Analysis for the Determination of Factors Significant to Vocational School Student MCAS Performance

An Interactive Qualifying Project Report submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the Degree of Bachelor of Science

on

01 May 2001

by

Bonnie Jean Boettcher

Jessica Fayard

Giancarlo Vivenzio

Approved by

Professor Fabio Carrera, Co-Advisor

Professor James P. Hanlan, Co-Advisor

Acknowledgements

We would like to thank our liaison, Sylvia Smith, Chief of Staff for Senator Robert Antonioni, who helped a great deal with the development and success of this project. We would also like to thank State Senator Robert Antonioni, for sponsoring the project and for allowing us the use of his office. The Senator, Sylvia, and the rest of the staff were very helpful and accommodating during the project, and made a great effort to see that we were made available every possible resource. We would also like to thank our contact with the Massachusetts Department of Education, Dr. Sheldon Rothman, who assisted us a great deal with our statistical analysis. We would like to thank Superintendent Eugene Carlo for giving us a tour of Assabet Valley Regional Vocational High School and helping us to frame our survey for a more complete analysis. Also we would like to thank all of the superintendents that participated in our surveys. Finally, we would like to thank our advisors, Fabio Carrera and James Hanlan for guiding us through the preparation phase of the project.

Abstract

Since the implementation of the exam, the Massachusetts Comprehensive Assessment System has been a center of controversy. Vocational schools in particular have a large percentage of students failing the exam. Additionally, passing the tenth grade exam is now a graduation requirement. This report examines many factors in an attempt to uncover reasons as to why vocational students are failing at higher rates than students in comprehensive schools, and to suggest both ways to improve scores and areas or factors that require further study.

Executive Summary

The Massachusetts Comprehensive Assessment System, commonly known as MCAS, is an exam that was developed as a result of the Education Reform Act of 1993 in an effort to hold schools accountable for the knowledge students should have acquired by high school graduation. The exam was implemented in 1998, and as of 2001, tenth grade students have five chances before graduation to pass the MCAS exam in order to receive a diploma.

The project analyzed the MCAS scores of vocational high school students by district in conjunction with educational, economic, and demographic factors to determine which factors might be considered significant to student MCAS performance. State Senator Robert Antonioni, co-chair of the Massachusetts Joint Committee on Education, Arts, & Humanities, sponsored this project. The liaison between our group and the Senator was Sylvia Smith, Senator Antonioni's Chief of Staff.

Spreadsheets were created using Microsoft Excel for statistical graphing and regression, and for use in GIS Map Info. Scores were analyzed from 1998 to 2000 for the English Language Arts, Math, and Science & Technology sections of the exam. Using data acquired through the Department of Education website and Superintendent surveys, the group made recommendations to the Senator both of potential ways schools might be able to help their students raise MCAS scores, and of research that should be completed in the future to allow for a more complete analysis.

MCAS has caused a great deal of controversy, mainly resulting from the fact that students are generally not performing well, and because it is a "one size fits all" exam. Students in vocational schools have much higher failing rates than students in comprehensive schools, in some cases as high as 80%. For this reason, the group was asked by Senator Antonioni to study these schools in depth to find factors that would correlate to the students' performance.

The high failing rates of students in vocational schools has led to a great deal of resistance from administrators, students, and other community members. The Senator has

recognized that steps must be taken in order to see that the vocational students raise their performance levels.

Due to the fact that data from the Department of Education was given by district, the group was able to do in-depth analysis of twenty-six of the forty-three vocational high schools. The twenty-six studied were all regional vocational schools that comprised their own school district. Data could be easily visualized using the maps created in Map Info, with overlaying trends and color-coded district scores. Graphs and charts were also created using Microsoft Excel.

Factors were divided into three categories: economic, demographic, and educational. For our statistical analysis, we used statistical regression. In this type of analysis, a weight is put on the factor that signifies the strength of the relationship between the factor and the MCAS scores. An R^2 value of 0 signifies no correlation and 1 signifies a perfect correlation. The highest correlation was found between the eligibility of free lunch programs to MCAS scores, which can be seen in Figure 4.12. Eligibility for free lunch programs was used as a proxy for students from low income families.

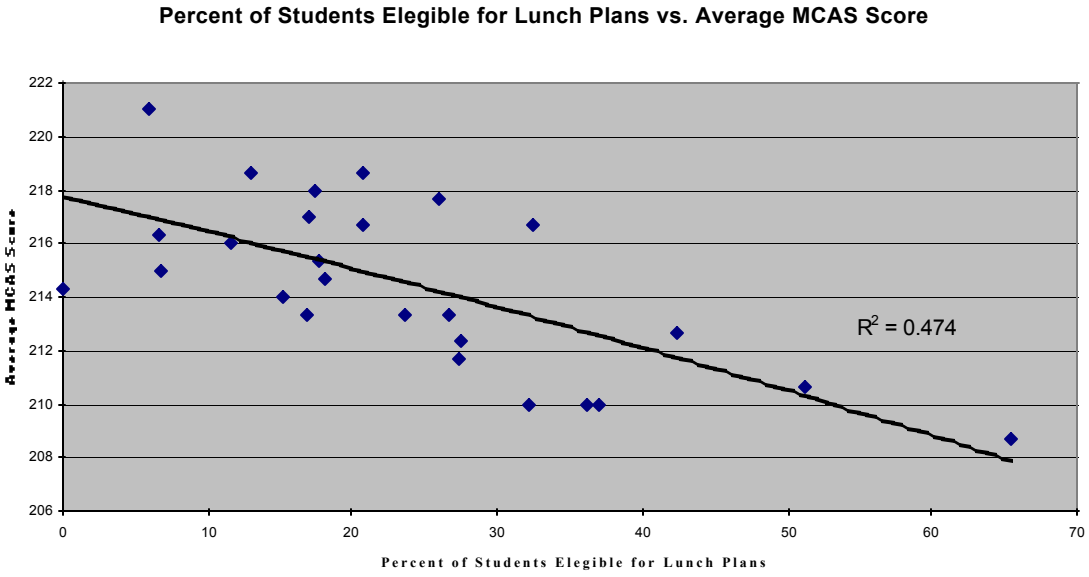


Figure 4.12: Percent of Students Eligible for Lunch Plans vs. Average MCAS Score

The higher the percentage of eligible students, the lower the MCAS scores. The next highest correlation was found between the percentage of minority students in a school and MCAS scores, shown in Figure 4.21.

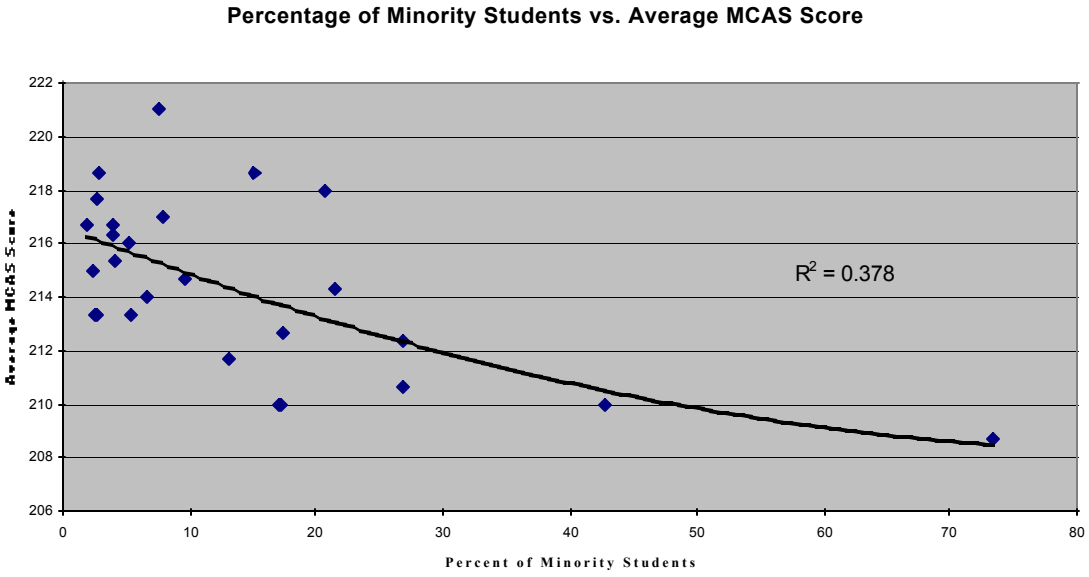


Figure 4.21: Percentage of Minority Students vs. Average MCAS Score

The higher the percentage of this demographic, the lower the MCAS scores. One of our hypotheses was that students who plan to attend a four-year college after graduation might be more likely to perform better on the MCAS exam, because the exam seems to target students who are academically inclined. Approximately 60-75% of vocational students typically enter the work force after high school. To test the hypothesis, we graphed the relationship between students planning to attend four-year colleges and MCAS scores. Figure 4.25 shows our results.

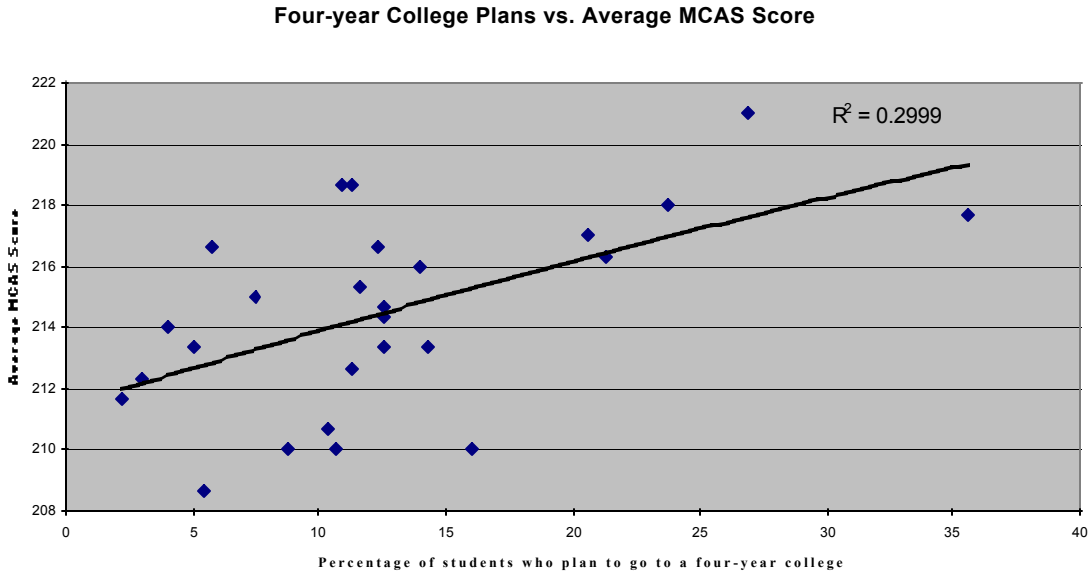


Figure 4.25: Four-year College Plans vs. Average MCAS Score

As expected, the higher the percentage of students who plan to continue their education, the higher the MCAS scores tend to be.

Aside from factor analysis, the group also interviewed ten of the twenty-six administrators of the regional vocational schools to obtain information on what the administrators felt were contributing to their students' low performance. The schools that were contacted for interviews were those that responded to our request for the interview and also those who had shown a trend of rising MCAS scores. We found that without exception, every superintendent felt that the students in vocational schools were academically several years behind where the tenth grade MCAS exam required them to be, and that if the student did not pass the tenth grade exam, chances were extremely high that the student did not pass the eighth grade exam.

Superintendents told the group that eighth grade MCAS scores were not sent to the vocational schools until at least the spring of students' freshman year, leaving the schools unable to accurately determine where to place them academically upon enrollment in the vocational school. Some schools never received students' eighth grade MCAS scores. We found that

vocational students spend approximately 500-540 hours on academics per year, whereas comprehensive school students spend about 990 hours per year in classes. Because vocational students are required to remediate as many as four years worth of study in seventeen months, they are many times unable to pass the exam. A great deal of the superintendents felt that the high stakes accountability should be placed on a lower academic level, such as fourth grade as opposed to tenth grade. They feel that it is necessary to keep students at the correct grade level and the best time to remediate students is in the elementary grades when the learning gap is small.

Our group had to analyze many factors, most of which did not prove to be very useful. In dealing with this type of analysis it is nearly impossible to place the responsibility for the low scores on only one or two factors. What we found is that the reason for the low scores is more likely a combination of factors, which is why our results show small correlations. Another problem is the limited time this exam has been in place. Our comparisons will probably strengthen over the next few years as the exam changes and more schools align their individual curricula to the curriculum frameworks.

Based on the information obtained, some suggestions were made on how to assist schools in raising their students' MCAS scores, and on future analysis that should be conducted to make the analysis of factors more complete.

One of the most important things would be to ensure that schools would receive the eighth and tenth grade MCAS scores immediately so that they would know in what areas the student needs most improvement. Currently schools receive the students' MCAS performance data in January of their freshman year of high school. This only allows thirteen months for the schools to raise the students' proficiency in the specific areas in which they need remediation. Figures 4.9 and 4.10 show the reason for this recommendation.

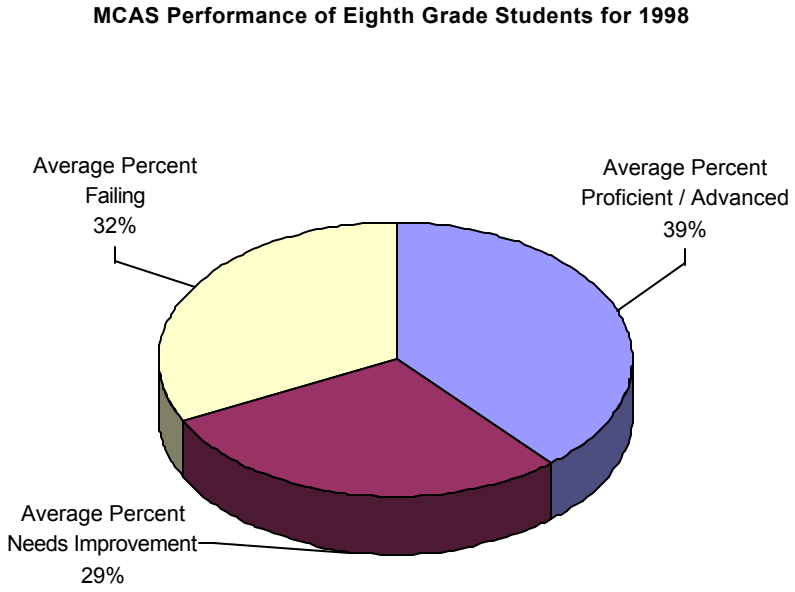


Figure 4.9: MCAS Performance of Eighth Grade Students for 1998

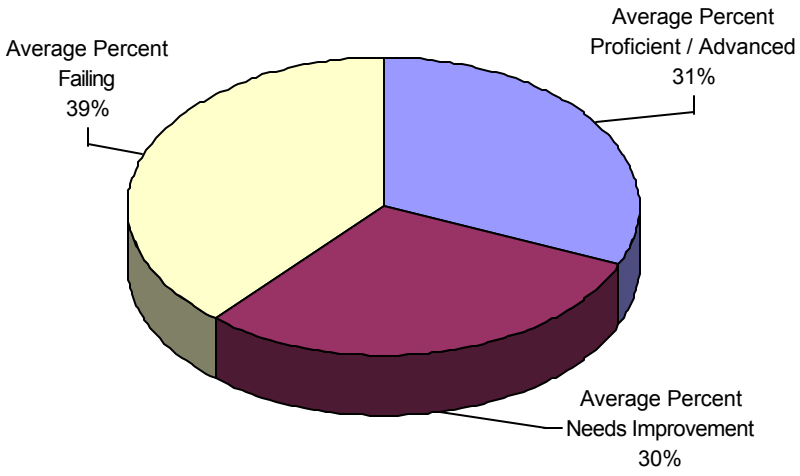


Figure 4.10: MCAS Performance of Tenth Grade Students for 2000

Figures 4.9 and 4.10 represent the performance of the eighth graders from 1998, and the same class of tenth graders from 2000. The students' performance in the eighth grade is almost identical to their performance in the tenth grade. Our conclusions from these graphs were that students performed the same on the tenth grade exam as they did in the eighth grade.

If schools were able to receive the students' eighth grade scores sooner there would be a better chance to improve the students' performance in the areas where they need assistance.

Several of the administrators from schools with improving scores partially attributed success they have had to the alignment of their curricula with the curriculum frameworks, so we suggested all vocational schools put effort into aligning their curricula.

The group recommended that more research be completed to track performance of students from the fourth grade exam to the tenth grade exam, in order to study further the theory that it may be beneficial to hold students accountable for academic knowledge at an earlier age.

Many administrators believed that the exam questions require students to approach problems from an abstract standpoint rather than from the practical one they are accustomed to from their vocational study. We suggested it might be beneficial to research the type of learning style and thought processes the MCAS questions target, to test this hypothesis.

When we conducted our research, all people interviewed were either completely opposed to the MCAS or in favor of restructuring the exam. It would be a great help to get the perspective of someone who had been part of the MCAS development process to balance out the negative propaganda against the MCAS.

As with any social research, it would have been impossible for us to find through our research a specific list of factors that can be held fully responsible for the high failing rates of vocational schools on the MCAS exam, and that are applicable 100% of the time. However, we hope that our research and analysis has shed some light on potential influences on vocational students' scores, and has given a base for further research into this area.

Table of Contents

List of Tables and Figures

1 Introduction

Senator Robert Antonioni, Chairperson of the Massachusetts Joint Committee on Education, Arts & Humanities asked us to study student performance on the Massachusetts Comprehensive Assessment System (MCAS). First we developed a proposal around the premise of studying student performance on the MCAS in three main demographics, special education students, students with limited English proficiency, and students enrolled in vocational high school. When we arrived in Boston we modified our project scope, with the help of our liaison Sylvia Smith, chief of staff to Senator Antonioni, and Dr. Sheldon Rothman, senior analyst with the Massachusetts Department of Education. After discussing our project with Sylvia and Sheldon we modified our goals and our premise became to study vocational education students and their performance on the standardized testing system for secondary education in Massachusetts, the MCAS.

Our first goal was to analyze the performance of students in vocational schools. We compared their scores to comprehensive student scores. Next, next we analyzed the scores in relation to economic, demographic, and educational factors for which we could obtain data. All factor data was available by school district, so all of our factor analysis was done for the twenty-six regional vocational schools. Based on the information we gathered from schools, we were able to provide suggestions for improvement of student scores to Senator Antonioni. This report provides a summary of the research we did to familiarize ourselves with the Massachusetts educational system with respect to vocational schooling, our analysis of the 1998, 1999 and 2000 MCAS scores, a discussion of how we accomplished our goals for the project, what results we obtained, and our conclusions and recommendations to Senator Antonioni and the Joint Committee on Education, Arts & Humanities.

In order to understand the information available to us, we conducted background research, presented in chapter two. We first researched the basic structure of the Massachusetts Public Education system, with heavy emphasis on vocational education. We then studied issues surrounding the MCAS, including how and why it was created, what the exam is comprised of, how it is graded, and how the exam is administered. We studied some

statistical trends that had already been developed, but most of our analysis was done on the scores that we obtained and the graphs that we created.

In the third chapter of this report we provide detailed descriptions of the types of methods we used in our field study. The three methods we used were statistical analysis, interviews, and a personal school visit. For each type of study, we describe who we studied, how the study was conducted and what was needed, and what results or deliverables were obtained.

Our fourth chapter focuses on the results and analysis of our research. We discuss the factors that we feel are most closely related to students' scores and suggest improvement strategies for schools that are not doing well on the MCAS exam, as well as topics that should be studied in greater depth in the future.

2 Background

Our team worked with Senator Antonioni and his staff in the State House to assist in the analysis of the MCAS exam with respect to students enrolled in vocational education programs. In order to fully understand the project we have undertaken, background research was necessary. We first researched the Massachusetts educational system, its structure, legal context, budgeting, and other areas we thought pertinent to our study. We next took that knowledge and expanded it to include the structure of vocational education. Finally, we took an in-depth look at the MCAS exam, how it is structured, why it was established, and basic statistical trends for past student performance.

2.1 The Structure of the Massachusetts Educational System

This section is intended to provide the reader with background knowledge of the Massachusetts educational system. It outlines the organizations and laws responsible for the structure of the public school system, gives an introduction to the curriculum frameworks for public schools, provides a breakdown of the public school system, and gives a description of the distribution of state and local school funding for individual schools.

2.1.1 Massachusetts Department of Education

The Massachusetts Department of Education is an organization headed by the Massachusetts Board of Education. The Board is composed of ten appointed officials from the state who take the laws enacted by the legislature and they create statewide policy in order to achieve those goals. Based on the 1992 legislation from the Joint Committee on Education, the Department of Education wrote the Education Reform Act of 1993. [1]

[1] Massachusetts Department of Education [Web Page]

2.1.2 Education Reform Act of 1993

At its April 1993 meeting, in anticipation of the passage of the Education Reform Act, the Board of Education adopted a resolution that declared:

"The Common Core of Learning refers to the broad set of educational goals which indicate what students should know and be able to do at the end of schooling; in essence they reflect what citizens highly value and see as essential for success in our democratic society." [2]

It was in conjunction with this resolution that the Education Reform Act was formed and standards were set for the educational system in Massachusetts. The Education Reform Act of 1993's main purpose was to dramatically change the public education system over a proposed time of seven years. The main points outlined by the act involve an increase in the funds provided to schools, higher accountability for student learning, and new educational standards not only for students but for the teachers, schools and school districts. By the end of the year 2000, the Secretary of Education estimated that, as a result of this act, there would be more than two billion dollars allocated toward education reform for public schools in Massachusetts. The Department of Education decided that the state of Massachusetts needed a set of specific guidelines that could be used to develop curricula that could be assessed by a standard, statewide exam. The exam system currently used is the Massachusetts Comprehensive Assessment System, commonly referred to as the MCAS.

Funding of the act was set up to run over a seven-year period. Some of what the act covered was accountability for what students were learning, statewide standards for students to attain, and more systematically developed professional standards for educators, schools, and districts.

Accountability and measurability were major parts of the Education Reform Act. Some of the requirements imposed by the act were: a school council for every school, better defined roles for school committees, and clear, concise, measurable statewide standards for students

[2] Fairtest. Overview of the Education Reform Act of 1993

and schools. [3] After the Act was written and passed into Massachusetts State law, it became the responsibility of the Department of Education and district school committees to implement curriculum changes.

2.1.3 The Curriculum Framework

The Massachusetts Common Core of Learning was developed by the Department of Education to ensure that students learned what they were supposed to by the time that they graduated. Legislature was passed to the DOE to develop a set of guidelines for learning for all students. From the Legislature, the DOE set a core concept for what skills they wanted high school students to have acquired by graduation. These skills are: to think and communicate, to gain and apply knowledge, and to work and contribute.

Thinking and Communicating require that students read and understand both for information and for enjoyment, and that they are able to solve complex problems by asking the right questions and thinking logically. Gaining and Applying knowledge require that students be exposed to a variety of subjects and activities throughout their high school education so that they are able to pursue their chosen field intelligently, having the correct background knowledge and experience. A student who can Work and Contribute has the ability to set goals and organize his or her time, and also has a highly developed work ethic both individually and in groups. Above all these students study and work hard with integrity and personal pride in themselves and their abilities.

Based on the core of learning concepts, the Curriculum Framework was drafted by the Massachusetts Department of Education. Updated from 1996 to 2000, the curriculum provides for students to be educated in the following academic areas: Arts, English Language Arts, Foreign Languages, Comprehensive Health, Mathematics, History and Social Science, and Science and Technology/Engineering. [3]

2.1.4 Massachusetts Public School System

Education reform begins with the Joint Committee on Education, [4] which is a committee of eleven House Representatives and six Senators from Massachusetts. The committee passes

[3] Massachusetts Department of Education [Web Page]
[4] Co-Chairperson, Robert Antonioni, Democrat, Middlesex and Worcester Districts

legislature on education to the US Department of Education to develop statewide implementation goals for education reform. [5] The goals that the Joint Committee on Education set forth in 1992 stated that they wanted to "create conditions for effective schools" and that they wanted an "accountability measurement of curriculum"(footnote: MA Dept ED website). [6] From the legislature, these statewide educational goals take individualized shape as they travel through the Massachusetts public school system. The divisions of the Massachusetts public education system are shown in Figure 2.1.

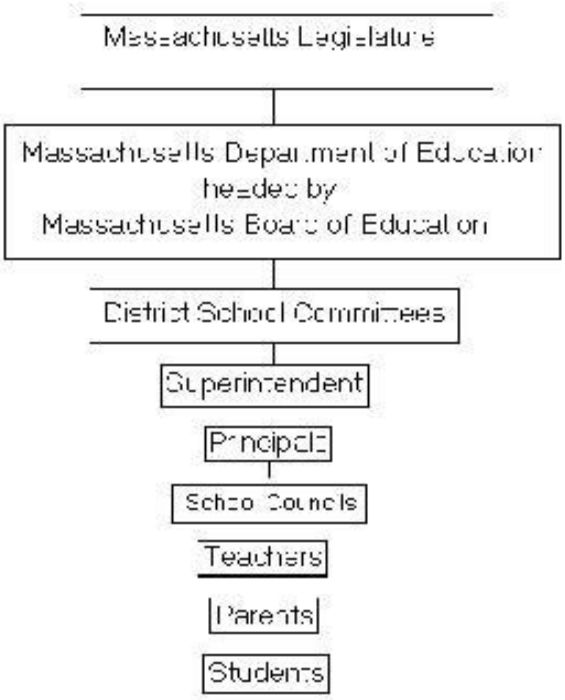


Figure 2.1: Breakdown of Public Education

[5] Massachusetts Department of Education Advisory on School Governance
[6] Massachusetts Department of Education [Web Site]

2.1.5 School Councils and Individual School Decision-Making

There is one school council for each school. The council is comprised of teachers, chosen by peers in the school, parents elected by the local parent-teacher organization, community members appointed by the community members who live in the town/city, and if the school is a secondary school (high school), then at least one student will be chosen to be a student representative. The only law stipulation in the Educational Reform Act is that no special interest group (teachers, parents, community members) may comprise more than 50% of the school council.

The principal is responsible for working with the council to identify the educational needs of the students, review the school budget, and prepare a school improvement plan. This school improvement plan discusses issues such as professional development, student learning time, improvement in parent involvement, safety and discipline, and ways to meet the diverse learning needs of the students in the school. The school council must submit its school improvement plan annually to the district school committee. While the main function of the school council is to be an advisory committee, the district school committee may grant additional authority of policy matters to the school council, except in matters of collective bargaining. School administrators should try whenever possible to foster a mutually beneficial relationship with parents and community members to ensure the most support and assistance with policy decisions and school improvement plans in the future, as well as with the continued improvement of student learning and growth. [7]

2.1.6 State Aid and Budget for Individual Schools

Chapter 71 of the Massachusetts General Laws (MGL) states that a district shall receive the amount of money the Board of Education deems necessary to establish and continue

[7] Massachusetts General Laws Chapter 71section 14, Regional school district planning committee; creation; membership 15, Regional school districts; acceptance of organization provisions by electorate

programs, which aids the students of the schools. [8] In 1999, the Department of Education reported budgets at each school district divided into separate categories; teaching, support, assistants, principals, clerical, health, custodial, benefits, professional development, athletics, extracurricular activities, maintenance, special education tuition, books and equipment, and miscellaneous. The range of budgets allotted to school districts in Massachusetts is from about $2 million to over $300 million. [9] From this, average teacher salary budgets range from $130 thousand to $22 million, and per pupil expenditures ranged from four to six thousand dollars. Average teacher salary for 1999 is $45,149. [9]

The district school committees need a two-thirds majority vote for any changes in the district budget and the amount from state aid that will be disbursed between schools. The superintendent is responsible for overseeing the fair disbursement of the state funding by the principals and the school council. [10]

Another major reform outlined by the Education Reform was that a new budget was to be established in hopes of putting schools on a more level financial playing field. Although the overall level of economic funding differs among communities due to demographic and other economic factors, the overall state finances should be even. The average budget allotted in 1993 was $5,500 per pupil. In 1994 local districts received $1.4 billion in state aid for education representing an increase of 11.1% from the previous year. In 1995, the state aid was $1.6 billion, in 1996 the figure was $1.8 billion and in 1997, local districts received $2.0 billion. The intention of the Act is that by the Year 2000, all districts in the state will be at their proposed level. [11]

2.2 Vocational Education

Vocational Education is defined by the Massachusetts Department of Education as, **"**the approved type of education, purposefully designed to educate and prepare students of all ages for employment and continuing academic and occupational preparation through a balance of classroom instruction, supportive services and occupational experience to develop life-long

[8] Massachusetts General Laws Aid from state
[9] Foundation Budget Spending Comparison [Web Page]
[10] Massachusetts General Laws Budgets; apportionment of expenses
[11] Massachusetts Department of Education [Web Page]

skills so that upon completion of vocational technical programs, students are qualified to pursue, directly or indirectly, opportunities emanating from such vocational technical programs". There are currently forty-three vocational high schools in Massachusetts. [12] Vocational students comprise about 40,000 of the total one million high school students in Massachusetts. A breakdown of Vocational schools is shown below in Figure 2.2:

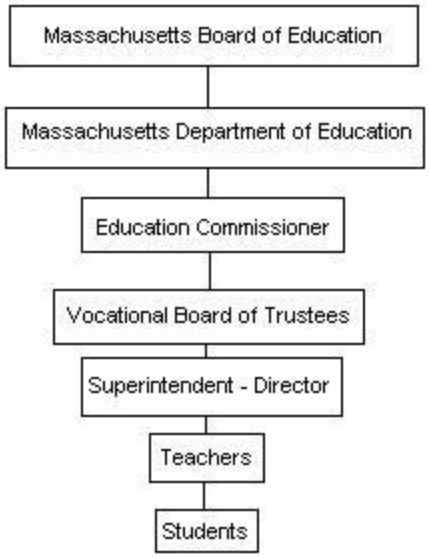


Figure 2.2: Breakdown of Vocational Education System

Vocational high schools are a type of alternative high school students may choose to attend. Students of these schools attend vocational classes and academic classes. These students are still held to the same academic frameworks as students in comprehensive high schools. Students will specialize in one vocational area such as health services, technology and engineering, business, arts and communication, agricultural sciences, or construction and design. A complete list of vocational programs offered in Massachusetts can be found in Appendix B. Vocational schools are designed to give students who complete the program enough skills to either become employed directly out of high school or go on to further education.

[12] Massachusetts Monitoring Report [Web Page]

The four types of vocational high schools are regional, city, agricultural, and charter. Regional vocational schools are schools whose student populations come from more than one city or town, whereas city vocational school enrollment comes from only one city or town and are part of a comprehensive school district. Agricultural schools are geared more toward agricultural sciences, and charter vocational schools are like any charter high school in that they are privately formed and not part of public school system.

As stated before, the vocational students must still fulfill the academic requirements set forth by the curriculum frameworks in addition to their vocational requirements. The particular school determines vocational class requirements. However, there are state regulations for receipt of a Certificate of Occupational Proficiency, which signifies a student's proficiency in their area of vocational study.

The Carl Perkins Act of 1998 outlines the allocation of state funds to areas of vocational education, and acts in accordance with federal funding. According to the Act, funds should be used for some of the following: ensure the level of academic and technical standards, provide industry training for students, improve technology use, and provide training for teachers and administration.[13] The state of Massachusetts was allocated over $14,812,307 from basic grants and $1,541,699 for technical preparation in 1998, and in the year 2000, was allocated $17,323,922 for basic grants and $1,663,433 for technical preparation.

. The population breakdowns of comprehensive and vocational high schools are shown below in Figures 2.3 and 2.4:

[13] Office of Vocational and Adult Education [Web Page]

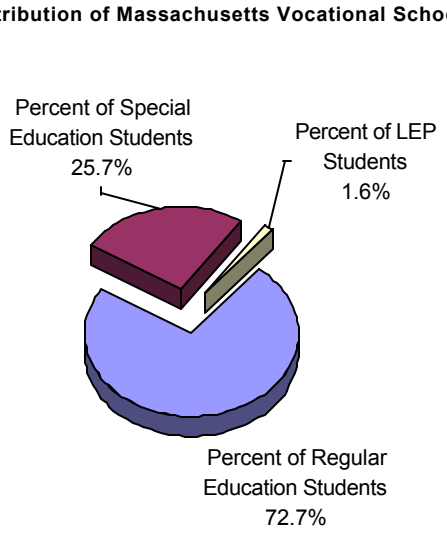


Figure 2.3: Population Distribution of Massachusetts Vocational Schools, 2000

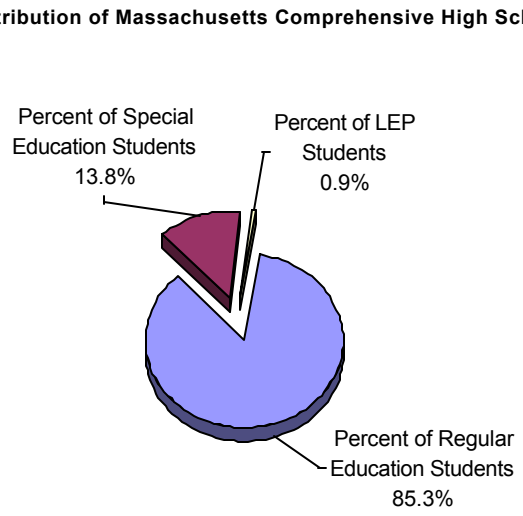


Figure 2.4: Population Distribution of Massachusetts Comprehensive High Schools, 2000

2.3 Special Education in Massachusetts

Special education students make up approximately 14.5% of the primary and secondary education population in Massachusetts, the second highest identification rate in the United States. The purpose of special education is to provide education for students, equal to that of regular education but appropriate to the needs of students with disabilities.

2.4 Students with Limited English Proficiency

The definition of a student with Limited English Proficiency (LEP) is given by the Massachusetts Department of Education as, "a student whose first language is a language other than English who is unable to perform ordinary classroom work in English". [14] There are at least five thousand Limited English Proficiency students enrolled in public schools in Massachusetts. Approximately 60% of these students are native Spanish speakers. [15]

2.5 MCAS Background Information

The Massachusetts Comprehensive Assessment System (MCAS) is the state's student testing program that is being implemented in accordance with the Education Reform Act of 1993. The goal of the MCAS testing method is to strengthen public education in Massachusetts. Beginning with the class of 2003, the test will be a graduation requirement. All students, including students with disabilities and students with limited English speaking proficiency, must take the MCAS tests.

One requirement of the MCAS is that performance measurement be based on the Massachusetts Curriculum Framework learning standards. Many people, including, parents, teachers, administrators, and employees of the Department of Education created these standards. The frameworks outline not only the expected results from schools for the MCAS exam but all aspects of education in Massachusetts. It is the belief of many, including Commissioner of Education David P. Driscoll, that by following these standards the overall quality of education in Massachusetts will greatly increase. Prior to 1993, the only statewide educational requirements were history and physical education. After the passing of the

[14]Massachusetts Department of Education: Participation guidelines for students with disabilities: a focus on MCAS alternate

[15] Massachusetts Department of Education 1999 MCAS Results

Education Reform Act, there was a statewide call for more defined curricula and standards for all students. This new framework was designed to be implemented by teachers in their everyday lesson plans and by school districts in their creation of their district curriculum. [16]

2.5.1 Subject Breakdown

The MCAS is a multifaceted test that determines a student's proficiency level in a number of subjects. The subject breakdown for each of the grades that will take the test in 2001 is as follows:

- English Language Arts: grades 3, 4, 7, 8, and 10
- Mathematics: grades 4, 6, 8, and 10
- Science & Technology: grades 5, 8, and 10
- History and Social Science: grades 5, 8, and 10

Table 2.1 better illustrates the schedule for each grade level and which tests they will take in the year 2001.

	ELA Composition	ELA Language and Literature	Mathematics	Science and Technology/ Engineering	History & Social Science
Grade 3		April (Reading)			
Grade 4	April	May	May		
Grade 5				May	May
Grade 6			May		
Grade 7	April	May			
Grade 8	April	May	May	May	May
Grade 9				Question Tryout	
Grade 10	April	May	May	Question Tryout	May

Table 2.1: MCAS Testing Schedule

Prior to the year 2001, only students in grades 4, 8 and 10 were required to take the test. In the year 2001, students in grades 3 through 8 and 10 will be required to take the test. We will be studying the tenth grade scores in English Language Arts, Mathematics and Science and Technology.

[16] Fairtest [Web Page]

2.5.2 Question Formulation

In order to appropriately test the students, the MCAS covers a variety of question types. Currently the format includes four types of questions:

- Multiple-choice questions
  - Used in all content area tests.
  - Students select an answer from four options.
- Short-answer questions
  - Used in Mathematics tests only.
  - Students generate a brief response, for example, a short statement or computation leading to a numeric solution.
- Open-response questions
  - Used in all content area tests.
  - Students create a one- or two-paragraph response in writing or in the form of a narrative or a chart, table, diagram, illustration, or graph, as appropriate.
- Writing Prompts
  - Used in English Language Arts tests only
  - Students write a composition based on the writing prompt, which may relate to a reading passage (footnote: MA Dept ED Overview of Assessment In. and Pro MCAS Tests of 1998). [17]

2.5.3 MCAS Exam Scoring

Each of the open response questions, short answer questions, and written compositions are individually read and scored by professional scorers employed by the Department of Education's test contractor, Harcourt Educational Measurement. A scanning machine does the scoring of multiple-choice questions. Professional scorers grade the open response question with the use of specific scoring guides. The responses to writing prompts are also scored by professional scorers and by Massachusetts teachers trained at MCAS Writing Scoring Institutes. [17]

[17] Massachusetts Department of Education Overview of Assessment Instruments and Procedures MCAS Test of 1998

2.5.4 Major Reforms of Massachusetts Education with Regard to the MCAS

Beyond simply raising the standards for students, the Education Reform Act emphasizes raising expectations for all educators, inexperienced as well as veteran. The Act requires that, beginning in 1998, all new teachers are required to pass two tests to become certified to teach in Massachusetts public schools: one on their knowledge of the subject content, and one on their communication/literacy skills. Current teachers who are temporarily certified or who want to become certified in a new field also need to pass the subject matter test. The Act allows the Board and Commissioner to create the criteria used for determining school and district performance. Under the Education Reform Act, if a district is performing poorly, the state can choose to intercede.

2.5.5 Vocational School participation in MCAS

One type of school that is often overlooked when dealing with standardized testing is vocational schools. The vocational school program gives students the opportunity to concentrate on a certain skill that would be applicable to the working world. The result of this program is less attention paid to core courses that are normally a requirement for regular school curriculums. Trends show that as public high school graduates earn more vocational credits, they tend to earn fewer academic ones. The reason for this is due to the lack of available class time. In order for the student to participate in the vocational program, some tradeoffs must be made. These students complete fewer academic courses overall, fewer advanced and more lower level academic courses.

Vocational school students are treated the same as regular students. It is for this reason that they are not given any test accommodations and their scores on the MCAS are not separated for analysis like scores for the other two demographics.

2.6 Overall Student Performance

The following statistics and graphs illustrate the trends of students at the proficient, advanced, and the failing levels. Levels of proficiency are as follows:

- Advanced 260 – 280, "Students at this level demonstrate a comprehensive and in depth understanding of rigorous subject matter and provide sophisticated solutions to complex problems."
- Proficient 240 – 259, "Students at this level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems."
- Needs Improvement 220 – 239 "Students at this level demonstrate a partial understanding of subject matter and solve some simple problems."
- Failing 200 – 219, "Students at this level demonstrate a minimal understanding of subject matter and do not solve simple problems." [18]

Now that the MCAS has been used for three years, we can begin to see a trend developing in the test scores. In examining the overall performance of 10 th grade we see the test scores beginning to rise in each of the subject areas as shown in Table 2.2.

Grade10: 1998 - 62,462

Students; 1999-63,183

Students; 2000- 66,080

[18] Massachusetts Department of Education MCAS Spring 2000 report of state results

Students

Table 3

1998-2000 Statewide MCAS Results: Grade 10

Average Scaled Score and Percentage of Students at Each Performance Level[1]

	Scaled Score	*Advanced*	*Proficient*	*Needs Improvement*	*Failing*
ENGLISH LANGUAGE ARTS					
2000	**229**	**7**	**29**	**30**	**34**
1999	229	4	30	34	32
1998	230	5	33	34	28
MATHEMATICS					
2000	**228**	**15**	**18**	**22**	**45**
1999	222	9	15	23	53
1998	222	7	17	24	52
SCIENCE/TECHNOLOGY					
2000	**226**	**3**	**23**	**37**	**37**
1999	226	3	21	39	38
1998	225	1	21	42	36

1. Percentages may not total 100 due to rounding. For the purpose of computing school, district, and state results, students who were absent without a medically documented excuse from any subject test MCAS test were assigned the minimum scaled score of 200 and a performance level of *Failing* for that subject area. These results include regular education students, students with disabilities and limited English proficient students.

Table 2.2: 1998-2000 Statewide MCAS Results: Grade 10

At the tenth grade level passing the English language arts section is a requirement in order to graduate from high school. As we can see from Figures 2.4 and 2.5, the trend of scores is poor. There has been a decrease in the percentage of students who are at the proficient or advanced levels, and a 6% increase between 1998 and 2000 in the percentage of students who are failing the English language arts section. Although the English scores are not doing well, there was a dramatic improvement of 9% on the Mathematics scores of 1999 to the scores of 2000.

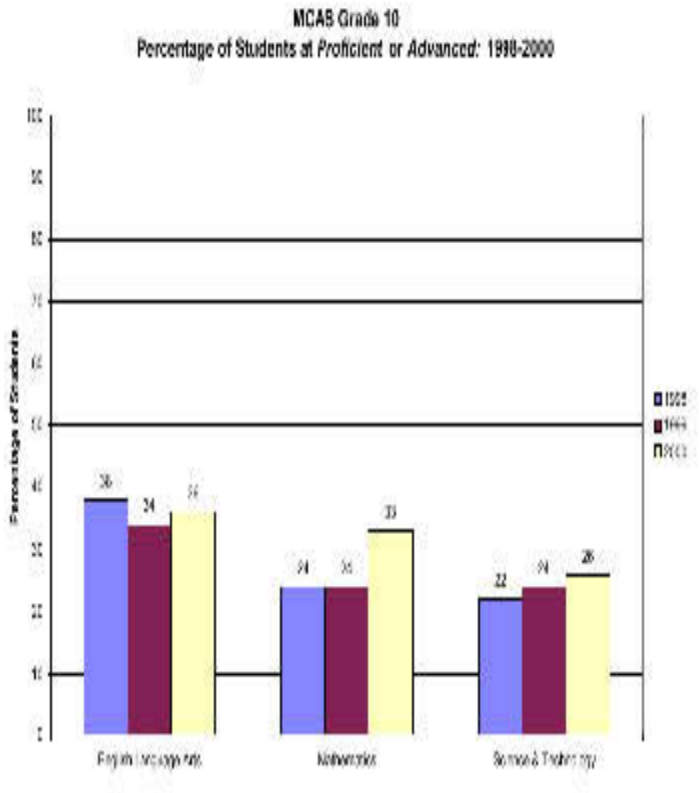


Figure 2.4: Grade 10 Percentage of Students Proficient by Subject Area

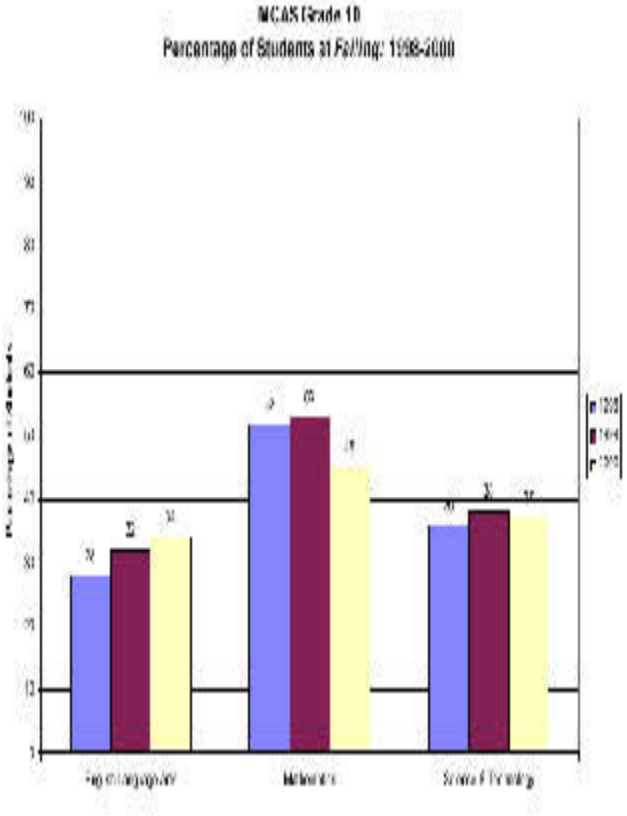


Figure 2.5: Grade 10 Percentage of Students Failing by Subject Area

We can see some change in each of the three grades. In the fourth grade, the most improvement can be seen in the mathematics section of the test with a 16% increase in the percentage of students who are above the failing level. In the eighth grade there is slight improvement in each of the sections of the test. The tenth grade proves to be disappointing in that in both the English and mathematics sections there was a decrease in the percentage of students above the failing rate.

While the schools of Massachusetts strive to increase their MCAS scores, they are also improving the overall quality of student education. Although we are seeing slightly better results on the MCAS tests, there is still little known as to why some schools or school districts

consistently score higher than those schools who have a greater failing rate. This relationship between unidentified factors is what prompted our project. The next chapters describe how we went about determining these relationships and the results obtained from our research.

3 Methodology

This project was intended to assist Senator Antonioni and the Massachusetts Joint Committee on Education in the analysis of the Massachusetts Comprehensive Assessment System (MCAS) exam for the improvement of provisions and accommodations for vocational education students, by identifying factors that affect student scores in specific schools and districts.

The objectives of our project were to:

- Assess the MCAS scores from 1998, 1999, and 2000
- Identify factors that influence student scores
- Propose techniques for improvement in student scores
- Suggest topics for further research

This chapter outlines our methods of research and analysis including statistical analysis, interviews, and a school visit. For our analysis, we compared schools where students performed well to those where students did not perform well on the MCAS exam with regard to vocational education.

3.1 Analysis of the MCAS Scores for 1998, 1999, and 2000

Our first objective for this project was to look at the scores from 1998 to 2000 for tenth grade students who were enrolled in vocational education. We were unable to acquire the scores by student, so we obtained scores aggregated by school from the Massachusetts Department of Education (DOE) website. We also found helpful information from the boston.com website, where the Boston Globe has been researching the MCAS based on data made available by the DOE. We used the scores and other information from these sites in order to organize our own file to extract schools we wished to study in further depth.

3.1.1 Analysis of the Score Format

The files on the DOE website contained the average scores of individual schools and districts for each of our studied academic subjects: English, math, and science & technology. They also include the district of the school, percentage of students in each score range, and

percentage of students in special education and LEP programs. Sheldon Rothman, our contact at the Massachusetts Department of Education, warned us about one exception in dealing with special program identification, however. If a student is involved in a program that enrolls fewer than ten students, that program is not accounted for on the MCAS score information sheet. The reason for this is that the information on the Department of Education website is available to the public and with a population of fewer than ten students, the ability to retain the anonymity of the students becomes very difficult. We wanted to directly contact districts for which no information from special programs was published with MCAS data to see if the programs do exist but with less than ten students. This plan was not completed because of difficulties contacting schools, time constraints, and confidentiality issues. The schools agree with the policy of the DOE and for the sake of the students will not divulge the information about programs with ten or fewer students.

3.1.2 Analysis of Data by District

Using Microsoft Excel, we used information from the DOE files and created worksheets with our fields for all students, for regular students, and for special education students. We also created a worksheet that listed each vocational school with its surrounding regular high schools. This data organization enabled us to look at each of our categories of students separately. It also allowed us to compare the vocational school performance to that of high schools in the same areas, which would be useful when analyzing demographic factors against test scores. We used the data to include worksheets listing addresses and phone numbers of the schools, performance ratings over the past three years, and actual score statistics for each of the three subjects. The statistics included the number of students that took each section of the test and the percentages of students that fit into the different grading categories, analysis of trends of MCAS scores, and comparisons of vocational and comprehensive school performance. All of the preliminary analysis was done using data from all forty-three vocational schools because the data for this analysis was available for all vocational schools.

3.1.3 Identification of Schools for In Depth Study

After our database was complete for our preliminary analysis, we ordered the schools, inclusive of all students, by MCAS score of each of the three subjects. We also used the

scores of the schools from 1998 and 1999 in order to determine schools that had been steadily improving or declining in their success rate with the exam.

When our schools were ordered by score and analyzed for success trends, we chose our schools for in depth study. At first we decided to conduct our research at a total of five schools: one test school, two schools that have performed the worst on the MCAS exam, and two schools who have performed the best. We had to take transportation into account. We had to exclude any schools that we would not be able to visit due to lack of transportation or time constraints. After taking all factors into account and trying to set up a visit with our test school, Assabet Valley Regional Vocational High School, we realized that we would not be able to visit all the schools for in depth study. We then looked at other possibilities and decided that a phone survey of superintendent-directors of the twenty-six regional vocational high schools to get information from a larger source without visiting. We chose to only survey twenty-six out of the forty-three vocational high schools in the state because those specific twenty-six, listed in Appendix C, are regional vocational schools, meaning that they encompass their own district. Since these schools were there own district, we could acquire information that is only available by district such as student to teacher ratios, post graduation plans, school expenditures, etc. for those schools rather than guessing as with the districts that combine comprehensive with vocational high schools. We felt that visiting Assabet Valley would be sufficient to acquaint ourselves to the vocational system and help us to shape our survey questions to attain the largest amount of information in the shortest amount of time.

A letter that introduced our group and our purpose was drafted by Senator Antonioni's office and then sent to all twenty-six schools that we wanted to survey. A copy of the letter can be found in Appendix E. The letter explained what our project premise entailed and what type of information we were hoping to obtain from the schools. We also included a copy of our preliminary survey questions so that the superintendents could prepare in advance thereby speeding up the interview process. The letter included a calendar marked with dates that we wanted the superintendents to choose from for the interview. The packet was sent through the mail on Wednesday, April 4th, 2001. Phone calls were placed over the following three weeks. We tried to speak to as many superintendents as possible, but since we did not receive

responses from many of them and due to time conflicts, mainly school holidays as well as the week of MCAS testing, our time in which to complete our surveys was severely hindered. Ten of the twenty-six schools were interviewed, including and interview with David Cronin who is the Executive Director of the Massachusetts Association of Vocational Administrators (MAVA). His input encompassed that of most of the Vocational Administrators of the State who are members of MAVA. All responses and survey summaries are included in Appendix E.

3.2 Identification of Factors Significant to MCAS Performance

As stated previously, our initial analysis of the scores initially was done on all forty-three of the vocational schools. This allowed us to understand as completely as possible how the vocational schools have been performing. When we began to do the analysis of the factors, we found that we would be unable to find enough information on all of the vocational schools for a complete analysis, so we decided to focus our study on the twenty-six vocational schools that are their own district. All of the graphs for the next section use data from the twenty-six regional vocational schools. The following map shows the locations and boundaries for the twenty-six regional vocational schools:

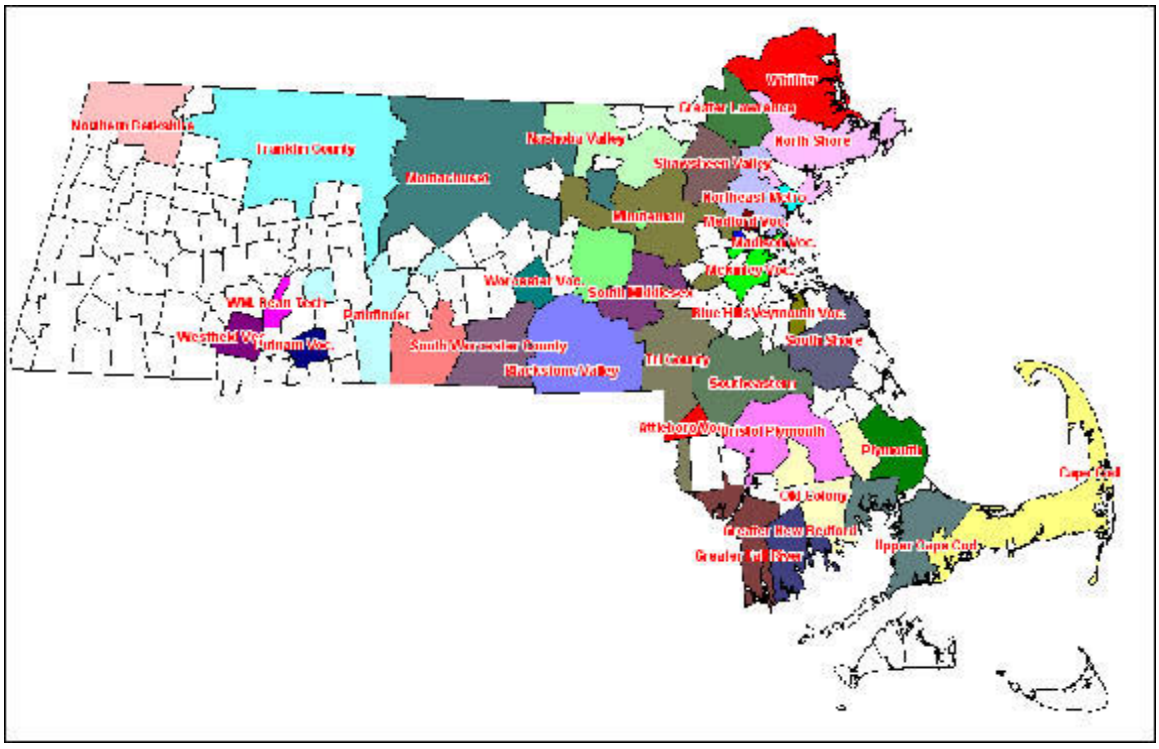


Figure 3.1: Map of Vocational Districts

A master list of potential factors for student scores was created. This list was edited and expanded based on the information we obtained from our visit to Assabet Valley and our phone survey. One of our original goals for the school visits was to develop our list of potential factors for student scores and then look at schools that have steadily improved and those that have steadily declined in MCAS scores, call the administration of those schools, and survey them about what factors from our list come into play in their school systems. As our project goals changed, most specifically after our visit to Assabet Valley, we decided to call all Regional Vocational High Schools and obtain information.

3.2.1 Economic Factors

The economic factors that we studied included teacher salaries, free lunch eligibility, and per pupil expenditures for principals, teachers, support programs, books and equipment, and state allotment of MCAS grants. All data for these were found on the Internet and from the Department of Education directly. The data were used in statistical regression analysis.

3.2.2 Demographic Factors

We had originally planned to study many demographic factors, but to find this information we had to rely on census data. The 2000 census data were not posted on the US Census web page, so we opted to only study the correlation between MCAS performance and minority student populations.

3.2.3 Educational Factors

Educational factors was the largest group of factors we studied. With respect to MCAS scores, we analyzed student to teacher ratio, post graduation plans for students, percent of vocational students passing their eighth grade MCAS exam, time devoted to academic classes, and MCAS preparation programs. Some of these factors were analyzed using regression. Student to teacher ratio and post graduation plans data were found online, while the others were obtained from superintendent interviews.

In addition to factors that could be analyzed by regression, we used our surveys to get opinions from superintendents as to their beliefs regarding MCAS. This included the likely hood that their students, had they not passed the tenth grade exam the first time, would be able to pass the exam before their senior year, the job placement rates for vocational schools, when the vocational schools received their new freshmen's eighth grade scores, and at what level they believed the high stakes should be placed. These data were gathered to find similarities between superintendent opinions and situations of students across the board.

3.2.4 Methods of Identification for Significant Factors

In order to identify the factors responsible for vocational student performance, we employed three techniques, including statistical analysis, a visit to Assabet Valley Regional Vocational High School, and phone surveys to superintendents and to the Executive Director of MAVA, the Massachusetts Association of Vocational Administrators. Our statistical analysis was done using regression in Microsoft Excel. We created a single worksheet that allowed us to weight our factors individually and together. The visit to Assabet Valley allowed us to tour a vocational school and learn more about the structure of vocational schools. We also had the opportunity to speak with Superintendent Carlo about his opinions on MCAS with relation to

vocational schools. Our survey, which can be found in Appendix E, consisted of twelve questions that were either answered during a phone survey or in written form through fax or email.

3.3 Formation of Score Improvement and Future Research Suggestions

Based on the research we were able to complete, we made suggestions on ways schools might possibly help their students improve their scores. The suggestions also include some things that could be done through the DOE that might be helpful to schools in raising student scores.

Due to the limited amount of time we were presented with, we were unable to research the factors as completely as we would have wished, so we also made suggestions for research that could be done or factors that should be explored in greater depth in the future to that more definite conclusions can be made as to the significance of certain factors.

4 Results and Analysis

The results obtained from our research and analyses are presented in this chapter. Our four main objectives were to assess the MCAS scores, identify factors that influence scores, propose ways to improve scores, and propose areas that should be studied further in the future. Due to the limited resources and time available to us, there were many factors we were unable to study in depth, but this report is designed not only to assist in the presenting of evidence for factors we did study, but in suggesting further research needed to prove or disprove certain hypothesis. This chapter is organized by each of our objectives.

4.1 Assess the MCAS scores from 1998, 1999, 2000

In order to assess the MCAS scores for 1998 through 2000, first, the format of the scores was analyzed. The fields needed for analysis were extracted from the files on the Massachusetts Department of Education website for all forty-three vocational schools and copied to Microsoft Excel worksheets. After the analysis of the raw score data, we began to compare the performance of vocational school with that of comprehensive schools.

4.1.1 Analysis of the MCAS Score Format

The scores downloaded from the Massachusetts Department of Education website were imported to Microsoft Excel spreadsheet for data manipulation. The site gave all data by school district, with a total of 116 fields. Twenty-seven of these fields were extracted from the site. For each school, the number of regular, special education, and LEP students that took each part of the exam was recorded, along with the percentages of students from those categories for each performance rating. Since we were only analyzing data for the English Language Arts, Science & Technology, and Math sections of the exam, we first eliminated all fields dealing with the history and social studies section. This section is being used for the first time this year. We then extracted into another worksheet the data for only vocational schools.

To gain a better visual understanding of how each vocational school performs on the different sections of the exam, maps were created to display the schools' performances on the test. Figure 4.1, created using Map Info, gives a thematic representation of each school's

performance on the MCAS for the year 2000. Researching which towns each school serviced, then combining these towns in Map Info formed the boundaries of the districts. The remaining cities and towns not serviced by regional vocational schools have school districts that encompass both comprehensive and vocational schools.

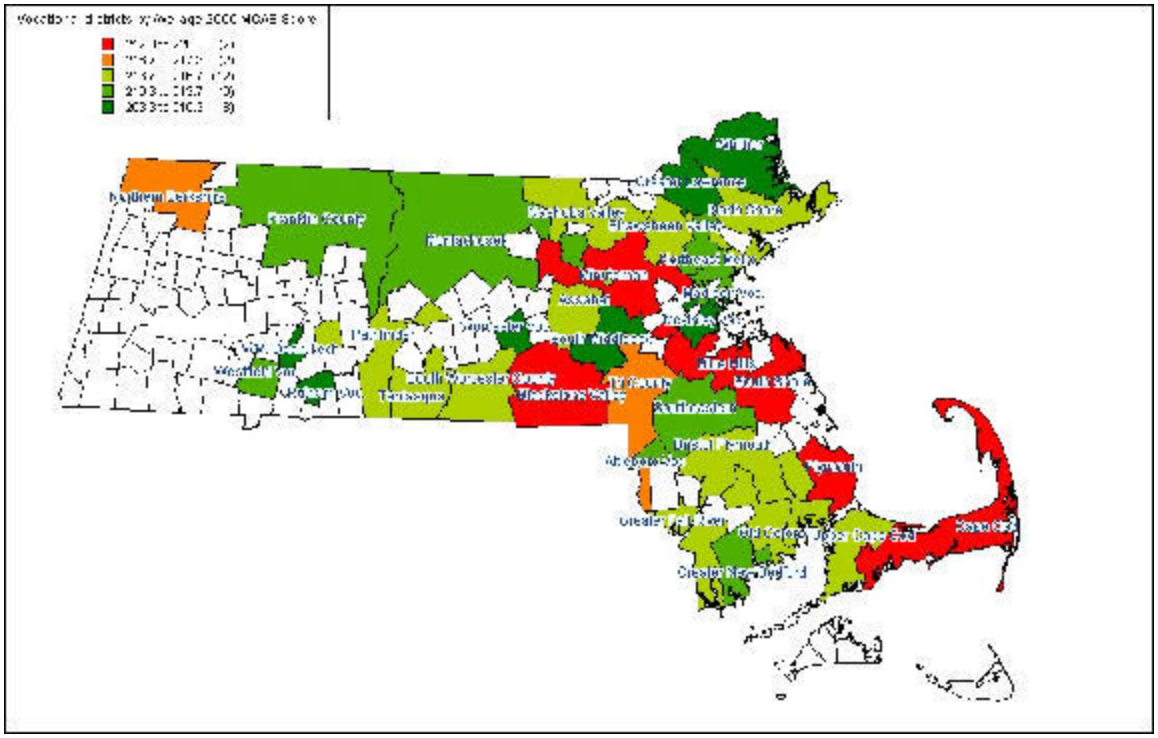


Figure 4.1: Map of Vocational Districts by Average 2000 MCAS Score

This map allows for a visualization of the score distribution for regional vocational schools across the state. It shows that school districts in the same area geographically do not always have similar MCAS performance levels. The names of the schools corresponding to the district names can be found in appendix C. In order to begin an in depth analysis of the scores we had to look at trends in the scores rather than just the score for each district. Maps representing the average 1998 and 1999 scores, by color, can be found in appendix G.

To see the overall score trends we simply made a bar chart for our initial reference.

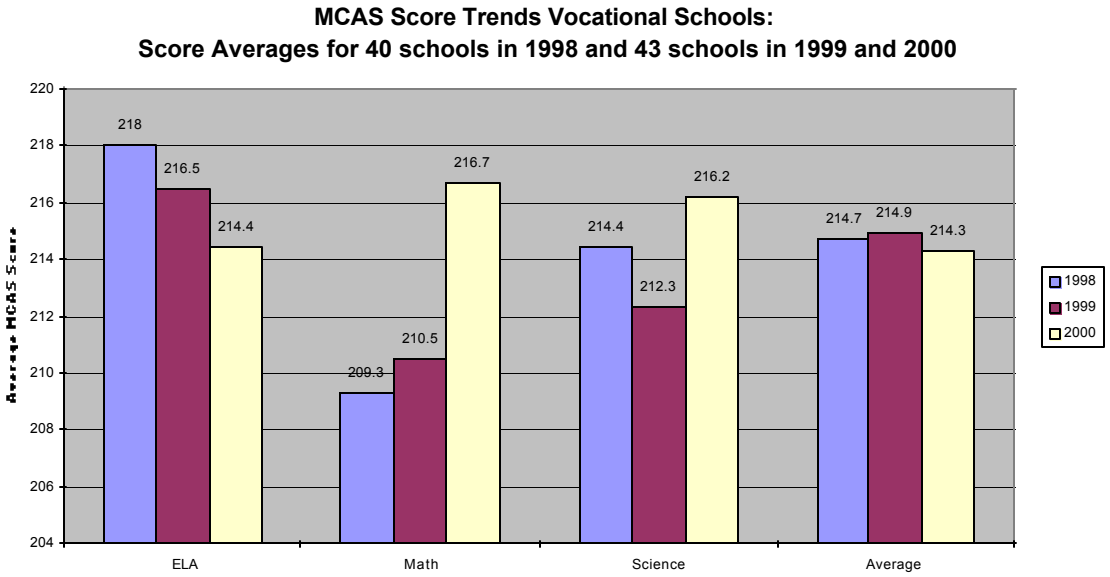


Figure 4.2: MCAS 1998, 1999, 2000 Score Trends for Vocational Schools

By only looking at the average of all three subjects for all forty-three vocational schools, the far right bar group, it appears that the scores have risen first then declined slightly over the course of three years, however when the scores are broken down by subject, it is easier to see that is not necessarily the case. The English scores have declined the most, math scores have risen the most, and the science scores have improved somewhat after a short decline in 1999. The combination of decreasing English scores and rising math scores have created a balance to make it seem that the schools scores are not changing significantly.

To get an idea of how vocational students were performing compared to comprehensive students, we also plotted a graph showing comprehensive trends:

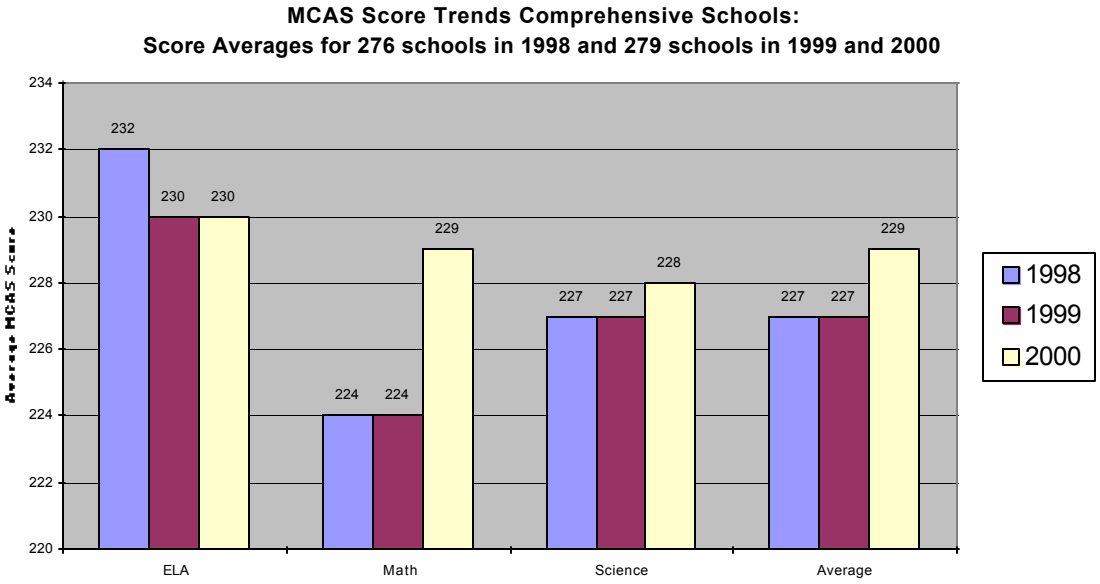


Figure 4.3: MCAS 1998, 1999, 2000 Score Trends for Comprehensive Schools

As can be seen from this graph, the comprehensive students also have decreasing English scores. The trends in the scores of all three subjects for comprehensive students are similar to that of vocational students, even though the average comprehensive scores are increasing, where the vocational average has stayed fairly constant. These graphs show that difficulty or success in specific academic subjects are not restricted to only vocational schools, but the entire Massachusetts public school system.

The following map, Figure 4.4, shows the trends in the scores over the past three years for the average MCAS scores.

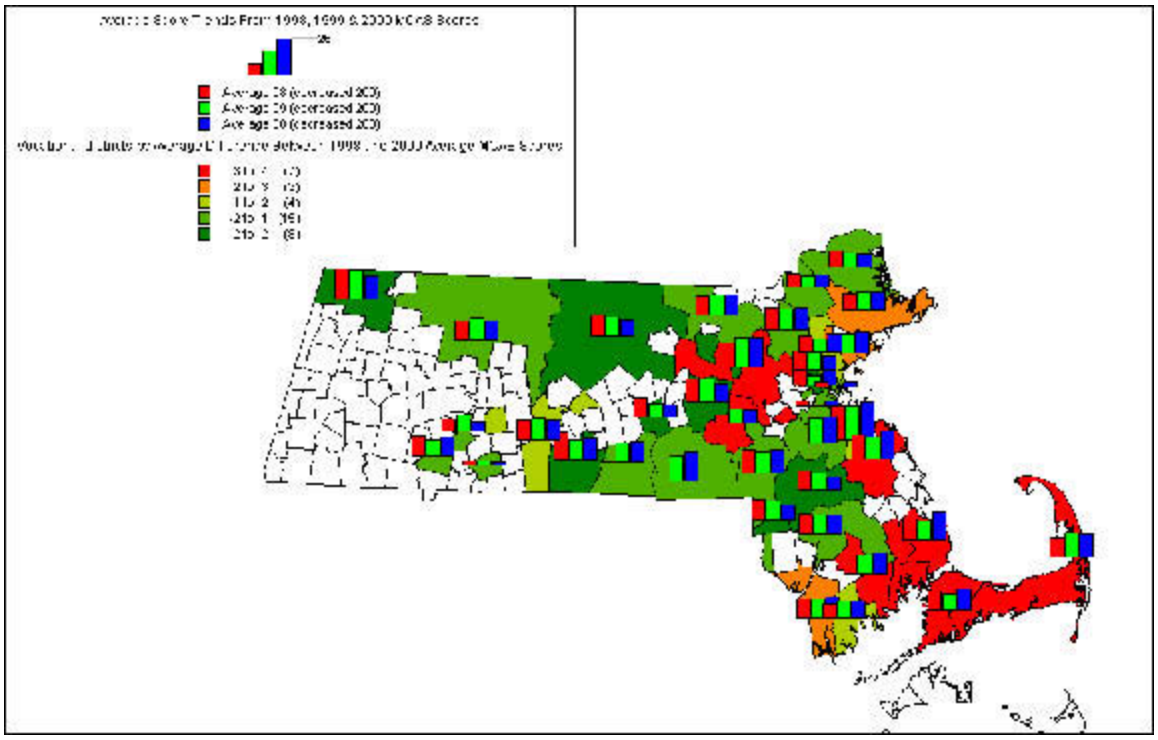


Figure 4.4: Map of MCAS 1998, 1999, 2000 Score Trends for Vocational Schools

The two types of data that are being represented in Figure 4.4 are the average scores from 1998 through 2000, represented by the bar graphs, and the average difference between the 1998 and 2000 MCAS scores for each district, shown as the colors of the districts. For the bar chart data we subtracted 200 points from each score to bring it down to a single or two-digit number. This allows the reader to see the trends of the scores more easily. Had the scores been kept in the 200 – 280 range, the trends would have been unreadable. This map shows specific areas of the state that are consistently performing better on the MCAS, such as the Cape Cod region in the lower right hand corner. In appendix H, the trends are broken down by academic subject.

4.1.2 Comparisons between Vocational and Comprehensive MCAS Performance

After analyzing the performance of only the vocational schools, we compared their performance to comprehensive schools. We first mapped each vocational school to a nearby comprehensive school for score comparison; we then looked at the ratings of the vocational vs. comprehensive schools across the state. We also looked at the eighth grade and tenth grade

scores of the same class inclusive of all students, to see if the performance of this class was similar for the two years they took the tests, this can be found in Figures 4.9 and 4.10. The following graph, Figure 4.5 shows a comparison of the average MCAS scores for vocational and comprehensive schools in 2000.

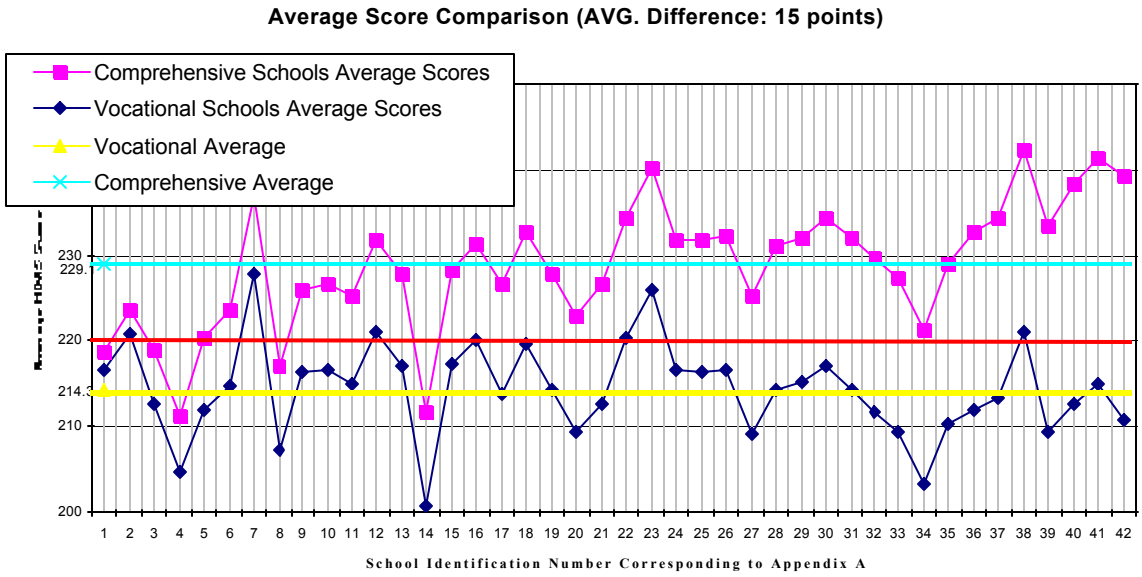


Figure 4.5: Average Score Comparison of Vocational and Comprehensive Schools, 2000

To create this graph, each vocational school was first mapped to a comprehensive school. If the vocational school was part of a comprehensive school district, that high school was chosen. If the vocational school was regional or agricultural, the comprehensive high school chosen was the one that was geographically the closest. The average difference in average score between vocational and comprehensive schools is fifteen points. Although there is no connection between each school other than their score comparisons the schools where connected by lines for the purpose of clearly showing the difference between the vocational and comprehensive schools. The school identification number and corresponding school names are listed in Appendix A.

As shown previously in Figure 4.3, English scores are suffering the most of the three subjects; we also plotted this graph for only English scores, shown below in Figure 4.6.

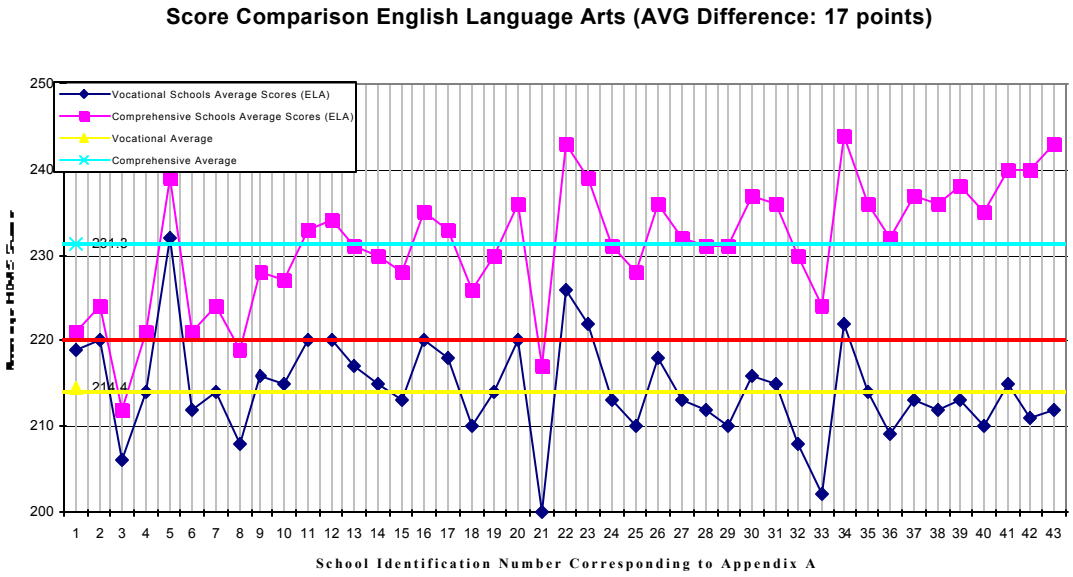


Figure 4.6: ELA Score Comparison of Vocational and Comprehensive Schools, 2000

When looking at these graphs, it is interesting to see that the scores for vocational schools, though they are 15-17 points lower than their comprehensive counterparts, follow the comprehensive line fairly closely. Since vocational schools are mapped to a comprehensive school that is the closest geographically, it is safe to assume that a large percentage of the students enrolled in the vocational school transferred from that comprehensive district. Since most of these students were at one point in the same district, their educational background would have been the same, proving that some of the reasons vocational students are not performing well might be partially attributed to the academic background they received before entering high school. In essence what we can see from this graph is that students who are brought up through a school system in the same area perform similarly. One hypothesis for the vocational students performing worse than their comprehensive school counterparts is that they may not have performed well in academics up until the eighth grade and therefore chose to learn a trade in a vocational school.

Using the boston.com site, we were able to obtain a table of vocational schools' performance ratings over the past three years. Boston.com is the home site of the Boston Globe newspaper, which has been doing MCAS research and analysis based on data available on the DOE website. We obtained data for each school including percent of students that failed, rating, average scaled score for 2000, change from 1998, and improvement rate. We graphed ratings in a pie chart to show what percentage of the vocational school had met the rating for each category. The rating scale ranged from *very high* to *critically low*. A full description of the criteria for performance ratings can be found in Appendix F. The only ratings listed for vocational schools included low, very low, and critically low. A few of the schools had data that had yet to be fully reviewed. A rating of *low* signifies that 20% or more of the students in a school were at the proficient or advanced level and 40% or less had failed. A rating of *very low* signifies that less than 20% of students in a school were at the proficient or advanced level, and 41%-60% failed the exam. *Critically low* indicates that over 60% of the student population failed the test.

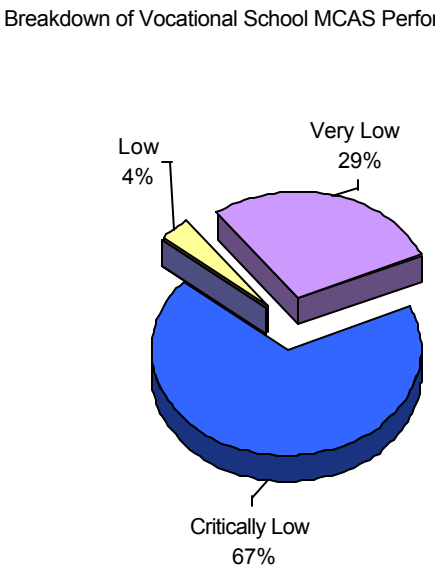


Figure 4.7: Breakdown of Vocational School MCAS Performance Ratings, 2000

Figure 4.7 shows that only 4% of vocational schools have over 20% of their students at the proficient level on the MCAS exam. 67% of the vocational schools have a failure rate of

over 60%. Not one vocational school achieved one of the three ratings above *low*. We compared this to comprehensive school ratings in Figure 4.8.

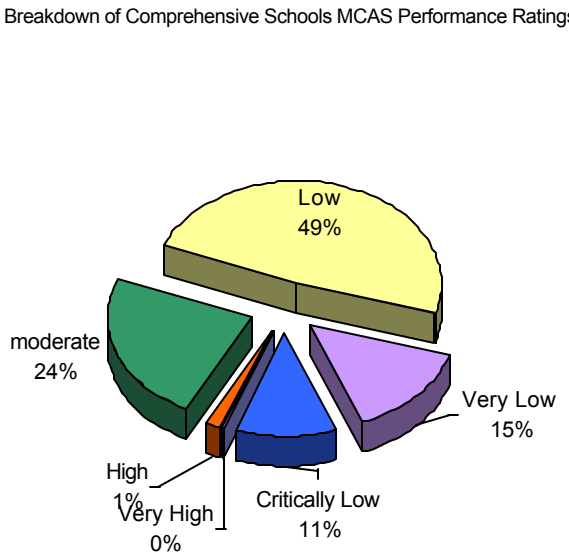


Figure 4.8: Breakdown of Comprehensive School MCAS Performance Ratings, 2000

Comprehensive schools have been achieving ratings that are significantly higher than the vocational schools. Compared to vocational education's 67% at the *critically low* level, only 11% of comprehensive schools are at this level. However, only a few of comprehensive schools have achieved the highest rating, *very high*, which signifies that less than 5% of students are failing the exam. Since there was only a fraction of 1% that were at the very high rating it is represented by 0% in the graph.

An argument was presented that vocational students are under prepared academically when they enter high school by several years. This would mean they are probably not passing their eighth grade exam. To test this theory, we compared the eighth grade 1998 MCAS scores to the 2000 tenth grade scores, hoping to see that this class of students performed similarly on the exam for both years, this comparison is shown in Figures 4.9 and 4.10.

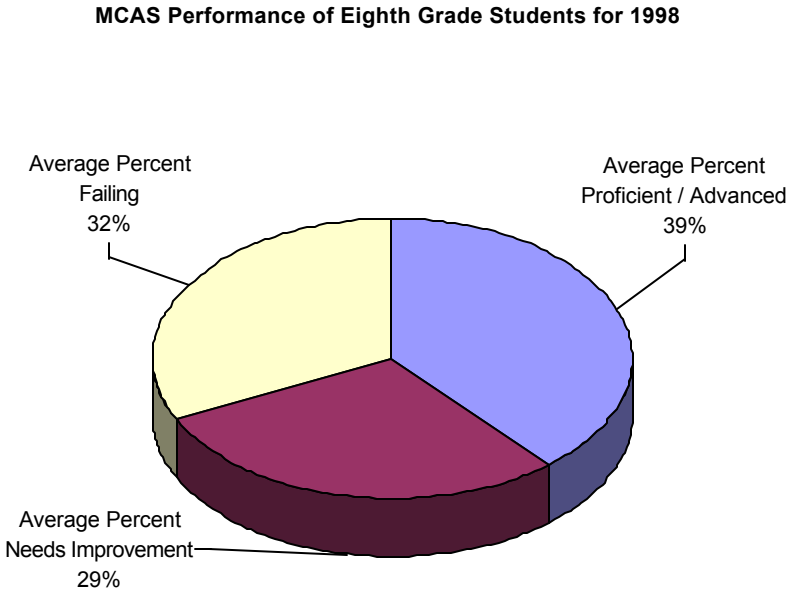


Figure 4.9: MCAS Performance of Eighth Grade Students for 1998

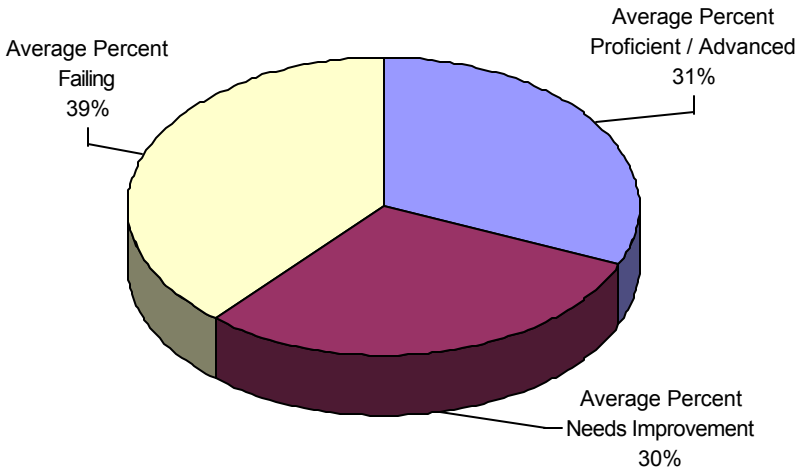


Figure 4.10: MCAS Performance of Tenth Grade Students for 2000

These graphs show an extremely similar distribution of score ratings for this class, meaning there is a good chance that the students failing the eighth grade exam may be the same students failing the tenth grade exam. It would have been useful to us to have been able to

separate out only vocational students for comparison, but that could only be done using data reported by student.

4.2 Identify Factors that Influence Scores

After analyzing the MCAS scores and trends in the scores over the past three years, we began to research why vocational schools might be performing poorly. A great deal of research was done in order to identify factors that might influence student performance on the MCAS exam. Our possible factors were categorized under three headings: economic, educational, and demographic. After completing research using the Internet and interviews, we were able to compile information for most of our initial list of factors, but were limited to analyzing only the twenty-six regional vocational schools that comprised their own district. We also found factors that might be significant but that we were unable to explore due to time and resource constraints. We first explored each factor separately to find correlations between the factor and the MCAS scores. In this type of analysis, known as regression we used Microsoft Excel to find a statistical weight for each factor. This type of analysis told us approximately how significant each factor was to MCAS performance. For each graph, we used a polynomial trend line and calculated the R^2 value, which denotes the strength of the relationship, on a scale of zero to one, where zero is no correlation and one is a perfect correlation.

There were three categories in which we explored possible factors influencing student performance on the MCAS exam: educational, economic, and demographic. We used four specific methods for obtaining data. The first was obtaining data from the World Wide Web using the Department Of Education (DOE) and Boston Globe websites. The second was our visit to Assabet Valley Regional Vocational High School. The third was superintendent interviews. Our last method was statistical information obtained from our contact at the Department of Education. All of our economic and demographic data were found using information published on the Internet or from Sheldon Rothman. The majority of the educational data was found from superintendent interviews and the visit to Assabet, with the exception of student plans and student to teacher ratio information, found on the Internet.

4.2.1 Economic Factors

There were seven economic factors analyzed with respect to average MCAS score for vocational schools: per pupil expenditures for teacher salaries, principal salaries, student support programs, books and equipment, percentage of low income households using free lunch eligibility as a proxy, and MCAS grants awarded to vocational schools from the state. Regression was done for each factor to weigh its correlation with the MCAS scores. Economic data were taken from 1999, as it was the only year for which they were available.

4.2.1.1 Teacher Salaries

We were able to obtain teacher salary data by district for the fiscal years of 1993 to 1999. We only analyzed the data from 1998 and 1999 since the MCAS started in 1998. When we graphed the difference of teacher salaries vs. average difference in MCAS score from 1998 to 1999:

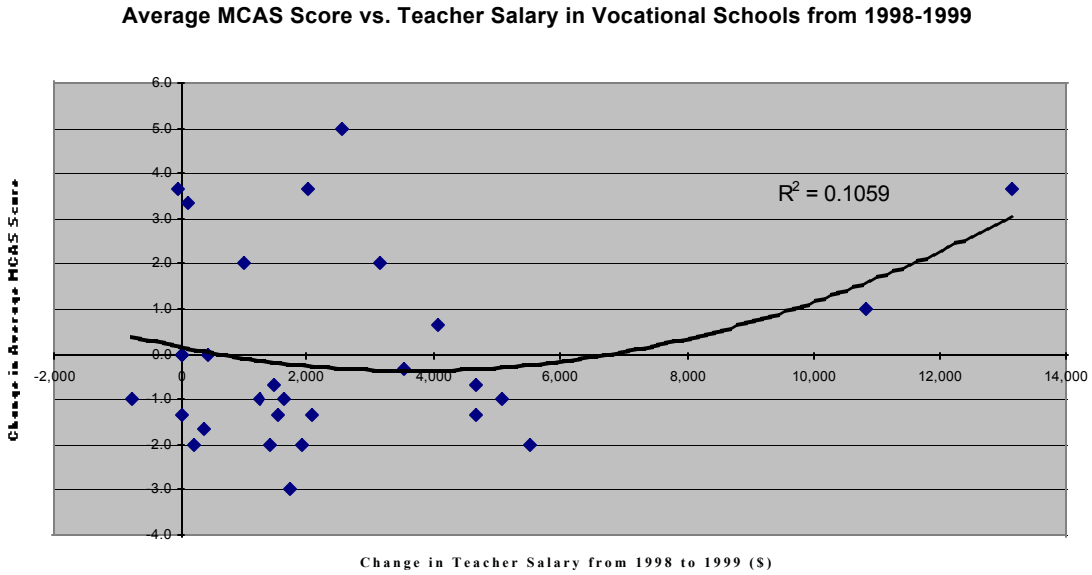


Figure 4.11: Average MCAS Score vs. Teacher Salary in Vocational Schools from 1998 - 1999

We did this comparison to try and prove the hypothesis that the more teachers were paid the better the MCAS scores would be. The basis for this hypothesis is that teachers with

higher salaries are more likely to have been a teacher for a while and therefore have more experience than younger teachers. Also teachers with higher salaries may have also had more education and attained such accomplishments such as a masters or doctorate degree. However, from this graph it can be seen that there is not a strong correlation between the change in teacher salaries and change in MCAS scores. It appears from the graph that even when teacher salaries were increased, the majority of the MCAS scores decreased somewhat. Appendix D shows the teacher salary vs. average MCAS score for 1998 and 1999.

4.2.1.2 Free Lunch Eligibility

For our next economic factor, we wanted to analyze the income levels of the families of vocational students. We could not obtain this data, but were able to use free lunch plan eligibility as a proxy. We substituted percentage of students eligible for free lunch for students living in low income families. We considered this might be a factor because students in families with low income might not get as much parental support if their parents are required to work a lot, and also because the students themselves might have to work to contribute to the income of the house, leaving less time for school work.

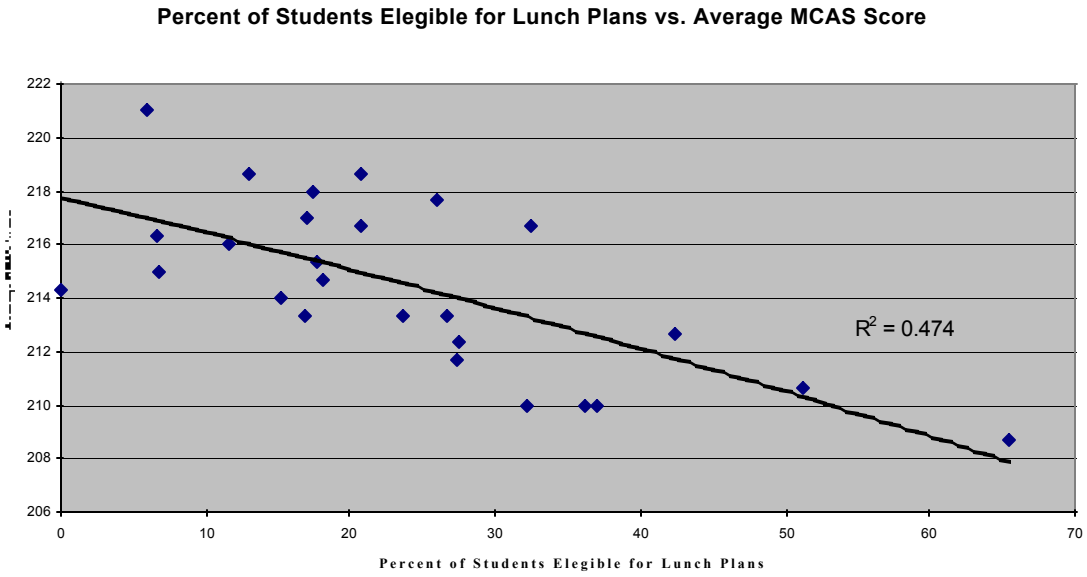


Figure 4.12: Percent of Students Eligible for Lunch Plans vs. Average 2000 MCAS Score

This graph shows that, as was suspected, MCAS score does decrease as percentage of students eligible for free lunch increases. This shows that there may be a problem with the amount of resources these students have at home to maintain a proficient level in their academics. It also could suggest that these students may be more preoccupied with working to help with economic problems.

4.2.1.3 School Expenditures

The third type of economic factor we analyzed dealt with school expenditures. We were able to obtain information from a section of the financial aid reporting form that schools are required to complete for the DOE. From this form, we were able to analyze the per pupil expenditures for following factors: teacher salaries, principal salaries, books and equipment, and student support services. All of this data was taken from 1999. For each of these factors, we created a graph that plotted the factor against the school's average MCAS score. Note that the per pupil expenditures for teacher salaries is not the same as the teacher salary analysis shown above.

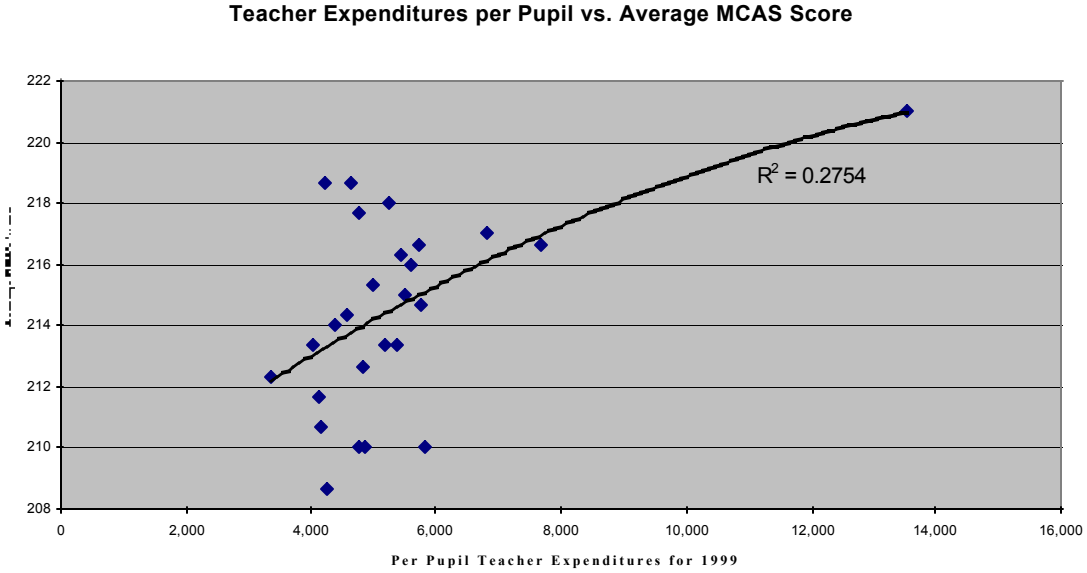


Figure 4.13: Teacher Expenditures per Pupil vs. Average 1999 MCAS Score

This graph does not show any significant correlation. The R^2 value is 0.28, but this can be attributed to the outlying value. When this data value is eliminated, the R^2 value becomes 0.12.

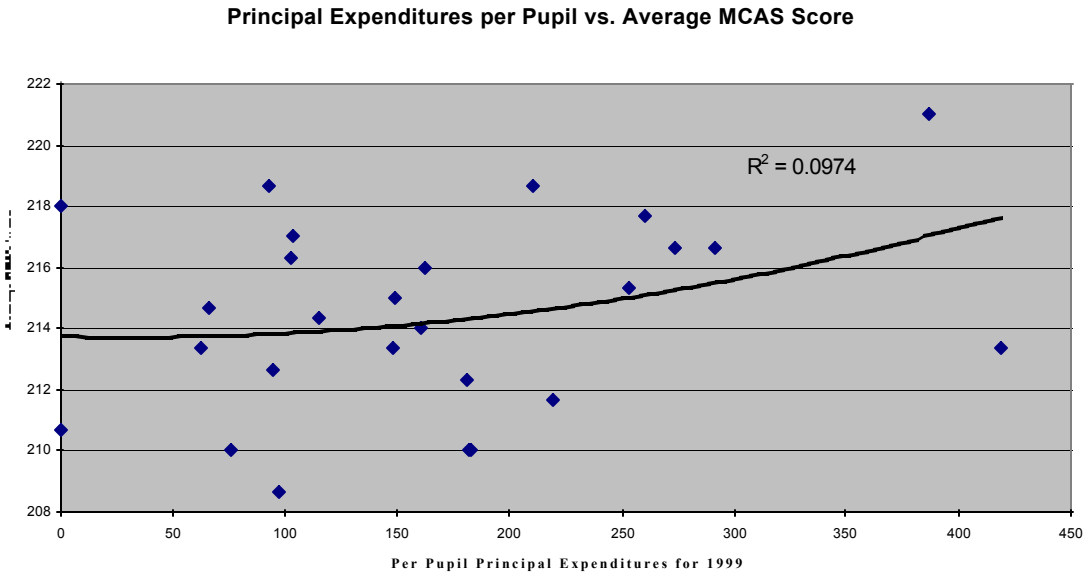


Figure 4.14: Principal Expenditures per Pupil vs. Average 1999 MCAS Score (Outlier removed)

The distribution of these data are also scattered and show only very small correlations as seen by the small R^2 values.

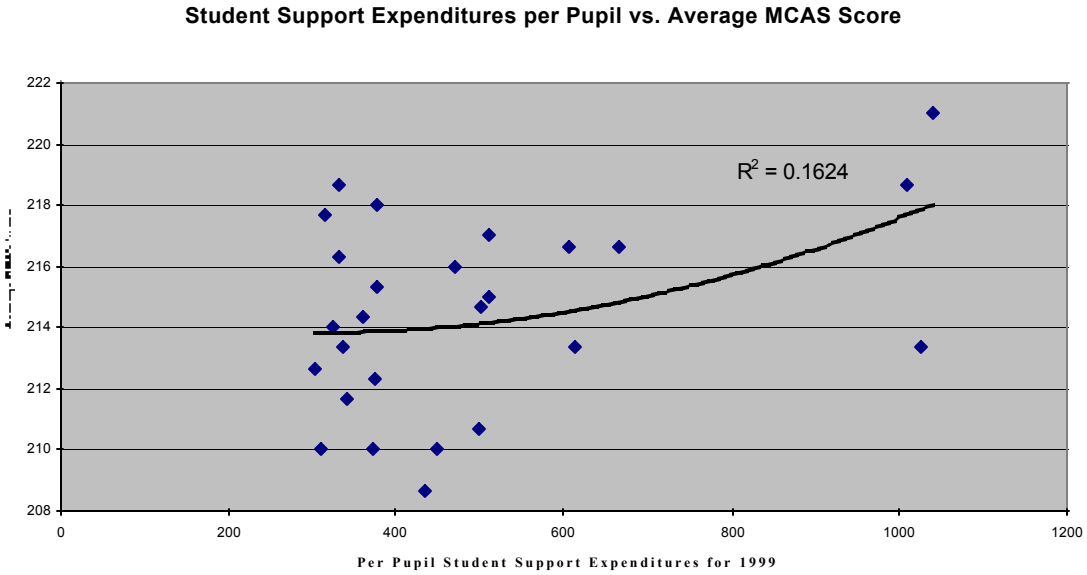


Figure 4.15: Student Support Expenditures per Pupil vs. Average 1999 MCAS Score

Figure 4.15 represents the comparisons between the student support expenditures for 1999 and the 1999 MCAS scores. This graph shows only a small trend however. The upward curve is most likely a result of the three outliers. Since most of the data points are distributed between $200 and $600, it is difficult to tell if the outlying values are significant. They might be considered significant if the high expenditures for all three points mapped to high MCAS scores.

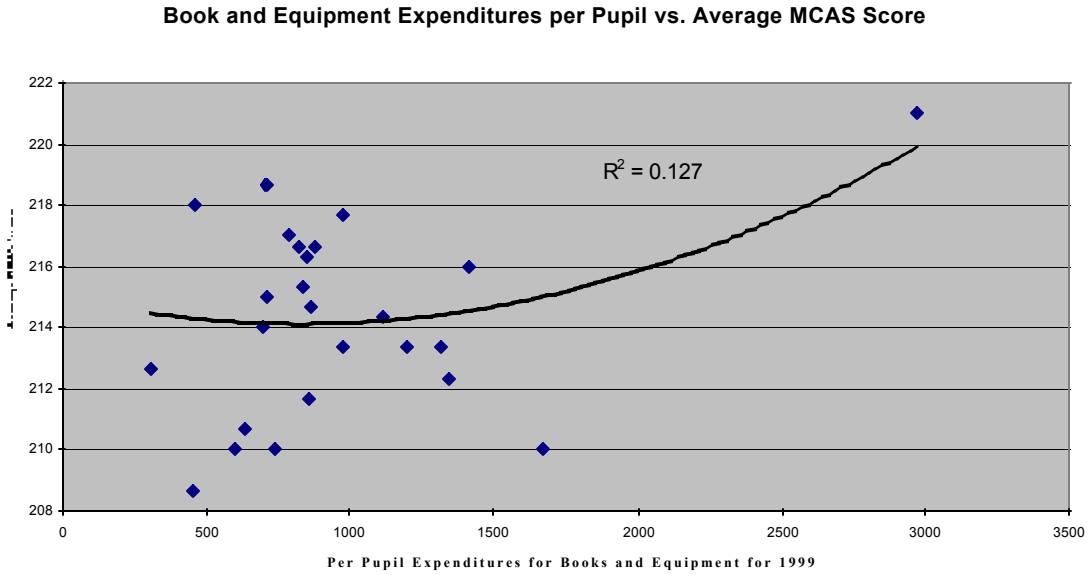


Figure 4.16: Book and Equipment Expenditures per Pupil vs. Average 1999 MCAS Score

As with the previous graphs, this correlation between books and equipment and the MCAS scores seems only to be due to the outlying value. Without this school's data, the R^2 value is 0.16, but creates a parabola trendline shape:

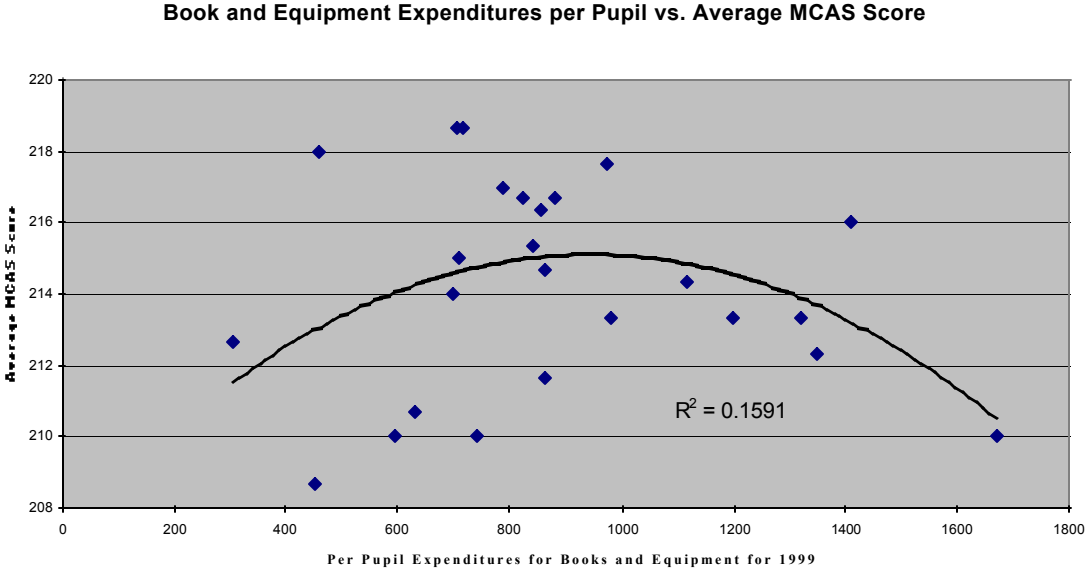


Figure 4.17: Student Support Expenditures per Pupil vs. Average MCAS 1999 Score (Outlier Removed)

Figure 4.17 still does not show any significant correlation between book and equipment expenditures to MCAS scores, even though the R^2 value increases when the outliers are removed.

Through the Department of Education we were able to obtain the monetary values for the state MCAS grant allotments for each of the twenty-six regional vocational districts in Massachusetts for 1999 and 2000. When we first obtained the data we felt there may be a correlation between the amount of the grant given to each school and their respective performance on the MCAS. In order to determine if there was a relationship we plotted the grant data against the MCAS scores for that particular year. As you can see in Figure 4.18 below there does not seem to be any correlation.

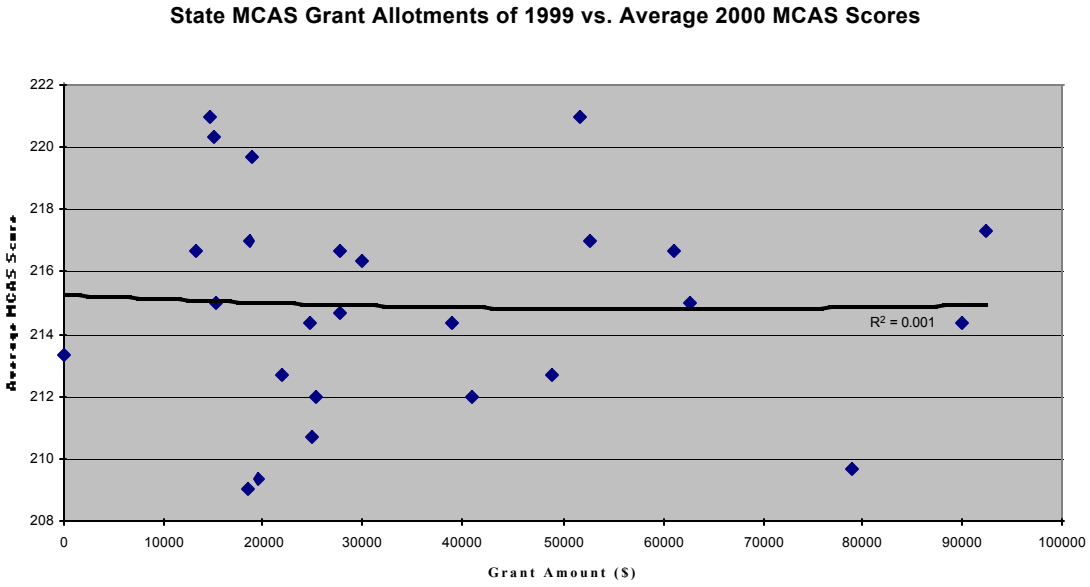


Figure 4.18: State MCAS Grant Allotments of 1999 vs. Average MCAS Scores

The reason we graphed the 1999 grant allotments against the 2000 MCAS scores is because the grant is received in the beginning of the school year. If we had graphed the 1999

grant data with the 1999 scores our results would not have been conclusive because the school would not have had time to utilize the money in bringing up the MCAS scores. As we can see from the data that we do have however is that after one year of grant help from the state there is very little correlation between the scores and the grant amounts. This may change over a few years of help from the grants but currently we do not see any correlation between the two. With an R^2 of only 0.001 there is more or less no correlation right now. When the 2001 MCAS data is released a study can be done to see how the grant may have helped a particular school over the past two years.

4.2.2 Demographic Factors

Since a census was taken in 2000, we originally planned on analyzing demographic information presented by the census bureau. However, the data was not available for 2000. We did analyze minority populations in vocational schools however, since this data was available for 1999.

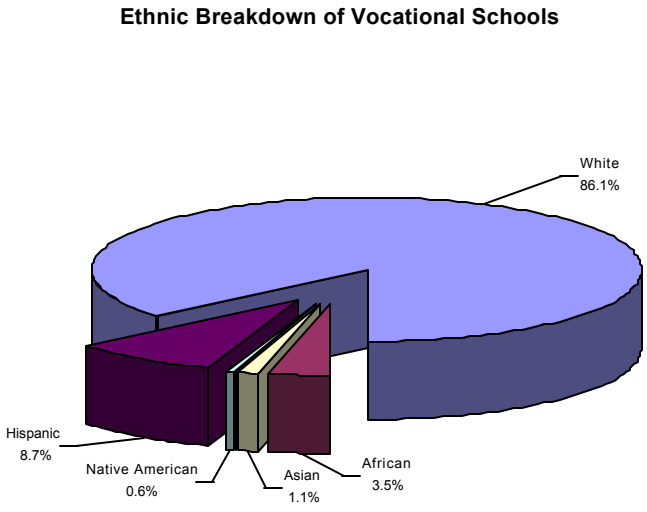


Figure 4.19: Ethnic Breakdown of Vocational Schools

This pie chart shows the breakdown of ethnicities for the regional vocational schools. We next graphed the percent of minority students for each regular vocational school against average MCAS scores. This graph was plotted for two reasons because many times, minority populations are associated with low-income households, so we were trying to find a relationship similar to that of the free lunch eligibility to MCAS score.

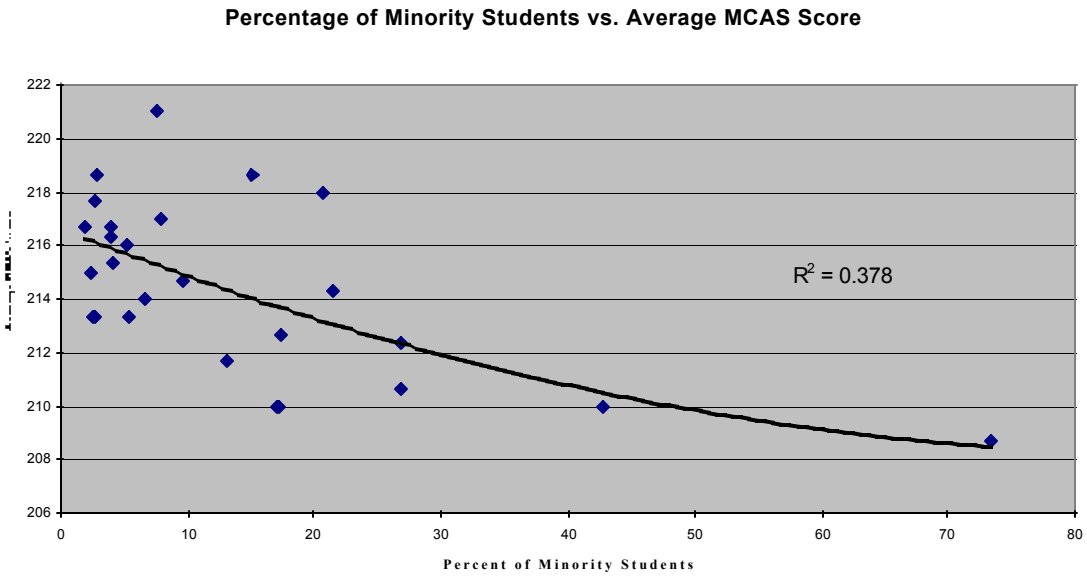


Figure 4.21: Percentage of Minority Students vs. Average MCAS Score

Figure 4.21 represents the percentage of minority students in each of our target vocational schools and compares that number with the schools' MCAS performance. This graph does show a trend, but unfortunately the outliers play a part in raising the strength coefficient of the relationship. Because LEP populations many times are significantly comprised mostly of minority students, we graphed percent of minority students against only the MCAS scores to see if the relationship would be stronger. Unfortunately, when this graph was plotted, it did not yield the results we expected. The R^2 value for this graph was 0.254, denoting a weaker correlation than that of the one shown in Figure 4.21.

4.2.3 Educational

Educational factors played the most important role in our study. The number of educational factors was the largest of the three factor categories. Not only did this provide the most helpful in determining significant factors, but also provided the largest informational base for our improvement suggestions and recommendations for further research.

4.2.3.1 Student to Teacher Ratios

We obtained all of the student to teacher ratios online through the DOE web site. The ratios we obtained showed the total number of teachers, academic and vocational, to the total number of students. We were unable to obtain the student to teacher ratios broken down by individual academic subject. We graphed the student to teacher ratio as the dependent variable to average MCAS score, which can be seen in Figure 4.22:

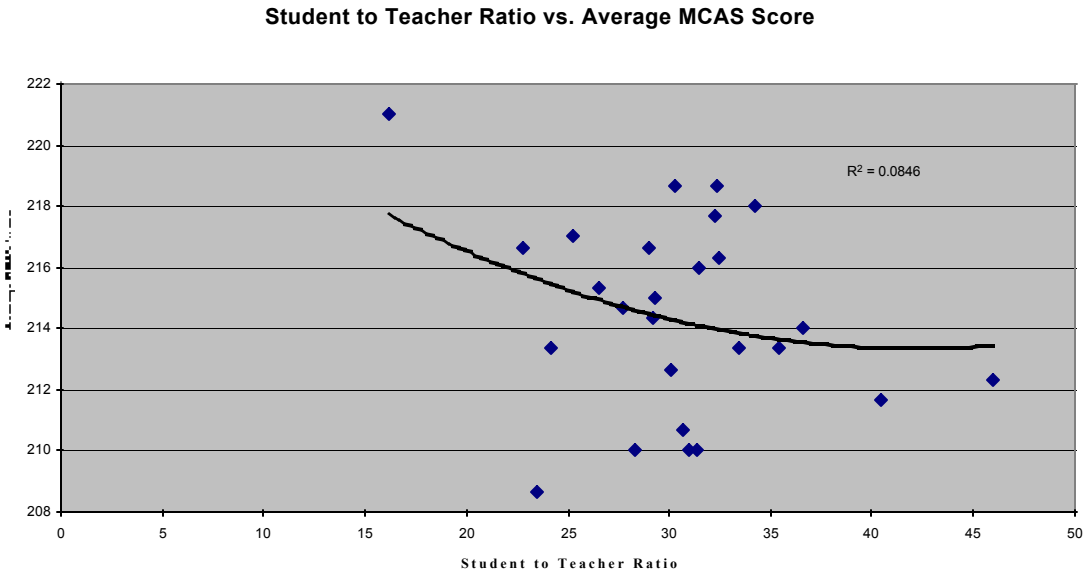


Figure 4.22: Student to Teacher Ratio vs. Average MCAS Score

This graph shows an extremely small correlation between student to teacher ratios and average MCAS score. Looking at the two outliers, it is clear that they are the only reason for any correlation.

4.2.3.2 Student Plans

We were able to obtain data for the post high school plans of vocational students. The data was divided into three categories: a four-year plan (college/BS degree), a two year plan (college/AS degree), and work (in their vocational area or the armed forces). The data was not complete and percentages did not always add up to 100%, for the purposes of this study we assume that the other students were either not surveyed or not sure as to their plans.

We used data gathered by the 1998 district profiles on the DOE site that gave students' post high school graduation ambitions. We then used the average MCAS score for each school and plotted it against the number of students attending a four year college, number attending a two year college, and number entering the work force after graduation.

Traditionally students who choose to go to a vocational school are those who desire to learn a trade and go to work right after high school. There are those students who attend vocational schools and intend to go on to secondary education, but as Figure 4.23 shows, on average the majority of the students do not.

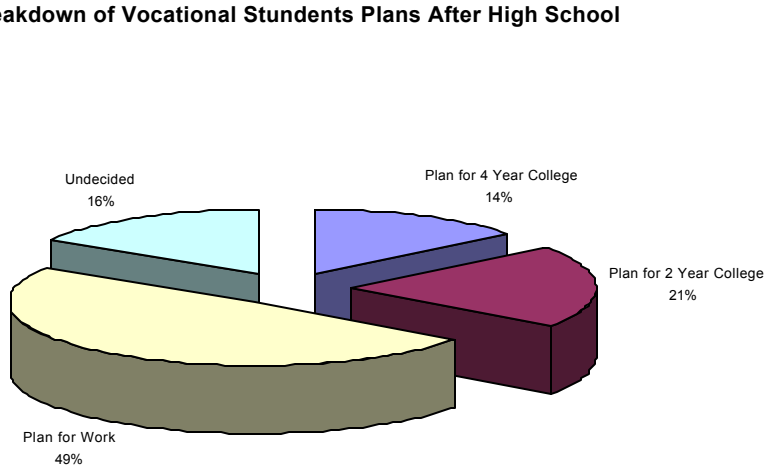


Figure 4.23: Breakdown of Vocational Students Plans After High School

The data used for this chart was obtained from the Massachusetts Department of Education from a 1998 survey of students in vocational schools. As we can see from this chart, 49% of the students surveyed plan on going on to work directly after high school while only 14% plan on going to a four year college and 21% to a two year college. In comparison with comprehensive school students, there is a great difference in the chart completed from a survey for post graduation plans.

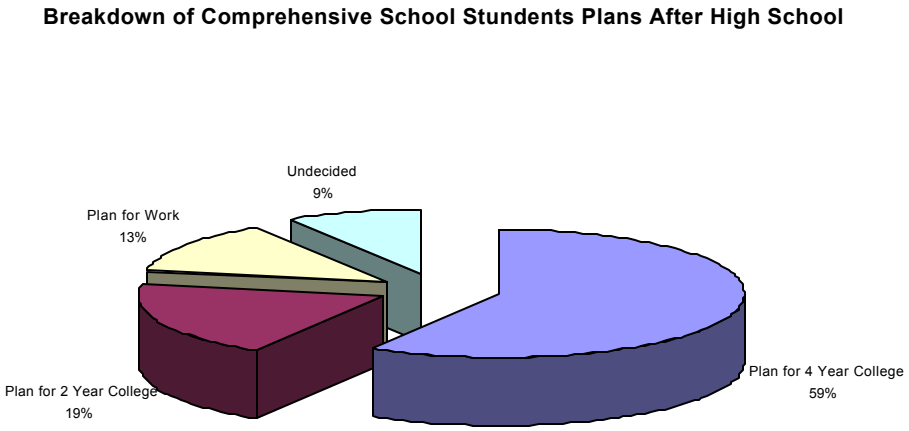


Figure 4.24: Breakdown of Comprehensive Students Plans After High School

As can be seen by Figure 4.24, 59% of comprehensive school students surveyed plan on attending a four-year college after high school. This compared to the 13% of comprehensive school students who plan on working right out of high school.

The first method we used in determining whether or not this factor made an impact on the MCAS performance was to map it. Figure 4.25 shows a thematic map representation of the vocational school's 1998 scores with the 1998 student plan survey results.

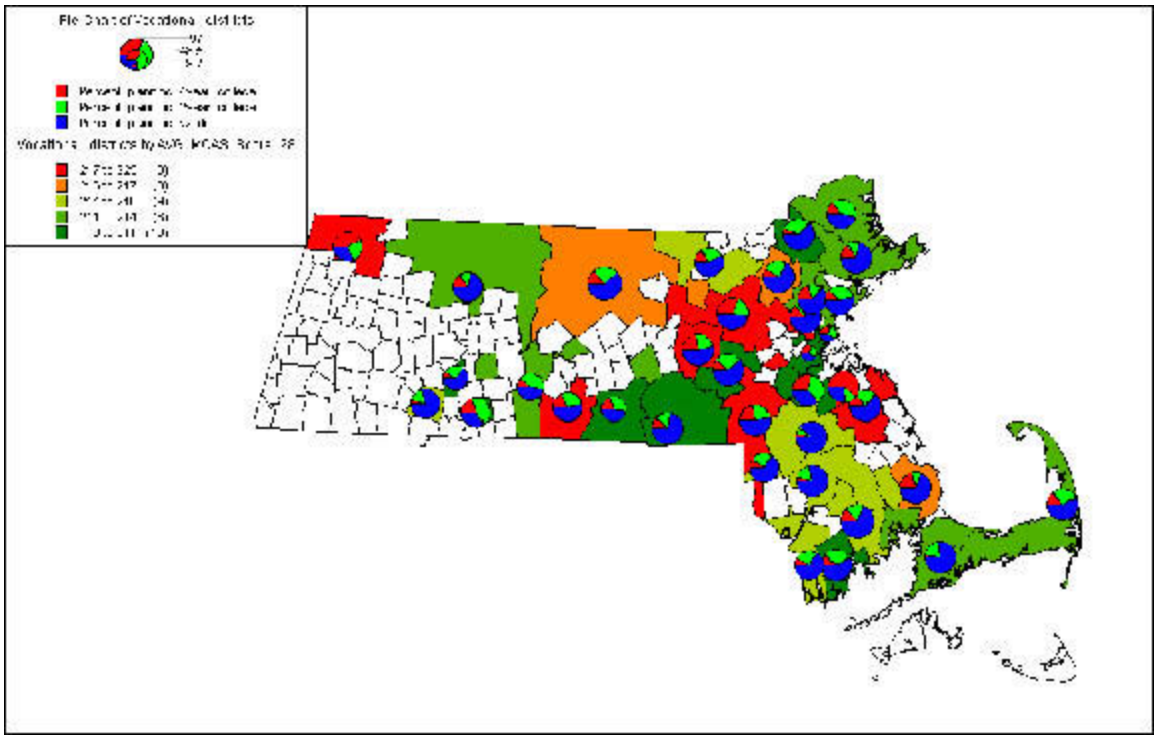


Figure 4.25: Four-year College Plans vs. Average MCAS Score

The pie charts in Figure 4.25 represent each school district's results for the survey of their students on their plans for after high school. In the pie chart the blue represents the percentage of students planning on going on to work right after high school. The colors of the districts represent each district's performance on the exam with the red color representing a higher score and the greener color representing the lower score. In most instances those districts that have a higher percentage of students who plan on going to work right after high school have a lower score on the MCAS while those with a lower percentage have higher scores. This does not hold true for all instances however. In certain areas schools have a high percentage of students who are going to work but the school still has a higher MCAS score. The opposite also holds true in some instances. This data is better represented in the Figure 4.26, which is a scatter plot representation of the same data.

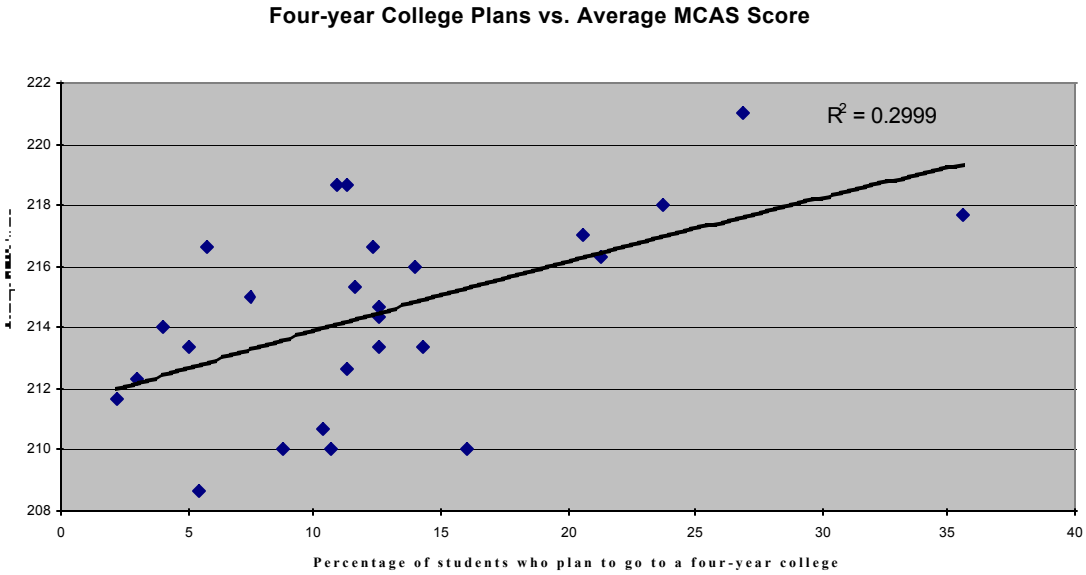


Figure 4.26: Four-year College Plans vs. Average MCAS Score

Figure 4.26 is a scatter plot representation of the correlation between vocational students' plans for after high school and their MCAS scores. This graph shows a small but possibly significant correlation between the number of students planning on attending a four-year college and the school's average MCAS score. However, the relationship is small and though the trend line increases as the percentage increases, the majority of the data points are between zero and fifteen percent.

4.2.3.3 Student Questionnaires

We acquired the data from the 2000 MCAS student questionnaires from the Department of Education. All students taking the MCAS exam are required to fill out the survey prior to the exam. It was this data that we used as a substitute for the student surveys information we had originally planned on conducting through student focus groups or interviews. We took the information from the surveys and sorted them into our database, using only data that pertained to our survey. A copy of the survey questions can be found in Appendix E, where the numbers of the questions we used for data analysis are circled. No data are gathered from the survey for the English Language Arts section of the exam. Our data from the analysis of only these questionnaire factors produced the following results:

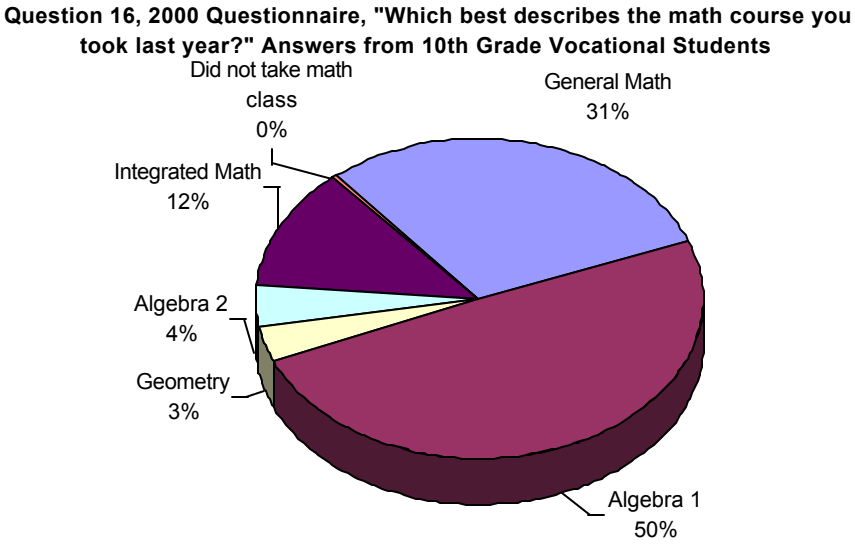


Figure 4.27: Student Questionnaire Question 16 Vocational Student Reponses, N = 6,388

Only 2% more of the comprehensive students than vocational students took Algebra I. Twice as many comprehensive students as vocational students took Algebra II, and seven times more comprehensive students took Geometry in ninth grade. A much larger percentage of vocational students took General Math in their ninth grade year than did comprehensive students.

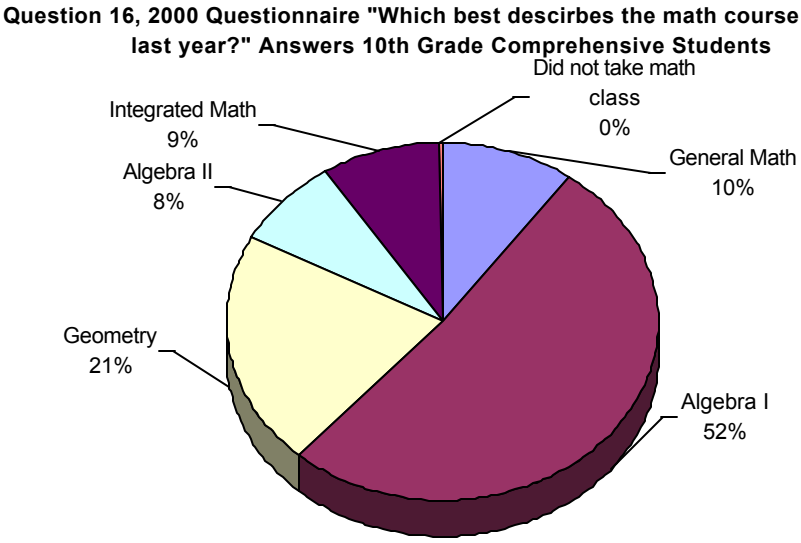


Figure 4.28: Student Questionnaire Question 16 Comprehensive Student Reponses, N = 58,732

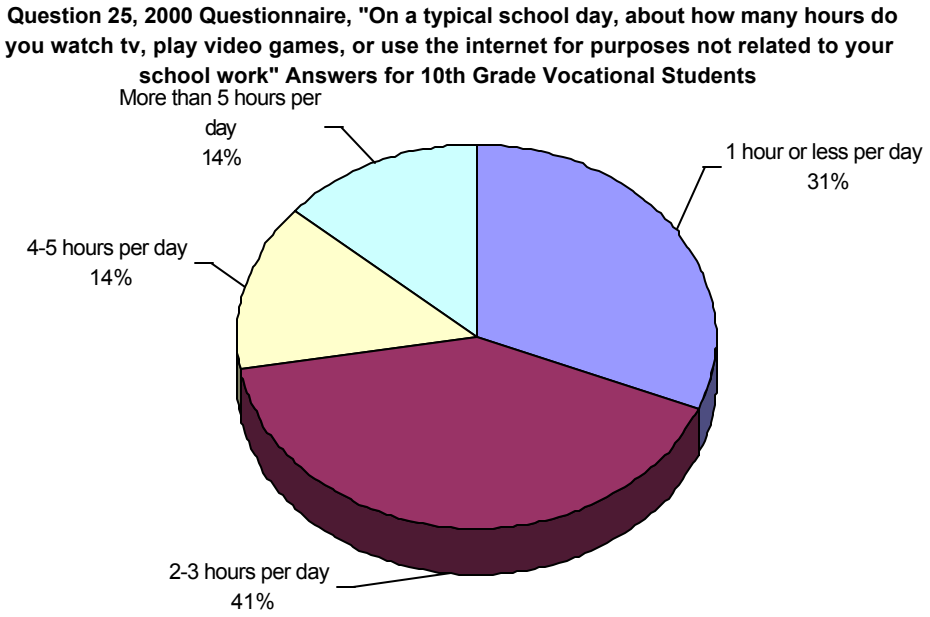


Figure 4.29: Student Questionnaire Question 25 Vocational Reponses, N = 6,388

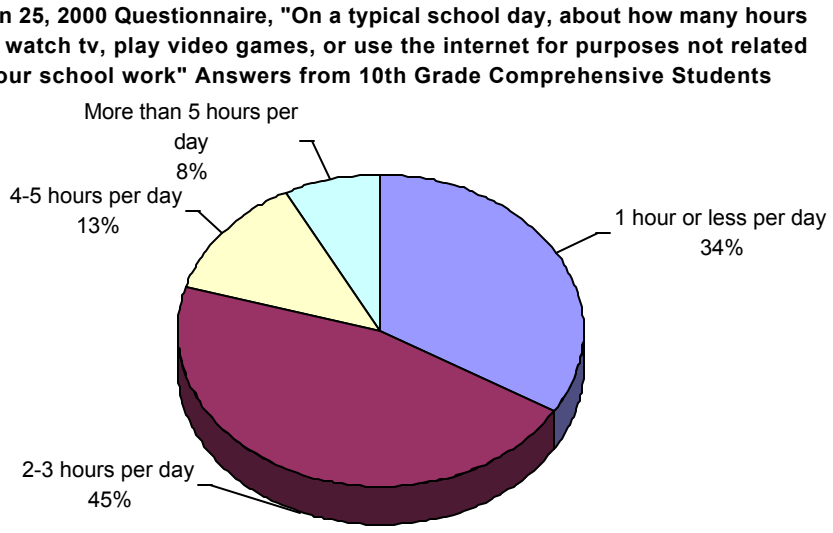


Figure 4.30: Student Questionnaire Question 25 Comprehensive Reponses, N = 58,732

These graphs show that students in vocational schools are spending approximately the same amount of time as comprehensive school student participating in non-school related activities.

4.2.3.4 Visit to Assabet Valley Regional Vocational Technical High School

Though we had originally planned on visiting between six and eighth of the twenty-six regional vocational schools, time only permitted us to visit one, and Superintendent Eugene Carlo was receptive to giving us a tour of Assabet Valley Regional Vocational Technical High School and discussing the MCAS exam with us. He helped us to develop our interview questions and gave us a better idea of how vocational schools operate.

When we arrived at Assabet Valley Regional Vocational High School, Eugene Carlo immediately made it known that his mission for the day was to persuade us to somewhat change our view of vocational schools and adjust the focus of our project.

We were given a tour of the school, which consisted mostly of visiting different vocational classrooms. The level of professionalism displayed by the students impressed us. In any classroom there was usually one teacher talking with one student, while all of the other students were diligently working on projects they were currently assigned to. There was no

graffiti on the walls or trash on the floor, and we did not see a single student procrastinating anywhere.

Superintendent Carlo told us in several of the classrooms that, "…for about ten of the students here, if I [Carlo] gave them the answers on the MCAS test, they still wouldn't pass it". He then asked us if we could identify which students those would be, and none of us could. He also told us that nearly all if not 100% of them would pass their vocational certification and have jobs right after high school if they chose to pursue a career right away.

He told us a great deal about the selection process of vocational schools. Aside from knowing from which school district a student is transferring, unless it can be proven that he or she will not prosper in vocational education, he or she must be accepted. The vocational schools are not provided with eighth grade MCAS data until the spring semester of the students' freshman year, if at all. A large number of the students, many times due to their aptitude in hands-on learning versus traditional academic instruction, enter vocational schools with academic knowledge an average of four years below where it should be according to curriculum frameworks. Then, the student is expected, in the seventeen months prior to the tenth grade MCAS exam, to catch up to the tenth grade level and pass the MCAS in addition to taking the required vocational classes. About 72% of Assabet's applicants failed the eighth grade MCAS exam. About 90% enter the vocational school without ever having taken Algebra I. The students are not held accountable in any grade other than tenth, so there is not as much incentive for them to pass the exam before high school graduation.

The goal of vocational schools is to provide students with the skills in their chosen vocational area so that they will be well prepared for higher education or a job after graduation. The job placement rate on average at Assabet is about 96%. They also check up on graduation after two and five years to see if they are still having success in their chosen track.

One problem vocational schools have with the MCAS exam is the approach of many of the questions. Due to the vocational/hands-on learning style that students receive in vocational schools, they approach some problems differently than do students in comprehensive schools. While comprehensive schools teach students to approach questions in a more abstract manner,

vocational students tend to take a more practical approach. Superintendent Carlo illustrated some examples of this for us. One example, taken from a 1998 Math section exam, question 39, is the following:

"To make a house handicap accessible, a ramp is being constructed to the floor of a porch. The Americans with Disabilities Act require that a ramp have an incline of no more than 5^{o}. Assume that the maximum allowable angle is used and that the floor of the porch to which the ramp is constructed is four feet above the ground (You may refer to the trigonometric table on your Mathematics Reference Sheet)

a. Draw and label a picture showing the ramp and the porch

b. Based on the information above, how far is the end of the ramp and the porch?

c. Based on the information above, what is the length of the ramp?"

Students in carpentry have learned that the ratio of the ramp should be 12:1 from the construction codes they have studied. So, they simply applied this to the question. The question graders were looking for the students to approach this problem from trigonometric standpoint. Though students who solved the problem using the construction ratio were only off by a small margin, the process they used to find the answer was not what graders were looking for and therefore many of Assabet's students did not get credit for the problem.

Questions like the one illustrated here are considered vocational questions because they seem to be construction-type problems. This problem may pertain to carpentry, but it does not cater to cosmetology, plumbing, or any other vocational program offered in the schools and therefore cannot be considered strictly for vocational schools. As was already stated, the vocational students, especially those in the programs that the questions supposedly cater to, approach the problems from an entirely different standpoint than they are expected to and not given credit for being competent in the practical knowledge they have learned.

Superintendent Carlo was not at all opposed to the idea of a high stake comprehensive exam for students, but offered suggestions as to how he believed it should be formulated. He told us that he believed the accountability should be placed much earlier, such as at the fourth

grade level. He said that too many students at that level are not learning the academic material they should be learning particularly relating to reading skills. When this is coupled with the fact that learning ability decreases with age, the gap between students who have and have not learned essential math and reading skills in the elementary grades increases.

He also believes that if students are held accountable at this level, the chances of them having the necessary skills for passing the tenth grade test are much higher. He said that by the time students come to the vocational schools with academic skills so far behind the standard that there is not enough time to catch students up to a level where they can pass the MCAS.

Superintendent Carlo spoke a great deal about the fact that vocational students are not necessarily less intelligent than students in comprehensive high schools, they just learn and analyze problems in a different matter. Also, the fact that the job placement rate for vocational students is so high offers testimony that failing the MCAS does not hinder the students' ability to become successful members of society. If this is true, and the purpose of the mission of the MCAS is to ensure that students have the knowledge they should have by graduating high school in order to be functional, successful citizens, two questions must be asked. First, does this then mean that if vocational students are failing the test but being successful after high school that the MCAS is not fulfilling its purpose? Second, is the standard of knowledge required by the state above the necessary level that needs to be reached in order to have a successful job? These are the impressions we were left with after visiting Assabet Valley. It may be that students in vocational schools are generally not prepared as well in the earlier grades and don't have time to catch up. It may also be that they do not analyze problems in a way that caters to the exam. With the time that we had, we knew we would be unable to give any definite answers as to why exactly vocational students are not performing as well as students at comprehensive high schools. We decided to do as much analysis with the data we could obtain, and explore other possibilities as completely as possible without the necessary data for doing actual analysis. We used this report as a way of giving foundation to further research that could be done in the future.

4.2.3.5 Superintendent Phone Surveys

In order to obtain accurate information directly from the schools we planned to conduct phone interviews with superintendents of regional vocational schools. Due to time and cooperation constraints we were only able to conduct interviews with ten superintendents and the Executive Director of the Massachusetts Association of Vocational Administrators (MAVA), David Cronin. His answers were scored as a combination of vocational administrative answers because he compiles the opinions of all the members of MAVA. The following is a report and analysis of the responses of the superintendents who participated in the phone interview. Complete interview summaries are included in Appendix E.

Percentage of Students Entering Vocational School at The Correct Grade Level

The first question in the phone interviews asked superintendents what percentage of vocational students entered their school at the proper academic level. When we visited Assabet Valley, Superintendent Carlo contested that a large percentage of their students did not enter vocational high school at a ninth grade vocational level as they should have. Because of this, he said, many were not able to catch up to the tenth grade level the following year in order to pass the MCAS. Data on this question may help to prove or disprove this hypothesis. Superintendents told us that an average of twenty percent of their students entered vocational school at the ninth grade level academically. We then asked superintendents if they believed that had an effect on student performance with the MCAS. All of the superintendents interviewed feel that students who are coming to vocational schools are not being educated well enough in the elementary grades and when their academic problems become too large they are encouraged to attend vocational schools to learn work skills. Unfortunately for these students, they are now required to obtain a vocational competency while remediating all the academics they have never learned in the seventeen months between when they enter the ninth grade to the tenth grade exam.

Time Allotted for Academic Instruction during the School Year in Vocational Schools

The second question we asked superintendents dealt with the amount of time students devoted to their academic classes during school hours throughout the year. We used the information from this to compare with that of regular high schools. Our initial hypothesis was

that since students in vocational schools were attending vocational classes in addition to academic classes, the needed emphasis was not put on academics and therefore leading to poor MCAS performance. We used data from this question to test our hypothesis. We asked superintendents how many hours during each year was devoted each to math, science, and English class and how the average school day is structured. We found that the state of Massachusetts requires that all high schools devote 990 hours per year to "time on learning" and vocational schools must divide that time evenly between vocational classes and academic classes. On average vocational schools devote 500 hours per year to academic and 500 hours to vocational study. [19] While comprehensive high schools do not divide academics by one half to accommodate vocational training it is important to note that vocational schools have no study hall periods during the day and offer no elective classes. Vocational students take the academics that they need and spend the remainder of their time in their vocational shop.

We also found that on average, vocational school students spend 1000 - 1080 hours of "time on learning" during the year, whereas comprehensive school students devote 990 - 1000 hours per year to "time on learning".

Academic Remediation Programs Offered by Vocational Schools

In our phone surveys, we asked the superintendents whether or not the school offered or required remediation programs for students who were not doing well in their academic classes. We found that eight out of ten vocational schools ran remediation programs. We found that the schools have been running these academic programs for several years, long before the MCAS exam. Schools are developing cross curriculum programs to help students learn the academics by integrating them with the vocational programs that the students are enrolled in. They are enlisting teacher assistance and offering incentive programs to both staff and students to encourage cooperative learning. Most importantly students are encouraged to do the best job that they can and the teachers and administration are behind that 100%. Most of the superintendents who spoke with us felt that the greatest encouragement for academic success and remediation is the support of the students and a genuine interest in what the student needs.

Academic Preparation for the MCAS Exam

[19] Massachusetts Department of Education Time on Learning

We asked superintendents whether or not they believed the academic preparation students have received in their school was adequate to prepare them for the MCAS exam. This question was intended to allow superintendents to offer their opinions and hypotheses as to why their students were not performing well on the exam. One hypothesis of Superintendent Carlo was that the students were not prepared well enough in the elementary years so that they were extremely far behind comprehensive high school student by the tenth grade. We wanted to test this theory and see if, without asking superintendents directly, any of them might offer the same hypothesis. All superintendents interviewed agreed that students who come to their school behind in academics, most at least two years behind, the time that they have to remediate that student and begin his/her vocational training is not sufficient enough to give them enough knowledge to pass the exam.

Assessment of Students' Ability to Pass the MCAS by their Senior Year

If we found it to be true that students are so far behind the proper academic level in ninth grade that they couldn't pass the tenth grade test, we wanted to find out if it is possible for them to reach the tenth grade level by the twelfth grade. Students are allowed a total of five chances to pass the tenth grade test. If a student entered vocational high school at a fifth grade reading comprehension level, it might be possible to bring them up to the tenth grade level by their senior year. The responses to this question were opinion based and therefore could not be counted as statistical data, but it was interesting to see what superintendents thought about this topic.

We found that superintendents believe it is highly unlikely that students can remediate enough to pass the tenth grade exam by their senior year. They begin several years behind, and do not have the results from the tenth grade exam until the middle of the eleventh grade year, which only leaves a year to work on the academics students need to improve.

Post Graduation Plans and Employment Rate of Vocational Students

We asked the superintendents to estimate the percentages of students who plan to enter the work force, enter the military, and go on to higher education. On average, 35% of vocational students elect to go on to higher education, 1-5% enlist in the military, and 60-65%

enter the work force. Most superintendents reported 35-50%of students are accepted into college and that percentage overlaps with the percentage that chooses to enter directly into the work force.

Our next question asked about the job placement rate for students who elect to enter the work force. We had theorized, based on our visit to Assabet Valley, that many vocational schools, even though their students did not perform well on the MCAS exam, have high job placement rates. When we visited Assabet, Superintendent Carlo told us that because the students are generally more hands-on learners, they excel in vocational work though they may have difficulty with academic subjects. We wanted to get an idea of how high the job placement rates were for all vocational schools. We found the average job placement rate to be 97%, with several of the vocational schools reporting consistent 100% job placement rates. This shows that though students are performing poorly on the MCAS exam, they are still capable of becoming successful in society after high school. We also asked superintendents whether or not they followed up with their graduates after high school to make sure they were still doing well in their chosen path and found that it is a requirement for all vocational schools to follow up with graduates after five years. Most schools do a one or two year follow-up as well.

Opinion Given by Administrators on High Stakes Placement

We next asked superintendents where they believed the high stakes should be placed. Superintendent Carlo believed the fourth grade exam is where the accountability should be placed. He said that this is the level where students learn the fastest, and if they all must pass the fourth grade test in order to continue to the fifth grade, the chance that they will be at the proper level by the time they reach tenth grade will be much higher. We wanted to see if other superintendents had the same type of theory. We found that 90% believed that the accountability should be placed at the fourth grade level, 10% at the eighth grade level, and 0% at the tenth grade level. The follow up to this survey question asked the superintendents the reasoning behind their belief. We found that superintendents who believed the fourth grade level should be the high stakes agreed with Superintendent Carlo's reasoning. They do not want to see the same pressure that the tenth graders are now feeling no placed on the fourth graders, however, if a child cannot read at the proper level in fourth grade, they could be remediated

then so that the learning curve differential between those who are proficient and those who are behind remains small.

Reporting Time of Eighth Grade MCAS Scores to Vocational Schools

Superintendent Carlo informed us that they did not have the eighth grade scores available to them until at least the end of January, which means that students were already placed in a certain level of academics that may or may not have been appropriate to them. We wanted to see if this was true for all vocational schools. Knowing when eighth grade MCAS scores were available to vocational schools might help in determining whether or not they had enough time to determine academic tracks for their students. We found that all superintendents reported that they receive eighth grade MCAS scores of incoming freshmen far too late for scheduling students and that means that students have even less time to prepare for the first tenth grade exam. Because students' eighth grade exam scores are sent back to the school where they took the exam, it is then up to the school to send the results on the vocational schools.

4.3 Suggestions for Score Improvement of Vocational Students

Based on our research, we devised ways that may be helpful in improving vocational student MCAS performance. Though all superintendents that we interviewed felt that the exam needed to be restructured in some way to better fit the learning styles or academic levels of vocational students, we decided that our research was not complete enough to make that kind of judgment. We could, however, suggest further research that should be done to prove or disprove this theory, as is outlined in this section.

Vocational schools would greatly benefit from receiving eighth grade MCAS scores of incoming freshman before the scheduling process. This would allow the school to better place their students in academic classes. If the schools were provided with MCAS scores right away, they would not have to conduct individual school testing to identify each student's academic level. The results from the tenth grade exams need to be returned to the schools more quickly as well. Students have five chances to pass the MCAS exam between their sophomore and senior year, and until schools receive the tenth grade scores, they may not know where or if students need improvement.

The statistical analysis done for this project proved no major correlations between school expenditures or student to teacher rations with respect to MCAS scores. A relationship can be found between low income and MCAS score, and we felt that increasing student support programs and encouraging parental involvement may be helpful in relation to this factor.

We found English to be suffering the most of the three subjects tested. Reading comprehension should be stressed heavily in the very early grades, so that these students are better prepared when they reach high school. Vocational schools have no control over the education their students receive prior to their enrollment into the high schools, but it might be beneficial for them to implement reading incentive programs, so that students are encouraged rather than forced improve their reading skills.

Several superintendents felt that their students' scores improved because the academic curriculum was aligned more to fit the curriculum frameworks, which were the base of the MCAS exam. If they are not already doing so, it would be helpful if all vocational schools could do this.

Superintendents feel for the most part that questions on the exam were structured in a way that requires an abstract approach rather than a practical one. In addition to encouraging students to take higher levels of academics such as algebra and trigonometry, where abstract analytical skills are used, it might be helpful to prepare students for this type of question by making them aware of the different approaches and which they should be using on the exam.

4.4 Suggestions for Future Analysis and Research

We feel that all of these suggestions mentioned above would be helpful for improvement of vocational student MCAS performance, but it is important to note that the exam and curriculum frameworks are both new, and more research must be done before making judgments as to changes that should be made, in schools or on the exam. As it stands, students in tenth grade who are presently required to pass the MCAS exam to graduate have only recently been exposed to curriculum frameworks, developed in 1997, and are therefore at a disadvantage to students in fourth grade that will learn core concepts throughout their elementary and secondary education. Any analysis of the effectiveness of the MCAS as an

assessment of whether or not students are learning core concepts should begin with those students who have been exposed to consistent curriculum frameworks all through school.

Research should be conducted tracking vocational students back to fourth grade or earlier. Some superintendents put forth the argument that their students are not learning what they should be in early grades, and their inability to pass the tenth grade MCAS exam is unfairly blamed on the vocational schools. If it can be proven that vocational students are failing the exam in fourth and eighth grade, some responsibility would be removed from vocational schools to remediate students and more pressure would be placed on elementary schools to educate students better. Unfortunately, the MCAS has only seen three years of testing. Research into earlier MCAS scores for vocational students cannot be done for another four years when this year's fourth graders have reached tenth grade. We graphed the 2000 English Language Arts fourth grade results to see how fourth graders are performing. The reason we chose to only graph the ELA section only was not only because we found English scores to be decreasing the most on the MCAS exams, but also because superintendents pointed out that reading comprehension is one of the biggest areas that need improvement.

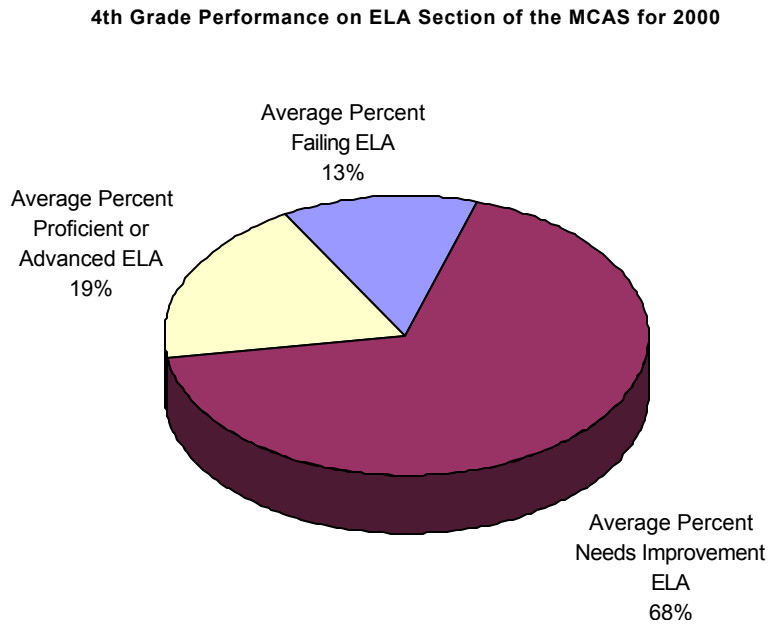


Figure 4.31: 4th Grade Performance on ELA Section of the MCAS for 2000

As this chart shows, 68% of fourth graders need improvement in English. So although we cannot make any determination as to how this year's sophomores would have performed on the test as fourth graders, it still shows that more attention needs to be focused on the younger grades. If the students in the fourth grade that need improvement continue to move up in grade level without being proficient in English language arts then they will eventually make it to high school but will not be at the proper English level.

Our group was unable to research resources for specific academic subjects. Analysis should particularly be done on English classes since this section of the test is where students have been having the most difficulty. It would be useful to compare academic curricula of vocational schools to that of comprehensive schools to see what teaching styles are employed and what specifically is taught in each course and classroom.

An in depth analysis of exam questions should be completed to determine, from both vocational and comprehensive students, how abstract or practical each question is. Studies with students and specific questions should be done to see how the student approaches certain questions and why they do so.

All of the opinions we obtained during our survey research were either opposed to the MCAS exam or in favor of exam restructuring. If we had more time it would have been helpful to speak with an exam developer, someone in favor of the MCAS. We suggest interviewing people from Harcourt Educational Measurement, the company responsible for the writing of the MCAS exam and some of the grading, and also people from the Massachusetts Department of Education who were part of the creation and development of the MCAS.

It would have been impossible for our group to have found our analysis to be complete enough to give a conclusive set of factors that apply to all vocational students and are the only determining factors relating to MCAS performance. This type of decisiveness is impossible in any social research. We believe our research will provide, however, some suggestions for improvement that will very possibly be useful to vocational schools. We also believe that our research has helped to create a base for which further research can be conducted. Though we were not able to consider all possible factors in our project, we hope this report provides a

good direction in which efforts should be concentrated in order to help vocational administrators and vocational students with their performance on the MCAS exam.

Bibliography

Fairtest. Overview of the Massachusetts Education Reform Act of 1993. [Web Page]. URL http://fairtest.org/care/Overview_of MA_Ed_Reform.html. [2001, January 29].

Greenberger, Scot. (2001, January 24). MCAS Retest Plan Approved. The Boston Globe. B, 4.

Lacaht, Mary Ann (2000). The Performance of Limited English Proficient Students on the 1998 and 1999 Massachusetts Comprehensive Assessment System.

Massachusetts Department of Education [Web Page]. URL http://www.doe.mass.edu

Massachusetts Department of Education. Massachusetts Comprehensive Assessment System. [Web Page]. URL http://www.doe.mass.edu/mcas/

Massachusetts Department of Education. Education Reform First Annual Implementation Report [Web Page]. URL http://www.doe.mass.edu/edreform/1st_Imp/TOC.html [2001, January 30]

Massachusetts Department of Education. (1998). Overview of Assessment Instruments and Procedures MCAS Tests of 1998.

Massachusetts Department of Education. (2000). Spring 2000 MCAS Tests: Report of State Results.

Massachusetts Department of Education. (1999). Spring 1999 MCAS Tests: Report of State Results.

Massachusetts General Laws. Aid from state. Chapter 17, 16 D

Massachusetts General Laws. Budgets; apportionment of expenses. Chapter 17, 16 B

Massachusetts General Laws. Establishment by district. Chapter 74, 4

Massachusetts General Laws. Establishment in towns; management . Chapter 74, 3

Massachusetts General Laws. Regional school districts; acceptance of organization provisions by electorate. Chapter 71, 15

Massachusetts General Laws. Regional school district planning committee; creation; membership. Chapter 71, 14

Office of Special Education Programs. [Web Page] URL http://www.ed.gov.offices/OSEP

The United States Department of Education : Office of Vocational and Adult Education. [Web Page] URL http://www.ed.gov/offices/OVAE/perkins.html

The United States Department of Education. (1999). The Educational System in the United States: Case Study Findings. Washington, D.C.: U.S. Government Printing Office.

APPENDIX A

List of Forty-Three Vocational Schools in
Massachusetts Corresponding to Comprehensive High Schools

Chart ID #	District ID	District Name	School Code	School Name
1	821	GREATER FALL RIVER	605	DIMAN REG VOC TECH HIGH
1	95	FALL RIVER	505	B M C DURFEE HIGH
2	910	BRISTOL COUNTY AGRIC.	705	BRISTOL COUNTY AGR HIGH
2	293	TAUNTON	505	TAUNTON HIGH
3	49	CAMBRIDGE	506	CAMBRIDGE RINDGE LATIN SCHOOL
3	274	SOMERVILLE	505	SOMERVILLE HIGH
4	35	BOSTON	537	MADISON PARK TECH HIGH
4	35	BOSTON	650	BOSTON HIGH
5	825	GREATER NEW BEDFORD	605	GR NEW BEDFORD VOC TECH
5	201	NEW BEDFORD	505	NEW BEDFORD HIGH
6	810	BRISTOL PLYMOUTH VOC TECH	605	BRISTOL PLYMOUTH VOC TECH
6	293	TAUNTON	505	TAUNTON HIGH
7	915	NORFOLK COUNTY AGRIC.	705	NORFOLK COUNTY AGR
7	307	WALPOLE	505	WALPOLE HIGH
8	137	HOLYOKE	605	WM DEAN TECH HIGH
8	137	HOLYOKE	505	HOLYOKE HIGH
9	163	LYNN	605	LYNN VOC. TECH. INSTITUTE
9	163	LYNN	505	CLASSICAL HIGH
10	855	OLD COLONY VOC. TECH.	605	OLD COLONY REG VOC TECH
10	310	WAREHAM	505	WAREHAM SR HIGH
11	876	S. WORCESTER COUNTY VOC.	605	BAY PATH REG VOC TECH
11	226	OXFORD	505	OXFORD HIGH
12	805	BLACKSTONE VALLEY REG.	605	BLACKSTONE VALLEY SCHOOL
12	185	MILFORD	505	MILFORD HIGH
13	851	NORTHERN BERKSHIRE VOC.	605	CHARLES MCCANN VOC TECH.
13	209	NORTH ADAMS	505	DRURY HIGH
14	35	BOSTON	903	MCKINLEY VOCATIONAL HIGH
14	35	BOSTON	540	FENWAY HIGH
15	815	CAPE COD REG. VOC. TECH.	605	CAPE COD REG VOC TECH HIGH
15	126	HARWICH	505	HARWICH HIGH
16	239	PLYMOUTH	605	PLYMOUTH SO. HIGH TECH.
16	239	PLYMOUTH	515	PLYMOUTH SOUTH HIGH
17	325	WESTFIELD	605	WESTFIELD VOC HIGH
17	325	WESTFIELD	505	WESTFIELD HIGH
18	806	BLUE HILLS VOC.	605	BLUE HILLS REG VOC TECH
18	50	CANTON	505	CANTON HIGH
19	860	PATHFINDER VOC. TECH.	605	PATHFINDER VOC TECH
19	227	PALMER	505	PALMER HIGH
20	348	WORCESTER	605	WORCESTER VOCATIONAL HIGH
20	348	WORCESTER	512	DOHERTY MEMORIAL HIGH
21	832	MONTACHUSETT VOC. TECH.	605	MONTACHUSETT VOC TECH.
21	97	FITCHBURG	505	FITCHBURG HIGH
22	873	SOUTH SHORE REG. VOC TECH	605	SO SHORE VOC TECH HIGH

22	122	HANOVER	505	HANOVER HIGH
23	336	WEYMOUTH	505	WEYMOUTH VOC TECH HIGH
23	40	BRAINTREE	505	BRAINTREE HIGH
24	770	TANTASQUA	605	TANTASQUA REG. VOC.
24	770	TANTASQUA	505	TANTASQUA REG. SR. HIGH
25	879	UPPER CAPE COD VOC. TECH.	605	UPPER CAPE COD TECH
25	36	BOURNE	505	BOURNE HIGH
26	871	SHAWSHEEN VALLEY VOC TECH	605	SHAWSHEEN VALLEY VOC TECH
26	31	BILLERICA	505	BILLERICA MEMORIAL HIGH
27	885	WHITTIER VOCATIONAL	605	WHITTIER REG VOC
27	128	HAVERHILL	505	HAVERHILL HIGH
28	801	ASSABET VALLEY	605	ASSABET VALLEY VOC HIGH
28	170	MARLBOROUGH	505	MARLBOROUGH HIGH
29	913	ESSEX AGRIC. TECH.	705	ESSEX AGR & TECH INST
29	71	DANVERS	505	DANVERS HIGH
30	854	NORTH SHORE REG VOC	605	NORTH SHORE TECH HIGH
30	71	DANVERS	505	DANVERS HIGH
31	878	TRI COUNTY	605	TRI COUNTY REG VOC TECH
31	101	FRANKLIN	505	FRANKLIN HIGH
32	16	ATTLEBORO	605	ATTLEBORO VOC TECH HIGH
32	16	ATTLEBORO	505	ATTLEBORO HIGH
33	153	LEOMINSTER	605	CTR FOR TECHNICAL EDUCATION
33	153	LEOMINSTER	505	LEOMINSTER HIGH
34	281	SPRINGFIELD	620	PUTNAM VOC. TECH. HIGH
34	281	SPRINGFIELD	500	SPRINGFIELD CENTRAL HIGH
35	176	MEDFORD	605	MEDFORD VOC. TECH. HIGH
35	176	MEDFORD	505	MEDFORD HIGH
36	853	NORTHEAST METRO VOC.	605	NORTHEAST METRO REG VOC
36	305	WAKEFIELD	505	WAKEFIELD MEMORIAL HIGH
37	818	FRANKLIN COUNTY	605	FRANKLIN COUNTY TECH
37	101	FRANKLIN	505	FRANKLIN HIGH
38	830	MINUTE MAN VOC. TECH.	605	MINUTE MAN VOC TECH HIGH
38	155	LEXINGTON	505	LEXINGTON HIGH
39	829	SO MIDDLESEX VOC TECH REG	605	JOSEPH KEEFE TECH HIGH
39	100	FRAMINGHAM	515	FRAMINGHAM HIGH
40	828	GREATER LOWELL VOC. TECH.	605	GR LOWELL REG VOC TECH
40	301	TYNGSBOROUGH	505	TYNGSBOROUGH JR. SR. HIGH
41	852	NASHOBA VALLEY TECH.	605	NASHOBA VALLEY TECH HIGH
41	326	WESTFORD	505	WESTFORD ACADEMY
42	872	SOUTHEASTERN	605	SOUTHEASTERN REG VOC TECH
42	88	EASTON	505	OLIVER AMES HIGH
43	823	GREATER LAWRENCE	605	GREATER LAWRENCE TECH
43	9	ANDOVER	505	ANDOVER HIGH

APPENDIX B

List of Vocational Programs in Massachusetts

Massachusetts Vocational Programs

Agriculture

Animal Production

Automotive Body Repairer

Automotive Mechanic

Biomedical

Building and Property Maintenance

Carpentry

Child Care Worker/Manager

Clothing/Apparel/Textile

Communications Technology

Computer Programming

Computer Technology

Construction Occupations

Cosmetology

Culinary Arts

Data Processing

Dental Assistant

Diesel Engine Mechanic

Dietician Assistant

Electrician

Electronics

Engineering Technology

Forestry

Graphic Design/Commercial Art

Health Occupations

Heating/Air Conditioning/Refrigeration

Heavy Equipment Maintenance & Repair

Horticulture

Hotel/Motel & Restaurant Management

Landscaping

Major Appliance Instrument/Repair

Marine Maintenance/Ship Repair

Marketing

Mason & Tile Setter

Medical Assistant

Medical Lab Tech

Metal Fabrication

Office Technology

Painter & Wall Coverer

Plumber & Pipefitter

Practical Nurse (LPN)

Radio & TV Broadcast Technology

Sheet Metal Worker

Welding

APPENDIX C

List of Twenty-Six Schools Chosen for In Depth Study

REGIONAL SCHOOL NAME	ADDRESS
Assabet Valley Regional Vocational School	Eugene Carlo 215 Fitchburg Street Marlborough, MA 01752-1288
Blackstone Valley Regional Vocational Technical High School	Michael Fitzpatrick 65 Pleasant Street Upton, MA 01568
Blue Hills Regional Vocational Technical School	Wilfrid J. Savole 800 Randolph Street Canton, MA 02021
Bristol-Plymouth Regional Technical School	John Avery 940 County Street Taunton, MA 02780
Cape Cod Regional Vocational Technical School	F. Timothy Carroll 351 Pleasant Lake Avenue Harwich, MA 02645
Greater Fall River Regional Vocational Technical School (Diman Regional Vocational Technical High School)	Joseph Martins 251 Stonehaven Road Fall River, MA 02723
Franklin County Technical School	Frederick Green III 36 Industrial Boulevard Turners Falls, MA 01376
Greater Lawrence Technical School	Francis Vacirca 57 River Road Andover, MA 02110
Greater Lowell Vocational Technical High School	William J. Collins 216 Pawtucket Blvd. Tyngsborough, MA 01879-2199

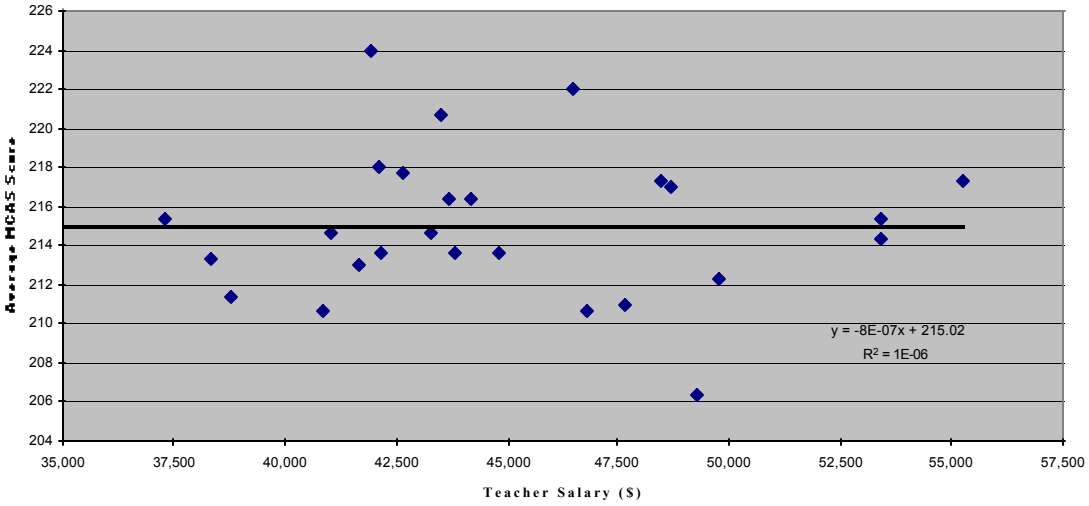
Greater New Bedford Regional Vocational Technical High School	Jeffrey E. Riley 1121 Ashley Boulevard New Bedford, MA 02745
South Middlesex Vocational Technical High School (Joseph Keefe Regional Technical School)	Paul Bento 750 Winter Street Framingham, MA 01702
Minuteman Science-Technology High	Ronald J Fitzgerald 758 Marrett Road Lexington, MA 02173
Montachusett Regional Vocational Technical School	Stratos G Dukakis 1050 Westminster Street, Route 2A Fitchburg, MA 01420
Nashoba Valley Technical High School	Judith L Klimkiewicz 100 Littleton Road Westford, MA 01886
Northeast Metropolitan Regional Vocational School	Thomas F. Markham Jr. 100 Hemlock Road Wakefield, MA 01880
Northern Berkshire Vocational Technical School (Charles McCann Vocational Technical High School)	James Brosnan 70 Hodges Cross Road North Adams, MA 01247
North Shore Regional Vocational Technical School	Edmund W Barry 30 Longbridge Road Middleton, MA 01949
Old Colony Vocational Technical School	David J. Ferreira 476 North Avenue Rochester, MA 02770
Pathfinder Regional Vocational Technical School	Gerald L Paist 239 Sykes Street Palmer, MA 01069

Shawsheen Valley Regional Vocational Technical	Charles Lyons 100 Cook Street Billerica, MA 01821
South Shore Regional Vocational Technical School	John Kosko 476 Webster Street Hanover, MA 02339
South Worcester County Vocational School (Baypath Regional Vocational Technical High School)	Steven Mondor RR #1 Box 277 Charleton, MA 01507
Southeastern Regional Vocational Technical Institute	James Hager 250 Foundry Street South Easton, MA 02375
Tri-County Regional Vocational Technical School	John Jones 147 Pond Street Franklin, MA 02038
Upper Cape Cod Regional Vocational Technical School	David P. Sampson 220 Sandwich Road Bourne, MA 02532
Whittier Regional Vocational Technical High School	Karen Sarkisian 115 Amesbury Line Road Haverhill, MA 01830

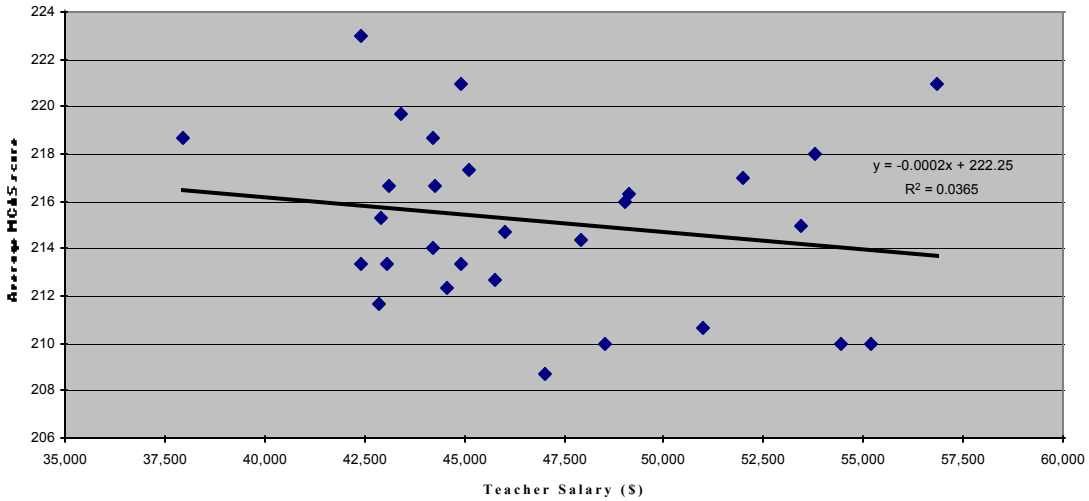
APPENDIX D

Graphs of teacher salaries 1998 and 1999

Average MCAS Score vs. Teacher Salary for Vocational Schools in 1998



Average MCAS Score vs. Teacher Salary for Vocational Schools in 1999



APPENDIX E

Letter from Senator Antonioni

Superintendent Phone Interviews

Thank You Letter for Assabet Valley

Thank You Letter for Superintendents

April 4, 2001

Superintendent
Regional Vocational Technical High School
School Address
AnyCity, MA ooooo

Dear Superintendent ,

The Massachusetts Comprehensive Assessment System, as you know, has been designed for all students in Massachusetts's public schools as a part of the Education Reform Act of 1993. In the three years of implementation to date, vocational students taking the test have had many challenges which have been reflected in their scores. I am very interested in a closer look at helping vocational students meeting the educational standards prescribed in law and how that might be best achieved.

This semester I have three students, Bonnie Jean Boettcher, Jessica Fayard, and Giancarlo Vivenzio from Worcester Polytechnic Institute as interns in my Senate office in Boston. My chief of staff, Sylvia Smith is working with the students under the direction of their WPI advisors Fabio Carrera and James P. Hanlan. There is also coordination with Dr. Sheldon Rothman, Chief MCAS data analyst with the Department of Education.

This letter is to request your support in allowing the students to conduct a phone interview with you. I have included a copy of the interview questions and a calendar of interviews with available interview dates highlighted so that you can select a day and time that suits your schedule. Please select your top two choices for interview dates by marking the date with the time that you would like the interview to commence. The calendar should be faxed to

C/O Sylvia Smith
Fax: 617-722-1130

If you have any questions regarding the interviews or the project please feel free to contact Jessica Fayard or Bonnie Jean Boettcher at the Boston State House at 617.722.1230. Thank you very much for your interest in this timely project.

Very truly yours,

ROBERT A. ANTONIONI
State Senator
Worcester and Middlesex District
RAA/sms

Superintendent Survey Questions

1. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?
2. How much time during the average school year is devoted to Math, Science, and English classes?
3. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?
4. What is the likelihood that some of these kids can pass the 10 th grade exam at some point in their high school education?
5. Do you have after school remediation programs for students who are not doing well in academic classes?
    a. In each of the three areas: Math

       Science

       English
6. What are the percentages of students that plan to go on to; higher education, work force, armed services?
7. What is the job placement rate for school graduates?
    a. Do you follow up with recent graduates? 2 years? 5 years?
8. What year do you think the "high stakes" should be placed on the exam?
    a. 4th, 8th, or 10th grade?
    b. Why?
9. When do the schools receive the 8th grade scores for students?

10. How many sophomores have passed their 8th grade MCAS exam? (2 years ago)

David F. Cronin
Executive Director
Massachusetts Association of Vocational Administrators
Blue Hills Regional Technical School
800 Randolph St. – Canton, MA 02021
Phone: 781.575.9486
Fax: 781.821.2583

Initial phone call was placed on Thursday, April 14 at 11AM but no one was available at Blue Hills High School so a voice mail message was left with contact information.

Dave Cronin returned phone call on Tuesday, April 17, 2001 at 11AM

11. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

ALMOST NONE, MOST ARE AT LEAST 2 ½ YEARS BEHIND THE NINTH GRADE LEVEL

12. How much time during the average school day/year is devoted to Math, Science, and English classes?

MOST OF THE VOCATIONAL SCHOOLS ARE SET UP SIMILAR TO ASSABET HIGH SCHOOL WITH BI WEEKLY CHANGES FROM ACADEMIC TO VOCATIONAL STUDY AND THE HOURS SPENT ON ACADEMICS ARE VERY SIMILAR IN VOCATIONAL SCHOOLS AS IN COMPREHENSIVE SCHOOLS.

13. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

NOT HIS AREA.

14. What is the likelihood that some of these kids can pass the 10th grade exam at some point in their high school education?

NOT LIKELY AT ALL. IF A STUDENT DOES NOT PASS THE 8TH GRADE EXAM AND THEN DOES NOT PASS THE 10TH GRADE EXAM THEY ARE ALREADY AT LEAST 2 ½ YEARS BEHIND IN GRADE LEVEL AND THE 10TH GRADE SCORES WILL NOT EVEN BE RECEIVED BY THE SCHOOL UNTIL THE MIDDLE OF THEIR JUNIOR YEAR. STUDENTS LOSE AT LEAST ONE HALF OF A YEAR OF PREPARATION BECAUSE THEY HAVE NO IDEA WHAT THEY NEED TO WORK ON AND THERE IS NO TIME TO PREPARE FOR THE RE-TAKE EXAMS. IT IS VERY UNLIKELY THAT STUDENTS WHO FAIL THE EXAM WILL BE ABLE TO PASS THE RE-TAKES BY THE END OF THEIR SENIOR YEAR IN HIGH SCHOOL.

15. Do you have after school remediation programs for students who are not doing well in academic classes?

a. In each of the three areas: Math
Science
English

16. What are the percentages of students that plan to go on to; higher education, work force, armed services?
17. What is the job placement rate for school graduates?
    a. Do you follow up with recent graduates? 2 years? 5 years?

ALL VOCATIONAL SCHOOLS IN MASSACHUSETTS FOLLOW-UP WITH EACH "GRADUATE" 1-2 YEARS AND THEN 4-5 YEARS AFTER GRADUATION. THEY ALSO HAVE EMPLOYER SATISFACTION SURVEYS THAT RATE THE INSTRUCTIONAL QUALITY OF THE PROGRAMS BASED ON THE QUALITY OF WORK THAT THE STUDENT /EMPLOYEE IS COMPLETING IN THE POSITION.

18. What year do you think the "high stakes" should be placed on the exam?
    a. 4th, 8th, or 10th grade?
    4TH GRADE AT LEAST, POSSIBLY YOUNGER BUT THERE IS NO MCAS EXAM THAT YOUNG.
    b. Why?
    IF STUDENTS ARE NOT ABLE TO COMPREHEND AT THE 4 TH GRADE LEVEL WHILE THEY ARE IN 4 TH GRADE THEN THEY SHOULD NOT BE ABLE TO BE PASSED ON.

19. When do the schools receive the 8 th grade scores for students?

SOME NEVER RECEIVE THE SCORES! THE SCORES ARE REPORTED BACK TO THE HOME SCHOOLS OF THE STUDENTS AND SOMETIMES THEY DO NOT GET THEM TO THE VOCATIONAL SCHOOLS. OTHERS RECEIVE THE SCORES BY THE SPRING SEMESTER OF THE STUDENTS 9 TH GRADE YEAR.

20. How many sophomores have passed their 8 th grade MCAS exam? (2 years ago)

SCHOOLS HAVE THIS INFORMATION IF THEY HAVE RECEIVED THE SCORES

OTHER INFORMATION THAT DAVE HAD TO OFFER:

GENERALLY SPEAKING – IF STUDENTS HAVE FAILED THE 10 TH GRADE EXAM THEY HAVE FAILED THE 8 TH GRADE EXAM. THE STUDENTS THAT WALK INTO VOCATIONAL HIGH SCHOOL ARE 2 ½ YEARS BEHIND THE 9 TH GRADE LEVEL, ACCORDING TO THE ACADEMIC FRAMEWORKS.

DAVID CRONIN'S OPINIONS AGREE WITH THOSE OF EUGENE CARLO ABOUT THE FACT THAT THERE IS NO INFORMATION PROVIDED ABOUT ANY STUDENT WHO ENTERS VOCATIONAL SCHOOLS. STUDENTS ARE NOT BEING EDUCATED WELL IN COMPREHENSIVE HIGH SCHOOLS AND THEREFORE WHEN THEY COME TO VOCATIONAL SCHOOLS THEY ARE BELOW THE

STANDARDS FOR NINTH GRADE ACADEMICS AND ALL THE BLAME THAT THE MCAS BRINGS TO THE VOCATIONAL SCHOOLS AND TO THE STUDENTS IS UNFAIR BECAUSE THEY WERE NOT TREATED FAIRLY AND NOW WHEN THERE IS REALLY NOTHING THAT CAN BE DONE ABOUT IT THEY MUST PAY THE PRICE OF NOT GRADUATING.

WHEN COMPREHENSIVE SCHOOLS SEND STUDENTS TO VOCATIONAL HIGH SCHOOLS THEIR AVERAGE MCAS SCORES AUTOMATICALLY GO UP BECAUSE THEY HAVE SENT A STUDENT WHO HAS MOST LIKELY FAILED THE 8 TH GRADE EXAM TO ANOTHER SCHOOL THEREFORE THEY ARE NOT COUNTED AS BEING ONE OF THEIR STUDENTS ANYMORE AS FAR AS ACCOUNTABILITY GOES.

DAVE ALSO FEELS THAT THE ACADEMIC FRAMEWORKS ARE CHANGING VERY RAPIDLY AND BECAUSE SCHOOLS AND DISTRICTS ARE CONFUSED ABOUT WHAT THEY NEED TO TEACH THE STUDENTS AND THEREFORE THE STUDENTS GET THE SHORT END AGAIN BECAUSE THE TEST IS DESIGNED BASED ON THE ACADEMIC FRAMEWORKS, WHICH STUDENTS ARE NOT REALLY BEING TAUGHT.

ONLY 15% OF THE PEOPLE THAT WORK FOR THE MASSACHUSETTS DEPARTMENT OF EDUCATION HAVE BEEN IN THE CLASSROOM SITUATION AS A TEACHER OR AN AIDE.

THE ESSAY PORTIONS OF THE MCAS EXAM HAVE BEEN CORRECTED BY SOPHOMORES AT BRIDGEWATER STATE COLLEGE BECAUSE THE PAY WAS LOW FOR THE POSITION.

DAVE FEELS THAT THE EXAM IS VERY CLASS BIASED. HE FEELS THAT IF YOU ARE A STUDENT LIVING IN A TWO-PARENT HOUSEHOLD WITH SUPPORT AND CARING AS WELL AS MIDDLE TO UPPER CLASS INCOME YOU WILL SUCCEED ON THIS EXAM.

DAVE MENTIONED A FEW NAMES DURING THE COURSE OF THE CONVERSATION THAT MAY PROVE TO BE HELPFUL SOURCES TO CONTACT:

- MARK ROOSEVELT (HOUSE OF REPRESENTATIVES)
- JACK RENNEY (LAYPERSON IN THE BUSINESS SECTOR WHO HELPED DESIGN THE MCAS EXAM)
- SENATOR DAVID MCGUANEY (CHAIR OF EDUCATION BEFORE ANTONIONI)

THE ABOVE PEOPLE FEEL, ACCORDING TO DAVID CRONIN, THAT THE MCAS EXAM WAS NOT INTENDED TO BE ADMINISTERED TO VOCATIONAL HIGH SCHOOL STUDENTS.

BLACKSTONE VALLEY REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL
SUPERINTENDENT DR. MICHAEL FITZPATRICK
508. 529. 4593 APRIL 23, 2001

Superintendent Survey Questions

21. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

WHEN YOU ANSWER A QUESTION ABOUT STUDENTS IN GENERAL YOU MAY TERNISH THE REPUTATION OF STUDENTS IN THAT PROGRAM. HE IS VERY SENSITIVE TO THE ISSUE OF STUDENTS BEING LOOKED DOWN UPON FOR BEING ENROLLED IN VOCATIONAL EDUCATION. HOWEVER, HE DID SAY THAT MORE THAN 50% COME TO BLACKSTONE BEHIND IN ACADEMICS.

22. How much time during the average school year is devoted to Math, Science, and English classes?

ABOUT 540 HOURS PER YEAR ARE DEVOTED TO ACADEMIC CLASSES.

23. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

NO

24. What is the likelihood that some of these kids can pass the 10 th grade exam at some point in their high school education?

NONE

25. Do you have after school remediation programs for students who are not doing well in academic classes?
    a. In each of the three areas: Math
       Science
       English

BLACKSTONE HAS IMPLEMENTED ALTERNATIVE WAYS OF TEACHING ACADEMICS TO STUDENTS AND THOSE ARE TO INTENSIVELY COMBINE ACADEMICS WITH THE VOCATIONAL TRADES THAT THE STUDENTS ARE LEARNING. THEIR SYSTEM OF CROSS CURRICULUM STUDY IS HIGHLY DEVELOPED.

26. What are the percentages of students that plan to go on to; higher education, work force, armed services?

OVER 50% OF STUDENTS WILL BE ACCEPTED TO COLLEGE. THAT IS A DOUBLE COUNT VALUE BECAUSE NOT ALL OF THOSE STUDENTS WILL ELECT HIGHER EDUCATION, BUT THEY WILL BE ACCEPTED. ABOUT 75-80% OF STUDENTS WILL ENTER THE WORK FORCE AFTER GRADUATION AND 2-3% WILL ENLIST IN THE ARMED SERVICES.

DR. FITZPATRICK FEELS THAT PEOPLE HAVE THE MINDSET THAT VOCATIONAL EDUCATION IS TERMINAL AND THAT STUDENTS HAVE ONLY ONE OPTION AFTER THEY GRADUATE FROM VOCATIONAL HIGH SCHOOL AND THAT IS WORK. THE TRUTH IS THAT VOCATIONAL EDUCATION OFFERS WORK RELATED EXPERIENCE THAT HELPS A GREAT DEAL WITH THE

COLLEGE EXPERIENCE BECAUSE STUDENTS HAVE TASTED THE WORK FORCE AND HAVE A CONCEPT OF GETTING THE WORK DONE AND ACHIEVING RESULTS.

27. What is the job placement rate for school graduates?

100% FOR THE PAST THREE YEARS IN A ROW

a. Do you follow up with recent graduates? 2 years? 5 years?

A FIVE YEAR FOLLOW-UP IS REQUIRED FOR ALL VOCATIONAL SCHOOLS ACCORDING TO DR. FITZPATRICK.

28. What year do you think the "high stakes" should be placed on the exam?

a. 4th, 8th, or 10th grade?

HIGH STAKES IS TOUGH AT ANY ONE OF THOSE JUNCTURES. IT IS VERY EMOTIONAL AND TRAUMATIC OF STUDENTS IN THE FOURTH GRADE BECAUSE THEY ARE SO YOUNG AND IT IS HARD TO UNDERSTAND. IT IS EMBARASSING FOR STUDENTS IN THE 8TH GRADE AND THEY FEEL LIKE FAILURES AND THAT THEY HAVE LET THEIR FAMILIES AND THEIR SCHOOLS DOWN. AND, IN THE 10TH GRADE YOU HAVE TO DEAL WITH STUDENTS WHO FEEL THAT DROPPING OUT OF SCHOOL IS A VIABLE OPTION.

b. Why?

29. When do the schools receive the 8th grade scores for students?

SCORES ARE RECEIVED VERY LATE, IF AT ALL. PLEASE SHARE THE INFORMATION FROM THE HOME SCHOOL. MANY LEGISLATORS AND COMPREHENSIVE SUPERINTENDENTS ARE AFRAID THAT IF MCAS OR OTHER EXAM SCORES ARE SHARED WITH VOCATIONAL SCHOOLS THE STUDENTS WILL NOT BE ACCEPTED. THAT IS AN UNDERLYING REASON FOR WHY SCHOOLS ARE NOT RECEIVING 8TH GRADE SCORES IN A ATIMELY FASHION.

30. How many sophomores have passed their 8th grade MCAS exam? (2 years ago)

HE DID NOT ANSWER THIS. NO DATA AVAILABLE AT THE MOMENT.

COMMENTS:

DR. FITZPATRICK'S MESSAGE TO STUDENTS IS:

"GIVE IT YOUR BEST SHOT AND WE WILL STICK WITH YOU"

HE FEELS THAT ACCOUNTABILITY NEEDS TO BE MANEUVERED AROUND STUDENTS WHO HAVE A CONFIRMED EDUCATIONAL PATH.

SCORES ARE MEDIA DRIVEN AND WHAT IS PRESENTED IS AN AVERAGE THAT DOES NOT TRULY REFLECT THE SUCCESS THAT THE SCHOOL HAS. FOR EXAMPLE, ON THE YEAR 2000 EXAM, 25% MORE STUDENTS PASSED THAN IN 1999 BUT BECAUSE THE SCORES WERE AVERAGED THE SUCCESS IS MASKED AND NOT TRULY REPORTED.

DR. FITZPATRICK ATTRIBUTES THE SUCCESS TO PERFORMANCE CONTRACTS WITH TEACHERS WHICH STATE THAT IS SCORES IMPROVE BY FIVE PERCENT THERE WILL BE A ONE PERCENT BONUS TO ALL STAFF MEMBERS, AS WELL

AS WRITING CONTRACTS TO PARENTS, MEETINGS WITH STUDENTS AND IDEAS FROM TEACHERS ON HOW TO ASSIST STUDENTS WITH ACADEMIC LEARNING. MATH TEACHERS CAME UP WITH INTERNET BASED HOMEWORK HELP, A MATH PROBLEM OF THE WEEK WITH INCENTIVES LIKE FREE FOOD AND MONEY, AND A MATH CLUB WHERE STUDENTS CAN COMPETE WITH OTHER SCHOOLS AND SEE THEIR SUCCESS.

"IF THERE IS A GROWTH FROM A 3-4TH GRADE READING LEVEL TO A 6-7TH GRADE READING LEVEL OVER THE COURSE OF A STUDENTS HIGH SCHOOL EDUCATION WHILE THEY ARE BEING TRAINED IN A VOCATIONAL FIELD, THAT WILL NOT BE CAPTURED ON THE MCAS BUT IT IS A CREDIT TO THE STUDENT, THE SCHOOL, AND THE COMMUNITY".

DR. FITZPATRICK ENDED THE CONVERSATION BY SAYING THAT HE FEELS IT IS IRONIC THAT, A STUDENT WHO IS HAVING ACADEMIC DIFFICULTIES IS ENCOURAGED TO GO TO A VOCATIONAL SCHOOL TO LEARN WORK SKILLS BUT THEN IS EXPECTED TO REMEDIATE ALL THE ACADEMICS THAT THEY ARE BEHIND IN AND GAIN A VOCATIONAL TRADE PROFICIENCY AT THE SAME TIME.

MINUTEMAN SCHOOL OF APPLIED ARTS & SCIENCES
SUPERINTENDENT RONALD FITZGERALD
781. 861. 6500 APRIL 24, 2001

Superintendent Survey Questions

31. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

48.4%. THOSE THAT ARE BEHIND ARE AT LEAST TWO YEARS BEHIND ACADEMICALLY. THE WORST SUBJECT IS ENGLISH.

32. How much time during the average school year is devoted to Math, Science, and English classes?

HALF OF THE TIME SPENT IN SCHOOL IS DEVOTED TO VOCATIONAL CLASSES.

33. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

YES, IF THEY ARE ON GRADE LEVEL. NO, IF THEY ARE NOT.

34. What is the likelihood that some of these kids can pass the 10 th grade exam at some point in their high school education?

IN THEORY THEY CAN. THE PROBLEM IS THAT EVEN IF THE REMEDIATION IS FOCUSED AND EFFECTIVE THE FEAR THAT STUDENTS WILL DEVELOP ABOUT TAKING THIS ARDUOUS EXAM OVER AND OVER AGAIN IS VERY TRYING AND STUDENTS MAY JUST GIVE UP. PEOPLE HAVE TO REMEMBER THAT THESE STUDENTS MOST LIKELY

35. Do you have after school remediation programs for students who are not doing well in academic classes?
    a. In each of the three areas: Math
       Science
       English

THERE IS AN MCAS CAMP THAT IS RUN OVER THE SUMMER.

36. What are the percentages of students that plan to go on to; higher education, work force, armed services?

48% HIGHER EDUCATION, 50% ENTER INTO THE WORK FORCE, AND 2% ENLIST IN THE MILITARY.

37. What is the job placement rate for school graduates?

98%. HOWEVER, MINUTEMAN COUNTS STUDENTS ENTERING COLLEGE AS SUCCESSFUL PLACEMENT.

    a. Do you follow up with recent graduates? 2 years? 5 years?

    THERE IS A ONE YEAR AND FIVE YEAR FOLLOW UP.

38. What year do you think the "high stakes" should be placed on the exam?
    a. 4th, 8th, or 10th grade?

IT IS MORE IMPORTANT THAT STUDENTS REMAIN ON TRACK AND AT THE CORRECT GRADE LEVEL.

    b. Why?

39. When do the schools receive the 8th grade scores for students?
NOVEMBER OF THEIR NINTH GRADE YEAR.

COMMENTS:
THE BEST PREDICTOR IS NOT MCAS IT IS READING GRADE LEVEL.
SUPERINTENDENT FITZGERALD FEELS THAT STUDENTS ARE GOING TO VOCATIONAL SCHOOLS HAVING BEEN EDUCATED IN A WAY THAT WAS NOT STRUCTURED TO THEIR LEARNING STYLE AND THEREFORE THEY NEED MORE TIME TO PROFIT FROM THE VOCATIONAL ENVIRONMENT.
THERE HAS TO BE MORE DONE TO TEACH TEACHERS HOW TO ADAPT TO DIFFERENT LEARNING STYLES SO THAT STUDENTS ARE NOT SHORT CHANGED IN K-8TH GRADE.
READING SKILLS HAVE GOT TO BE FOCUSED ON.

MONTACHUSETT REGIONAL VOCATIONAL HIGH SCHOOL
SUPERINTENDENT STRATOS DUKAKIS
978. 343. 2506 APRIL 24, 2001

Superintendent Survey Questions

40. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

ABOUT 20%. THOSE THAT ARE BEHIND ARE BEHIND APPROXIMATELY 2-5 YEARS DEPENDING ON SUBJECT.

41. How much time during the average school year is devoted to Math, Science, and English classes?

TOTAL OF 990 HOURS PER YEAR "TIME ON LEARNING". HALF TO VOCATIONAL CLASSES AND HALF TO ACADEMIC CLASSES. THEY FOLLOW A BI-WEEKLY SCHEDULE WITH ONE WEEK OF INTENSE VOCATIONAL STUDY FOLLOWED BY A WEEK OF ACADEMIC CLASSES.

42. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

NO. IN ORDER TO BE SUCCESSFUL AS FAR AS THE MCAS IS CONCERNED WE WOULD HAVE TO ALLOW VOCATIONAL EDUCATION TO SUFFER TO MAKE ROOM FOR ACADEMICS. THE MISSION OF VOCATIONAL SCHOOLS IS TO HELP STUDENTS WHO ARE NOT ACADEMICALLY INCLINED GAIN EMPLOYMENT.

43. What is the likelihood that some of these kids can pass the 10 th grade exam at some point in their high school education?

SOME WILL PASS EVENTUALLY.

44. Do you have after school remediation programs for students who are not doing well in academic classes?
    a. In each of the three areas: Math
       Science
       English

SUMMER AND AFTER SCHOOL PROGRAMS ARE OFFERED. NOTHING SPECIFIC TO MCAS. THE HARDEST PART OF REMEDIATION IS FINDING QUALIFIED TEACHERS.

45. What are the percentages of students that plan to go on to; higher education, work force, armed services?

35% TO HIGHER EDUCATION, 10% ENLIST IN THE MILITARY, AND 65% ENTER THE WORK FORCE.

46. What is the job placement rate for school graduates?

100%

    a. Do you follow up with recent graduates? 2 years? 5 years?
       THERE IS A ONE YEAR AND FIVE YEAR FOLLOW UP.

47. What year do you think the "high stakes" should be placed on the exam?
    a. 4th, 8th, or 10th grade?

IT IS EXTREMEMLY NECESSARY TO KEEP STUDENTS ON THE RIGHT TRACK AND AT THE CORRECT GRADE LEVEL THROUGHOUT THEIR EDUCATION AND IF THAT MEANS IMPLEMENTING "HIGH STAKES" AT EVERY GRADE LEVEL THEN SO BE IT. HOWEVER, PLACING "HIGH STAKES" ON TENTH GRADE STUDENTS WHO HAVE NEVER BEEN HELD TO THE CORRECT GRADE LEVEL AND EXPECTING ALL THE BLAM EOT FALL ON THE SCHOOLS THOSE STUDENTS ARE ENROLLED IN AT THE TIME IS ABSURD.

b. Why?

48. When do the schools receive the 8th grade scores for students?

THE SCORES ARE SENT TO THE STUDENT'S HOME SCHOOL AND THE VOCATIONAL SCHOOLS HAVE TO ASK FOR THEM.

COMMENTS:

THE DEPARTMENT OF EDUCATION WANTS ALL SCHOOLS TO PASS THE MCAS EXAM. IN ORDER TO TRY AND ACCOMPLISH THIS SCHOOLS ARE NOW ALIGNING THEIR CURRICULUM WITH THE CORE CONCEPTS AND CURRICULUM FRAMEWORKS THAT ARE NOW IN PLACE IN MASSACHUSETTS. THERE SHOULD BE A UNIFIED CURRICULUM, CREATED BY THE DOE, THAT SAYS EXACTLY WHAT SCHOOLS SHOULD BE TEACHING. GUIDELINES ARE NOT ENOUGH BECAUSE THE TEST IS FORMED BASED ON THESE GUIDELINES AND THEY CAN BE INTERPRETTED IN DIFFERENT WAYS BY DIFFERENT PEOPLE. IF YOU ARE CREATING A STANDARDIZED TEST FOR ALL SCHOOLS IN MASSACHUSETTS YOU HAVE TO STEP UP, TAKE SOME LEADERSHIP, AND DEVELOP A STANDARD CURRICULUM FORMAT SO THAT ALL SCHOOLS WILL BE ABLE TO MORE COMPLETELY PREPARE STUDENTS ACADEMICALLY FOR WHAT WILL BE TESTED AND EXPECTED OF THEM IN ORDER TO GRADUATE.

OLD COLONY REGIONAL VOCATIONAL HIGH SCHOOL
SUPERINTENDENT DAVID FERREIRA
508. 763. 8011 APRIL 24, 2001

Superintendent Survey Questions

49. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

30-40%. THOSE THAT ARE NOT UP TO THE NINTH GRADE LEVEL ARE NORMALLY 1-2 GRADE LEVELS BEHIND HOWEVER IT MAY BE MUCH LARGER THAN THAT. ENGLISH IS QUITE A BIT LOWER.

50. How much time during the average school year is devoted to Math, Science, and English classes?

540 HOURS PER YEAR ARE DEVOTED TO ACADEMICS. THE TOTAL NUMBER OF HOURS IN LEARNING IS 1080 SO FOR VOCATIONAL SCHOOLS THAT NUMBER HAS TO BE CUT IN HALF.

51. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

FOR THE CURRENT MCAS EXAM THIS AMOUNT OF ACADEMIC PREPARATION IS NOT ENOUGH BECAUSE THE STUDENTS ARE SO FAR BEHIND. THIS EXAM DOES NOT MATCH THE TYPE OF STUDENT THAT IS ENROLLED IN VOCATIONAL HIGH SCHOOL.

52. What is the likelihood that some of these kids can pass the 10 th grade exam at some point in their high school education?

NOT LIKELY. BECAUSE THE TEST IS NOT GEARED TO THE TYPE OF LEARNERS THAT THESE STUDENTS ARE, ADDING MORE ACADEMIC TIME IN A STYLE OF TEACHING THAT THE STUDENTS ARE NOT RESPONDING TO WILL NOT DO ANY GOOD.

53. Do you have after school remediation programs for students who are not doing well in academic classes?
    a. In each of the three areas: Math
       Science
       English

SUMMER JUMP START HELPS STUDENTS ADJUST TO VOCATIONAL LEARNING AND AFTER SCHOOL REMEDIAL PROGRAMS ARE OFFERED IN ENGLISH LANGUAGE ARTS AND MATH.

54. What are the percentages of students that plan to go on to; higher education, work force, armed services?

HIGHER EDUCATION: 1/3, WORK FORCE: 2/3, ONLY ABOUT 1-2% ENLIST IN THE MILITARY.

55. What is the job placement rate for school graduates?

EXCELLENT. WELL OVER 95%.

    a. Do you follow up with recent graduates? 2 years? 5 years?

THERE IS A ONE YEAR AND FOUR YEAR FOLLOW UP WITH GRADUATES.

56. What year do you think the "high stakes" should be placed on the exam?

a. 4th, 8th, or 10th grade?

SUPERINTENDENT FERREIRA CANNOT ADVOCATE PUTTING PRESSURE ON A FOURTH GRADER HOWEVER, IF A STUDENT CANNOT READ WHEN THEY LEAVE THE FOURTH GRADE THAT WILL CAUSE MAJOR PROBLEMS LATER IN THEIR EDUCATION AND IT IS BEST TO CORRECT PROBLEMS BEFORE THE LEARNING CURVE DIFFERENTIAL IS TOO GREAT.

b. Why?

57. When do the schools receive the 8th grade scores for students?

ALL SCORES ARE SENT TO THE STUDENT'S HOME SCHOOL AND THEN SENT ON TO THE VOCATIONAL SCHOOLS, IF THEY ARE SENT AT ALL. SUPERINTENDENT FERREIRA FEELS THAT STUDENTS SHOULD HAVE AN MCAS ID NUMBER AND ALL SCORES ARE SENT TO THAT ID NUMBER SO THAT THERE ARE NO LATE SCORES.

58. How many sophomores have passed their 8th grade MCAS exam? (2 years ago)

IF A STUDENT PASSED THEIR 8TH GRADE EXAM AND THEN CAME TO OLD COLONY, THAT STUDENT WILL PASS THE TENTH GRADE EXAM.

COMMENTS:

SUPERINTENDENT FERREIRA FEELS THAT EVERYONE INVOLVED WITH THE DEPARTMENT OF EDUCATION IS VERY STUCK ON MCAS AS IT STANDS WITH NO CHANGES BECAUSE THEY WANT TO CREATE A STANDARD BUT MCAS CAN TRULY NOT BE THE STANDARD BECAUSE EVERY STUDENT IS DIFFERENT. A ONE SIZE FITS ALL TEST CANNOT WORK IF YOU ARE COMPARING STUDENTS WHO WANT TO GO ON TO HIGHER EDUCATION AND STUDENTS WHO WANT TO ENTER THE WORK FORCE. YOU HAVE TWO TOTALLY DIFFERENT LEARNING STYLES AND KNOWLEDGE BASES AND YOU ARE GIVING THEM ONE TEST THAT FOCUSES ONLY ON ACADEMICS. HE FEELS THAT THERE SHOULD BE PERFORMANCE BASED ASSESSMENT AS WELL AS DEVELOPING QUESTIONS THAT WILL ACKNOWLEDGE VOCATIONAL EDUCATION BY SETTING THEM IN A PRACTICAL FIELD. SUPERINTENDENT FERREIRA UNDERSTANDS THAT LEGISLATURE HAS INVESTED A LOT OF MONEY AND WANTS ACCOUNTABILITY, HOWEVER THEY ALSO HAVE TO TAKE INTO ACCOUNT THAT THESE ARE REAL CHILDREN THAT ARE FALLING THROUGH THE CRACKS WHILE ALL THE "BUGS" IN THE SYSTEM ARE BEING WORKED OUT.

PATHFINDER REGIONAL VOCATIONAL HIGH SCHOOL
SUPERINTENDENT GERALD PAIST
SENT OVER EMAIL

APRIL 27, 2001

Superintendent Survey Questions

59. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?
    25-35%. FOR SCHOOL YEAR 2000-01, MATH 16%, ENGLISH 33%.
60. How much time during the average school day/year is devoted to Math, Science, and English classes?
    MATH: 12-15%

    SCIENCE: 12-15%

    ENGLISH: 25%
61. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade
    MCAS exam?

ABSOLUTELY NOT, EITHER IN OUR SCHOOL OR IN SENDING SCHOOLS.

62. What is the likelihood that some of these kids can pass the 10th grade exam at some point in their high school education?
    IT IS LIKELY THAT *SOME* WILL PASS, BUT WE ARE UNABLE TO MAKE A PREDICTION AT THIS TIME.
63. Do you have after school remediation programs for students who are not doing well in academic classes?
    a. In each of the three areas:

    MATH YES
    SCIENCE YES
    ENGLISH YES

64. What are the percentages of students that plan to go on to; higher education, work force, armed services?

HIGHER ED: 35%; WORK FORCE: 50%; ARMED SERVICES: 10%; OTHER: 5%

65. What is the job placement rate for school graduates? 50%, NOT INCLUDING HIGHER EDUCATION OR MILITARY
    a. Do you follow up with recent graduates? 2 years? 5 years?
       YES. 2 YEAR FOLLOW-UP IS VERY EFFECTIVE; 5 YEAR FOLLOW UP IS LESS EFFECTIVE BECAUSE OF DIFFICULTY IN CONTACTING.
66. What year do you think the "high stakes" should be placed on the exam?

a. 4th, 8th, or 10th grade? NONE
b. Why? WE ARE OPPOSED TO A SINGLE TEST BEING THE SOLE CRITERION FOR HIGH SCHOOL GRADUATION.

67. When do the schools receive the 8th grade scores for students?

IT VARIES. SCORES ARE GENERALLY RECEIVED IN DECEMBER, AND IN SOME CASES, NOT AT ALL. IT IS VIRTUALLY IMPOSSIBLE TO GET ACCESS TO SCORES FROM SCHOOLS IN TOWNS WHICH ARE NOT MEMBERS OF THE REGIONAL VOCATIONAL DISTRICT.

NO COMMENTS

BAYPATH REGIONAL VOCATIONAL HIGH SCHOOL
SOUTH WORCESTER COUNTY REGION
SUPERINTENDENT STEVEN MONDOR

APRIL 19, 2001

68. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

NONE. THEY ARE USUALLY ABOUT 1.5 TO 2.5 YEARS BEHIND

69. How much time during the average school year is devoted to Math, Science, and English classes?

ABOUT 540 HRS IN ACADEMICS PER YEAR. 8 PERIODS PER DAY WITH BI-WEEKLY INTENSIVE STUDY FOR BOTH ACADEMIC AND VOCATIONAL. NO STUDY HALLS

70. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

IF YOU TAKE AWAY FROM VOCATIONAL CLASSES THEN THE STUDENTS WOULD NOT BE AS WELL PREPARED IN THEIR CHOSEN VOCATIONAL FIELD. IT IS A TRADE OFF BECAUSE STUDENTS NEED INTENSIVE ACADEMIC ASSISTANCE TO CATCH UP TO THE GRADE LEVEL THAT THEY ARE SUPPOSED TO BE AT BUT THERE CANNOT BE ANY LACK OF VOCATIONAL INSTRUCTION.

71. What is the likelihood that some of these kids can pass the 10th grade exam at some point in their high school education?

HARD TO SAY

72. Do you have after school remediation programs for students who are not doing well in academic classes?

THERE ARE REMEDIATION PROGRAMS BUT IT IS UP TO THE STUDENT AND THE TEACHER TO SET UP A TIME TO WORK ON WHAT THE STUDENT NEEDS TO HELP THEM. TEACHERS ARE REQUIRED TO STAY TO HELP THE STUDENT IF THEY REQUEST HELP BUT THERE ARE NO MANDATORY PROGRAMS FOR STUDENTS WHO ARE FAILING. THE ONLY THING THAT IS DONE IS LETTERS ARE SENT HOME TO PARENTS ENCOURAGEING THEM TO HAVE THEIR CHILDREN SEEK EXTRA HELP.

a. In each of the three areas: Math YES
Science NO
English YES

73. What are the percentages of students that plan to go on to; higher education, work force, armed services?

HIGHER ED – 15-19%, WORK/ARMED SERVICES– 65%, REMAINING (10%) – ANYTHING

74. What is the job placement rate for school graduates?
HE DOES NOT KNOW OFF HAND

a. Do you follow up with recent graduates? 2 years? 5 years?

ONE YEAR FOLLOW-UP

75. What year do you think the "high stakes" should be placed on the exam?

a. 4th, 8th, or 10th grade?

I DON'T KNOW. IT WOULD BE DESIRABLE FOR STUDENTS TO BE REQUIRED TO PASS THE 4TH OR THE 8TH GRADE EXAM BECAUSE THEY ARE ENTERING HIGH SCHOOL SO FAR BEHIND, HOWEVER, IT IS REALLY NOT THE "HIGH STAKES" IT IS THE NATURE OF THE EXAM.

b. Why?

76. When do the schools receive the 8th grade scores for students?
THIS IS A REAL PROBLEM. WE RECEIVED 8TH GRADE SCORES FOR THESE 10TH GRADERS ABOUT SIX WEEKS BEFORE THEY TOOK THE ENGLISH COMP PART OF THE EXAM. (APRIL 9TH) THERE IS JUST NOT ENOUGH TIME TO PREPARE STUDENTS TO TAKE THE 10TH GRADE EXAM.

77. How many sophomores have passed their 8th grade MCAS exam? (2 years ago)
HE COULD NOT SAY HOWEVER HE MENTIONED THAT THE SCORES WOULD MOST LIKELY REFLECT 10TH GRADE SCORES. THE 10TH GRADE TEST HOWEVER, HAS NOT BEEN COMPLETED YET. HE MADE A COMMENT THAT BAYPATH IS RIGHT ON THE AVERAGE AS FAR AS SCORES AND THE 8TH GRADE SCORES ARE MOST LIKELY THE SAME AS THE OVERALL SCHOOL SCORES.

COMMENTS:
SUPERINTENDENT MONDOR FEELS THAT THIS EXAM IS JUST MUCH TOO DIFFICULT FOR VOCATIONAL STUDENTS. THESE STUDENTS HAVE VERY BASIC ACADEMIC SKILLS AND THE TEST IS TOO ADVANCED BECAUSE THEY [DOE] WERE TRYING TO CREATE AN ASSESSMENT THAT BOTH IDENTIFIED ADVANCED STUDENTS AND SET A FLOOR FOR BASIC SKILLS AND THAT IS NOT POSSIBLE. HE SUGGESTED THAT A MORE ADVANCED TEST MIGHT BE OFFERED ON A VOLUNTARY BASIS AND THAT VOCATIONAL STUDENTS SHOULD BE TESTED IN THEIR SPECIFIC VOCATIONAL AREA. DO NOT INCLUDE "VOCATIONAL QUESTIONS" BECAUSE THEY WILL NOT REFLECT THOSE OF ALL OF THE INDIVIDUAL PROGRAMS.

PROGRAMS DEVELOPED TO HELP WITH MCAS SCORES:
- CURRICULUM CHANGED TO REFLECT THE NEW CURRICULUM FRAMEWORKS
- REVISED COURSES

    - SCIENCE
    - SOCIAL STUDIES
    - ENGLISH (MORE WRITING)
- SUMMER CLASSES OFFERED FOR MCAS PREPARATION
- PROFESSIONAL DEVELOPMENT
    - USING NEW WRITING TECHNIQUES
    - MORE LONG COMPOSITION ASSIGNEMENT
    - MULTIPLE CHOICE ON EXAMS
    - AT LEAST EVERY OTHER DAY THERE IS A CRITICAL THINKING QUESTION INCLUDED IN ACADEMIC CLASSES

THE LAST POINT THAT SUPERINTENDENT MONDOR MADE WAS THAT THE TEST REALLY NEEDS TO BE CHANGED AND HE SITED MATH AS THE WORST AREA BECAUSE IT COVERED TOO WIDE OF A SPECTRUM OF MATH CONCEPTS THAT NOT ALL STUDENTS HAVE BEEN EXPOSED TO. HE SITED THAT IN HIS SCHOOL OVER 70% OF STUDENTS FAILED THE MATH PORTIONOF THE EXAM AND STATE WIDE OVER 50% OF VOCATIONAL STUDENTS HAVE FAILED THE MATH PORTION.

SHAWSHEEN VALLEY TECHNICAL HIGH SCHOOL
CHARLES LYONS
978. 667. 2111 APRIL 23, 2001

CHARLES LYONS IS A MEMBER OF THE DEMOCRATIC STATE COMMITTEE. HE WAS WILLING TO SPEAK WITH ME OVER THE PHONE BUT REFUSED TO ANSWER ANY QUESTIONS. HE DID GIVE SOME REMARKS OVER THE PHONE BUT WANTED TO MAKE IT CLEAR THAT HE IS VERY DISGUSTED WITH SENATOR ANTONIONI BOTH PROFESSIONALLY AND PERSONALLY.

HE FEELS THAT THE SENATOR IS NOT A FRIEND OF VOCATIONAL EDUCATION AND THAT THE MCA EXAM IS "A JOKE".

HE IS VERY UPSET THAT THE SENATOR HAS NOT SIGNED ON TO THE BILL PROPOSED BY VOCATIONAL ADMINISTRATORS THAT WILL CALL FOR MULTIPLE ASSESSMENTS FOR DIFFERENT STUDENTS. HE SAID THAT HE DOES NOT NEED THE SENATOR ANY LONGER FOR THAT BECAUSE THERE ARE ALREADY 85 STATE REPRESENTATIVES AND 25 STATE SENATORS THAT ARE IN SUPPORT OF THE BILL. WHAT HE WANTS NOW IS;
"FOR THE SENATOR TO HAVE THE DECENCY TO HAVE A HEARING AND THEN GET OUT OF THE WAY AND STOP HOLDING THINGS UP SO THAT MORE CHILDREN ARE VICTIMIZED".

HE REFUSED TO ANSWER ANY QUESTIONS BY SAYING THAT THE SENATOR IS NOT ACCOMPLISHING ANYTHING AND ALL HE IS DOING IS CREATING SURVEYS THAT ARE WASTING HIS TIME.

THE TONE OF THE INTERVIEW WAS VERY NEGATIVE AND SUPERINTENDENT LYONS IS VERY ANGRY WITH THE ENTIRE MCAS SITUATION.

SOUTH SHORE VOCATIONAL TECHNICAL HIGH SCHOOL
SUPERINTENDENT JOHN KOSKO

781. 878. 8822
APRIL 23, 2001

Superintendent Survey Questions

78. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

IT VARIES CLASS TO CLASS AND SUBJECT-TO-SUBJECT HOWEVER, 60% ARE 2-3 GRADE LEVELS BEHIND

79. How much time during the average school day/year is devoted to Math, Science, and English classes?

540 HOURS PER YEAR ARE DEVOTED TO ACADEMICS. THE TOTAL NUMBER OF HOURS ON TASK ARE 1080 HRS.

80. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

NO. HE FEELS THAT WHAT LEGISLATURE INTENDED WAS A MULTIPLE SOURCE ASSESSMENT AND NOT A "ONE SIZE FITS ALL" TEST FOR ALL STUDENTS REGARDLESS OF EDUCATIONAL TRACK.

81. What is the likelihood that some of these kids can pass the 10th grade exam at some point in their high school education?

SLIM TO NONE. STUDENTS IN VOCATIONAL HIGH SCHOOLS ARE LOOKING FOR A DIFFERENT TYPE OF EDUCATION AND HAVE VERY DIFFERENT GOALS AND LEARNING STYLES THAN COMPREHENSIVE HIGH SCHOOL STUDENTS.

82. Do you have after school remediation programs for students who are not doing well in academic classes? YES

    a. In each of the three areas: Math
       Science
       English

    SOUTH SHORE HAS INCREASED TUTORIAL HOURS FOR STUDENTS WHO ARE HAVING DIFFICULTY WITH ACADEMICS AS WELL AS SATURDAY SCHOOL AND SUMMER SCHOOL THAT IS DEVELOPED WITH PARENTS AND STUDENTS. THERE IS ALSO A TRANSITION PROGRAM DURING THE SUMMER OF THEIR EIGHTH GRADE AND NINTH GRADE YEARS TO HELP WITH THE CHANGE FROM COMPREHENSIVE TO VOCATIONAL SCHOOL.

83. What are the percentages of students that plan to go on to; higher education, work force, armed services?

35% GO ON TO HIGHER EDUCATION, 2-5% GO INTO THE ARMED SERVICES, AND AT LEAST 60% ENTER THE WORK FORCE AFTER GRADUATION

84. What is the job placement rate for school graduates?

    100%

    a. Do you follow up with recent graduates? 2 years? 5 years?

BOTH A ONE YEAR AND A FIVE YEAR FOLLOW UP IS ATTEMPTED FOR EVERY STUDENT

85. What year do you think the "high stakes" should be placed on the exam?

a. 4th, 8th, or 10th grade?

"HIGH STAKES" AT EVERY GRADE LEVEL WITH THE MCAS

b. Why?

IT MAKES MORE SENSE FOR HIGH STAKES TO BEGIN WHEN STUDENTS HAVE PARTICIPATED IN CURRENT AND STEADY CURRICULUM FRAMEWORKS AND THEN IF THEY ARE HELD ACCOUNTABLE IN EVERY GRADE THE CHANCE FOR THE LEARNING GAP TO WIDEN TO AN EXTREME BY THE TIME THEY REACH THE TENTH GRADE WILL BE SLIM TO NONE.

86. When do the schools receive the 8th grade scores for students?

8TH GRADE SCORES FOR THE MCAS ARE NOT ONLY RECEIVED TOO LATE FOR THE SCHOOLS TO MAKE ANY PROGRESS BEFORE THE FIRST TENTH GRADE EXAM BUT SOMETIMES THEY ARE NOT RECEIVED AT ALL.

COMMENTS:

SUPERINTENDENT KOSKO ATTRIBUTES THE STEADY IMPROVEMENT OF MCAS SCORES TO THE RECENT CHANGE OF CURRICULUM IN THE SCHOOL TO MATCH THE CURRICULUM FRAMEWORKS OF THE STATE. HE ALSO STATED THAT THERE IS A PROGRAM THAT HAS BEEN IN USE FOR FIVE YEARS IN THE SCHOOL CALLED "WRITING ACROSS THE CURRICULUMS" THAT HAS HELPED TO RAISE STUDENTS READING AND WRITING SKILLS AND THEREFORE HAS HELPED WITH THE OVERALL MCAS SCORES.

THE SUPERINTENDENT AGREES WITH THE STANCE OF THE MASSACHUSETTS ASSOCIATION OF VOCATIONAL ADMINISTRATORS (MAVA) THAT THE ASSESSMENT NEEDS TO BE EXPANDED TO INCLUDE WHAT STUDENTS ARE ACTUALLY LEARNING.

THE SCORES WILL CONTINUE TO RISE IF YOU GIVE THE CURRICULUM FRAMEWORKS A CHANCE TO STEADY AND HE FEELS THAT THE REAL ASSESSMENT CAN BE MADE BY FOLLOWING THE KINDERGARTEN CLASS, EDUCATED UNDER THE EDUCATION REFORM ACT, ALL THE WAY THROUGH THEIR YEARS IN THE MASSACUSETTS PUBLIC SCHOOL SYSTEM.

SOUTHEASTERN VOCATIONAL HIGH SCHOOL
JAMES HAGER
508. 238. 4374 EXT. 215
APRIL 23, 2001

Superintendent Survey Questions

87. What percentage of students enter vocational school at the academic level that they are supposed to (ninth grade)?

ON AVERAGE STUDENTS ARE AT LEAST TWO YEARS BEHIND THE NINTH GRADE ACADEMIC LEVEL WHEN THEY ENTER VOCATIONAL HIGH SCHOOL.

88. How much time during the average school year is devoted to academic classes?

THERE ARE A TOTAL OF 1000 HRS "ON TASK" PER YEAR AND HALF IS SPENT ON ACADEMICS AND HALF WAS SPENT ON VOCATIONAL SKILLS. THEREFORE 500 HRS/YEAR ARE SPENT ON ACADEMICS.

89. Do you feel that the academic preparation that the students receive is enough to prepare them adequately for the 10th grade MCAS exam?

THE MISSION OF VOCATIONAL SCHOOLS IS VERY DIFFERENT FROM COMPREHENSIVE SCHOOLS AND THAT ALONG WITH THE FACT THAT MOST OF THE STUDENTS WHO COME TO VOCATIONAL SCHOOLS HAVE NOT HAD SUFFICIENT ACADEMIC PREPARATION. THIS MAKES IT IMPOSSIBLE TO BRING STUDENTS UP TO THE LEVEL OF ACADEMICS THAT THEY NEED IN ORDER TO BE SUCCESSFUL ON THE MCAS EXAM.

90. What is the likelihood that some of these kids can pass the 10 th grade exam at some point in their high school education?

SLIM TO NONE.

91. Do you have after school remediation programs for students who are not doing well in academic classes?

a. In each of the three areas: Math
Science
English

SOUTHEASTERN OFFERS READING ASSISTANCE BY USING AN INTERACTIVE COMPUTER BASED TUTORIAL SYSTEM THAT IS QUITE EFFECTIVE. IN BEST CASE SENARIOS THIS COMPUTER TUTORIAL SYSTEM CAN HELP STUDENTS TO RAISE THEIR ACADEMICS ONE GRADE LEVEL IN ONE YEAR. THE IMPLEMENTATION OF THE SYSTEM HAS ALSO CONTRIBUTED TO LOWER CLASS SIZES BECAUSE STUDENTS CAN LEARN CLASS MATERIAL IN THE COMPUTER LAB AND IMPROVE THEIR READING.

92. What are the percentages of students that plan to go on to; higher education, work force, armed services?

20% GO ON TO HIGHER EDUCATION, 5% GO ON TO THE ARMED SERVICES, 75% ENTER THE WORK FORCE

93. What is the job placement rate for school graduates?

THE JOB PLACEMENT RATE FOR STUDENTS WHO ELECT TO ENTER INTO THE WORK FORCE IS 90-100% DEPENDING ON THE YEAR AND THE JOB MARKET.

a. Do you follow up with recent graduates? 2 years? 5 years?

THERE IS A TWO YEAR FOLLOW UP CONDUCTED WITH EVERY GRADUATE.

94. What year do you think the "high stakes" should be placed on the exam?

a. 4th, 8th, or 10th grade?

A SINGLE HIGH STAKES EXAM MAY NOT BE ENOUGH

b. Why? DID NOT ANSWER

95. When do the schools receive the 8th grade scores for students?

IT REALLY DEPENDS ON THE STUDENTS HOME DISTRICT AND IF THEY [SOUTHEASTERN] ARE PERSISTANT ENOUGH TO GET THE ATTENTION OF THE HOME DISTRICT. SOMETIMES THEY DO NOT RECEIVE THEM AT ALL. MOST OF THE TIME THEY ARE VERY LATE.

96. How many sophomores have passed their 8th grade MCAS exam? (2 years ago)

IF A STUDENT PASSED THE 8TH GRADE EXAM THEN THEY WILL PASS THE 10TH GRADE EXAM. (SAID EARLIER IN THE INTERVIEW BUT IS APPLICABLE TO THIS QUESTION)

COMMENTS:

SUPERINTENDENT HAGER IS A STRONG BELIEVER IN RASING STANDARDS AND HE FEELS THAT HAVING A COMPETENCY TEST IS A VERY GOOD THING FOR ACCOUNTABILITY AND ASSISTING THE STUDENTS IN ACHIEVING THE ACADEMIC STANDARDS THAT THEY DESERVE, HOWEVER MCAS MAY NOT BE THE ANSWER. HE IS OPPOSED TO A SINGLE HIGH STAKES EXAM AS A GRADUATION REQUIREMENT AND HE FEELS THAT MULTIPLE ASSESSMENTS ARE THE WAY TO GO.

SUPERINTENDENT HAGER FEELS THAT STUDENTS THAT WILL BE ARRIVING AT VOCATIONAL SCHOOLS IN THE FUTURE WILL HAVE BETTER ACADEMIC SKILLS. HE FEELS THAT THIS WILL BE SHOWN WHEN STUDENTS BEGINNING IN KINDERGARTEN ARE EDUCATED ACCORDING TO THE NEW CURRICULUM WILL CONTINUE THROUGH THE PUBLIC EDUCATION SYSTEM WITH A CONSISTENT SET OF GUIDELINES THAT WERE ALSO THE BASIS OF THE MCAS EXAM. UNFORTUNATELY, THIS PROCESS WILL BE VERY SLOW AND THE CHALLENGE OF HOW TO ASSIST STUDENTS IN THE PRESENT TIME WITH GRADUATION CONCERNS IS VERY REAL AND VERY SENSITIVE.

April 30, 2001

Superintendent Eugene Carlo
Assabet Valley Regional Vocational High School
215 Fitchburg Street
Marlborough, MA 01752

Dear Superintendent Carlo,

The Massachusetts Comprehensive Assessment System and Vocational School analysis report has been completed and given to the Honorable Senator Robert A. Antonioni. The project report contains conclusions drawn by our team as well as suggestions for future research.

We would like to thank you for inviting us to visit Assabet Valley and assisting our project by educating us about vocational schools. A full summary of our visit is included completely in the report. We hope that this project will serve as a strong base for future research on this topic so as to better assist vocational students with their performance on the MCAS exam.

Very truly yours,
Jessica B. Fayard
Bonnie Jean Boettcher
Giancarlo Vivenzio

April 30, 2001

Superintendent
Regional Vocational Technical High School
School Address
AnyCity, MA 00000

Dear Superintendent ,

The Massachusetts Comprehensive Assessment System and Vocational School analysis report has been completed and given to the Honorable Senator Robert A. Antonioni. The project report contains conclusions drawn by our team as well as suggestions for future research.

We would like to thank you for your participation in the telephone interview that we conducted. Your comments and suggestions were included completely in the report. We hope that this project will serve as a strong base for future research on this topic so as to better assist vocational students with their performance on the MCAS exam.

Very truly yours,
Jessica B. Fayard
Bonnie Jean Boettcher
Giancarlo Vivenzio

APPENDIX F

Performance Rating Criteria

School Performance Categories				Improvement Expectation
	Percentage of Students Scoring in			
Category	Proficient/Advanced		Failing	Increase average score by:
1	80% or more	And	5% or less	1-3 points
2	60% or more	And	10% or less	1-3 points
3	40% or more	And	20% or less	2-4 points
4	20% or more	And	40% or less	3-5 points
5	Less than 20%	Or	41% - 60%	4-6 points
6			More than 60%	5-7 points

Performance Category	Rating
1	Very High
2	High
3	Moderately
4	Low
5	Very Low
6	Critically Low

Improvement Made	Rating
More than Expectation	Exceeded
Within Expectation Range	Met
Within one point below Expectation	Approached
More than one point below Expectation	Failed to Meet

Performance					
Very High					
High					
Moderate					
Low					
Very Low					
Critically Low					
	Failed to Meet	Approached	Met	Exceeded	
	Improvement				

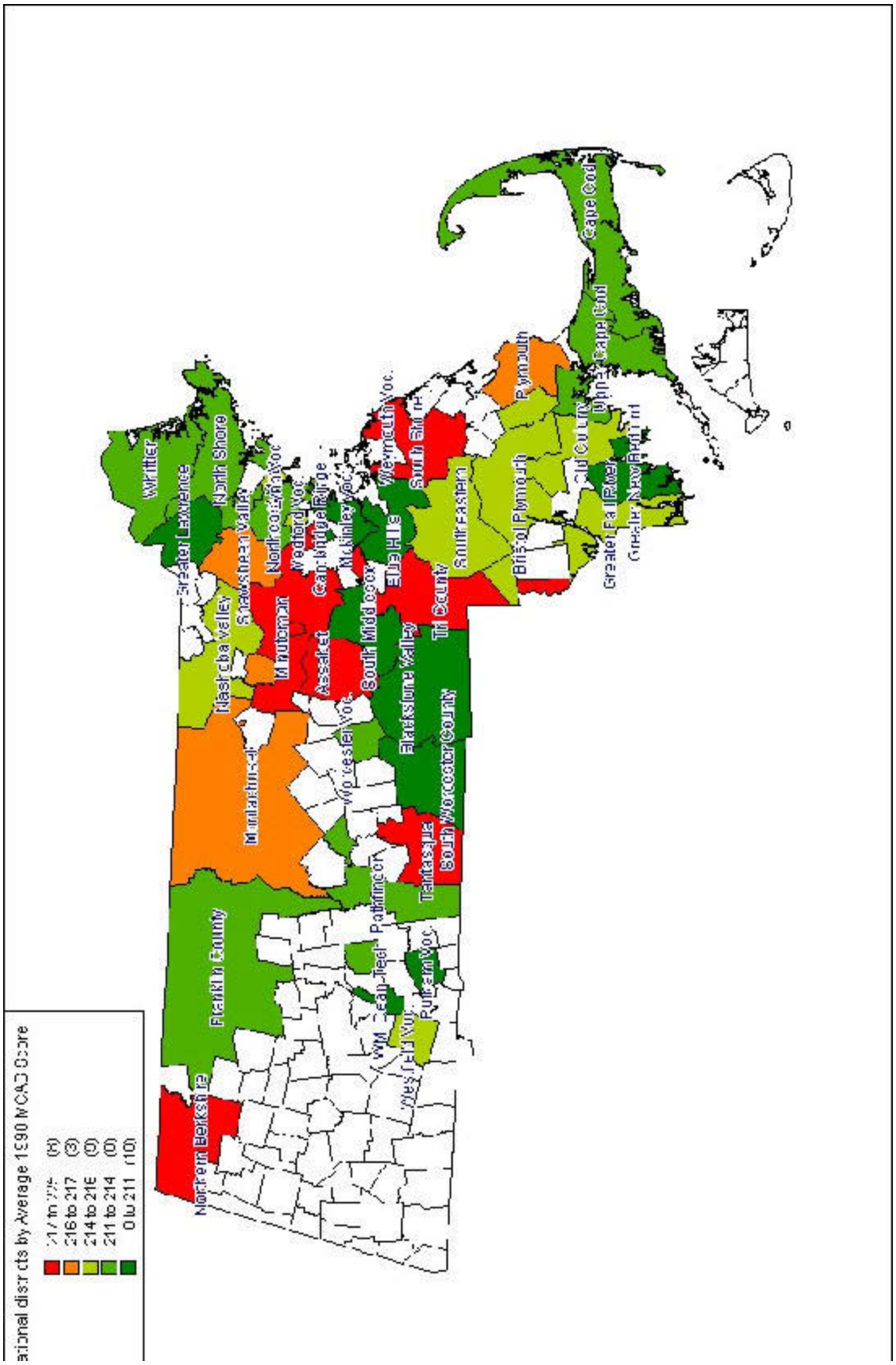
OVERALL PERFORMANCE	OVERALL IMPROVEMENT			
	Failed to Meet	Approached	Met	Exceeded
Very High		RECOGNITION for very high performance	RECOGNITION for very high performance and for meeting improvement expectations	RECOGNITION for very high performance and for exceeding improvement expectations. Candidate for Exemplary Schools Program

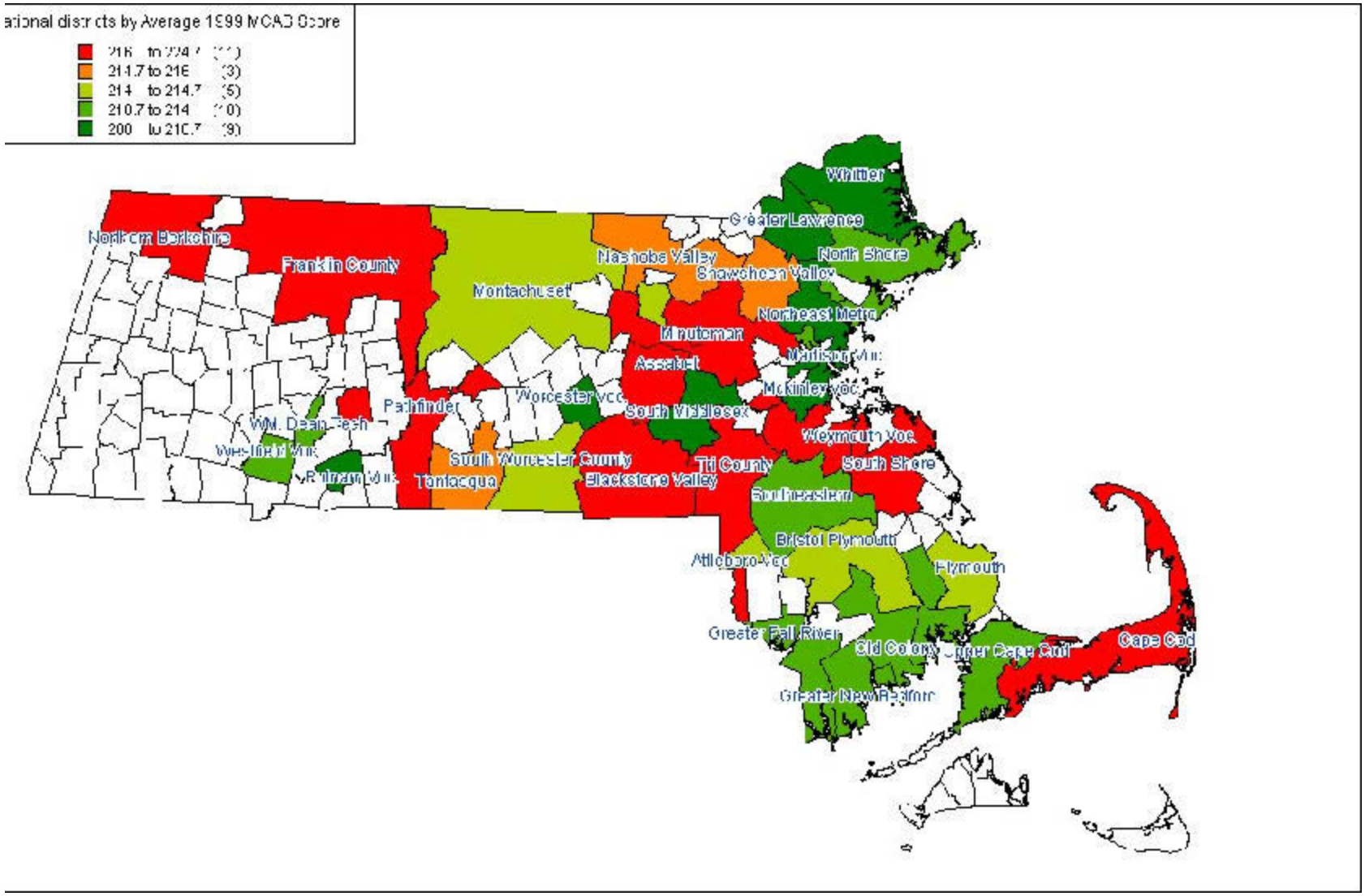
High			RECOGNITION for high performance and for meeting improvement expectations	RECOGNITION for high performance and for exceeding improvement expectations. Candidate for Exemplary Schools Program
Moderate	WARNING that the school and district must strengthen improvement efforts		RECOGNITION for meeting improvement expectations	RECOGNITION for exceeding improvement expectations.Candidate for Exemplary Schools Program
Low	WARNING that the school and district must strengthen improvement efforts	WARNING that the school and district must strengthen improvement efforts	RECOGNITION for meeting improvement expectations	RECOGNITION for exceeding improvement expectations. Candidate for Exemplary Schools Program

Very Low	REFERRED FOR REVIEW to determine whether school should be declared under-performing. High priority for district support and targeted state assistance	REFERRED FOR REVIEW to determine whether school should be declared under-performing. High priority for district support and targeted state assistance	RECOGNITION for meeting improvement expectations.High priority for district support and targeted state assistance.	RECOGNITION for exceeding improvement expectations. Candidate for Exemplary Schools Program.High priority for district support and targeted state assistance
Critically Low	REFERRED FOR REVIEW to determine whether school should be declared under-performing .Top priority for district support and targeted state assistance	REFERRED FOR REVIEW to determine whether school should be declared under-performing .Top priority for district support and targeted state assistance	RECOGNITION for meeting improvement expectations.High priority for district support and targeted state assistance	RECOGNITION for exceeding improvement expectations. Candidate for Exemplary Schools Program. High priority for district support and targeted state assistance

APPENDIX G

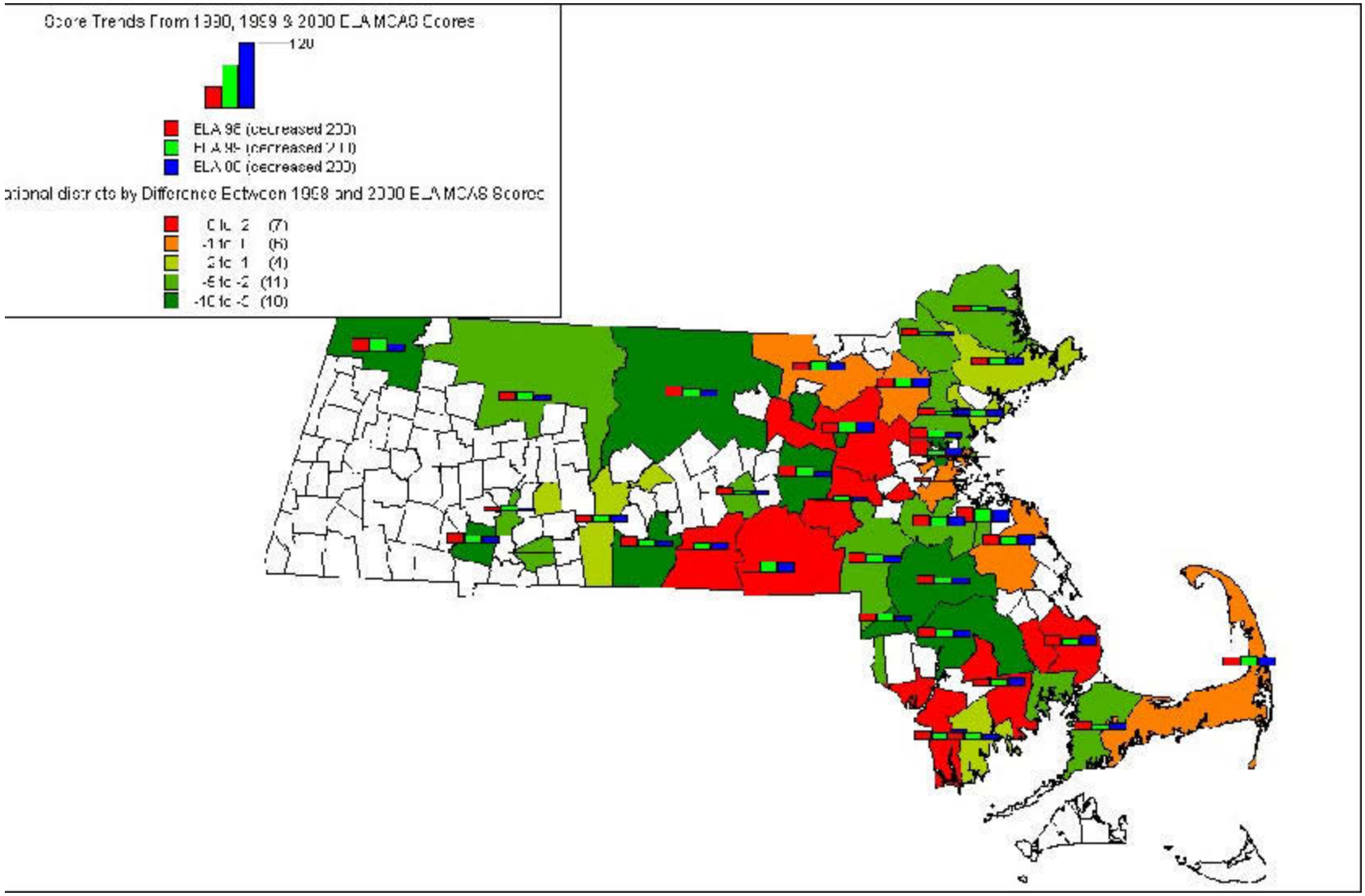
Maps for 1998 and 1999 with Scores

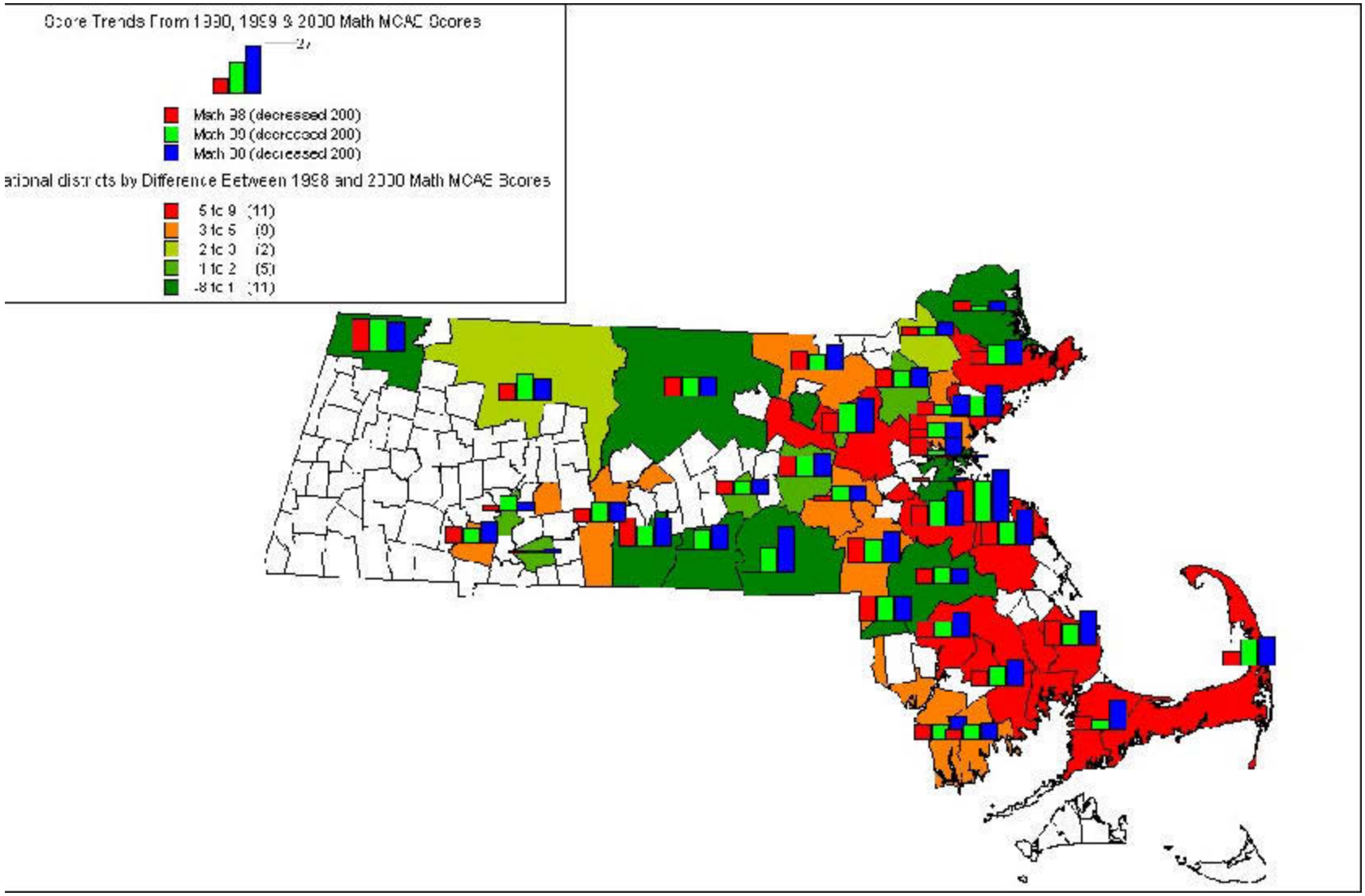

Greater Lawrence
North Shore
Nashoba Valley
Shawsheen Valley
Northeast Voc.
Minuteman
Assabet
Wachusett
Montachusett
Keystone
Northern Berkshire
Franklin County
Pathfinder
Tantasqua
Quaboag
Blackstone Valley
South Worcester County
Tri County
South Middlesex
Essex Aggie
McKinley Voc.
Whittier
Wareham
South Shore
Old Colony
Bristol Plymouth
Southeastern
Cape Cod
Upper Cape Cod
Greater Fall River
Greater New Bedford
Cape Cod

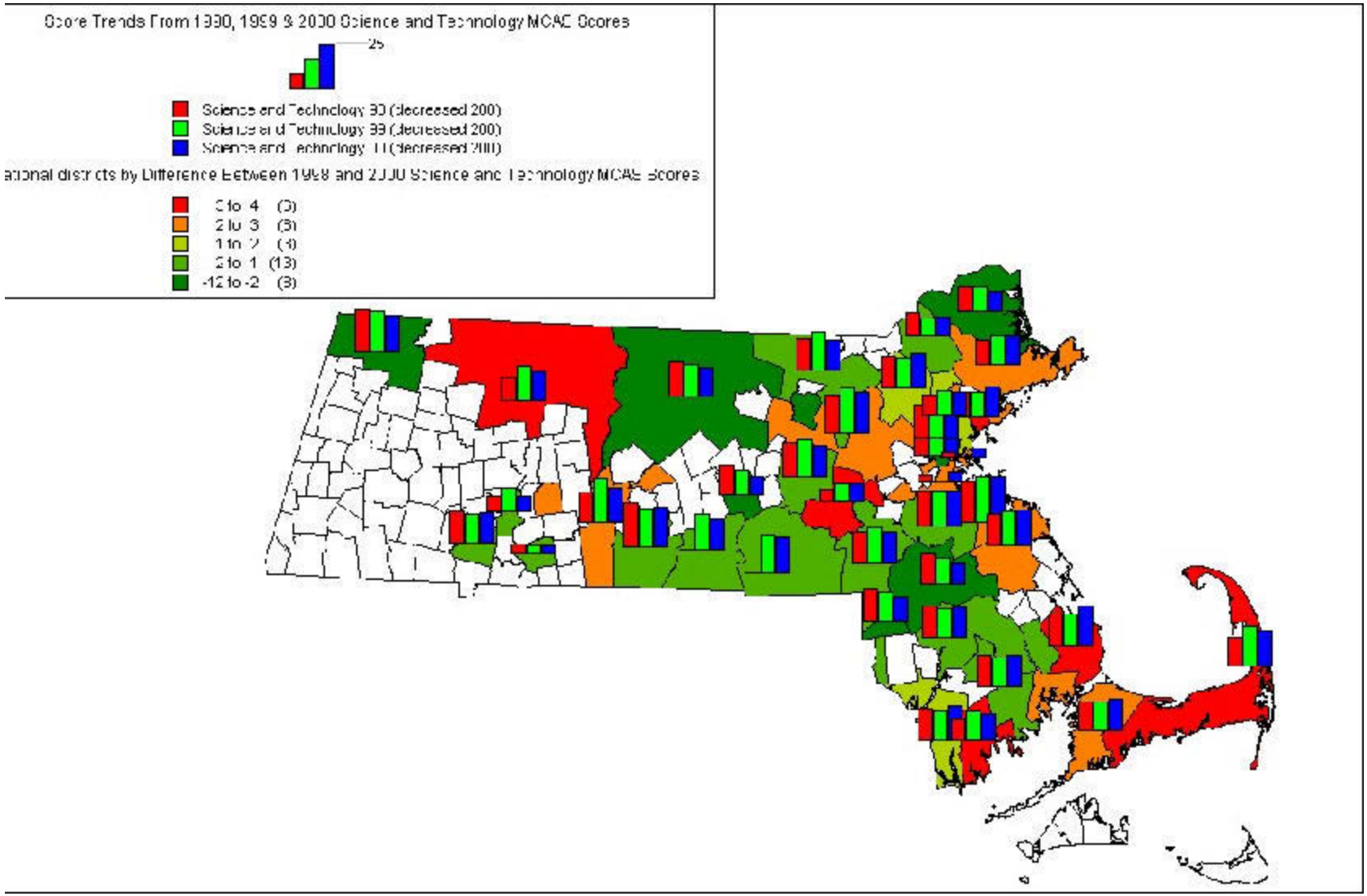

ational districts by Average 1999 MCAS Score
214.7 to 216 (3)
214 to 214.7 (5)
210.7 to 214 (10)
200 to 210.7 (9)
Whittier
Greater Lawrence
Northern Berkshire
Franklin County
Nashoba Valley
North Shore
Shawsheen Valley
Montachusett
Northeast Metro
Minuteman
Assabet
Marlborough
McKinley Voc.
Pathfinder
Worcester Voc.
South Middlesex
Wm. Dean Tech
Weymouth Voc.
Whittier Voc.
South Worcester County
Tri County
South Shore
Tantasqua
Blackstone Valley
Southeastern
Bristol Plymouth
Attleboro Voc.
Plymouth
Greater Fall River
Old Colony
Upper Cape Cod
Cape Cod
Greater New Bedford

APPENDIX H

Trend Maps for English Language Arts, Math, and Science & Technology


Score Trends From 1998, 1999 & 2000 ELA MCAS Scores
120
ELA 98 (decreased 200)
ELA 99 (decreased 210)
ELA 00 (decreased 200)
ational districts by Difference Between 1998 and 2000 ELA MCAS Scores
0 to 2 (7)
-1 to -1 (6)
2 to 1 (4)
-5 to -2 (11)
-10 to -6 (10)


Score Trends From 1998, 1999 & 2000 Math MCAS Scores
Math 98 (decreased 200)
Math 99 (decreased 200)
Math 00 (decreased 200)
ational districts by Difference Between 1998 and 2000 Math MCAS Scores
5 to 9 (11)
3 to 5 (9)
2 to 3 (2)
1 to 2 (5)
-8 to 1 (11)


Score Trends From 1998, 1999 & 2000 Science and Technology MCAS Scores
25
Science and Technology 98 (decreased 200)
Science and Technology 99 (decreased 200)
Science and Technology 00 (decreased 200)
ational districts by Difference Between 1998 and 2000 Science and Technology MCAS Scores
3 to 4 (3)
2 to 3 (3)
1 to 2 (4)
0 to 1 (13)
-12 to -2 (3)