

Study: Missouri's ed-tech program is raising student

Achievement By Cara Branigan, Assistant Editor, eSchool News

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An analysis of student test scores in Missouri offers solid evidence to suggest that using technology to facilitate an inquiry-based approach to learning can boost student achievement.

Students who participated in Missouri's educational technology program scored consistently higher in every subject area on the states standardized test compared with students not involved in the program, according to an analysis of last years test results.

The study, called Analysis of 2001 MAP Results for eMINTS Students, compared the results of the Missouri Assessment Program (MAP) for more than 6,000 third- and fourth-graders. See <http://emints.more.net/evaluation/reports/map2001-emints.pdf>

The eMINTS program which stands for Enhancing Missouri's Instructional Networked Teaching Strategies was found to have a positive impact on student achievement. See <http://emints.more.net>

eMINTS combines multimedia and computer technology, an inquiry-based approach to teaching, and extensive professional development. For example, instead of giving a lecture on gravity, a teacher [might have] students design an M&M dispenser to be used on a space shuttle, she said. Together, the class would research gravity and how astronauts eat in space, using web sites displayed on an interactive whiteboard.

Students would listen to audio clips, look at pictures, and watch movies. Then, they would begin developing their own dispensers.

eMINTS teachers undergo 200 hours of professional development along with in-class coaching and mentoring over a two-year period. Teachers learn to integrate technology and emphasize critical thinking and problem-solving skills in their instruction.

Teachers are required to use technology within their District's curriculum in ways that make learning significant, rather than just reading and reciting, said Monica Beglau, instructional program director for eMINTS.

eMINTS started in 1999 as a pilot project and was so successful that state officials expanded the program. Now, approximately 450 classrooms and 10,000 students participate statewide.

For the purposes of this study, researchers analyzed test scores from 85 eMINTS classrooms and 203 non-eMINTS

classrooms within the same schools.

The 85 eMINTS classrooms began participating in the fall of 1999 and were fully equipped and operational for two years before the students were tested in the spring of 2001.

Their classrooms had the full complement of equipment, and the teachers had completed over 200 hours of professional development and [had begun] changing their teaching, said Beglau, meaning teachers were using technology to facilitate an inquiry-based approach to classroom instruction.

Inquiry-based teaching and true technology integration instructional strategies acquired only after two years of rigorous professional development are the fundamentals of the eMINTS program, Beglau said.

We find the two are inextricably linked, she said. When you put the two together, there's a synergy created that really boosts students learning.

An analysis of the test scores seems to support this statement.

Results show that a higher percentage of students in eMINTS classrooms scored in the Proficient or Advanced categories the top two achievement levels out of five possible levels of performance when compared with other students who took the MAP tests, the study found:

- * In third-grade communication arts, 36 percent of eMINTS students scored in the Proficient or Advanced categories, compared with 34.4 percent of non-eMINTS students in the same schools and 32.8 percent of students statewide.
- * In third-grade science, 53.7 percent of eMINTS students scored in the Proficient or Advanced categories, compared with 50.7 percent of non-eMINTS students in the same schools and 45.2 percent of students statewide.
- * In fourth-grade mathematics, 47.1 percent of eMINTS students scored in the Proficient or Advanced categories, compared with 39.7 percent of non-eMINTS students in the same schools and 36.7 percent of

students statewide. This difference is statistically significant, meaning that the differences in these scores are greater than could be expected to occur by chance alone, Beglau said.

* In fourth-grade social studies, 52 percent of eMINTS students scored in the Proficient or Advanced categories, compared with 41.6 percent of non-eMINTS students in the same schools and 37.7 percent of students statewide. This difference is also statistically significant and is the largest for all areas tested, Beglau said.

Researchers also analyzed individual test scores and found that students in special statuses such as special-education students, Title I students, and students eligible for the free or reduced-price lunch program showed substantial increases in their MAP scores when enrolled in eMINTS classrooms.

We have students in our test groups from every Category rural, poor, urban, rich, Beglau said. With eMINTS technology-based program and inquiry-based instruction, they can all achieve at the same level.

Alan Warhaftig, former coordinator of Learning in the Real World, a now-defunct group that cast a critical eye on school technology investments, said he was concerned about the conclusions drawn by the study.

Experienced teachers understand that there are a number of valid pedagogies and that different approaches are suited to different teachers, Warhaftig said. How much would the eMINTS teachers (and their students results) have improved had they received 200 hours of a different flavor of professional development?

He continued, If we're going to find out what works and define a proper role for technology in education, the research about programs such as eMINTS is going to have to be more carefully designed to control for factors other than technology.

Links:

eMINTS program

<http://emints.more.net>

Analysis of 2001 MAP Results for eMINTS Students

<http://emints.more.net/evaluation/reports/map2001-emints.pdf>

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