AMSTI

Alabama Math, Science, and Technology Initiative

Preparing students for success in the workforce and postsecondary studies

Growing Recognition for AMSTI

- Fortune 500 CEO's chose AMSTI as one of only 35 official "Programs that Work" the only math and science initiative that was recognized
- American Museum of Natural History Summit/Science Generation: A National Imperative – The only exemplary state model highlighted
- National Governors Association – Effective state model program
- Smithsonian Institution/National Academies of Science/NSRC- Model initiative
- National Conference of State Legislatures-– Leading model of reform
- Education Week – Four articles
- Howard Hughes Medical Institute- Top model of excellence
- Great Britain – Glowing review in Teacher Training Resource Bank: "Ambitious and exciting initiative…substantial empirical data"
- National Education Report-"On the Edge" – Leading Networks during Prime Time and on 355 PBS Stations
- Center for Excellence in Education –1 of 5 top laboratory programs nationally

International Model

- AMSTI has become an international model for math, science and technology classroom instruction and learning and is being studied as a model by 21 European countries, Russia, China, and Mexico, as well as many states in the USA.

The AMSTI Premise: Students learn best through DOING math and science

AMSTI – A Two Year Program

- AMSTI is designed to be a two year program, with teachers receiving half of the training the first summer and the remainder of the training during the second summer.

Evaluation of the Effectiveness of the Alabama Math, Science and Technology Initiative (AMSTI)

The study was led by SERVE Center at UNCG, the Regional Education Laboratory Southeast contractor for 2006-2011.

Empirical Education conducted the research analysis.

Landmark Study for Math and Science Reform

- Methodology -randomized control trial study with matched schools
- $3,000,000 research study
- One of the largest science and math studies in the US: 82 schools, 780 teachers, 30,000 students

Study was conducted when AMSTI was undergoing its greatest expansion

Data Collected

- Student Achievement Data (National Norm Referenced Test)
- Classroom rosters
- Student demographic data
- Training logs
- Principal web surveys
- Teacher surveys

- Teacher interviews
- Classroom observations
- Web surveys of teachers
- Principal interviews
- Training session observations

Key Student Achievement Research Questions

- What is the effect of AMSTI on:
  - a. student achievement in mathematics problem solving *after one year*?
  - b. student achievement in science *after one year*?
- What is the effect of AMSTI on:
  - a. student achievement in mathematics problem solving *after two years*?
  - b. student achievement in science *after two years*?
- What is the effect of AMSTI on:
  - a. student achievement in reading *after one year*?

Key Classroom Effect Research Questions

- What is the effect of AMSTI on:

  a. mathematics teachers' reported level of student engagement *after one year*?

  b. science teachers' reported level of student engagement *after one year*?

Findings from the Evaluation of the Effectiveness of AMSTI

Math Achievement – Over the course of one year, AMSTI produced achievement gains of 2 percentile points on the SAT-10. Those gains can be compared to 28 days of additional student progress over students receiving conventional math instruction. The year two gains followed the same trajectory as the year one gains.

Findings from the Evaluation of the Effectiveness of AMSTI

Science Achievement – After one year, AMSTI students showed no significant gains in science. After two years of AMSTI, science gains were 20% greater than the gains in math which is quite significant.

Findings from the Evaluation of the Effectiveness of AMSTI

Reading Achievement – AMSTI students showed reading gains of more than 2 percentile points, which can be compared to 40 days additional student progress over students taught with conventional methods.

Findings from the Evaluation of the Effectiveness of AMSTI

Student Engagement – AMSTI students were more engaged in active learning than were the control students, according to teacher survey data.


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