



Transforming East Alabama Mathematics

The East Alabama Partnership for the Improvement of Mathematics Education

How Do We Know That TEAM-Math Will Work?

1. TEAM-Math is based on the best available research about teaching and learning. Hiebert (1999) provides the following summary of the research:
 - a. Instructional programs that emphasize conceptual development, with the goal of developing students' understanding, can facilitate significant mathematics learning without sacrificing skill proficiency.
 - b. Students can learn new concepts *and* skills *while* they are solving problems.
 - c. If students over-practice procedures before they understand them, they have more difficulty making sense of them later.
2. Similar systemic change projects have met with great success. A few sample studies follow.
 - a. The MARS project worked with 107 schools in Baltimore; see <http://www.education.umd.edu/institutesandcenters/MIMAUE/projects/mars/marsproj.101801.html>
 - The number of 3rd and 5th grade students who tested as proficient on the Maryland state test increased by over 50% from 1996 to 2000.
 - Scores on the Comprehensive Test of Basic Skills at grades 1-5 nearly doubled between 1998 and 2001.
 - b. The Greater Philadelphia Mathematics Project supports reform of secondary school math. Over a ten year period, they have worked with over 5,000 teachers; see <http://gphillymath.org>
 - Schools participating in the project have shown substantial increases on the Pennsylvania state test.
 - Five years of data show that scores on standardized tests were significantly better than students in a traditional program.
 - Other data show that student attitudes improved, and that students were well-prepared for future study in math.
 - c. A study of 22 urban school districts engaged in systemic reform showed noteworthy improvements on whatever achievement measures that district used. See <http://www.systemic.com/pdfs/Booklet.pdf>.
 - The longer the districts were involved, the better results they got!
3. The NSF-funded textbook series being used to enhance the TEAM-Math curriculum have been subjected to intensive, long-term research that has established their effectiveness. (See separate fact sheets for Investigations, CMP, and IMP.)
4. The TEAM-Math proposal to the National Science Foundation was reviewed by a panel of distinguished educators who found it worthy of funding -- \$9 million over 5 years.
 - Note that only 7 out of 187 proposals reviewed in 2003 received funding.