

Long-term Trend NAEP Talking Points

July 14, 2005

Signs of improvement

- Math scores increased significantly at both ages 9 and 13 and were higher in 2004 than in any previous year. At age 9, scores increased from 232 to 241 since 1999; at age 13, the increase was from 276 to 281. The recent emphasis on math and science education in early grades is paying off.
- Scores for 17-year-olds have been flat since 1973. Practice needs to change if we're going to help students reach their potential, especially at the high school level.

Achievement Gap narrowing

- We're pleased to see progress in closing the achievement gap, and we want to see the movement continue until the gap is closed.
- When comparing white students to black and Hispanic students, the report shows that all achievement gaps at ages 9, 13, and 17 narrowed since 1999 except for the white/Hispanic gap at age 17.
- The achievement gaps between white and black students and white and Hispanic students narrowed at ages 9 and 13 since 1999, but did not significantly change at age 17.
- The most significant long-term change in the achievement gap was from 46 to 27 points from 1973 to 2004 between white and black 13-year-olds.

Higher-level math courses

- Significantly more 17-year-olds are taking advanced courses (53 percent in 2nd-year algebra and 17 percent in calculus) in 2004 than in 1978 (37 percent in 2nd-year algebra and 6 percent in calculus).
- The percentage of 17-year-olds for whom pre-algebra was the most advanced math course dropped from 20 percent in 1978 to 4 percent in 2004.
- These results, coupled with the overall flat scores of 17-year-olds, raise the question of what content is taught in those courses. We need to look closely at the mathematical content and how it is presented to students. To improve student achievement and learning, we have to teach in different ways.

Long-Term Trend NAEP Results are at

<http://nces.ed.gov/nationsreportcard/ltr/results2004/>

General Talking Points

- This part of NAEP is a long-term trend assessment that tells us how students are doing on a stable set of skills, particularly in important areas involving number and operations. It should be noted that the progress of students has remained stable since NAEP was first administered in the early 1970s. Items in the trend NAEP tend to reflect curricular topics that involve computation, measurement formulas, and everyday problems. The main NAEP provides a more complete picture of topics in the mathematics curriculum, including algebra, data analysis, etc. These results will be released in the fall.
- Results for 9- and 13-year-olds show a continued increase in performance, with the highest performance on these skills of any time in the 30-year history of trend NAEP. Results for 17-year-olds are fairly stable during this same period.
- As identified by many studies, as well as by business and community leaders, students need to learn with real understanding so that they will be able to use what they learn not only in higher academic study and careers, but also in their daily lives. Facts and procedures are important, but teaching and learning merely facts and procedures won't prepare students adequately for the future. This position is aligned with the NCTM's vision expressed in the Learning Principle and Problem Solving Standard of *Principles and Standards for School Mathematics*.
- While many schools are making progress in teaching a comprehensive program anchored in real problem-solving skills, some schools still teach math in ways that don't give students the understanding from which to make decisions or the opportunities to apply what they learn to solve problems.