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Massachusetts Department of

Education

**COMMONWEALTH OF MASSACHUSETTS  
BOARD OF EDUCATION  
\*\*\*REGULAR MEETING\*\*\*  
MASSACHUSETTS DEPARTMENT OF EDUCATION  
350 MAIN STREET  
MALDEN, MASSACHUSETTS  
WEDNESDAY, FEBRUARY 23, 2000  
9:00 a.m. - 1:00 p.m.**

The Chairman called the meeting into order at 9:00 a.m. The following were in attendance:

**MEMBERS OF THE BOARD  
OF EDUCATION PRESENT:**

Mr. James A. Peyser, Chairman, Boston  
Dr. Roberta R. Schaefer, Vice-chairperson, Worcester  
Mr. Charles D. Baker, Swampscott  
Ms. Patricia Crutchfield, Southwick  
Dr. Edwin J. Delattre, Boston  
Dr. Judith I. Gill, Acting Chancellor, Boston  
Mr. William K. Irwin, Wilmington  
Mr. Marcel LaFlamme, Monson, Chair, Student Advisory Council  
Dr. Abigail Thernstrom, Lexington  
  
Dr. David P. Driscoll, Commissioner of Education

**ALSO PRESENT:**

Nancy L. Catuogno, Registered Diplomate Reporter  
Certified Realtime Reporter

**COMMENTS FROM THE CHAIRMAN**

**CHAIRMAN PEYSER:** Good morning, everyone. Welcome. We are facing a full agenda this morning so we're going to get right into things. I'm going to pass on making any opening statements though the Commissioner has a couple of brief comments. Then we'll try to get to the public comments. I believe there are 15 people signed up to testify. We are going to try to squeeze in all of that within the first hour. We are basically looking at two and a half minutes per person. It would be great if you could keep it within that timeframe so that we can hear from everyone. Commissioner?

**COMMENTS FROM THE COMMISSIONER**

**COMMISSIONER DRISCOLL:** Thank you. I will be brief. I'd like to thank the people who are speaking for agreeing to reduce their comments to two and a half minutes. The other choice was to have people submit written testimony but people were anxious to testify orally, and we respect that.

I want to be sure that we are factually correct and in that vein I want to make sure everyone has a copy of the latest motion which does include an amendment by the Chairman. This motion makes the vote today conditional on four items. One of which includes directing me to work with the Board's Advisory Council on

Science and Math and the Massachusetts Superintendents Association to add back vignettes and classroom practices to the document. This would include input from all of the other groups we work with, as well. It isn't meant to exclude those groups. It was really meant to have those two organizations, one being a Board Advisory Council, lead that effort. So with that, Mr. Chairman, can we begin with the first testimonial which is John D'Auria, the principal of Wellesley Middle School?

**PUBLIC COMMENT**

**MR. D'AURIA:** Good morning. Thank you. I have copies of a letter that I'd like to pass out to the Board here. The 79 principals, 60 math department heads, and 26 other educational leaders from 50 districts who have signed this letter want to communicate to you our great concern for both the proposed changes in the math framework and for the process that led to these changes. We urge you to postpone the ratification of these changes in order to restore good faith dialogue with an overwhelming number of principals, math department heads, and math teachers throughout this Commonwealth.

The proposed changes, we believe, will halt the progress we have made in our efforts to help our students understand math more deeply and appreciate both its beauty and its rigor. There are clear limitations and problems associated with reducing the study of math to a series of algorithms. For too long this methodology prevailed in our schools and it did not work well with many of our students. While this more narrow teaching of math may lead to short-term higher scores on tests of certain basic skills, it does not lead to a broad understanding of underlying mathematical concepts, particularly for those students who struggle with math. Our current math framework strikes an important balance between conceptual understanding and computational skill. It emphasizes the application of principles, not just the underlying mechanics.

When the DOE decided to develop the statewide math curriculum framework, the Department wisely utilized a broad-based open policy of framework development using practitioners at the school and at the university level. The range of participants and the openness of the process de-emphasized ideological politics of curriculum development and allowed us to focus on improved teaching and learning. The process fit well with an important strand of the Ed Reform law that calls for the ongoing professional development of teachers. It was this very interchange of professional development that led to the initial math framework. The current process used to support the proposed changes does not fit the standard of openness that characterized the DOE prior to this year, nor is it based on any of the leadership principles we have come to value in our work as school administrators. In essence, dialogue was closed and the knowledge of practitioners was disregarded. As you know, a number of highly regarded professionals resigned in protest last week. In the end it will be the teachers and principals who will make the critical difference in the teaching of math to every child. We are at a loss to explain why the Board of Education and its Commissioners would so deliberately choose to alienate the very people who are on the front line of teaching. We urge you to keep the framework that is already in place so as not to undo all the work of preparing our students for the past three years, all the curriculum changes we have made, and all the ongoing professional development of our teachers. Give the initial framework the chance it deserves. Revise it slowly, carefully, and, most importantly, openly. We are prepared to work with you in this process.

**COMMISSIONER DRISCOLL:** Thank you. John, you said we had copies. Do the members have copies? Judy, would you make sure everybody gets a copy? Thank you very much, John.

**MR. ZELIGER:** Good morning, members of the Board. I urge you to reject the draft of the Mathematics Curriculum Frameworks submitted for your vote.

I am a parent of two Brighton public school students, which makes my concerns very personal. I'm a mathematician educated in one of the world's finest schools, with considerable experience in mathematical and

statistical research and applications, as well as in teaching ranging from grade 2 to graduate level, which enables me to make professional judgments. I can assure you that the document does not stand up to criticism from virtually any point of view. Its language is sloppy, definitions of basic mathematical concepts are inaccurate -- sometimes to absurdity -- sample problems are poorly worded, and in many cases are confusing rather than challenging. The document is unbalanced.

The level of difficulty of the material in different strands in the same grade is often strikingly different. At the same time, instead of steady growth of level of difficulty and requirements from grade to grade, there are inexplicable drops within the same strand. Some pedagogical ideas incorporated by the authors are more than questionable. For instance, I'm afraid that investigating the Pascal's triangle in a manner the authors apparently mean may lead to the development of racial, religious, and other similar prejudices. To my relief, the definition of the triangle given in the Glossary is erroneous so, according to it, the triangle, thank God, does not exist.

Unlike some critics, I support the intention of the DOE to develop, instead of the current amorphous and nonspecific curriculum, a document that explicitly and clearly describes what material is supposed to be learned by a certain time. Among other serious benefits, this approach provides solid grounds for implementing a meaningful and reliable MCAS test. I strongly believe that the Department turned into the right direction. Unfortunately, the result happened to be quite unsuccessful. One of the possible reasons was absence of professional mathematicians among the members of the panel. Another may be disregard of existing world experience in teaching math, as well as the lack of healthy conservatism. As a result, less than carefully thought through "innovations" carried the panel away, and the document has lost a good deal of common sense. This sad outcome should not undermine, however, the otherwise correct strategic approach adopted by the Department. Dear members of the Board, please find courage to admit the fact that the submitted draft is unacceptable. It is our mutual failure, a threat to the quality of education of our children, and our mutual well-being.

Find courage to reject the current draft. By doing so, you will create a void, which a better-qualified panel will be able to fill with a much better document. Expose that new draft to a proper process of professional and public reviewing, and we all won't fail again. Keep in mind that the quality of mathematical education crucially affects the ability of our children to acquire knowledge in any other field, and eventually affects their creativity and productivity. Give them a chance, reject the draft.

**COMMISSIONER DRISCOLL:** Sir, if I could, two quick things. The definition of Pascal's triangle came directly from the 1995 document. I personally would be more than glad to see a better definition, if there is one. The other issue, and I won't talk about it now, is that I would be glad to pursue your issue about Pascal's triangle as a standard, because I'm not sure what you meant.

**DR. SCHAEFER:** I can't let this go by without commenting on it. What are the racial and political prejudices?

**COMMISSIONER DRISCOLL:** That's what I asked. I don't want to take the time now.

**DR. SCHAEFER:** That requires explanation, a statement like that.

**MR. ZELIGER:** Can I elaborate on that?

**DR. SCHAEFER:** It cannot be left without comment.

**COMMISSIONER DRISCOLL:** I don't want to take the time now. There are 15 people here. But I will report back to the Board.

**DR. SCHAEFER:** Bigotry in math? I'm a little confused, to say the least.

**COMMISSIONER DRISCOLL:** I will pursue it and get back to the Board. It's a point that we will deal with. It wasn't part of the public comment. I don't think anybody commented on Pascal's triangle.

**DR. THERNSTROM:** This is a process request and maybe inappropriate. I wonder if we could just move through this without audience participation in the form of applause.

**CHAIRMAN PEYSER:** I don't think we need to have silence. I think the level of applause and participation has been okay to this point. It hasn't disrupted the proceedings or the timing of anything, so I'm comfortable.

**DR. THERNSTROM:** I'm just trying to get through this.

**CHAIRMAN PEYSER:** Quiet, please. Next person to testify is William Kendall of the Braintree Public Schools.

**MR. KENDALL:** Hi, I'm Bill Kendall. I'm currently the director of math in the Braintree Public Schools. I'm a proud graduate of the Massachusetts public schools. I have a bachelor's in math from Boston College, a masters in math from UMass, a masters in computer science from BU, and a doctorate in education from Harvard.

I'm here because a new math framework was conceived under a faulty plan, and is just downright bad for the children of Massachusetts. Over the past few years a different approach to teaching mathematics has arisen. It usually goes by the label "standards-based math." In the Town of Braintree, we are currently using two standards-based curricula as supplements to our regular textbooks, and they are working. We are using TERC Investigations in the elementary school and CMP in the middle school. Both have us teach concepts directly to children through applications and projects that force them to think deeply about mathematics. These programs are succeeding. We are teaching difficult math concepts to all students, not just a small mathematical elite. We are reaching students whom we never reached before. Test scores are up. Enthusiasm is up. Come into our classrooms, see what's happening.

If you adopt these frameworks, you are sending the strong message that mathematical education should stop this forward movement. How can this list of items be sending this awful message? Because it is just that: a cold list of items for students to master. It avoids the deep conceptual understanding that students need. In math education we have been down this road many times before. This is not a new revolutionary document. Just look at any school system's elementary math checklist, or examine the objectives that come with any regular math textbook. This document is a giant step backward and a significant watering down of the curriculum for most of the students in Massachusetts. If you adopt this framework, you are in effect saying that the children of Massachusetts should avoid deep understanding and instead march through a checklist of procedures.

I have seen the damage that this correct procedure approach to math can do in my own family. On her PSAT's, my daughter had to compare the slope of two line segments pictured. It should have been an easy problem. The steeper line has the bigger slope. She should have had the concept down. She had A's in algebra. Unfortunately, she got A's in algebra because she knew how to calculate slope. She wasted time on the PSAT's applying the proper algorithm to calculate the correct approach. The teacher had taught this checklist formula approach that you're telling people to go back to and had avoided understanding the deep concept. This mis-education, this checklist approach, has been going on for all too long. This is exactly the approach that's created generations of math phobic Americans.

In the thirties, the forties and the fifties we marched students through checklists: drill and practice. They learned the trees; they didn't see the forest. By doing this all but a small number of students just don't get it. This curriculum is an amazing dumbing down from the lofty document you originally had five years ago. That document was subtitled Math Power For All. This is an old-fashioned math checklist for all. So how did the mathematics curriculum framework get into such a mess? Somehow, you put a person in charge who is not certified in math, has no math experience, and is not connected to the Massachusetts mathematics community. This person is, however, excellent at writing testable objectives. This is, in fact, her specialty, and she's very good at it. The entire mathematics education community knows that reducing math to a list of testable objectives is nothing but a throwback to the failed mathematics education policies of the past. We have tried to tell her this many, many, many times. Her response was to suddenly haul teachers into small secret meetings, bury them with new information, give them no chance to make deep criticisms, tweak a faulty document in a very limited way, and then say they agreed. When these teachers reflected on their actions, most of them did not agree with what had transpired and that is why there are absolutely no teachers mentioned in the front of this framework.

Now we are at loggerheads. Every single math organization in the state is opposing this dumbing down of the frameworks. Attached to my testimony is an appendix of ten letters. You have unified us as we have never been unified before. We have ten letters from ten math professional organizations saying why this framework should be turned down. We all want a framework that says that all students must understand math concepts, not merely be marched through a checklist of skills. Please follow the wishes of the mathematics community in Massachusetts and reject this new framework.

**MR. MALASKI:** I'm Bill Masalski, I am a professor of mathematics education at the University of Massachusetts. For your information, I was a member of the original Board advisors for Project PALMS and the committee which oversaw the writing of the current framework. I have been a member of the Mathematics and Science Advisory Council since its inception six years ago. I have also served as a nationally elected member of the Board of Directors at the National Council of Teachers of Mathematics. We have made great strides in improving the learning and teaching of mathematics in the Commonwealth. However, if this revision moves forward as planned, the resulting framework will reverse a decade-long process of reform in math education in Massachusetts. The document is seriously flawed, as was the process for developing it. It is significant that both the revision panel, and many of the teachers involved in the gradespan working groups, requested that their names not appear in the final document. Educators in attendance at those gradespan meetings have publicly expressed dismay at the autocratic manner in which they were treated and the lack of acceptance of their concerns and meaningful input. It is also significant that in the document submitted to you from the DOE summarizing public comment, group comments were each considered as from a single individual and lumped with individual responses. This greatly distorted the reporting and rendered the cited percentages as absolutely incorrect and misleading.

The document that has been submitted to you is not a curriculum framework. It is a major shift from a document based on research that emphasizes teaching and learning, conceptual understanding, and mathematical reasoning to one that emphasizes testing, procedural knowledge, and rote memorization. The Ed Reform Act clearly states in section 29, subsection 1E, and I quote, "The curriculum frameworks shall present broad pedagogical approaches and strategies for assisting students in the development of the skills, competencies and knowledge called for by these standards." Until such time the revised framework is put forward which includes these mandated items and clearly represents a careful blending of conceptual understanding and appropriate skill development, you must not accept, even conditionally, as suggested by the Commissioner, any document which is put before you. Finally, I direct you to the three main items in the motion before you.

One item calls for the generation of examples and vignettes to enhance the framework and provide supplementary pedagogical material. The DOE has already thrown out over 40 pages of excellent examples from the original framework. My response to the item which refers to the new NCTM standards are a refinement of an already well-conceived and universally accepted document. The DOE has already rejected all of what NCTM stands for by throwing out over 21 pages of NCTM-related material. And, finally, my response to the item on assessment, and that is the most important point and one I think we have all missed, is that assessment should not drive curriculum. Curriculum should dictate what is success. I ask you to reject this document outright and instruct the DOE to start over, but this time make it a fair and open process, free of ideological politics. Thank you.

**MR. HAMOS:** Good morning. My comments are actually part of a much broader set of comments you have in front of you so I will try to honor the time part of this. Commissioner Driscoll, members of the Board, thank you for allowing me this opportunity to bring you recommendations from your Mathematics and Science Advisory Council. On January 24, 2000, the Council sent a letter to the Board in which we recommended delaying your vote today. Although the vote you will make today is conditional and sets up process steps that have the potential to ensure MCAS validity and engagement of the field, the Advisory Council, after fully reviewing the final draft and much discussion, believes it would be in the best interests of the Board to fully reject the document for the following reasons.

First of all, the document before you is not a curriculum framework. As Bill mentioned, the Ed Reform Act is explicit on this and stating within Section 29, Subsection 1E, that "the curriculum frameworks shall present broad pedagogical approaches and strategies for assisting students in the development of the skills, competencies and knowledge called for by these standards." The writers of the 1995 mathematics framework, Achieving Mathematical Power, were very mindful of this within Guiding Principle I on page 10, that "curriculum cannot be separated from the instructional practices used to teach it." Their framework contained narratives and examples that formed a vision of what rigorous mathematics instruction would look like. At best, the current document might be considered a guide to assessment but, again, it is not a curriculum framework.

Secondly, the document before you fully changes the direction and emphasis of the 1995 curriculum framework. It is not in concert with our state's initiative, PALMS, and the millions of dollars of initial science foundation money. It is not in alignment with national standards. The Commonwealth is at great legal risk when educators and students are directed to learn and achieve in one manner at a given time, and then in a different manner at another time. Communities have spent millions of dollars purchasing and implementing curricula that is aligned to NCTM standards. Indeed, the Department has reinforced this approach through huge expenditures in professional development and through support of curriculum implementation centers. The final draft document, with its emphasis on procedural skills and definition of standards for varying courses in secondary education, moves the Commonwealth in a totally different direction. An MCAS test created around the proposed standards will be different from the MCAS test of the past. This should be a fundamental concern to all as we enter the high-stakes moment for students. You just may have empowered a bunch of expert witnesses at future trials, as well.

Three, the document before you does not have broad support from the parties that need to be included: pre-K to 12 teachers, school administrators, mathematics educators, mathematicians, and the Department staff. The process that created the Final Draft document in front of you was deeply flawed as barriers have been created and distrust now runs rampant. This is directly opposite to the process that engendered wide statewide support from 1992 to 1999.

In summary, we all have much work to do in order to move mathematics education forward in the Commonwealth. We certainly cannot expect to use MCAS as a cudgel of compliance. The Mathematics and

Science Advisory Council recommends that you reject the current draft of the revised document, open discussion on the nature and substance of the Mathematics Curriculum Framework, and reengage the field in order to create an educational system in mathematics that is centered on student learning and brings all students to high levels of performance.

**CHAIRMAN PEYSER:** May I ask you one question? You mentioned on page 2 the definition of standards for varying courses in secondary education as being a step in a new direction, and I assume implicitly the wrong direction. I wonder if you could explain.

**MR. HAMOS:** In this particular part I'm not trying to say right or wrong. It's laying down course sequences of algebra, geometry, algebra, so it is a different direction. We clearly did not have that in the previous document. It just begins to shift us into doing something different.

**CHAIRMAN PEYSER:** Certainly there are plenty of schools that structure their math program in secondary school along those same lines.

**MR. HAMOS:** That's fine. The belief is the first framework didn't say do algebra.

**CHAIRMAN PEYSER:** This one presents both integrated and/or single discipline courses. I'm just wondering why this presents a problem.

**MR. HAMOS:** I believe that the previous framework allowed that to happen anyway, so schools are still left open to doing what I believe –

**CHAIRMAN PEYSER:** And they would still be under this.

**MR. HAMOS:** Right, but what you now have makes the terminology integrated mathematics courses. It's not like science which is clearly separate disciplines. This is trying to make up a new terminology. There are curriculum out there bringing things together but not quite called that, so that's a new direction. Then, again, one of the philosophies of the framework from the beginning was to create a document for all kids and to get away from a general track. What you now have is an integrated math course and then an algebra course that is those standards plus more. We just set it all up again. So it is a different direction.

**CHAIRMAN PEYSER:** But I'm trying to understand, is it your position that only math should be presented in a single --

**MR. HAMOS:** No, that's not the position.

**CHAIRMAN PEYSER:** So the framework should allow schools to pursue either course or multiple courses.

**MR. HAMOS:** It's left to school decisions.

**CHAIRMAN PEYSER:** But you would agree that hasn't changed in this current draft? It's still left to schools to decide.

**MR. HAMOS:** No, this is much more in line with what schools have always done. It pushes them towards -- as school districts start getting evaluated, how many kids will they have pass the integrated course versus the Algebra I and other sequence courses? They are going to be rank ordered on these things. I think it's very problematic.

**DR. THERNSTROM:** That suggests that you would not allow, even as an option, an 8th grade algebra, is that correct?

**MR. HAMOS:** Absolutely not. I think schools should decide.

**DR. THERNSTROM:** You just said they will be evaluated --

**MR. HAMOS:** They should be evaluated on learning the content skills of whatever we say it is for all kids. If kids are taking Algebra I and other sequence courses, taking even AP courses in 8th grade if they wanted to, if kids took those and passed what we set in the MCAS or went beyond to advanced, that's fine. It doesn't say anything about Algebra I or II.

**DR. THERNSTROM:** I'm sorry, the point is still obscure to a number of us on this Board.

**MR. HAMOS:** What we had to this moment was a high set of standards. We wanted everyone to reach them. They weren't minimal standards. They were a high set of standards that we thought were reachable by all kids. With students taking algebra courses, theoretically, the way schools do this now, honors track introduces kids to these courses and beyond. They pass those and move forwards. That's fine. The previous framework did not say anything about which course, what sequences. Those scope and sequences were left to school decisions. This new framework creates a scope and sequence, in a way, and begins to lead the field and the testing and then schools in another direction. That's the policy that's being laid out by the Governor. What the Governor is laying out to the Board is to rank order districts, and these numbers will be out there for the field.

**COMMISSIONER DRISCOLL:** I just want to point out, as I think you know, our school and district accountability system is for improvement and rates people against improvement. We can't control The Globe, Herald, Eagle, Tribune, et cetera. They rank, but we don't rank. You're right that that's what happens, but I think it's not our intent. We are very worried about improvement, that's the issue.

**MR. HAMOS:** Of course. Just think of items lower on the list, for example, the item of testing math teachers from low-performing schools. What are going to be those definitions? There are a lot of subtleties, this is why we have to have open conversations. The key point is it's a different direction. I think this is much more directive and encouraging of something different from where we were.

**MR. GORRIE:** Good morning. For the record, my name is Steve Gorrie, I'm the president of the Massachusetts Teachers Association, I am on leave as a 4th grade teacher in Winchester, and thank you for giving me an opportunity to comment this morning on the math framework. I'm here to ask you to delay voting on this framework until math educators have had ample opportunity to review and comment on this new version. Even a superficial reading of the framework before you indicates that this document embodies major changes from the September version. However, I will be brief so that the experts in the teaching of math have a chance to voice their opinions, as many have already, on the content. So I will limit my remarks to the process.

Several weeks ago we began getting phone calls from our members expressing concern about the new draft of the framework. Frankly, these calls came from teachers who both supported and opposed the September draft. We assisted those teachers in arranging and publicizing the meeting of math teachers at Newton North High School on February 9. Despite the short notice, over 150 teachers attended that meeting. The alarm they expressed heightened our concerns. We, like they, sought to obtain a copy of the new framework, only to be told that no new draft existed. Nonetheless, we heard from members who were allowed to review a new draft behind closed doors, as long as they turned their copies in before leaving. However, the February 23rd Final



Draft is substantively different from the September 28 Public Comment Draft and the current Mathematics Curriculum Framework. This review process led to confusion, rumors about what was in the new draft, and resentment.

You must understand that we teachers are used to discussing and debating curriculum issues thoroughly. And, as one member has even said, "We are used to having knock-down drag-out fights on curriculum, but we are not used to curricular decisions being made behind closed doors." The National Council of Teachers of Mathematics is expected to release its new standards this spring. Let us examine our state's math standards in light of the new national standard, and let us review them in the light of day. Quality must always take precedence over speed in making decisions over what constitutes a sound curriculum and effective teaching methods. We request that no vote be taken on this document until that is complete and until there's been ample opportunity for open, public comments and representative teacher input into the final version. And finally, it is better to make sense than to make history, and I think we need to be very, very cautious. Thank you very much.

**CHAIRMAN PEYSER:** One question. You indicated there are major changes from the September draft. I wonder if you could just name a couple that stand out as being most significant.

**MR. GORRIE:** In an even initial reading of the first part, I notice that teachers and classroom environment and other things such as that have been eliminated from the initial sessions.

**CHAIRMAN PEYSER:** From the September draft? Is that what you're talking about?

**MR. GORRIE:** In comparison, and again, I leave a lot of that to the math people. I'm not a math expert nor a mathematician. However, I do respect the professional judgment of those people with whom I work and I think that they are absolutely correct.

**MS. KELLEY:** Good morning, Mr. Chairman, Commissioner and members of the Board. My name is Kathleen Kelley, I'm president of the Massachusetts Federation of Teachers. I am a 1st grade teacher and a self-confessed math phobic. Part of the reason for my statement today is so that we don't make the kinds of mistakes that were made when I was coming up and being taught mathematics. In two and a half minutes I will try and highlight the concerns of our members, particularly the mathematics teachers and coordinators that we represent in the schools.

First, let me say something about the process. One of the huge concerns I have is that the Math Curriculum Revision Framework Committee was disbanded way before the final work was completed on a final draft, and all the data was compiled, analyzed, and viewed in terms of the changes that should be made. These people, in my view, many of whom I know, are highly respected educators and mathematicians and ones who are deeply connected to those in the field who are actually implementing mathematics curriculum. Education Reform had a lot of promises that I have a passionate belief in such as standards-based education.

Setting high academic standards and developing curriculum that would talk about not only what children should know but what they should be able to do was one of the strengths of MERA. Another strength was that a lot of what we did in curriculum frameworks would remain constant over time in order to guide districts on how they should align curriculum, order material, purchase books, develop teacher training programs, meaningful professional development and analyze data over the course of time to make appropriate changes to improve student instruction. All of that takes time. Is every framework perfect? You bet it's not. But we have to have some time to implement and analyze and get the appropriate data.

The revised draft emphasizes more narrow computation skills as opposed to what I think is a deep understanding of number concepts and relationships. Students need to know how mathematics processes, patterns, and data can be used to solve problems. That is an extremely important part of the math curriculum. And this document from every view of the mathematics community does not do that. My experience is that it is one of the few subjects where the mathematics standards have national consensus. The NCTM are going to be revising their own standards in two months and it makes no sense to me at all that we are embarking on this kind of an approach without looking at what they've done. They are the experts and they are the ones that know.

**MS. GREENES:** Good morning. Commissioner Driscoll, Chairman Peyser, members of the Board of Education, I'm Carole Greenes, Chairman of the panel originally charged with the task of revising the mathematics framework. I'm here today speaking for the members of that group to request that the February 23rd draft of the mathematics curriculum framework be rejected -- but that the process be continued. Our recommendation for rejection is based on the fact that this document falls short in three major respects.

First, the document is rife with errors in mathematics definitions and developmental sequence. These errors were introduced into the draft when it was revised after the close of the public comment period. As an example, on page 22, Number Sense and Operations for grades 5 and 6, number 7 says, "Add and subtract positive and negative whole numbers." There are no negative whole numbers.

In the glossary on page 70, the definition for whole numbers states, "Any of the set of nonnegative integers." The second example, in the glossary, is the definition for Fibonacci numbers. By the way, the panel almost resigned earlier when we were told that the glossary that was in the 1995 document was going to be included in our document of September 28 even though it was rife with errors. It is still included in the February 23rd document. In the glossary it says that Fibonacci numbers are a sequence of numbers that begins with 1 and each number that follows is the sum of the two previous numbers. If you don't have two previous numbers, you can't get the next number. The sequence begins with 1 and 1. In the definitions we have circular definitions. An integer is a number that is either a whole number or the negative of a whole number, and whole numbers are defined as any of the set of nonnegative integers.

There are also errors in developmental sequence and conceptual thinking. We had count by 1's to 100, it was changed to rote count by 1's to at least 30. Why rote count? The definitions of rote are: 1, the use of memory usually with little intelligence; and routine or repetition carried out mechanically or unthinkingly. The saddest standard of mathematics education for the state. In addition, the document has not adequately taken into account the overwhelming public comment.

Finally, the document is not in the spirit of the Education Reform Act of 1993. Others have quoted part of Section 1E. I would like to quote parts of sections 1D and 1E. The standards are required to, and I quote directly, (a) *provide clear and specific examples* (b) *be constructed with due regard to the work and recommendations of national organizations* (c) *reflect sensitivity to different learning styles and impediments to learning*, (d) *present broad pedagogical approaches and strategies for assisting students in the development of the skills, competencies and knowledge called for by these standards* (e) *guide and inform processes for the education, professional development, certification, and evaluation of both active and aspiring teachers*, and (f) *provide sufficient detail to guide the promulgation of student assessment instruments*.

Other than the last point relating to assessment, the February 23rd document essentially ignores all of these requirements. A document that omits these elements as related specifically to mathematics education is not a mathematics curriculum framework. Since the Principles and Standards for School Mathematics will be released on April 10 by the National Council of Teachers of Mathematics, since no date for the completion of the curriculum is mandated by the Reform Act, and since an open process of the discussion of the current

document has not yet occurred--I just received a copy yesterday-- we urge the Board to reject the February 23 draft and call for a new draft that addresses the three issues we have raised. The goal is to develop a mathematics curriculum framework for Massachusetts that will serve our children well, and enable our teachers to foster their students' appreciation for the power and beauty of mathematics. Let us unify our purpose and come together to create a framework document of which we can all be proud.

**MS. COLLINS:** Good morning. I would like to state that I am a former statewide mathematics coordinator who has had a lot of experience visiting classrooms around the state.

I speak on behalf of all the students in the Commonwealth. I speak on behalf of Mike, a 7th grade student who tested at the 5th grade level in the beginning of the school year. In June of that same year, after spending that year in a student-centered classroom based on the tenets of the NCTM, Mike left scoring on a California achievement test at a 10th grade, 3rd month level. When asked what made the difference, Mike stated, "For the first time ever I had to do the mathematics; I could no longer sit back and watch the teacher do all the math. I learned whether I wanted to or not."

It is critically important that our frameworks represent the opinions and the beliefs of Massachusetts mathematicians, mathematics educators, teachers, and curriculum coordinators, not the imported views of those from outside of our state. Compare the acknowledgement of this document to the 1995 edition. Only one person is willing to have his name associated with it, as compared with 90 teachers. 90 teachers, many of whom were classroom teachers proud to be included in the acknowledgements in 1995. Those teachers were the professionals who wanted to make a difference for children. Those teachers were the professionals who identified the need to change the way in which mathematics was taught. So many of the initiatives promoted by the Department of Education rely on the commitment of good teachers. But in the development of this framework, the professional knowledge of these same teachers is being dismissed. The message emanating from the Department of Education is one that rejects and dismisses teachers. It makes me wonder why anyone would want to pursue teaching as a career knowing their pedagogical-content knowledge has no value in Massachusetts.

The document before you is not balanced and it does not represent what teachers know is in the best interest of teaching for understanding. The document is a laundry list, a prescriptive set of topics. The prescribed method of instruction is clearly rote memorization and recitation. It does not promote understanding. It does not promote what we know is best practice. It limits the flexibility that teachers need as they strive to make the learning experience meaningful for all students. For example, the rote count by 1's to 30. My sister has a parakeet named Pete and Pete says, Whatcha doing? Hi, Pete. 1, 2, 3." Makes me wonder if we work with him a little longer he could count up to 30 so he meets the standards listed in this new framework.

The teacher-written 1995 document is generating a track record of improved student achievement. Not only are SAT scores the highest this decade, but students enrolled in the Integrated Mathematics Project are not only outperforming their counterparts on the math section of the SAT's, but also the verbal section. On the National Assessment of Educational Progress, NAEP, our students in grades 4 and 8 have scored significantly higher than the national average on the last two administrations of this test and show improvement in each year. On our MCAS, despite the poor scores in grades 8 and 10, 4th graders using a standards-based curriculum performed extremely well. Of the 34 highest performing districts, 82 percent of those districts used Everyday Mathematics, Investigations, or Mathland-- all NST exemplary curricular.

Data from the TIMSS report, the Third International Math and Science Study, clearly indicates that our students do fine in computation. However, they perform dismally in problem solving and reasoning. It is therefore unconscionable to eliminate problem solving from the mathematics learning standards as in this new

document. It is also unconscionable that this document pays lip service to technology. While President Clinton is promoting technology on a national level, recognizing that 80 percent of the jobs in which our students will be employed have not yet been invented, it is critical to reinstate technology into the appropriate learning standards. Middle school students across the state are using graphing calculators to compare and contrast linear, exponential and quadratic functions, a skill that is tedious at best when done by hand.

The basic skills of the 21st century are problem solving, reasoning, and the ability to communicate clearly. It is in the best interests of students, employers, and college mathematics professors to have students who can problem solve, reason, communicate, and connect that which they know to a problem at hand. It is not critical that every student

recite the quadratic formula. One of the learning standards asks for students to identify the density of rational numbers. I ask, are we all not very successful? I will bet none of us can recite what the density of rational numbers is.

Classroom teachers are the ones who have to implement these frameworks. They are the ones who have worked tirelessly to implement strategies and standards that are in the best interests of children. It is important that they and their curriculum leaders have a major say in the development of those standards. The school-based management clause of Ed Reform serves to empower teachers to take a leadership role in matters of curriculum and instruction. The Department of Education should be held to that same criteria. I respectfully request the panel table its vote today and convene a group of mathematicians, math educators, and teachers who will develop a well-balanced mathematically correct curriculum framework that is in the best interests of our children.

**MR. BERMAN:** Good morning. Commissioner Driscoll, Chairman Peyser, members of the Board, thank you for giving me the opportunity to speak. I'm Sheldon Berman, superintendent of schools in Hudson, Massachusetts.

For the past five years, Hudson has put in place significant changes in our mathematics program that have increased both student interest in mathematics and their performance on standardized assessments. The materials we have been using are standards-based materials created through funding by the National Science Foundation and well aligned to the original Massachusetts Mathematics Curriculum Framework.

Although that framework needed minor revisions to provide greater specificity, the document has been a powerful and effective framework for improving mathematics performance. It was developed through a consensual process, bringing together mathematics educators, parents, and state policy makers. As a result of its use, we have seen research results that indicate increases in students' mathematics understanding for those schools using standards-based materials. Having reviewed the current draft with my mathematics curriculum directors, mathematics teachers, and leading mathematics experts statewide, I'm deeply concerned about the draft framework before you.

This framework is a dramatic shift in orientation. It would be a major setback for improving mathematics education in Massachusetts. In addition, the process by which this draft has been developed has been anything but a consensual process. I have discussed these issues with the Commissioner and I'm pleased he has recommended only tentative acceptance and the establishment of a review committee made up of representatives from the Massachusetts Association of School Superintendents and the Advisory Council on Mathematics and Science Education. However, to produce a framework that generates broad-based support and endorsement from the field, as the first framework did, many of the standards will need to change. The focus of the original framework was on conceptual development and understanding. The focus of the current draft is on computational skills. While a computational approach to mathematics instruction has been

successful in moving a very limited number of students into advanced mathematics, it has failed to provide good mathematical literacy for the vast majority of students.

Mathematics programs grounded in the NCTM standards sought to reverse this prevailing trend, while deepening the understanding of students pursuing advanced mathematics. The work on the mathematics framework over the next four months must balance a conceptual and computational approach by once again setting computational skills within the context of conceptual development. I believe that this can be accomplished and I'm willing to work with the Commissioner on achieving this end. However, what you will see four months from now may be quite different from what is currently before you.

The one recommendation I would offer is that you amend the motion to include in Section C changes in the standards themselves, not just the examples and the vignettes. I urge you to listen carefully to feedback you hear today and consider the voices of those teachers, administrators, and curriculum developers who have direct responsibility for improving student performance as you make this decision. I know that I and others in Massachusetts are willing to work with the Commissioner to make Massachusetts a leader in mathematics education. Thank you.

**MS. EICH:** Honorable members of the Board of Education, for nearly 20 years mathematics educators have worked to develop and implement curriculum and instructional practice that makes the study of mathematics accessible to all students, not just those who have been traditionally successful in our subject area. We believe that many female, African American and Hispanic, and poor adults were not well served by their traditional mathematics education, and we are committed to providing better education for their children. Although the new curricular and instructional practices do not look familiar to most adults, they are nevertheless rigorous and concept-based mathematics. No longer do students have to spend years studying computational algorithms out of context, but instead can spend time developing deep understanding of concepts, and applying mathematics to every day situations.

We are committed to the appropriate use of technology as a tool to assist in the analysis and solution of complex problems, knowing full well that without a firm understanding of the meaning of operations, technology is useless. The hand-held calculator, the graphing calculator, and various pieces of geometry software have all allowed students to use mathematics to solve problems rather than learning isolated skills out of context. A rigorous mathematics curriculum is not simply a matter of learning more and more complicated procedures. Rather, a rigorous mathematics curriculum explores topics in depth, develops a deep understanding of concepts and uses, and leads to mathematical power for all students. I cannot state strongly enough that a return to traditional mathematics education is not good for all students. Traditional mathematics education left many otherwise competent adults feeling as though they can't do math. Traditional mathematics education is a race to calculus, where computation is king, and only the strong survive. Traditional mathematics education does not consider the learner first, rather it makes covering the material the primary goal. A return to traditional mathematics education will leave many children out of the opportunities that mathematics provides. We have made progress towards including female, African American and Hispanic, and poor students in the mathematics curriculum. We cannot return to the curriculum and instructional practice that left them out.

**MS. SAFT:** Good morning. I would like to thank you for the opportunity to share my views as a student on this policy. Just because the state has decided to go to a more traditional way of math does not mean it is more beneficial to me or to any of the other students in my school. It is my understanding that the MCAS started out to be a way to guarantee a higher level of mathematics in Massachusetts. But it now seems that the DOE is limiting the different ways that students can be more competitive in and out of

schools instead of letting students explore and find better ways to learn, whether it be through the Interactive Mathematics Program, or not. This restricts the potential of the mind by saying that everyone learns the same way, which isn't true.

The Board members are here today because they were picked for their brilliance and understanding of complex problems. But by settling for more simplistic standards, what is the future of MCAS? What happens to me when I grow up? What does this mean when I graduate high school? How will this prepare me to be a more competitive person in a world that is becoming even more complex as we speak? The IMP programs and programs like it, help broaden students' minds and help them solve more complex problems. I know you all have good intentions but I'm asking everyone on this Board why you would limit my future before it has even started?

**MS. OBLAS:** Good morning. My name is Carla Oblas, I hold a joint appointment in mathematics education at Northeastern University. I'm concerned about many aspects of the revised mathematics frameworks, but in particular I would like to address the oft quoted remark that the changes under consideration are minor.

Research and learning theory tells us that the way to build student understanding is by having students investigate, explore and discover concepts and algorithms. Rote learning leads merely to memorizing for a test and forgetting the day after. I'm attaching to my remarks test data from the Interactive Mathematics Program which is a high school program to allow students to discover mathematics while working on real-life applications in a collaborative group. These data were gathered by each school in their attempt to measure how effective the curriculum has been. You will see that on both MCAS and SAT's, IMP students out-performed the control groups.

We all want our students to know how to add and subtract and solve equations, but these skills are useless unless students know how to create the correct equation to model a real-life situation. The revision of the frameworks being voted on today eliminates this aspect of the original frameworks. We need to produce students who have a deep understanding of mathematics, who can think mathematically, problem solve, communicate about mathematics both orally and in writing, and make connections between various strands of mathematics so that they can keep up with the fast changes occurring in industry and business.

If the curriculum frameworks eliminate these aspects of learning mathematics, we are doing a grave injustice to our students. I urge the Board to reinstate the committee that was working on the frameworks which was composed of knowledgeable mathematics educators and allow them to complete their job unimpeded by political pressures.

**MS. BONDREW:** Good morning. I'm Peg Bondrew, I'm the Executive Director of the Massachusetts Mathematics Initiative. I'm also speaking to you as the Associate Director for Mathematics at the Center for the Enhancement of Science and Math Education, CESAME, at Northeastern University, and as the President-elect for the Association of Teachers of Mathematics in Massachusetts. I should also tell you that I'm a member of the advisory council for math and science, and I'm a past statewide math coordinator. I have a prepared statement that is longer than the points that I'm going to make.

As a member of the advisory council, I would like to give an answer to one of the questions posed to Jim Hamos concerning algebra and geometry and so on. In a recent conversation with Mary Renquist, the co-chair of the writing team for the new NCTM standards, she mentioned that the United States is the only country, according to the TIMSS study, that continues to use this sequence of algebra, geometry, algebra, trigonometry, and so on. I think it came into play in the early 1900's when Harvard started to require two years of mathematics and one of those had to be geometry.

I thank you, Commissioner Driscoll, and members of the Board of Education, for allowing me the opportunity to present comments on proposed revisions to the Massachusetts Mathematics Framework. All of the organizations that I represent have been strong supporters of the work of PALMS. In Massachusetts this work has been focused on the development and implementation of standards that are aligned with those of the National Council of Teachers of Mathematics. Mathematically Correct was founded to oppose NCTM and the curricular programs aligned with NCTM standards. It is impossible for standards to agree with both the tenets of Mathematically Correct and those of NCTM, so you will have to choose.

The revision of the mathematics framework which you have before you is not aligned with NCTM and, if approved even conditionally, will reverse the work of PALMS and that of all of the organizations, school districts, teachers, parents, business people, policy makers, and others who have supported their efforts. I urge you to reject it.

Over 1,000 people commented on the September 1999 draft of the mathematics framework. Almost all of them said that this document represented a major shift away from the direction set by the 1996 framework. There is little evidence that the comments have been sorted and analyzed, as is presently being done with the comments to the science and technology/engineering framework draft. This is not to fault the DOE staff. It is due to the "fast track" on which the revision of the mathematics framework has been put. With few exceptions, the revision represented today seems to include changes that move the document even further away from one which supports the standards-based curriculum programs aligned with the 1996 framework and adopted by many districts. I urge you to expend the needed resources to do a complete detailed analysis of the public comments.

For example, the discussion on technology, page 6, is now in direct opposition to the recommendations in the Discussion Draft of the NCTM Standards as well as to the comments by teachers in their reviews. The discussion on standard algorithms on pages 9 and 10 of the February revision was added without a clear direction from the public comments. This was acknowledged in the brief report given by the DOE staff. It has radically twisted some of the statements from the NCTM draft to give the erroneous impression that NCTM expects teachers to explicitly teach "standard algorithms". I have a press release from NCTM that substantiates this claim. NCTM stresses that a procedure may be appropriate in one situation but not in another. For example, the ability to make change is now included in the standard. If you give a cashier a \$10 bill and the items total \$6.59, what will the change be? How will you calculate that mentally? What algorithm will you use? The question posed is what is 1,000 minus 659. What algorithm do you use? Is it the one in which you cross out some numbers on the top and put in some little 1's? Or is it the one taught to me by Sister Mary Katherine in 1940 -- in which I have to add to the bottom number until I got to the other number? If there is only one correct best way, I claim it's the latter since it's passed down from the Highest Authority.

There are two documents now in use in guiding the development of the MCAS: "The Guide to the Massachusetts Comprehensive Assessment System", published in January 1998, and the Mathematics Curriculum Framework (1996). The Guide complements the framework by, among other things, identifying the learning standards upon which the tests are based and describing specific content knowledge and skills associated with the learning standards that students are expected to demonstrate on the test. It has been suggested that a revision of both documents might combine them into one, with broad curriculum standards in one column, associated with more specific assessment expectations, or standards, in another. Classroom and assessment examples could be drawn from both the previous framework document and also be developed by groups of teachers, mathematicians, and others. This would serve many purposes. The members of both the 1996 framework development and the 1999 revision committees would not feel that their work has been trashed, as they do now and you would regain valuable support and buy-in for the documents from a broad constituency. You would be building on the success of the original documents instead of reversing directions.

**COMMISSIONER DRISCOLL:** Very quickly, without getting into any details. Is the process to bring this document into line with NCTM in your judgment a matter primarily of addition?

**MS. BONDREW:** No.

**MS. UDICS:** Good morning, I'm Rose Udics, the mother of two children in the Arlington Public Schools. I'm not a mathematician and I'm not an educator. I just want to say that changing the math curriculum frameworks right now makes about as much sense as changing one's horse in the middle of a horse race.

Given the time and the money school districts are spending to buy new mathematics curricula to gear curricula to state standards and to train teachers to use them, it's impossible for the Department of Education to imply that the frameworks are already not working well when it's really too soon to tell. As a parent and a taxpayer, I resent having my children's teachers being told, yet again, to scrap lesson plans and costly materials for yet another "new system". What could be more demoralizing? The real bottom line, of course, is how would the proposed changes affect our children's achievement? Who is measuring and factoring in all the variables that go into helping more children to learn more mathematics well? It's not the Commonwealth of Massachusetts. By focusing only on our state's short experience with MCAS, the state, by its own admission, cannot even supply basic answers to the following questions: First of all, how completely have school districts used any published curriculum geared to the current frameworks and state standards? Do teachers use it in all of the classrooms or only some of them? Do all of the teachers teach all of the units or only some of the units? Which units do they teach? Why don't teachers use all of the units? If the school day or the school year is too short to teach it all, what should a school district's policy be toward curriculum? Who is investigating this at the classroom level? An assistant superintendent? Department head? A principal? The Board of Education? How certain is the state that reported answers are true and correct? How many teachers within a district have been thoroughly trained, and retrained when switching grade levels, to teach a particular math curriculum well? And how much do students achieve using a particular curriculum? That is, how do MCAS test scores, and other means of assessing students' achievement, correlate to the number of years of experience students and teachers have had with a particular curriculum? Until DOE can answer these questions and until the media are able to report on this so that the public understands the answers and their consequences, it should not try adjust the curriculum frameworks on the unsubstantiated claim that they are not effective.

DOE simply cannot yet know whether the new curricular methods are or are not effective. As you know, math curricula are somewhat sequential. 8th- and 10th-graders' knowledge build on what they begin to learn in kindergarten. Assessing just two or three years of MCAS scores can't possibly yield enough information from which to judge a program's effectiveness. We do already know that the older traditional ways of teaching mathematics have left most students, who are now adults, unable to use mathematical concepts much beyond counting, some basic arithmetic, and possibly a bit of geometry.

We do know that good teachers are trying exciting new ways of teaching math that deserve careful, impartial, longitudinal studies. The state's focus ought to be on finding out what works best for our children. My own town, which is Arlington, is not a wealthy town, but it has recently invested a lot in a great standards-based elementary math curriculum, Investigations in Numbers, Space and Data, that takes an integrated approach in teaching children about numbers and how people use them. Most teachers at my kids' school love teaching this curriculum, even though they admit it is much more work than the way they taught mathematics in the past, because the kids are so excited and have fun while learning quickly. My 4th-grader is already using algebraic and geometric concepts to tackle interesting problems that I'm helping him with involving proportional areas and quantities, which of course are fractions. My 1st-grader is explaining in words, pictures, and groups of numerals that already show an understanding of multiplication the different ways she knows, for example, that 18 is the total number of boots that nine children can wear. She too is beginning to



use algebra when she writes 3D for dogs, plus 9C for cats, make 12 animals in all. She told me recently that one of her goals was to do hard math, and that is an attitude she has not gotten from her mother. I have to commend her teachers for instilling that at so early an age. One of the best things that her teachers are doing is informing parents about the curriculum structure, premises and goals, and how they use it to teach our children so that we parents can support the teachers' work in the schools.

Please, do not return mathematics education to "the good old days" by espousing a back-to-basics, stringent, tough, traditional approach. We have been down that road before and its failure is all around us in the untold numbers of adults who ran away from math as fast as they could. We have had generations of "data" about the effectiveness of these traditional teaching methods. We know they do not work well.

When I learned multiplication and division, my teachers stood over a classroom of fearful students with a stopwatch and we labored through pages of drills. When I learned algebraic formulas I could plug in the numbers to get the right answer, but today I cannot tell you the use of a sine or why I would want to know how to use one, although I've successfully completed courses in algebra, trigonometry, analytical geometry, statistics and calculus. Why should children learn only formulas and arithmetic facts in the same uninspiring ways that turned so many of us adults off to higher math?

As anyone with more than one child knows, children learn in different ways and at different rates. Learning to understand mathematical concepts and developing good skills takes time. A teacher presenting only one formula or algorithm may not engage a large percentage of students who "just don't get it" the first time, but that may be the only time. Being able to analyze and write about different ways of looking at a math problem takes time. I don't want my kids to be mere calculators who can complete cut and dried problems in a textbook quickly. I want them to think about how to apply their knowledge of mathematical ideas to solve real-life problems.

I also do not want algebra and geometry to be "gatekeeper" kinds of courses -- effectively screening out the majority of kids who don't take them from other "higher" mathematical subjects. These days, what used to be called shop math and business math demand some facility with these skills, too. Most children can easily learn these concepts, just as mine are doing, by revisiting them and exploring them in greater depth and complexity at various ages. The gatekeeper approach is wrong. It with means writing off large numbers of children who are capable of learning higher mathematics if the concepts are taught in different ways all along, from kindergarten through 12th grade. Teachers and schools have been trying to get on the right track, and the state should give the current frameworks a longer chance to work. The state should take time to collect the data it needs to analyze what's working in math education here in Massachusetts and then take the best practices to all the cities and towns. Above all, don't further demoralize parents, teachers and students by emphasizing computing and memorization. Those same traditional methods of drilling that can kill all interest in the subject. I know that all children can learn to use math in their lives and future careers if they have interesting methods with well-prepared teachers and integrated math courses. Parents do care about this issue and we will be watching your decision closely.

#### **REVISED CURRICULUM FRAMEWORK IN MATHEMATICS - Discussion and Vote**

**CHAIRMAN PEYSER:** I want to thank all the speakers for coming today. I thank you for your thoughtful comments in writing and those verbally presented this morning. I'd like to now move on to the first item of the agenda which is a discussion of the revised math framework and I would like to open the conversation with some thoughts of my own on this subject.

There has been much debate over the past several months, and this morning as well, about what constitutes a sound mathematics curriculum. Although it is a very good thing to have such broad attention paid to a topic that is typically the subject of only professional conferences and faculty meetings, I'm afraid to date in many

cases it has generated more heat than light. Here are some basic principles on which I hope we can all agree: (1) Students should be actively engaged in problem solving and reasoning to help them develop a conceptual understanding in mathematics (2) all children should be given the opportunity to master the core skills and content of mathematics (3) students should have an opportunity to learn advanced mathematics as soon as they are ready and (4) the many different combinations of strengths and weaknesses among students demand that a variety of instructional strategies, within classrooms and between classrooms, be employed to maximize learning. The effort to revise the mathematics curriculum framework has been based on these principles, as well as two basic concerns about the 1995 draft.

First, the 1995 framework does not provide math teachers or MCAS test developers with sufficient clarity or specificity. As a result, over the past few years, efforts have been made, both formally and informally, to translate the framework into lower levels of detail. In revising the 1995 document, the Department has incorporated these efforts into the framework itself by breaking it down into two-year gradespans and by developing learning standards within each gradespan that build upon each other and are worded in precise, measurable and understandable terms.

Second, the 1995 framework is, in my view, unbalanced and somewhat prescriptive in its treatment of pedagogy. Anyone familiar with this field knows, and I think the debate that we have been hearing today, and in particular over the past several months, confirms that there is not only great diversity in actual classroom practice, but in opinion within the academic profession with regard to the most effective teaching strategies. In revising the framework, it was our intention to make the document more neutral and balanced with respect to instructional methods. I believe the document before us effectively addresses the weaknesses of the 95 framework. The learning standards are now clear and complete. They are presented in both integrated and single-discipline formats at the secondary level, reflecting the necessary diversity of current practice. The standards include exploratory concepts and skills designed to help teachers introduce students to new subject matter. In addition, the guiding philosophy, guiding principles, and strand overview are thoughtful, straightforward, and evenhanded.

If there's a weakness with the new program, it is that in refocusing on the standards we have given insufficient attention to developing examples of lessons and classroom vignettes that could enrich the framework and enhance its usefulness to teachers. The gap is addressed in the motion before us today by directing the Commissioner to form a working group of educators to develop these sections for incorporation in the final published framework.

Another concern that has been broadly expressed is whether the changes to the mathematics framework will affect MCAS. Of particular concern is whether we are changing the rules in the middle of the game for the class of 2003. The Department has advised the Board that the new framework will not materially affect the MCAS, in part because the new framework is primarily a clarification of the prior version, and in part because any new test questions resulting from the new revisions will not count toward student MCAS scores until 2005. While I accept the Department's assurances, the issue is too important for any doubts. For that reason, the motion directs the Commissioner to refer the new framework to the Mathematics Assessment Development Committee to confirm the Department's technical judgment and to recommend a specific strategy for ensuring that future test items generated from the revised standards will not affect the comparability and validity of MCAS assessments. With that I'd like to ask that someone place the motion on the table and we'll begin discussion.

**DR. SCHAEFER:** So moved.

**DR. THERNSTROM:** Second.

**COMMISSIONER DRISCOLL:** There have been more concerns expressed about this issue than I can remember, certainly since I've been Commissioner. Some of them are, from my perspective, right on the money. Others could even be called unfair. I leave it to each person to search their own mind and heart with what they believe to be right for kids. But the one that strikes me the most is that the process was not open. Whether I agree or disagree really doesn't matter, because if it's that much of a problem, it has to be reality. This Department must be open. It can be heated, we can have disagreements, we can have a gay-old time talking about Pascal's triangle, but there must be a sense of openness and trust. And therefore, I want to assure this Board that with this vote I will go out on the highways and byways personally and have open meetings with all of the people that have views on this issue. I believe that this process has accomplished a great deal.

We began in January of 1999, and I might comment that at that time when we began revising, doing the work, developing a panel and so forth, at least I didn't hear people say we shouldn't revise the framework. We did it not only because the law requires us to do it every now and then, but there certainly seemed to be a great deal of consensus in schools and across this Commonwealth that it was time to make changes to the mathematics framework. A framework, I might add, that even the AAF and others did not rate as highly as our science framework because they were concerned about the clarity of the standards. This led to an assessment document, the so-called bridge document, in January of 1998. It led the Boston Public Schools through Sid Smith to develop back mapping. It led to Michael Smith, assistant superintendent in Greenfield, now superintendent in South Hadley, to develop back mapping because the reality of it is, as we get closer and closer, that MCAS, I think too much, takes on a life of its own. We started out with the right intent. It also seems clear that we may have overrun the play.

The interest was to clarify the standards. The interest certainly on my part was not to abandon all of the work that's been done in mathematics education since 1992 when PALMS began and perhaps before. The interest was to add, not subtract. The interest in fact was to multiply, not divide. I think we would have to say in retrospect that the panel didn't have enough time. They went through a difficult period, as all panels do. It was a very difficult job, but they developed a document in June of 1999. Whether they felt they were obliged to do it or came to it on their own, I can't figure out. We can sort that out at some point. They presented a document that really did do what the charge was. And we have to keep straight which documents are which and what happened and who came and so forth. That document started towards this idea of the clearer standards. I believe that this is not necessarily a step backward, if we get back to the addition and multiplication. We will have the entire framework digitized such that teachers can weigh in on classroom lessons, let alone vignettes and classroom examples. That doesn't have to be in a static document by any means. As the motion suggests, we're going to work towards adding those. I want to suggest what this document does do and why I believe it is so important.

Most of you recognize that it does eliminate a few standards. I would say the ones that were added are not of major consequence in the sense that they were addressed by most teachers anyway: the use of Pythagorean theorem, quadratic formula and added value. They were clarified for strength and moved either into a different strand or to another grade level. In fact, of the 18 standards moved to a new grade level, 12 of them. Some were moved out of 4th grade, some were moved out of 8th grade, and some were moved out of 10th grade. Let me tell you why I think that the document heads absolutely in the right direction.

We can spend a lot of time talking about anecdotal stories and about those teachers who are still involved in "drill-and-kill." Certainly that was the interest in PALMS all of these years: to develop a critical mass, develop professional development, have the summer content institutes and all around developing this richer understanding of the teaching and learning of mathematics. But there are also anecdotes across this state from parents, from teachers --I heard them last night from the electrical union state officials-- that indicate that our kids are not learning the content they should. Let me refer to the current MCAS test for grade 4 where people have commented that the results are better than in grade 8 and 10. There is question number 12 on page 128 :

256 times 98; 66 percent of our 4th graders got that question wrong. Question number 29 on page 136: 789 divided by 9; 57 percent of our 4th graders got it wrong. I have examples in the 10th grade as well. There was a problem with a wrench, five-eighths wrench, and the kids were asked to pick the next highest size. And in all cases it was easily translated to 16ths. And 73 percent of our kids in the 10th grade got that wrong.

People say, "Why are you so adamant about these standards?" It's partly because I'm in a leadership role. I've always believed in the combination skills and understanding content-- what some like to call the "beauty of mathematics". That is why I think we have an obligation to the teachers and the students in this Commonwealth to be very clear about what it is that we expect. It may be counterintuitive, but I do not see at all why that in turn dictates how people teach. I don't see how putting all of the standards in an appendix would therefore suggest how people are going to teach. If teachers choose to go right to the appendix and not read the rest of the document, well, shame on them. But that's not the document's fault. People want that. That's what the feedback was, so we put it there. I can't bring myself not to have that appendix just because people might not read the rest of the document. That's not what I think we should be about.

I will not be able, of course, to satisfy everyone in terms of what they believe and what they think should or shouldn't be in the document. I pledge today to do everything in my power to satisfy their need to be heard and feel that their views are listened to and thoughtfully considered. I frankly think that's been done. I thank the Department of Education staff who has worked tirelessly into the night and so forth, hours and hours and hours. It's at least as much effort, I think perhaps even more effort, than it was in 1995, and I've been around for both. I think it's unfortunate that certain comments have been made. But be that as it may, we can take all of this energy, all of this belief in what's right for kids, and wind up divided. We must add and multiply and I pledge to do that.

**CHAIRMAN PEYSER:** If we can invite the Department staff who have been working on this to come forward. I think it would be appropriate at this time. I do want to add my thanks to the folks that are coming up to the table and others who have been participating in this process in the Department, because I think you have done a lot of great work which has not only been thankless but has been less than thankless in many cases. So with that, let me open up to other Board members for comment and discussion.

**DR. THERNSTROM:** I'd like to clarify something. As somebody who both believes in an open process and who really loved math as a student myself, my concern earlier was precisely what David Driscoll has referred to, that there was too much heat in the room. I wanted to proceed in a way in which I could listen in a very responsible way to a lot of very important comments that were made. I think that earlier request of mine was misunderstood.

I could not be more appreciative of a need for students to understand the structure of math, the logic of math, the beauty of math. I adored math as a student, and I do not understand the basic message of so many of those who came before us this morning, that this document excludes the skills of problem solving, of reasoning, of communication, and connecting. Indeed, you cannot do well as a student on the MCAS test without demonstrating those skills. This is not a rote learning framework. I just do not understand how it has been read this way.

This is not a framework of which the core is drill-and-kill, memorization, returning to traditional mathematics in which, "the race is the race to calculus as the king." I do not see it. I do not understand the point that we are leaving students out, writing off large numbers of students. I think quite the opposite. The specific comment that these frameworks exclude female, African American, Latino students, is something I don't see. I may be dense, but it's not a point that I understand on the basis of looking at these frameworks. I have a huge concern about the disparity in math scores specifically, the gap in math scores on average between whites and

Asians, and African Americans and Latinos. We need to close that gap, obviously. Creating a basis of solid grounding in skills is an essential step to doing so.

No one is saying everyone learns mathematics in the same way. That is a central point that David Driscoll made. We are setting goals. I would hope that good teachers get to them in a variety of ways. My bottom line here is that so much of the criticism this morning doesn't square with what I see in the document that has been put before us.

**COMMISSIONER DRISCOLL:** Let me take a whack at that, because I see it clearly now. I think the point, and I think it's well taken, is that the former document had vignettes, first of all, and statements that said "moving away from" and "moving towards". It was a clear statement by the Department of Education and the Commonwealth of Massachusetts that we, in fact, endorse having kids actively involved in their learning, not just having teachers dictate, et cetera, et cetera. In fact, some critics might say the first document was too heavy in that regard. Nevertheless, this Department stepped forward, not only here but across the country, through NSF, in keeping with NCTM and so forth, and made statements and vignettes that stood behind this idea. And now this document doesn't have it. From my perspective, the motion to add those back in would satisfy that complaint.

When the panel report first came in in June, I was comfortable because there has been so much that we have talked about as to what classroom practices should look like. But I can see now where it looks like we had backed off, that we're going in a different direction. I think the way to try to solve it is the way the Chairman has proposed the motion. Go back out, take people from school administration, MMI, and school districts and come up with a set of classroom practices, a set of vignettes, a set of principles. I do feel a tremendous obligation to our kids, teachers, and parents to be very clear on what it is we expect. I think we have that obligation.

**DR. THERNSTROM:** I don't have any problem with adding those vignettes, David. I don't think the addition of them changes in any way the core of the document that we have presented. They simply will flesh it out because I don't think the core is, as described, some kind of mindless rote learning message.

**MS. CRUTCHFIELD:** Abbie, I would agree with you, but as I look at the motion before us -- first of all, I'm struck by the fact that I've heard no one from the field who is in support of this document. So I'm struck by that. I'm very interested in hearing what folks who are supporting the framework have to say. I'm sure that their feedback is as thoughtful as some of the feedback that I've heard here this morning. That's one thing.

I hear concern about process and content. As I look at the revised motion, I'm looking at issues that have to do a lot with timing. I'm wondering, if we are going to go back out and do some of the things, which I agree with, in this revised motion, why we don't put off our vote today until we have heard from people from the field who support the document. I'm sure there are as many there as are here today who don't support it. We should have some time to take the steps that are outlined in this revised motion. That's all I wanted to say.

**COMMISSIONER DRISCOLL:** You know, this would have been the easy one for me. There's a timing to it all and in my judgment it's very important to get the standards out there. There are a lot of people who have been crying for just this kind of a document. We have had an awful lot of input into this document. If you look at some of the comments we got back on --

**MS. CRUTCHFIELD:** I did, yes.

**COMMISSIONER DRISCOLL:** There's a large percentage that like certain parts of it. So I believe if we can get this out so that the standards are clear then these few months will make a difference. The NCTM standards

will hopefully be out in April. I would hope that we could bring a full document back to this Board in May, but in the meantime I just believe it's very important to get these standards out there for the classrooms and the schools. I think we owe that.

**DR. DELATTRE:** I find myself in the position of believing that there is no refuge to be found in the 95 framework. I have believed all along that we had to get that framework out of play because of its mathematical deficiencies. The deficiencies in the MCAS tests, including those in mathematics, are likewise demonstrable. So for me, the only real question is what the best means are of moving forward to a competent curriculum and instruction in mathematics and other subjects, which has been at the basis of all the framework revisions.

We have to keep trying to get things closer to right and working toward better frameworks and better examples. The only question I'm faced with is whether this motion is necessary. Is it useful in making sure that we continue to work on the revisions of this framework draft to the point that we have a framework that the public can trust, from which teachers will benefit, and on which teachers and parents and the rest of us can rely. I do not believe that the questions that are fundamental here are about examples or vignettes. They are about mathematics.

I know from my own limited knowledge that there is much about mathematics in this framework that we have before us that is false. There are mathematical mistakes in this framework, there are conceptual mistakes of real gravity, and fixing them is not a matter of tinkering with vignettes and examples. Having standards on which we can rely is impossible until the mathematics are right.

So I'd like an answer to the question of how approving this motion gives us greater resolve or capacity to get on with the revision and elevation of this framework draft. I want to say that I'm disposed, if the motion is indeed indispensable to our proceeding, to support it. As you know, there are a couple of revisions that I would like to make. I do not propose them as amendments at this moment but I will tell you what they are.

Procedurally, I want the Association of Teachers of Mathematics in Massachusetts included, explicitly included, in our following through from here. I also want us to move beyond the idea that it's vignettes and supplementary pedagogical materials that are at stake here. I want the motion to say that the Department will have the framework reviewed by mathematicians and revised throughout for mathematical accuracy and soundness, and that we will be seeking recommendations from all these professional associations for corrections to the mathematics content as well as anything having to do with examples and vignettes. In other words, I think we are talking about fundamental conceptual matters here and I'm not really much interested in doing a history of who fell short here or there or who said what or he said/she said. I'm interested in the future and I'm prepared to support the motion if it has these kinds of assurances about fundamental conceptual content and involvement in it.

I will close my initial remarks by saying that I think the prospect of responsibly and conscientiously following through on our obligations, the prospect of having a document that can be presented to this Board if we work expeditiously starting today, the prospect of having a responsible document before September, is nonexistent.

**CHAIRMAN PEYSER:** Let me comment regarding condition D: *Complete a final technical and editorial review of the framework.* Certainly the accuracy and errors of mathematics either at detail level or conceptual level would need to be addressed in such a technical review. This section may be more than tinkering, and I'm not persuaded that it's not, but that's to be determined. To the extent there are flaws in the document in terms of its mathematical accuracy and errors that may have been introduced conceptually, I think those things need to be addressed in the technical and editorial review of the framework, and certainly mathematicians should be engaged in that process. I do think that it's important for us to move the process forward by giving an

endorsement to the document as a means of not setting the process back to square one. I think we need to be clear that we are moving from this point forward rather than going back to the beginning.

**DR. DELATTRE:** If I vote for this, I understand myself to be voting for a series of steps we will be taking. I don't take myself to be voting in endorsement of the present standards or content. I take myself to be saying: All right, let's go from here in the ways that we have described in the motion.

I have no way of saying what will be changed in the course of the further deliberations and work. But then, the changes and modifications will end here, right? I'm certainly not prepared to offer myself up as sufficiently competent or expert in mathematics to say, "Well, we only need to go this far. "

**CHAIRMAN PEYSER:** My position, in terms of the motion and what we ought to be doing, is that we shouldn't be opening the document up, the learning standards in particular, to an open-ended review. The review needs to be specifically targeted towards those things that present technical or conceptual problems or outright errors.

**DR. DELATTRE:** Whenever you think it's appropriate for me to suggest an amendment to the motion that has the references to mathematics in it, tell me, and then we can defeat the amendment or pass it.

**CHAIRMAN PEYSER:** We'll try to complete a round of general discussion and we'll come back to that.

**MR. LaFLAMME:** I think what Dr. Delattre brought up in terms of the scope of the motion is really about equal consideration. I heard the word "timing" brought up again and again in different contexts, and I think that that is my concern with the motion that's in front of us this morning.

I appreciate what the Commissioner said about a shift of sorts and moving towards the clarity and the specificity of the standards. I think that's where we need to be. I agree that it should be up to teachers to say, "Well, these are the standards..." That's why we have these frameworks in front of us in the first place. We are presenting standards and saying "run with it." This is the information, these are the mathematical concepts, let's go from there. I see the value of that paradigm shift, if you will, or whatever you want to call it, because it seems ipso facto to be part of what a framework should be, to be defining those mathematical concepts and leaving the role of the vignettes, or whatever you want to call that, to be different. So I'm in agreement with that shift. But I'm also in agreement with the need for elaboration of these vignettes.

My concern is one of process. In my tenure on this Board, I've been bemused by the common practice of making a decision and passing a motion with a number of conditional clauses that seem to address the crux of the issue at hand. When we talked about the Waltham Equity Plan, I couldn't vote one way or another because the conditions which we would be examining at a later date were fundamental to whether or not we could approve it in the first place. We're talking about looking at the NCTM standards when they come out in April. As for "complete a final technical review of the revised framework," from the 75 minutes of public comment that we have heard today, it seems that the bullet on this motion is complex at best. So I question whether the motion that we have before us today is really worth voting for in that it seems there are too many unanswered questions here.

I'm grateful for the Commissioner's assurance that he will be holding these open meetings. I think the steps that are delineated here are necessary. We need to be looking at those things that Dr. Delattre spoke about: examples, vignettes, looking at the pedagogy involved, looking at the classroom aspect of it, all these things need to happen. I'm finding it difficult to vote for this motion when it seems that it's a string of "ifs" and a string of conditional statements that we need answers to before we can act in support of this framework.

**MR. BAKER:** I'm not smart enough to have comments, I only have questions. Can someone, I guess it would be Sandra, comment on the question about whether or not you can have a consistent structure using this format with the NCTM which was alleged that you couldn't do?

**DR. THERNSTROM:** I would also like in general to hear responses from members of the staff.

**COMMISSIONER DRISCOLL:** I should introduce, starting at my left, everyone knows Jeff Nellhaus and Sandra Stotsky, Tom Noonan. Beth McBridge you may not know, but Beth is our new statewide math coordinator; she comes from North Reading. So I don't know who wants to talk about the NCTM standards which, by the way, won't be out until April, but we have seen drafts.

**MS. STOTSKY:** Your question of consistency with the October 98 draft which we used as a key reference in what we were doing has different gradespan arrangements, and if they continue those different gradespan arrangements, there is no easy way for us to use the document because we still have to translate it into our two-grade gradespans, preK-K, 1-2, 3-4, 5-6, 7-8, as opposed to their gradespan of 3-5, 6-7-8. So their standard arrangement is not going to be the answer in itself regardless of whatever they come out with as standards, because they are going to be covering a broader range of grade levels than what we have here, which is what the field wanted. If that's what your question was directed towards.

**MR. BAKER:** I'm just wondering whether there's more to it. Is it just the gradespans or is there more to it? Is the conclusion you would draw from this that we are doing something so fundamentally different than what everyone else in the country is doing?

**MS. STOTSKY:** No, that is not at all the case. That is part of why I quoted from NCTM material, the October 98 draft, in the first strand on Number Sense and Operations with regard to the standard algorithms. I deliberately tried to quote as much as possible from that October draft so that people could see that we were indeed drawing, to whatever extent we could, on it to support what we were doing. Let me point out that not only do you have quotations from the October 98 draft, but I would be happy to pass out to you a statement from the American Mathematical Society about the desirability of students learning standard algorithms and how they have theoretical as well as practical significance.

**COMMISSIONER DRISCOLL:** Let me answer it this way, Charlie. We think it's consistent, but someone I respect, Peg Bondorew, said no in answer to the question. So that's one of the first things I'm going to do, starting today. I'm going to get more opinions as to what the inconsistency is.

**CHAIRMAN PEYSER:** The other thing I guess I would say is that much of NCTM is really about method as opposed to the kind of learning standard they have describe in the draft framework. This goes back to the fundamental point which is: There's an implication that's being made that following the teaching methods embraced by NCTM will not lead students to the point where they can master or perform well on assessments that are based on these particular learning standards.

It is that contention that I'm not persuaded by. I mean, it's my belief, and in fact it was said here earlier today, that students who have been engaged in NCTM-inspired curricula are performing better on MCAS than other students. It's my belief that if that is true, then there is nothing inconsistent with the learning standards and nothing inconsistent with the MCAS tests that are driven by it and other teaching methods used in the field and embraced by NCTM. I guess my only point would be that I don't think that is necessarily the only way to teach mathematics. There are other people who have strongly held opinions in different directions, and I don't think we should foreclose those pedagogical paths to the field. We need to be more balanced and indeed more neutral in terms of the kind of practices that teachers choose to use in their own classrooms.



**MS. STOTSKY:** There is no inconsistency between what we have in this document and what is in the NCTM document. What we have tried to do is be far more inclusive of that because from the research that all of us have looked at and that I have looked at very extensively, we know there is no body of published credible, consistent research that supports the so-called reformed pedagogies as opposed to efficacy of other approaches. That is why the document intends to be far more inclusive in what it offers and tries to provide for options at grade 8 for different ways of conceiving of curricular programs. So indeed what we are saying is we are certainly consistent with what NCTM is wanting, but we are also going beyond that in trying to make sure that we have more rather than a narrower set of pedagogies available for teachers to use.

**DR. THERNSTROM:** Is there anything else that other staff members would like to add in the way of response to the public comment this morning? I'm obviously very eager to hear from DOE staff itself.

**MR. NOONAN:** My only comment in reference to NCTM is that we split up the learning standards as opposed to exploratory concepts and skills in two columns. I believe the NCTM will probably combine those more, so we will have an issue of trying to separate a learning standard that is accessible. And our feedback from the teachers who are working on the MCAS is they wanted greater clarity around what we were talking about in our standards. So we do anticipate really having to spend some time looking at the NCTM when it comes out and trying to massage that into what we are doing with assessment standards. Jeff also has some comments on the MCAS.

**MR. NELLHAUS:** Based on some of the testimony we are heard this morning, you might be led to believe that the standards start off with verbs like "recite" or "list" or "describe" when, in fact, if you look at the standards themselves, they overwhelmingly talk about students analyzing, explaining, solving problems and creating certain situations. So I don't think this document is limited to a rote recitation of the mathematical concepts. There's an overwhelming number of learning standards that get into what I would describe as a higher understanding of mathematical concepts. So I think that's important to recognize.

Secondly, just in terms of the MCAS, I would like to explain how a new question actually comes to life. I know Jim explained that if there is any new material in this document, it won't actually count towards a student's results any earlier than the spring of 2003. That's because a particular question that we develop this spring and summer that appears on next spring's test actually will appear in the matrix section of the test not only in the spring of 2001 but in the spring of 2002. So it is not until the spring of 2003 that any new material becomes somewhat eligible to become a common question on the test which counts towards students' results. So for those standards that were perhaps moved to a new grade level where some won't count for a student for several years.

**MR. NOONAN:** We do agree with some of the previous speakers. Having been a former math teacher in a public school, I agree with Dr. Greenes. We did have some editing mistakes when we talked about whole numbers and integers. We did hear feedback from the K-4 teachers when we specifically put in the word "rote count to 30". I'm sure we'll be looking at that again. We probably don't need the word "rote" and what it connotes, so we will be looking at that very carefully. When they analyzed this document, they were looking at age appropriateness and trying to match it to the level that they teach, and so therefore we did argue quite a bit as to whether it's going to be counting up to 30 or counting up to 100, but in some of the other standards and in our Guiding Principles we did talk about expanding that so that we do have a good number sense capability. Also, our glossary came from 1995, we put it in a couple of weeks ago, and we have to look at that again. We have not had that feedback for the five years it's been out in the public domain, so we'll again take a look at that.

**MS. CRUTCHFIELD:** I have a question. Does "Take a look at" mean before --depending on our vote today-- before this leaves here?

**MR. NOONAN:** No. The obvious mistakes will be corrected this afternoon, of course.

**CHAIRMAN PEYSER:** The motion is for conditional approval and it will come back to us in a complete format some later date.

**MS. CRUTCHFIELD:** But "timing" is the word of the morning. Should we approve this conditional one today, will it leave the Department and go out into the world on conditional approval, or will these other things, these four steps, be happening to it before it leaves this Department?

**MR. NOONAN:** I would say that it should be --

**MS. CRUTCHFIELD:** Not conditional.

**MR. NOONAN:** It should be accepted so we can start working with the committees that the Commissioner mentioned. We will change the obvious mistakes in editing immediately before it goes out as a document to be looked at by our organizations. We are in touch with our organizations and welcome their support and so the conceptual issues that they have need further discussion. But the small editing, that can take place immediately.

**MS. CRUTCHFIELD:** So conditional approval today would mean that the next step would be that it would go out to organizations, not to the field.

**MR. NOONAN:** We could put it on the web.

**MS. CRUTCHFIELD:** I just want to know. This is not a trick question.

**MR. NOONAN:** We are ready to go on the website.

**MS. CRUTCHFIELD:** So it would go out to the world, basically.

**DR. THERNSTROM:** With the changes.

**MS. CRUTCHFIELD:** I just need some clarity.

**CHAIRMAN PEYSER:** Again, it will not be a formally or finally approved document.

**COMMISSIONER DRISCOLL:** It has to come back to this room.

**MS. CRUTCHFIELD:** A work in progress.

**MS. MCBRIDE:** Members of the Board, I hope I'm coherent right now because I feel like I'm in a state of extreme cognitive dissonance. In my heart I understand all the complaints and all the issues that have been raised today. And yet as a new member of DOE, I want to support the document.

I can't address all the issue but I'd like to talk to you about the NCTM because I'm a devoted member and I have presented their innovative program in geometry for high school and I expect to be at the convention again this

April. I see quite a difference in philosophy or in approach in the standards as they are written here for the state of Massachusetts. Now, the NCTM has a document called Standards for Curriculum. They also have a separate document called Guidelines for Teachers. In comparison, some of the Guiding Principles here align themselves with NCTM, in particular the Guiding Principle relating to problem solving. I think problem solving is the thrust of what we want to do. We want kids to become good problem solvers. I think the names of the standards are in alliance with NCTM but there are differences. I wouldn't want to say they are inconsistent or incompatible but they are different. I can stand behind the motion today because with the amendments that have been made, we need to bring the field back in and include them. I'd like to work toward that process of bringing everyone back into the fold.

**DR. SCHAEFER:** I just have a couple of general observations. Mr. Kendall made the comment that scores are up. I think that that can be disputed. There was mention made of national tests. Some of them are norm-referenced tests in contrast with criterion-referenced, and that does not provide me with much comfort if they are norm-referenced tests. Well, okay, we are not doing as bad as some. I am also focused on the statement that all math groups oppose these frameworks. Finally, I want to thank Mrs. Udics for coming forward, because she's actually the first parent I've heard who favors the current approach to mathematics in the schools over the last number of years.

I have received numerous phone calls from parents across this state who have questioned what is going on in mathematics. They say they have to work with their children every night to try to teach them fundamentals because they claim that's not being taught in the schools. Now, I can't verify that because I haven't been in every classroom, certainly. I'm telling you what I have heard from parents. And when they go to speak to the teachers -- and obviously these are concerned parents -- the teachers say, "It's hard, but maybe in a few years your student will come to understand mathematics." They are very frustrated. So I sense that there is something that needs to be done. And I leave you with that because you're all mathematics educators who have testified today and you need to understand all of this from the parents' perspective. I can't believe that you haven't heard some of this as well.

**MR. IRWIN:** I came here this morning after reading a lot of the materials that we've gotten thinking I was going to support the revised motion. But now that I'm listening I see that it's more than just editing the current document. When we talk about the process, I find it interesting to hear that the glossary was just added a couple of weeks ago. The public comment that we've had here today is overwhelmingly against what we are showing today.

I will take some of the comments with a grain of salt, but I think there are many legitimate issues here. These are the people that are the experts in the field, in mathematics, and this is what we are discussing today. We are not really here to look at the process or anything else. We are here to look at the mathematics and the basic issue. I think we have to take into consideration all the comments we have heard today. I find it strange that we have not had one person come in front of us today supporting this document that we have. I'm sorry, I'm certainly not talking to the crowd, because I realize that we have a serious problem in the schools with mathematics. We have a serious problem and we have our children that are not learning mathematics. What the exact answer is, I don't know. But to hear it overwhelmingly one-sided on this document and not anybody that supports it is troubling.

I wanted to hear what Dr. Delattre had to say as far as endorsing or adding to this motion. But also Marcel had a very good point. There are a lot of "ifs" here, and if we are putting a document out on the web and before the public without showing them the "ifs" of it, people are going to take it as being the newest document. So I still have an awful lot of questions here that have gone unanswered. If this document goes out people are going to take it to be the final document and I have a problem with that.

**DR. DELATTRE:** Would your difficulty, with which I sympathize, be met if we endorsed this conditionally, and sent it only to those places where the motion promises it will go for review, revision and recommendations? In this case it would not go on the website, nor would it be out there to create the confusion to which you rightly point.

**MR. IRWIN:** Yes.

**MS. CRUTCHFIELD:** That would help me a lot.

**MS. GILL:** Me too, yes.

**CHAIRMAN PEYSER:** Unless anyone else has a general comment, Ed, you indicated you would like to make a motion to amend the motion that's pending before us. Maybe this would be a good time.

**DR. DELATTRE:** I propose to amend it as follows:

These are the things that we are directing the Commissioner to do: "Review the revised framework in light of the final standards that the National Council of Teachers of Mathematics is expected to release in the spring, and report, back to the Board, any recommended changes to be made in the framework as a result of that review." I want to add there, after the semi-colon: "have the framework reviewed by mathematicians and revised throughout for mathematical accuracy and soundness," semi-colon. "Have the framework reviewed by mathematicians and revised throughout for mathematical accuracy and soundness," add a semi-colon there. In C, I want to say, "Work with a group of teachers, administrators, and other interested parties, as the Commissioner shall designate, based on recommendations from the Board's Advisory Council on Mathematics and Science Education," and I'm now adding, "the Association of Teachers of Mathematics in Massachusetts, and the Massachusetts Association of School Superintendents to recommend, to the Board, necessary corrections in mathematics content, as well as refinement of standards, examples, and vignettes."

**MR. BAKER:** Can you read that again, please?

**DR. DELATTRE:** "Recommend to the Board all necessary corrections to the mathematics content as well as refinement of standards, examples, and vignettes," and then it reads as it is, "to enhance the framework and provide supplementary pedagogical material." Those are the amendments that I propose. I take it it's not part of the motion, the matter that Bill raised, but I offer the amendments in the spirit of what he raised about who is going to see this and what's going to happen before it's on the web or anyone could have the impression that this is somehow operational. Finally, my overriding reason for believing that we need to pass some sort of conditional endorsement is that I don't want anybody to have the impression that going back to the 95 framework is an option.

**CHAIRMAN PEYSER:** This is not part of the motion, but could I ask a question on this issue of publishing the draft as it currently exists. What sort of balance are you trying to strike here? I sure don't want to keep the document secret or for "certain eyes only" -- those people who are properly authorized to see it. Are you averse to publishing it in any form? Is it that it just needs to have a proper disclaimer or otherwise be characterized in such a way as to not to be misconstrued?

**COMMISSIONER DRISCOLL:** Mr. Chairman, it's out now on the web. It is out on the web as a draft coming to this Board, as it should be. The way this Board has conditioned it, people understand that it's got to come back to this Board with all of the "ifs" that you put on it. I don't want you thinking that you're going to be able to contain it. It should be out there. That's the way the world is: e-commerce.com.

**DR. DELATTRE:** We are not trying to keep it secret, we are trying to keep people from having the impression that it's live and efficacious now when it isn't.

**COMMISSIONER DRISCOLL:** We'll make sure that if the Board passes a motion it is clearly explained on the web so that the spirit of this motion, as well as the letter of this motion, will be clearly known.

**CHAIRMAN PEYSER:** I've got concerns about the amendment to subsection C in particular, the part that talks about corrections to mathematics content as well as refinements to standards. I'm not sure of the distinction you're making between that and the amendment you suggest to section B, where you talk about the review by mathematicians for mathematical accuracy and soundness.

**DR. DELATTRE:** What I'm trying to do, in the first, is ensure that people who know a lot more than I know are working on the mathematics, to check us all. In the second, my purpose is to say that I don't think these groups we are inviting to comment ought to be handcuffed by limitation to vignettes and examples. I welcome their counsel across the board on the framework. The one area that's of greatest concern to me is the mathematics. I take that to be indivisible from the question of standards, and so I referred to standards explicitly.

Now, for me, I don't care what conforms to NCTM and what doesn't. I care whether NCTM is right, where and when it's right, and I want to conform to them when they are right. If they are wrong and people who know more about mathematics and mathematics instruction than I do show us that they are wrong, then I don't want it to conform to NCTM. So conformity to NCTM is no desideratum for the success of the framework, by my lights. I want the opportunity for people to say to us, "Don't miss the boat on this about standards, don't miss the boat on this about mathematics. Delattre, you don't even know this mathematical mistake was here." So I've tried to give the range to say, "Your criticisms, your recommendations are welcome, and not just about examples and vignettes." I don't see the point of making some long list. I've tried to describe the opportunity a little bit more, that we welcome people to tell us what they know about.

**CHAIRMAN PEYSER:** On the one hand, we want to state clearly that we do not intend, as a Board, to go back to the 95 framework, but on the other hand, we are giving such a broad charge to this working group as to perhaps lead us back in that direction. I'm trying to figure out how to provide a charge to these working groups to work in areas that will be productive and useful for the Board's further consideration.

**DR. DELATTRE:** Look, there's no way on earth that anybody is going to successfully offer a conceptual defense of the 95 framework. It's logically impossible. If somebody says, "Look, this standard is more lucid in form X than in form Y and, by the way, this one standard is better captured in 95 than you've got it captured now," that's certainly possible. That's certainly possible.

**CHAIRMAN PEYSER:** I don't know if this solves my dilemma here or not. If we were to say "refinements of specific standards" --

**DR. DELATTRE:** That's fine with me.

**FROM THE FLOOR:** Who gets to choose which one?

**CHAIRMAN PEYSER:** I offer that as a friendly amendment to your --

**MS. CRUTCHFIELD:** -- friendly amendment.

**DR. DELATTRE:** "Any specific standard".

**DR. THERNSTROM:** Ed, I'm still a little bothered. I have the same problem Jim does with the B and C revisions. I just wonder whether there is such a clear distinction there that they cannot be collapsed into one amendment. Obviously, we want mathematical accuracy and soundness and we are open to suggestions from the associations that you name in C, as well as other interested parties. Is there a reason that I'm just not understanding for separating the B and C?

**DR. DELATTRE:** I separated B and C because I don't know how much the superintendents in the state of Massachusetts know about mathematics, but I do know that they have access to expertise that we are unlikely to reach by ourselves. They may be able to bring things to the table that the mathematicians, to whom we have access, may not point out to us.

**DR. THERNSTROM:** Could we add the mathematicians to the C list and therefore collapse the two?

**DR. DELATTRE:** I don't want to collapse them.

**DR. THERNSTROM:** This is a clarification problem.

**DR. DELATTRE:** I don't see any gain in collapsing them. I'm trying to expand the invitation to the groups who are already mentioned.

**DR. THERNSTROM:** All right.

**DR. DELATTRE:** And to add one domain for safety sake.

**CHAIRMAN PEYSER:** I would like to move the amendment, or see if there's a second to the amendment.

**MR. LaFLAMME:** I agree with the language that Dr. Delattre proposes. However, with four conditional clauses in the first place, and the introduction of other conditions, I can't imagine us saying that we are adopting much of anything when there are question marks all over the place.

**MR. BAKER:** The way people typically make policy, particularly policy that at the end of the day you don't expect to get consensus on, is that you support direction. By supporting direction you provide guidance to the people who are trying to get to wherever it is you're trying to get to. I view this as a directional vote. I don't view it as a vote on a final standard. I absolutely view it as a directional vote, getting back to Ed's point about 95.

**MR. LaFLAMME:** Then can we phrase it in such a way that it is explicitly stated that it's a directional vote and not an approval of the framework in front of us? It seems to me that they are different.

**MS. CRUTCHFIELD:** You're referring to the direction that the amendment is going in. This is like watching the making of sausage, it's kind of messy. At some point I would like to vote. I'd like to move Ed's amendment forward.

**DR. DELATTRE:** You'll notice that when I talked about the two amendments I did not offer as another amendment the word "endorse" in place of "adopt". "Adopt" has a technical meaning and we might be wise to say "endorse as a matter of direction." I don't really care because I think it's a directional motion either way. But if the word "endorse" would answer these concerns, I'm happy to add it to the amendment.

**DR. SCHAEFER:** May I make another comment? I guess I'm not so sure that we're going in the right direction. Bill made a comment before that we haven't heard from one person who favored the frameworks. I think that we all know that people who come out for various assorted things are those who object, generally speaking. Three years ago, I'd like to remind this Board, we had a draft of history frameworks and the objections from the field were overwhelming. So we went back to the drawing board and came up with a framework that is so flawed that we now have to redo it. And I'd like the Board to keep that in mind in terms of the direction that we are now going in.

**On a motion duly made and seconded, it was:**

**VOTED:**           **that the Board of Education, in accordance with Chapter 69, Section 1E of the General Laws, conditionally endorse the revised Mathematics Curriculum Framework as presented, and direct the Commissioner to:**

**(a) refer the revised framework to the Mathematics Assessment Development Committee to confirm that the framework's learning standards will not materially affect the comparability and validity of the MCAS assessments, and report back to the Board on any recommended changes to be made in the framework as a result of that review;**

**(b) review the revised framework in light of the final standards that the National Council of Teachers of Mathematics is expected to release in the spring, have the framework reviewed by mathematicians and revised throughout for mathematical accuracy and soundness, and report back to the Board on any recommended changes to be made in the framework as a result of that review;**

**(c) work with a group of teachers, administrators and other interested parties as the Commissioner shall designate based on recommendations from the Board's Advisory Council on Mathematics and Science Education, the Association of Teachers of Mathematics in Massachusetts, and the Massachusetts Association of School Superintendents, to recommend to the Board necessary corrections in mathematical content as well as refinements of any specific standards, examples and vignettes to enhance the framework and provide supplementary pedagogical material; and**

**(d) complete a final technical and editorial review of the revised framework, to be approved by the Board before its final publication.**

**Upon final publication, the Commissioner shall distribute copies of the framework to the Joint Committee on Education, Arts and Humanities for their information, and to public schools and other interested parties throughout the Commonwealth for use in improving curriculum, instruction and assessment in Mathematics.**

**Further, that the Board extend its appreciation to the many individuals and groups statewide that helped to revise and strengthen the Mathematics Curriculum Framework as directed by the Education Reform Act of 1993.**

The motion was made by Ms. Crutchfield and seconded by Mr. Irwin. The vote passed 7-2. Dr. Thernstrom and Dr. Schaefer opposed.

**CHAIRMAN PEYSER:** It's seconded. Just to repeat what I believe the motion to be: it would change in the introductory sentence the term "adopt" to "endorse", so instead of "conditionally adopt" it would be "conditionally

endorse. In paragraph B, following the last line it would state, reviewed by mathematicians and revised throughout for mathematical accuracy and soundness. Paragraph C, after the reference to the Board's Advisory Council on Mathematics and Science Education, insert a reference to the Association of Teachers of Mathematics in Massachusetts, and after the clause "to recommend to the Board" include the words "necessary corrections to mathematics content as well as refinements of any specific standards, examples, and vignettes". Have I captured it all?

**CHAIRMAN PEYSER:** I'd like to move the original motion as amended. All in favor of the original as amended?

**DR. DELATTRE:** Aye.

**MR. IRWIN:** Aye.

**MR. LaFLAMME:** Aye.

**DR. GILL:** Aye.

**MS. CRUTCHFIELD:** Aye.

**MR. BAKER:** Aye.

**DR. THERNSTROM:** Opposed.

**DR. SCHAEFER:** Opposed.

**CHAIRMAN PEYSER:** Was that not clear on what the motion is? It's the amendment we voted on first, now it's the motion.

**CHAIRMAN PEYSER:** Seven to two. It's adopted. Thank you all very much.

**MS. CRUTCHFIELD:** It's endorsed.

**CHAIRMAN PEYSER:** The motion was adopted, the motion itself is an endorsement.

**CHAIRMAN PEYSER:** Believe it or not, there are other things on the agenda today. In fact, there are quite a few of them. There may be a little sprinting that goes on from time to time here, but the first thing I'm going to do is readjust the order of our agenda in order to accommodate our guests and in order to move up the items that are going to take a little bit more time. Specifically, I want to jump to item 6 which is a discussion of the amendments to the Boston Student Assignment Plan. Superintendent Payzant is here to present those changes to us for consideration. There will be no vote on this today. This may, I think, come back in a month as a specific amendment for consideration, but for now we are having a discussion. Following that, I would like to go to the charter school section, in particular the renewal of the Atlantis Charter and the award of the charter to the New Bedford Global Learning Horace Mann Charter School. We'll try to move in that order. At that point I will check to see where we are and figure out what comes next. But let me turn it over to Superintendent Payzant. Thank you for coming.

#### **AMENDMENTS TO BOSTON STUDENT ASSIGNMENT PLAN - Discussion**

**DR. PAYZANT:** Thank you. My name is Tom Payzant, I'm superintendent of Boston Public Schools. Members of the Board, thank you for the opportunity to make a few comments at the outset. My purpose is to show that the Controlled Choice Student Assignment Plan in Boston, as modified by the school committee in July of 1999 and again in November of 1999, meets the intent, goals, and objectives of Boston's original controlled choice plan first implemented in the 1988/1989 school year, and the requirements of the Commonwealth Racial Imbalance Law.

It is my hope that at the appropriate time, in a month or so, that the Board does approve the plan as modified under the Racial Imbalance Law. The State Board has been approving modifications to Boston's plan over the years. I'd like to make my brief comments in four areas: first, to say a word or two about the



context and demographics of Boston in the year 2000; second, to speak briefly to the modifications for the Controlled Choice Student Assignment Plan; third, to tell you how we plan to monitor the results of the plan and consider the necessity of making additional modifications to it based on the data that we analyze as we work with it over the next several years; and, finally, just a couple of comments about Boston's new school projects.

First of all, to set the context, we have about 63,500 students. The racial breakdown is as follows: 49 percent black, 27 percent Hispanic, 9 percent Asian, 15 percent white, and less than 1 percent Native American. We do have transitional bilingual education programs in several programs that serve a number of students that come from countries in every part of the world. The actual Controlled Choice Student Assignment Plan is based on dividing the district into three geographic zones known as east, north, and west zones. And there are 35 to 40 elementary schools in each of the zones, about seven or eight middle schools, and people can choose from schools within the zone where they reside. There are also citywide schools, five in fact, and all of the high schools are citywide in terms of choice, so it doesn't matter which geographic zone you live in.

Secondly, I want to comment briefly on the modifications to the plan. In July of 1999 I recommended and the school committee approved a modification to remove race as a factor in the controlled choice plan. That was a result of several factors that we considered at great length and with great care. First of all, there was a suit brought in Federal District Court challenging our student assignment plan. Second, we had had several court cases involving our exam schools and one of the cases in Federal District Court only to be overturned in the First Circuit, that was the Westman case, on a 2-1 vote of the panel that heard the case -- clearly said that we could not use race as part of our exam school admission process. Furthermore, we looked at the change in legal landscape around the country and we also considered the changing demographics in the school district and the diversity not only across racial groups, but within racial groups. So the modification was not just to remove race from the plan but to keep other aspects of the Controlled Choice Student Assignment Plan; in other words, keeping the assignment zones, keeping choice as a major option for parents, having some citywide schools, giving preference to bilingual and special education programs placement in schools. All of the elements of the controlled choice plan remained in place.

We did some simulations to see what the impact would be as a result of removing race from the plan, and based on the data that we had to work with at the time, which was 1998-99 school data, the result of removing race was really very, very small. In fact, we found out we only had three additional schools that would not meet the racial guidelines in one or more grades were they to remain in effect. So in the July vote the school committee accepted that recommendation to remove race. They also directed me to continue the public dialogue, to examine the control choice plan, and see where other modifications needed to be made that would ensure our ongoing commitment to access and equity within the student assignment plan. They also directed me to ensure that the plan continues to reduce racial imbalance, make sure that we don't increase racial isolation, and that we comply with the Racial Imbalance Act.

I spent the time between July and November doing as the school committee requested, talking with groups in public dialogue, looking at various aspects of the plan, and coming back with recommendations in November. The major one was that under the previous plan with the racial guidelines in effect, there was 100 percent preference given for parents who live within a walk zone defined as, for an elementary school, living within a mile of the school, for middle school, living within a mile and a half of the school. There was concern that if, with the removal of the racial guidelines, we maintain the 100 percent walk zone preference, that that could be problematic. So I recommended that we make a modification which would result in 50 percent of the seats in a school being set for walk zone preference and the remaining 50 percent for parents who live within one of the three geographic zones to choose from schools even though they didn't live within that walk zone.

I would remind the Board that our assignment plan just focuses on three transition grades: kindergarten, which is the entry point to elementary; 6th grade, which is the entry point to middle school; and 9th grade, which is the entry point for high school. So you don't have assignment up for grabs in every grade. It's only those three transition points.

I also recommended, because there are some students who don't have a walk zone school, that they would be given some preference for their first or second choice school within the assignment zone and not be disadvantaged because they did not have a walk zone school. So that was a modification that was recommended and adopted by the school committee in November and is significant in terms of our commitment to continue to make sure that there is an effort to maintain and improve quality, to make sure that access is there to opportunity, to make sure that racial isolation doesn't increase and that racial imbalance improves.

Now, third point: What do we plan to do to monitor the results of the plan and consider what the data might suggest should be further modifications? As part of the school committee order, I am obligated every year at the end of the school year to present a complete plan with data analysis on what has happened as a result of the choices that were made by parents, the actual school assignment patterns -- and obviously, in the first year you can't establish a trend -- but compared to what existed before and then over two or three years, whether there are trends as a result of the modifications in the plan.

The Department of Implementation, which is a unit within the School Department that has full responsibility and is accountable for monitoring and managing the implementation of the student assignment process, does not wait until the end of the year. They do checkpoints at various times through the year and give me data. For example, we look at what schools are over and under chosen. We look at what's happening with new students that are coming into Boston from outside. We look at all of the racial data, achievement data and the like. And then we have some things that are available to us in terms of consideration of modifications. If we saw some slippage, for example, in certain schools, we could say, "Well, we are not going to have a 50 percent walk zone preference in those schools." We could reduce it to 30 or 25 or 20, to offset any adverse impact that might appear. We could establish more flexibility so that there could be opportunity for parents to choose across an assignment zone. If you lived in the west zone and there was a school in the west zone you were interested in that was nearby, you could choose that one. Or we could create additional citywide schools. There are a number of things we could do in terms of additional modifications if the data suggested that we needed to do so.

The final thing I want to comment on is the construction of new schools. I don't think you would be surprised, any of you, that one of the biggest challenges has been finding sites for schools in Boston. There aren't lots of sites just waiting for the city to come in and use for schools. And the cost of sites -- the good news is the economic boom has done a lot for a lot of things, but it's also ratcheted up the price of property and leases and other facilities and so on. We do have an interesting phenomenon.

We have the need for additional middle school and high school seats over the next five to ten years because of the bulge of students coming up through the system, and the three new school projects that are underway now are designed to reflect the first bulge. We have picked sites in areas of the city where there are the highest concentration of school-aged children who do not have sufficient schools to attend anywhere close to where they live. The first is in Orchard Gardens in Roxbury which will be a K-8 school that will serve 738 students. The second is a middle school in Brunswick Gardens which is in the South Dorchester/Roxbury area and will serve 786 students. And the third is in Mattapan which will be a 6-8 school that will serve 786 students. We are trying to do several things with these schools to make sure that they, again, meet the goal of being as diverse as we can make them and that they advance our commitment to reduce racial isolation and improve racial balance.

All the schools will have regular education, special education, bilingual education programs. We are in the process of beginning contract negotiations with the Boston teachers union and we have a proposal on the table which would make all three of the new schools pilot schools which would be the equivalent of what I call in-district charters, and would provide flexibility and would be a greater draw for parents from the other parts of the assignment zone. And we have every intention of applying, because that's the policy, the 50/50 distribution of seats. 50 percent in the walk zone and 50 percent available to those from outside of the area. So we think the siting of the new schools and the need to have additional seats and maintain our commitment are all doable with the proposals that we will be submitting to the Department in June.

In conclusion, I would say that the school committee and I are confident that the Controlled Choice Student Assignment Plan as modified in 1999 continues to assure both choice and access beyond the student's particular neighborhood in order to preserve racial and ethnic diversity, and reduce the likelihood of racial isolation within schools. In addition, I would say that the modified plan retains all of the educational benefits of the original controlled choice plan including the promotion of school improvement, continuity and stability of placement of students, equitable distribution of resources, educational opportunity district-wide, and a commitment to monitor and make adjustments as necessary to make sure that we comply with the Racial Imbalance Law and our own commitment to diversity within the schools.

The last point I would make is if controlled choice went away and somebody said, Let's just draw neighborhood attendance boundaries, that we would run the risk in a few areas of the city, even though most neighborhoods are much more diverse than 10 or 15 years ago, a few schools, perhaps, becoming more racially isolated. With the controlled choice plan in place, we believe that that will not occur. If it begins to turn that way, we have the mechanism to make adjustments to correct that situation. Thank you. I will be happy to answer any questions.

**CHAIRMAN PEYSER:** Thank you very much. I do want to applaud your efforts for creatively managing often conflicting mandates of policy goals. This is a very fine line you're walking and you've done a good job in trying to balance the competing demands on the system. Couple of quick questions. You refer to the schools, when you did the simulation, falling out of the sort of boundaries or the range of demographics, and you first make specific reference to an ideal racial percentage. What is that percentage?

**DR. PAYZANT:** Under the racial guidelines, the actual racial demographics of each zone, each of the three zones were determined and the range for being in or out of compliance under the racial guidelines was plus or minus 15 percent.

**CHAIRMAN PEYSER:** Of the zone average?

**DR. PAYZANT:** Of the zone average.

**CHAIRMAN PEYSER:** You suggest that the change in policy has a marginal effect on the number of schools falling in and out of these ranges, although it appears that basically half the schools are out of the range. Could you explain that?

**DR. PAYZANT:** I think it goes back to the demographics and the fact that 49 percent of the students are black, 27 percent Hispanic, 15 percent white, 9 percent Asian, and when you look at the demographics of the zones, they pretty much track that. Two of the three zones are very, very close to the system-wide average and one is off a bit. And when you just look at the numbers and the distribution of students and the mathematics of choice on the one hand where people tend to go all over, and those who want to be close to home on the other, it's that reality that you can't get beyond.

**DR. THERNSTROM:** I also very much appreciate your trying to negotiate the competing regulations.

**DR. SCHAEFER:** Threading the needle.

**DR. THERNSTROM:** Threading the needle, right. You're offering a plan of controlled choice without racial considerations, and given the demographics of Boston, I'm wondering why the controls at all. That is, I strongly believe myself in integrated schools but I would define all of Boston schools as integrated in the sense that I don't think members of minority groups, that is Blacks, Hispanics, Asians, are fungible. They are not fungible members of one group as opposed to whites. In any case, we are down to 15 percent whites. I'm not in the school system and I'm not sure, at this point, what we are gaining educationally by compromising choice and continuing with the controls. I would like to see integrated schools -- and indeed the schools of choice like the Renaissance. There is an argument to be made that when you really open up choice, you are going to get, in fact, parents back into the school system, back into the public school system, that have left it and, therefore, more integrated schools.

**DR. PAYZANT:** I spent a lot of time last summer dealing with just the issue you raise. As expected, I found, very quickly to generalize it, there were two debates about this going on in the city, and a different framing of the debate depending on whether you were talking with Boston Public School parents versus whomever else you might talk to in the city. And the simple way of framing the debate was: Why not let children go to school in their neighborhood and make that sacrosanct? And very quickly the realities of that hit you in that we have three circumstances: (1) there are neighborhoods that have schools with more seats than are necessary to serve the school-age population; (2) we have other neighborhoods where it's about a right fit, if you were to compare residents and school; and (3) we have some major areas where there's a real imbalance, a much higher concentration of children than schools available to serve them.

The second part of the debate is in terms of the parents. They wanted some controls in terms of choice to make sure that there was some kind of equal shot at access to what are perceived to be the best schools until all 130 meet their standard of being very, very good. And I heard from parent focus group after parent focus group across racial lines and different parts the community, "Don't take away our choice and access until we are convinced that the quality has risen uniformly across the system."

The third point was more a remnant of history, which I can understand emotionally although not rationally. Emotionally, there was a time in Boston where resources were not allocated equally and it depended on what neighborhood you lived in, what arguably, some inequities in distribution of resources. We have done a lot to correct that in recent years but there's still a lack of trust, and that's going to continue. So for all of those reasons, parents were saying, "Don't take choice away, the competition is good, schools will improve, but you've got to control it a bit to make sure that there is equal access and some people have the right to make a choice while others don't."

The other thing we found is people are choosing for lots of different reasons, although quality of education is the key from the data we have from our main study. We have a number of people who choose because they want their child to be close to a child care provider, they want them to be closer to their place of work. That message came through very clearly in those focus groups and in the debates at school committee meetings and other public forums.

**DR. THERNSTROM:** I'm very sympathetic to the historically grounded lack of trust in going to a choice system, though I think we are way past the era where some schools would be deprived of resources depending on their racial and ethnic mix. I agree with you, people make choices for different reasons. Are you saying that without the controls in place the distribution of students, in what are perceived to be the better schools, would

become less fair about the access to those “better schools” than if it were simply an open choice, no controls program? And what is the relationship? I’m just puzzled as to what the relationship is between taking the controls off, allowing real choice, first come-first serve, random, whatever you want to do, and the equity in terms of access to the “better schools” -- those that are perceived as such.

**DR. PAYZANT:** Part of the debate was defined in terms of you can take the choice off except make sure that I get a right to go to my neighborhood school. That was one framing of the argument. Then that leads to other people saying, “If you happen to live in a neighborhood that’s got a great school, that works for you, but it doesn’t work for me. I don’t want my child to go to the school that’s closest to where I live because I don’t think it’s as good as yours. I want some access and not have that be determined by whether I have in my circumstances the ability to live in the neighborhood where I think the good schools are.” So unless you put some controls on it, you can’t provide equity of access for various groups in various neighborhoods in the city.

**DR. SCHAEFER:** This is somewhat hypothetical, but not so farfetched. What would happen if the Racial Imbalance Law were overturned? Then where would that leave you?

**DR. PAYZANT:** It would leave us, at this point, committed to our controlled choice plan because we think that it does meet the standard of our overall goals in the school district of making sure that we don’t increase racial isolation in the schools. More importantly, until we reach the goal of having high quality across the board, we’ve got some way to be fair about who gets a shot at going to what schools.

## **CHARTER SCHOOLS**

### **a. RENEWAL OF CHARTER FOR ATLANTIS CHARTER SCHOOL (Fall River) - Discussion and Vote**

**CHAIRMAN PEYSER:** Next item will be the charter school renewal and the new charter application.

**COMMISSIONER DRISCOLL:** I may have done this before but let me again introduce our new Associate Commissioner, Susan Barker. To my left and her right is Hannah Richman from the office, and to my right and her left is Jose Afonso from the charter school office.

**CHAIRMAN PEYSER:** Maybe the way to proceed is to have a quick summary of the findings and recommendations on Atlantis and we’ll have some discussions.

**MS. BARKER:** We took the accountability process materials generated by the charter schools before you, and went through it looking at three questions for renewal: Is the school an academic success? Is it a viable organization? Is it faithful to the terms of the mission of its charter? We answered in the affirmative with all of those questions and looked very carefully, given all of the evidence that we had, at the organization’s viability. Given that information, we worked with the Commissioner for the proposal that you have in front of you, which is to renew the charter for Atlantis conditional on the following the list of recommendations. In essence, looking at the governance of the school and making some recommendations about that.

**CHAIRMAN PEYSER:** Thank you. I want to preface my remarks by thanking the Commissioner, and Suzie in particular in the first couple of months on the job, for handling what has been a somewhat problematic process of getting to this point. I just want to make a couple of comments on that.

The application for renewal of Atlantis Charter School presents the Board with a difficult decision. Based on the evaluation report, the school warrants renewal, but just barely. The school’s overall academic performance is mildly positive, but mixed. For example, based on three years worth of Stanford 9 reading test data, all of the school cohorts, except one, show consistent progress from moving below grade-level performance to above grade-level performance. Stanford 9 results in math, however, have not produced similar improvement. In general, students who entered Atlantic below grade level in math are still below grade level.

MCAS results in 8th grade are encouraging, particularly in English, with an average score for 1999 just below the state average and six points below the Fall River average. Atlantis' 4th grade MCAS performance, overall, was about the same as Fall River, which was well below the state 3 average. Beyond their analysis of the test data, the evaluators note that academic standards in grades seven and eight, at the time of inspection, were inadequate. According to the report, and I'm quoting now directly, "in practice, both the content and its presentation to students lack the rigor necessary to promote academic success. A lack of command of content area knowledge on the part of faculty and insufficient classroom resources result in students being minimally exposed to demanding material and opportunities for in-depth inquiry." While there is reason to believe that there have been some improvements since the evaluators visited the school last year, these findings should give us pause.

Your report is most troubling in its evaluation of the school's management. In particular, the report states that the board of trustees has not been sufficiently open to the school community or the public at large. Moreover, the poor relationship between the board and the staff has led to heavy turnover, including the loss of many of the school's better teachers and administrators. Without new leadership and a reconstituted governance structure, I'm not convinced Atlantis can fulfill its academic promise or live up to its other commitments under its charter. I'm prepared to vote for renewal of this charter, but only in light of the conditions recommended by the Commissioner. I expect the Department to closely monitor the school over the next several months to ensure that these conditions are met fully and to determine whether the school is making adequate progress in stabilizing the staff and improving its academic programs. Does anyone else have any comments or thoughts on this application for renewal? If not, I will entertain --

**DR. SCHAEFER:** Just to reiterate. I agree with what the Chairman is saying about the problems and that needs to be monitored carefully.

**CHAIRMAN PEYSER:** I guess I would add further, the credibility and ultimate success of the charter school movement in Massachusetts depends on the accountability process being meaningful. If we lack the courage to call it as we see it, I think the underpinning of this movement will collapse. This presents a difficult case in that there are some positive signs, but there are some reasons for concern. For good or real, we are forced to make a decision at a particular point in time rather than waiting for all our questions to be answered. But given where we are, given where the school is, I'm comfortable that the motion before us is appropriate in light of the conditions and in light of the oversight that needs to follow.

**MS. CRUTCHFIELD:** Jim, will this information, the written documentation, come back to the Board after May 1?

**CHAIRMAN PEYSER:** I don't know. Commissioner, how will you proceed?

**COMMISSIONER DRISCOLL:** I certainly want to report back to the Board, because it's a conditional renewal. So I plan to implement what is said and have the school implement what is said, and then report back.

**On a motion duly made and seconded, it was:**

**VOTED:**           **that the Board of Education, in accordance with General Laws chapter 71, section 89 and 603 CMR 1.00, and subject to the general and specific conditions set forth below, hereby grants a renewal of a public school charter the following school for the five-year period from July 1, 2000, through June 30, 2005, as recommended by the Commissioner:**

**Commonwealth Charter:**

**1. Atlantis Charter School**  
**Location: Fall River**

Said charter school shall be operated in accordance with the provisions of General Laws chapter 71, section 89 and 603 CMR 1.00 and all other applicable state and federal laws and regulations and such conditions as the Commissioner may from time to time establish, all of which shall be deemed conditions of the charter.

Said charter school shall have by May 1, 2000, appointed new leadership to its board of trustees, endorsed by the Commissioner, that is capable of ensuring skillful governance of the school.

Said charter school shall, by May 1, 2000, provide written document for the Commissioner's approval that:

- Clearly specifies the roles, responsibilities, and practices of the board of trustees, particularly in regard to; board development; the methods by which it determines school policies; the methods by which it oversees and supports the school's administration and staff.
- Clearly specifies the policies and practices by which the board of trustees exercises oversight of the school's financial management.
- Clearly specifies the school's plans for: organizing its administrative structure for the 2000-2001 school year and beyond in a manner that provides effective leadership of the academic program; and for appointing and retaining outstanding individuals to positions in that structure.
- Provides evidence that the school has attained sufficient facilities for its academic program for the 2000-2001 school year and beyond.

The motion was made by Ms. Crutchfield and seconded by Dr. Schaefer. The vote was unanimous.

**b. AWARD OF CHARTER TO NEW BEDFORD GLOBAL LEARNING HORACE MANN CHARTER SCHOOL - Discussion and Vote**

**MS. BARKER:** There were only two Horace Mann applications that came to the charter school office that went through the process of all Horace Mann charters. We put one forth, the New Bedford Global Learning Charter School, for the Board's approval. As summarized in your documents, that is a school that will have grades 5 to 12. It's going to be a global learning charter school, they envision it as serving as a citywide education, research and dissemination center. It has strong support from many members of the community as well as the education community and the researcher communities.

**On a motion duly made and seconded, it was:**

**VOTED:** that the Board of Education, in accordance with General Laws chapter 71, section 89 and 603 CMR 1.00, and subject to the conditions set forth below, hereby grants a charter to the following school as recommended by the Commissioner:

**Horace Mann Charter:**

**New Bedford Global Learning Charter School**

<b>Location:</b>	<b>New Bedford</b>
<b>Number of Students:</b>	<b>400</b>
<b>Grade Levels:</b>	<b>5-12</b>
<b>Opening year:</b>	<b>2001</b>

**The Horace Mann charter school shall be operated in accordance with the provisions of General Laws chapter 71, section 89 and 603 CMR 1.00 and all other applicable state and federal laws and regulations and such conditions as the Commissioner may from time to time establish, all of which shall be deemed conditions of the charter. The Commissioner shall conduct a legal review of each charter application to ensure that it complies with all applicable requirements.**

The motion was made by Ms. Crutchfield and seconded by Mr. LaFlamme. The vote was unanimous.

**PROPOSED AMENDMENTS TO REGULATIONS ON ACCESS TO EQUAL EDUCATIONAL OPPORTUNITY (603 CMR 26.00) - Discussion and Vote to Seek Public Comment**

**CHAIRMAN PEYSER:** There's one piece of business that requires a vote. Specifically, this is point 5 in the agenda which is Proposed Amendments to the Regulations on Access to Equal Educational Opportunity, and if you will recall, back in December, we discussed the basic elements of this essentially around issues of discrimination and harassment with respect to sexual orientation. The regulations have been drafted to reflect that conversation and reflect the changes that have been recommended in part by the Gay and Lesbian Youth Commission, and they are now back to us in order to send them out for public comment.

**On a motion duly made and seconded, it was:**

**VOTED:**           **that the Board of Education, in accordance with G.L. Chapter 69, section 1B and chapter 76, section 5, hereby authorize the Commissioner to proceed in accordance with the Administrative Procedure Act, G.L. chapter 30 A, section 3, to solicit public comment on the proposed amendments to the Regulations on Access to Equal Educational Opportunity, 603 CMR 26.00, as presented by the Commissioner.**

The motion was made by Ms. Crutchfield, and seconded by Mr. Irwin. The vote was unanimous.

**CHAIRMAN PEYSER:** This meeting seems to have lasted a month. Essentially what you have here is kind of a schematic of where we think we had consensus around basic goals and strategies we should be pursuing in the coming year and perhaps beyond. As you can see, it is all tied into the primary goal of Raising Student Achievement. The two general headings under which the other initiatives or strategies and goals are grouped is Accountability for Results and Creating Conditions for Effective Schools. What I'd like to do is begin with whatever discussion Board members would like to have on the content of this. Then, we can move for adoption of it as a guide for us in developing agenda items going forward. This will ensure that we are not only handling those things which we need to handle as a result of just the natural cycle of regulations and statutes, but also that we are focusing attention on those issues that we think can have the greatest impact on raising student achievement.

**DR. SCHAEFER:** I don't know whether it's an amendment or an addition, but under Creating Conditions under Recruiting Talented Professionals, it seems to me that there's something missing between those two, namely, all the incentive programs that we have been working on and advertising. Maybe we don't want to put it in now, but hopefully some of the recommendations of the Joint Commission would be approved by this Board, so I think we should allow some place in there for those.



**CHAIRMAN PEYSER:** I appreciate that. I had been conceptually putting those under the heading of Enhancing the Professional Status of Teachers. I'm comfortable with being more explicit for creating incentives for people entering the profession.

**DR. SCHAEFER:** Those things I mentioned were more by way of recruitment.

**MR. PEYSER:** Is there a way we might phrase it that we can put it in here?

**DR. THERNSTROM:** Roberta, this should cover recruitment, Enhancing the Professional Status. That has everything to do with recruitment as well as the status of the teachers.

**MS. CRUTCHFIELD:** I think I agree with Roberta that we need something that. I think that Enhancing Professional Status of Teaching can mean a lot of things. I'm interested in measuring impact of bidding on success of current recruiting efforts. I think we talked about collecting data and figuring out what we are doing right so that we can continue to build on what we are doing well.

**DR. SCHAEFER:** How about just develop incentives programs?

**DR. THERNSTROM:** We already have incentive programs.

**MS. CRUTCHFIELD:** Continue to develop.

**CHAIRMAN PEYSER:** Develop and improve.

**COMMISSIONER DRISCOLL:** Develop and improve.

**CHAIRMAN PEYSER:** We can wordsmith a little bit more off line, but I get your general point. It's a good one. Are there other thoughts or comments?

**DR. THERNSTROM:** Is your plan, as you formulate the agenda month by month, to keep this in mind? Or are you going to work from this?

#### **BOARD GOALS AND STRATEGIES - Discussion and Vote**

**CHAIRMAN PEYSER:** I think it will be a little bit of both. There are some things which, again, are in some ways out of our control in terms of coming before the Board. To the extent possible, I'd like to begin considering those issues in the context of this set of goals and strategies. Beyond that, we need to be more proactive in generating our own agenda going forward. I think essentially what we have been doing over the last year is dealing with a bunch of issues that have been piling up in some ways and we are effectively through those. There's still some things to be done to be sure, but we are effectively through that. We are at the point now where we have the freedom to be --

**DR. THERNSTROM:** Anticipatory.

**CHAIRMAN PEYSER:** And create our own agenda.

**DR. THERNSTROM:** Good.

**MS. CRUTCHFIELD:** This also provides a nice blueprint for Monday evening conversation, and to do what we did last month, which is try to figure out what we mean when we say Enhance Professional Status of Teaching.

**CHAIRMAN PEYSER:** That's a good point. There is another item that's missing here, for which we have had some small amount of discussion, some suggestions. It's a means of measuring our performance against these objectives, and I think that's something we need to flesh out as well. So it's been moved and seconded.

**On a motion duly made and seconded, it was:**

**VOTED:**           **that the Board of Education, consistent with its charge under General Laws chapter 69, section 1B to "carry out its responsibilities with a view toward increasing the accountability and effectiveness of public early childhood, elementary, secondary and vocational-technical schools and school districts for the performance of the students they serve," adopt the *Board of Education Goals and Strategies* as presented.**

The motion was made by Ms. Crutchfield and seconded by Mr. Irwin. The vote was unanimous.

#### **APPROVAL OF MINUTES**

**On a motion duly made and seconded, it was:**

**VOTED:**           **that the Board of Education approve the minutes of the January 24, 2000 Special meeting and the January 25, 2000 Regular meeting as presented by the Commissioner.**

The motion was made by Dr. Schaefer and seconded by Ms. Crutchfield. The vote was unanimous.

#### **ANNUAL REPORT OF THE BOARD AND COMMISSIONER**

**CHAIRMAN PEYSER:** The other thing is number 3 on the agenda. I'd just as soon skip the discussion. You have received a copy of a draft annual report that attempts to summarize the actions of the Board and the Department over the last year and as well providing general data about the state of education in Massachusetts. Ann Hess has done a huge amount of work to get this to this point, and I give her my thanks publicly. It's not in your Board packet but it was handed out, should be on the table. But if you can go over it in the next week or so, provide me, or Ann, directly with feedback on things you think should be added, subtracted, or otherwise changed, I'd really appreciate it. My hope is to get it out by our next Board meeting in final form.

**COMMISSIONER DRISCOLL:** May I also add my thanks and praise to Ann Hess for an outstanding job. This isn't as easy as it looks. The final product is fantastic, she was here most of Monday and probably part of Sunday. She did a terrific job and should be complimented for it.

#### **GOVERNOR CELLUCCI'S PROPOSAL TO TEST MATHEMATICS TEACHERS IN LOW-PERFORMING SCHOOLS - Discussion**

**CHAIRMAN PEYSER:** I want to move to the discussion of the Governor's proposal with respect to doing diagnostic assessments of mathematics teachers. We introduced the topic at last month's meeting, although this is just a couple days after the Governor's State of the State. We did nothing more than ask the Department to initiate a process, including the Commissioner and myself, to begin to flesh out what the implications of this might be and how it might be implemented. What I've given to you is a memorandum that summarizes some of the basic rationale, and then describes about eight basic elements that should be part of a more specific

program that the Commissioner will bring back to the Board next month in the form of draft regulations. The first is that the Department will offer expanded summer institutes for math teachers. Do people have this?

**DR. THERNSTROM:** For some reason I don't have it. For some reason I don't have a copy, if I could get another one.

**CHAIRMAN PEYSER:** I will read from this so you can hear it if you can't read it. First, the Department will offer expanded summer institutes in mathematics to address the basic issue here of trying to improve the quality and content knowledge of mathematics teachers. DOE will also then begin developing a customized diagnostic assessment instrument which will make it possible for teachers and principals to receive a detailed item analysis in order to guide remediation through professional development. Under the current teacher test which is offered to new teachers, there really is no feedback in terms of strengths and weaknesses, things that were right, things that were wrong, on the exam and it therefore doesn't provide much of a map for guiding further professional development. Since the purpose of this is to diagnose weaknesses that can be addressed through professional development, we need to have an instrument that provides that feedback.

Individual results will be reported to each teacher and his or her principal, but will not be published. Aggregate, statewide and district-level results will be analyzed to inform policy. Assessments will be administered at no cost to teachers. Assessments will apply only to middle and high school math teachers. The first administration of the assessment will be for math teachers in schools that are, "referred for review" based on the 98/99 MCAS results. Julianne Dow was here last month talking about the number of schools that have been placed in that category so far. I think the number she indicated was 65 or somewhere around there. In addition to math teachers in those schools, math teachers who don't have certification in math but are teaching math, who are also teaching in schools that have failure rates above 30 percent on MCAS, would also be subject to the diagnostic assessment.

The second administration of the assessment will be for math teachers in schools with 2000 MCAS math failure rates above 30 percent. So the first group who would be taking the assessment would be doing so based on results from 98-99, 99 data in particular, and the second group will be based on 2000 data. Finally, math teachers working in schools that meet or exceed their improvement expectations on the 2000 MCAS will be exempt even if student failure rates exceed 30 percent. There are a number of schools where the failure rates on math are well above 30 percent. To the extent, based on the 98, 99, and 2000 MCAS data, that a school is demonstrating significant improvement in driving down those failure rates, we would not require math teachers in the schools to take the assessment. Nevertheless, if they don't meet or exceed those expectations for improvement, then those teachers, like other teachers in schools with failure rates above 30 percent, would be expected to take the assessment. Those are the basic elements that are outlined here and I'd be interested in hearing any comments from Board members.

**MR. LaFLAMME:** I have question regarding your second point. In order to guide remediation through professional development, what happens when a teacher gets this test back? If they do well, what happens? If they don't, what happens?

**CHAIRMAN PEYSER:** One would hope that what happens is they get the results back and to the extent they demonstrate that the teacher essentially has mastery over the material that is being assessed, then there may not be much of anything that happens subsequent to that. If there are some weaknesses that are identified, one would hope that the teacher, in consultation with his or her principal or supervisor, would then develop or revise that individual's professional development plan for the coming year or two in order to directly address the weaknesses that have been identified.

**MS. CRUTCHFIELD:** Is this something we oversee or do we leave that to the local level?

**CHAIRMAN PEYSER:** On the one hand I think it's something we need to leave to the local level because we don't have any basis for doing it. On the other hand, as we are able to analyze the available data to see where the weaknesses are, it might help us with overall policy to help the math structure.

**MS. CRUTCHFIELD:** I see the second point, and I think Marcel's question is very well put. I think it's based on: What if that doesn't happen? I heard your words "we would hope." So what if it doesn't happen? What can we do to ensure that if we're going to develop a customized diagnostic assessment instrument, that the results are then going to be used to help the teacher improve? I don't mean to put you on the spot. I'm just trying to think it out.

**CHAIRMAN PEYSER:** I don't think we can send out Department police to make sure people are doing this, but the enforcement or compliance aspect I think is by definition weak. We are able, though, in terms of aggregating the data by district and statewide, to understand where the general weakness areas are. There may be ways of monitoring that over time.

**MS. CRUTCHFIELD:** I'm not thinking about this in terms of a punitive piece. I'm thinking of how do we support the supervisor, the principal and the teacher. I don't need an answer now. I just want us to think about not punishing, but support

**CHAIRMAN PEYSER:** That's a good point. For example, the summer institutes, the way in which we structure the summer institutes may depend significantly on the kind of data we get back from this assessment.

**MS. CRUTCHFIELD:** Right. That also means not pussyfooting around with things. We need to look at saying, "If you're at this place, then it's required that you take some steps toward improvement" so that we don't leave people with the results of an assessment instrument that indicate they need support for improvement and then they think it's optional.

**DR. SCHAEFER:** It seems to me that it's in the interests of the principal and the superintendent to then pursue that.

**MS. CRUTCHFIELD:** It seems to me, too.

**CHAIRMAN PEYSER:** Certainly to the extent that this ultimately gets translated into MCAS performance. To the extent that schools are not improving, it certainly gives us plenty of opportunity to go in and evaluate, in more detail what is going on or what isn't.

**DR. THERNSTROM:** On our long discussion this morning about the math frameworks, there was a lot of concern expressed, and eventually that concern was part of the motion we voted on, about working with the Association of Teachers of Math, et cetera. Now, I wonder what kind of feedback you have gotten from the field, if any, on this proposal. What you are expecting? Will we be able to forward with collaboration and support?

**CHAIRMAN PEYSER:** The short answer is I don't know.

**DR. SCHAEFER:** We still have some people here.

**CHAIRMAN PEYSER:** This is obviously the first step in the process and the Department needs to flesh out the regulations. We will have ample opportunity for further comment from the field and from math teachers and other interested parties. In terms of the extent to which teachers and others in the field will be supportive or

collaborative, I don't know. I think it's clear there may be some resistance, maybe significant resistance. What we have tried to do, in putting this set of principles and elements together, is introduce some amount of flexibility and indicate that we are not applying this in some haphazard way to all teachers of all schools regardless of their actual performance. We have tried to let folks know that this is meant to be a diagnostic assessment, not a punitive one. My only hope is that people in the field who are going to be engaged in this will participate in good faith. I hope that they will understand that we are pursuing this also in good faith in what we hope will be furthering the interests of the students.

**MR. LaFLAMME:** I'm just wondering, would you envision a full diagnostic at any point?

**CHAIRMAN PEYSER:** We talked about that a little bit. I think that's possible as well. I'm not sure exactly what the schedule would be or what the circumstances would be of that, but it's worth thinking about. We don't need a motion. But I want to get some sense there's agreement.

**COMMISSIONER DRISCOLL:** Consensus that we are in the right direction is what we are thinking of.

**MR. LaFLAMME:** Offer a directional motion?

**DR. SCHAEFER:** This is not in the form of a proposal that you want to get reaction from the field in.

**CHAIRMAN PEYSER:** No. We will when it becomes a formal proposal, but I want to get first a reaction from the Board as to whether we're going off in the wrong direction. The other thing I'll just mention is that the other part of the Governor's initiative was to try to accelerate some school evaluations in math in particular. If the Department could report back on that as well in a month, that would be helpful.

**DR. SCHAEFER:** That issue ties to something I mentioned last month by way of evaluation. I would hope it's not just math. But I would hope that when we begin to do some school evaluations, that in some schools, we use the same method as the charter schools just by way of a comparison. Given the scrutiny that we are putting the charter schools under it would make sense to use the same thing in several instances.

**CHAIRMAN PEYSER:** I'd agree with that, except to say that there are some differences in the way the evaluations are structured. It would be helpful to include many of the methods that are used, including the observation techniques, and to some extent the people who have actually been doing them.

**DR. SCHAEFER:** Yes.

#### **CAPITAL EXPENDITURE (Supplemental Budget) PROPOSAL - Discussion and Vote**

**CHAIRMAN PEYSER:** With that, let me go on to the last two items. First is the capital expenditure supplemental budget proposal.

**COMMISSIONER DRISCOLL:** That came out of the finance committee discussions we talked about in the budget discussions. It wasn't part of your budget, but we do need a vote on requesting these through a supplemental budget.

**CHAIRMAN PEYSER:** Can you just quickly summarize what exactly the request is?

**COMMISSIONER DRISCOLL:** Yes. We have three requests. One is for our IMS system, \$4 million for the information management system. Second, for the virtual education space, which we need to spend some time talking the Board about, because I think this really has the potential to significantly improve student achievement across this Commonwealth.. And, finally, teacher certification on line which is one of the things

that was part of our goal. When we got to this point in the budget discussions, we felt these were more properly asked for in a supplemental budget under capital, because they are capital products.

**On a motion duly made and seconded, it was:**

**VOTED: that the Board of Education approve the capital funding request relating to three information technology projects as presented by the Commissioner, and authorize the Commissioner to submit the request to the Fiscal Affairs Divisions for possible funding from either state capital bond funds or a supplemental budget appropriation.**

The motion was made by Mr. Irwin and seconded by Ms. Crutchfield. The vote was unanimous.

**APPROVAL OF GRANTS AND SCHOOL BUILDING ASSISTANCE MATTERS - Discussion and Vote**

**COMMISSIONER DRISCOLL:** We have several grants that are before you today: School Safety; After-School Meal; Reading Excellence, which is a \$5 million federal program we are very pleased about; the Alternative Education Program, which was in the budget, it's our attempt to find alternative programs for kids; and then the After School Meal Program; and the tutorial under Reading Excellence. Those are the six we need voted on at this point.

We have a couple issues under the School Building Assistance Program as well. As we transform to greater scrutiny, both through our regulations and perhaps the Governor's legislative proposals, we do have some of these longstanding projects that have run into issues: ledge in the case of Marblehead High School; and in the case of Everett, they want to switch schools from one to the another, move the order in which they are going to build their schools, which is not a problem; and then in Lanesboro, they came in \$1.8 million over the estimated budget.

We are looking for the Board to approve changes to the previously approved grants for Lanesboro and Everett; and in the case of Medford, Shrewsbury and Marblehead, we are looking for waivers of the cost standards. In the case of Dover/Sherborn, we are looking for a waiver of the construction start date, the requirements which you can read. And then we have the final audits. We've completed 33 state grants and I've listed those for you. These are longstanding projects and we need the Board's approval in order to go forward.

**CHAIRMAN PEYSER:** This motion will be to approve not only the grants that have been discussed, but also the School Board Assistance Project.

**On a motion duly made and seconded, it was:**

**VOTED: that the Board of Education approve the grants under the following programs as presented by the Commissioner:**

- **After-School Meal Program (state funds)**
- **Reading Excellence: (federal funds)**

**Further, that the Board of Education approve the following School Building Assistance matters, as presented by the Commissioner:**

- **changes for previously approved projects for Lanesboro and Everett**

- **pursuant to 603 CMR § 38.13, waivers of cost standards in 603 CMR § 38.06 for projects for Medford (elementary school), Shrewsbury (high school) and Marblehead (high school)**
- **pursuant to 603 CMR § 38.13, waiver of the construction start date requirement for Dover-Sherborn**
- **final approved costs for 33 projects on which project close-out audits have been completed**

The motion was made by Mr. Irwin and seconded by Ms. Crutchfield. The vote was unanimous.

**CHAIRMAN PEYSER:** With that, unless there's any further comment anyone has to make, we are adjourned.