



STEM Summit V: *Implementing the Plan*

Preparing Massachusetts students for careers in
science, technology, engineering and mathematics

Excerpts from the *National Mathematics Advisory Panel final report*

1. The Panel recommends that research be conducted on the use of full-time mathematics teachers in elementary schools. These would be teachers with strong knowledge of mathematics who would teach mathematics full-time to several classrooms of students, rather than teaching many subjects to one class, as is typical in most elementary classrooms. This recommendation for research is based on the Panel's findings about the importance of teachers' mathematical knowledge. The use of teachers who have specialized in elementary mathematics teaching could be a practical alternative to increasing all elementary teachers' content knowledge (a problem of huge scale) by focusing the need for expertise on fewer teachers.
2. All-encompassing recommendations that instruction should be entirely "student centered" or "teacher directed" are not supported by research. If such recommendations exist, they should be rescinded. If they are being considered, they should be avoided. High-quality research does not support the exclusive use of either approach.
3. The Panel cautions that to the degree that calculators impede the development of automaticity, fluency in computation will be adversely affected.
- 4) The Major Topics of School Algebra, accompanied by a thorough elucidation of the mathematical connections among these topics,¹⁰ should be the focus of Algebra I and Algebra II standards in state curriculum frameworks, in The Algebra I and Algebra II courses, in textbooks for these two levels of Algebra whether for integrated curricula or otherwise, and in end-of-course assessments of these two levels of Algebra. The Panel also recommends use of the Major Topics of School Algebra in revisions of mathematics standards at the high school level in state curriculum frameworks, in high school textbooks organized by an integrated approach, and in grade-level state assessments using an integrated approach at the high school, by Grade 11 at the latest.

For full report:

<http://www.ed.gov/about/bdscomm/list/mathpanel/report/final-report.pdf>