progress of Massachusetts education reform, it is better to look at how different kinds of school districts are doing in teaching all students the basic skills needed to be successful in life. As is obvious after 8 years of education reform and 4 years of MCAS, most students in many, if not most, Massachusetts districts have already passed MCAS. The challenge now is to figure out what needs to be done at the policy level and the school level to help those students who have not yet demonstrated a mastery of basic skills.

Statewide Grade 10 scores went up about 8 scaled score points in Math and ELA between 2000 and 2001 in the data set used for this report. In order to understand the efficacy of education reform, it is helpful to evaluate that gain in terms of the demography of school districts. It might be that the districts making the most gain were the districts whose students were already successful at MCAS. That would be troubling in that the districts most in need of reform are those with substantial numbers of students who have not yet passed MCAS. Unfortunately, because of scoring changes made last year by the state Department of Education (especially at the low end of the scaled score range), looking at scaled scores may not be the best way to gauge progress in 2001. Examining the performance of different kinds of districts in moving students up to pass is one way to assess progress across demography.

Fortunately, the gains in the 2001 Grade 10 MCAS were distributed relatively evenly across different kinds of districts. In fact, schools in Challenged Massachusetts and the 15 Cities, the districts with the largest number of students in Fail (or Warning), had similar or slightly greater gains in moving students out of Fail than did the schools in Middle Massachusetts. This indicates that even in communities that face serious demographic challenges, education reform is working. (For Advantaged districts, so few students fail MCAS that it is not helpful to spend too much time examining their performance in moving students out of Fail.)

2000-2001 Grade 10 MCAS Pass Rate Change by Demography

	English 2000	English 2001	Average Point Gain
Advantaged	88%	96%	8
Middle	77%	90%	13
Challenged	68%	82%	14
Major Cities	54%	69%	15
	Math 2000	**Math 2001**	**Average Point Gain**
Advantaged	80%	93%	13
Middle	65%	84%	19
Challenged	55%	75%	20
Major Cities	40%	60%	20

GRADE 10 MCAS PERFORMANCE IN MOVING STUDENTS OUT OF FAIL

While analyzing scaled scores gives us an overall understanding of the progress of education improvement efforts, the immediate goal of Massachusetts education reform is to move students up to passing MCAS. While great gains were made between 2000 and 2001, in many districts many students still must demonstrate competence in basic skills as measured by MCAS. Again, looking at progress in different kinds of communities in moving students out of Fail is helpful in understanding the progress of education reform.

The following chart breaks out how well different kinds of communities are doing in moving students out of Fail. As always, the chart looks at progress in the four basic demographic clusters of communities of Massachusetts (Advantaged, Middle Mass, Challenged and the 15 Cities). The chart sets out the absolute change in moving students out of Fail between 2000 and 2001. For example, in 2000 in Challenged Massachusetts, 45% of students failed Math. In 2001, 24% failed, a change of 21 points. (2000-2001 figures are in the right-hand column.)

What is interesting about this chart is that districts in all four kind-of-community clusters made solid progress in moving students out of Fail between 2000 and 2001, although Challenged Mass and the 15 Cities made somewhat better progress in reducing the Fail rate.

Please note that in the following table a negative figure in the ELA FAIL CHANGE or MATH FAIL CHANGE is good; a negative sign indicates that fewer students were in Fail from the current year to the previous year.

Change in Percentage of Grade 10 Students in Fail by Demography, 1998-2001

Advantaged Mass				
	1998	**1999**	**2000**	**2001**
ELA FAIL %	8	12	12	4
MATH FAIL %	24	27	26	7
		98-99	**99-2000**	**2000-01**
ELA FAIL CHANGE		4	0	-8
MATH FAIL CHANGE		3	-1	-19
Mid Mass				
	1998	**1999**	**2000**	**2001**
ELA FAIL %	17	21	22	10
MATH FAIL %	41	42	33	15
		98-99	**99-2000**	**2000-01**
ELA FAIL CHANGE		4	1	-12
MATH FAIL CHANGE		1	-9	-18
Challenged Mass				
	1998	**1999**	**2000**	**2001**
ELA FAIL %	25	30	32	17
MATH FAIL %	52	54	45	24
		98-99	**99-2000**	**2000-01**
ELA FAIL CHANGE		5	2	-15
MATH FAIL CHANGE		2	-9	-21
15 Cities				
	1998	**1999**	**2000**	**2001**
ELA FAIL %	43	47	49	34
MATH FAIL %	72	70	63	43
		98-99	**99-2000**	**2000-01**
ELA FAIL CHANGE		4	2	-15
MATH FAIL CHANGE		-2	-7	-20

CHART KEY:

ELA FAIL % is the percentage of students failing the ELA Grade 10 MCAS.
MATH FAIL % is the percentage of students failing the Math Grade 10 MCAS.
ELA FAIL CHANGE is the difference in the percentage of students in ELA Fail from one year to the next year. **A negative number is good** since it indicates that fewer students were in the Fail category from one year compared to the previous year.
MATH FAIL CHANGE is the difference in the percentage of students in Math Fail from one year to the next year. **A negative number is good** since it indicates that fewer students were in the Fail category from one year compared to the previous year.

EDUCATION REFORM IN MASSACHUSETTS IN 2001

The Massachusetts Education Reform Act of 1993 has moved on from one century to another. Since passage, the legislature and three governors have kept their side of the bargain in providing substantial additional school funding each year. The state Department of Education has seen to the development of a battery of assessments, the MCAS, which measure the effectiveness of education reform in every district every year. The schools have implemented changes and reforms designed to boost the effectiveness of teachers and the learning of students.

Given the initial results of MCAS, the persistent resistance to the reforms by some, and the general difficulty in reforming any societal institution as basic as public education, it is fair to say that much progress has been made since June of 1993 when Governor William Weld signed the reform act into law.

Many certainly deserve praise for their efforts making Massachusetts public education more effective for all of our children. Yet, after eight years of reform and four years of assessment of that reform, several clear challenges lie ahead:

- Special populations – Special Education, Vocational Education, Limited English Proficient – are still much more likely to not pass MCAS than Regular Education students. This pattern, clear after four years of assessment, suggests that educators, education schools, teachers unions, and policy makers must focus on finding more effective ways of helping all of these children learn.
- Urban students are also much more likely to have difficulty passing MCAS. While some observers have focused on the race of students who do not succeed passing MCAS, the problem may be rooted in place - urban settings and challenging demography – as well as race. Students in Fall River, a predominantly white system, have as much difficulty with MCAS as do students in predominantly minority systems. In any event, more must be done to help urban schools become more effective in meeting the needs of their students.

- Low Fail students – or Low Warning students to use the current term – pose a particular challenge for educators and policy makers. A substantial number of unsuccessful MCAS takers are at the lowest end of the performance spectrum. These students may have been socially promoted over the years, may have language issues, and/or may not learn in a conventional manner. Whatever the reasons, these students are far away from success on MCAS or on any other reliable measure of learning. Moving these students up to passing from Low Fail to passing is a daunting challenge.

MAINTAINING PROGRESS

The most interesting question posed by the solid Grade 10 score gains between 2000 and 2001 may relate to the next act: Can the rate of improvement be repeated the next year so that even more students succeed in passing MCAS? If many of the children who did not pass MCAS have particular educational issues that have not yet been addressed under education reform, then the gains may not increase substantially over time.

Several issues that have historically been sidebars are now coming to the fore. Urban schools often have a number of students who are discipline problems and who disrupt the normal course of events in the classroom. While many systems say that they have facilities for disruptive youth, they do not have enough facilities that are designed to deal with the specific issues that underlie negative behavior. We need to develop a new kind of alternative school organized to deal with seriously disruptive young people. In a time when standards finally matter, the disruptive behavior of the few should no longer impede the learning of the many.

END NOTE

Last year I wrote the following words at the conclusion of the third edition of *Effective School Districts in Massachusetts*:

> After three years of MCAS, we do see slow progress. A pace of incremental change that may be acceptable in a middle-class district, where just about everyone passes MCAS now, is not good enough for a system with high percentages of students who do not possess basic skills and who fail MCAS.
>
> - *Effective School Districts in Massachusetts*, February 2001, *page 41*

That observation makes even more sense now. Year 4 of MCAS demonstrated substantial score gains in Grade 10. That is good news that puts the Commonwealth of Massachusetts in a position to continue to ratchet up the effectiveness of the public schools so that more children do indeed learn. The challenge remains, however, to develop the kind of innovative education that connects to students who have not been successful in the traditional educational system. As we head towards the second decade of education reform in Massachusetts, we have identified successes and we have identified problems. The measure of our commitment to all of our children will be how willing we are to replicate what does work and change what does not work to improve teaching and learning all across Massachusetts.