

EAST[®]

EAST[®]initiative

The Proof in the Pudding
Research on the EAST[®] Model

Executive Briefing Number 1101
March 2011

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Background

EAST® began in 1996 in a single rural Arkansas classroom with a belief that students can play a vital role in their communities, in directing their own educational processes and ultimately, their own futures. Since that time, EAST has grown to include more than 200 schools in eight states. EAST's accomplishments are many, as attested by the over 120,000 students who have experienced the model since 1995, and the numerous service projects they have developed for their communities.

EAST promotes the development and intellectual growth of all students, regardless of educational skill level, technical proficiency or socioeconomic background. Students perform self-directed community service projects using sophisticated and emerging technologies in a real-world environment, in the

process honing skills including teamwork, communication, collaboration and problem solving.

Since its beginning, EAST students have achieved at levels defying traditional expectations. The EAST Initiative—the 501(c)(3) non-profit educational corporation that assists in implementing, developing and maintaining EAST classrooms—has actively encouraged and sought research opportunities on the EAST model. This research has helped quantify EAST impacts on student growth, development, and achievement as well as on economic and other community enhancements. This paper summarizes that research. Full documentation of the reports mentioned and other research resources can be found at: <http://www.EASTproject.org/>.

The Research

2001— Andrews, C. Wilkins, L. *Environmental and Spatial Technology (EAST®) Project—an Industry/Education Collaboration that Works for Females and Minorities* Paper presented at the National Association of Minority Engineering Program Administrators/Women in Engineering Program & Advocates Network, April 21-24, 2001, Alexandria, VA.

Description This paper looks at how the EAST educational model provides rich learning opportunities that are particularly powerful for student sub-groups traditionally underrepresented in STEM (Science, Technology, Engineering, and Mathematics) educational offerings—particularly the upper level or more advanced STEM courses. As indicated in the title, the specific sub-groups studied were women and minorities. The multi-modal approach to EAST is identified as a strong and inviting entry point for students who have traditionally been tracked out of advanced science and technology courses.

Findings EAST attracts students who might not otherwise gain critical STEM skills into STEM learning environments. “Student information transfer has been greatly enhanced by tapping into kinetic and visual learning styles. By allowing students to become personally engaged in their learning process and by requiring the students to take personal initiative, the students have developed into active learners capable of taking on the personal responsibilities necessary to insure success in a team effort.” It also clearly defines how EAST pedagogical strategies correlate with accepted best

practices of the Congressional Commission on the Advancement of Women and Minorities in Science, the AAUW Education Foundation, and the National Science Education Standards.

2004— Bynum, Judith. *Student Perceptions of Concomitant Learnings of EAST® Lab in a Small, Rural Arkansas School District* Dissertation Submitted to University of Arkansas at Little Rock Department of Educational Leadership of the College of Education.

Description This dissertation examines how the EAST model develops skills necessary for concomitant learning, the learning of multiple skills concurrently, and the transference of those skills to other curricular and life goals.

Findings Quoting the Executive Summary of the study, “It was found that interpersonal skills, intrapersonal skills, lifelong learning skills, and college transition skills are learned concomitantly in the EAST classroom. These learnings are transferred to other classes and situations in the lives of the students, motivating more responsibility by the students in their academic lives. Because of the students’ empowerment by these learnings, they are better prepared for their college study.

The findings in this study show evidence that EAST is valuable as a model learning environment, through its incorporation of a variety of

learning modalities, technology-based learning, and project-based learning. Utilizing this study as a guide, other classroom situations may be modified and transformed so that more students are motivated to learn by providing different ways of learning. Perhaps the most useful finding of the study is that the students' perceptions of their preferred learning environment were overwhelmingly patterned on that of EAST [classroom]. There were no outliers in this area."

2006— Metis Associates, Final Report. 2003-2006 Evaluation of Arkansas Environmental and Spatial Technology Initiative (EAST®)

Description This federally funded study examined variations of EAST implementation in Arkansas schools and the learning outcomes generated by the EAST model. The learning outcomes study was designed as an experimental and quasi-experimental study focusing on new EAST programs, and compared student outcomes with equivalent students in schools without EAST programs.

Findings Quoting the Executive Summary, "Among the 16 student outcomes that were studied, analyses indicated that participation in EAST appears to have a positive, statistically reliable impact in five domains. These included three problem solving domains (defining the characteristics of a problem, assessing the outcomes of a solution, and revising strategies in response to the assessment of outcomes), one motivation domain (motivation for school derived from accomplishment), and self-directed learning style. The preponderance of evidence for program effects in the area of problem solving skills seems consistent with one of the most central goals of EAST, and may point to a particular strength of the program. ... The domains on which EAST has been shown to have an impact are widely recognized as being important for both academic and career success."

2009— Metis Associates. EAST® Initiative in Arkansas

Description This follow-up quasi-experimental study to the 2003-2006 Evaluation of Arkansas Environmental and Spatial Technology Initiative (EAST) examined two major questions: 1) Did EAST students who participated in the program during 2007-2008 perform significantly better than the comparison students who had never joined the program? and 2) Among the high school EAST students in 2007-2008, did those who started the program in middle school significantly outperform their counterparts who started the program in high school? Statewide standardized testing instruments were used for the comparisons.

Findings On the first question, whether the 2007-2008 EAST students performed better than non-EAST students in non-EAST schools, the study found a significant positive impact on EAST students who took the 8th grade Benchmark English Language Arts test, the SAT 10 Math, Language, and Reading tests, the 9th grade End of Course Algebra test, the 10th grade End of Course Geometry test, and the 11th grade End of Course Literacy test. In further examining EAST student achievement versus non-EAST student achievement in the same school, the study found a significant positive impact on EAST students who took 5th grade Benchmark Math and English Language Arts test; the 6th, 7th and 8th grade Benchmark Math tests, the 8th grade English Language Arts test; the 9th grade End of Course Algebra and Geometry tests; the 10th grade End of Course Geometry test; and the 11th grade End of Course Geometry test.

On the second question, the study found that high school EAST students who had started their EAST experience in the middle grades outperformed students who had not started EAST until high school on all tests examined.

2011— Center on Community and Economic Development, University of Central Arkansas. Estimating the Economic Impact of EAST® Projects in Arkansas.

Description The Center for Community and Economic Development (CCED) at the University of Central Arkansas developed a methodology for evaluating the community and economic development impacts of EAST projects. This was an important development, as the strategies developed are transferable to other community development projects and had not been fully explored before. The CCED executed a survey of all EAST programs in Arkansas, asking several key questions to determine the average number of projects completed per EAST facilitator surveyed and an estimate of the market value of each project. The 2010-2011 results provide a benchmark for gauging the growth of EAST projects' economic impact in the future.

Findings CCED's findings confirm that EAST projects have a significant economic impact throughout Arkansas. Specifically, the CCED found that: (1) the estimated annual total economic impact of all EAST projects in Arkansas is \$15,161,775; (2) the average total value of projects per facilitator is \$85,756; (3) the average number of projects per facilitator is 12.19; (4) the average value of each project is \$7,035; (5) over 80% of the projects incurred expenses of less than \$250; and (6) students contributed over 1.5 million service hours in completing these service projects. ■

EAST[®]

The Proof in the Pudding

The EAST[®] model—as it was designed—has a powerful impact on students. The positive outcomes of EAST have been notoriously difficult for the educational community to achieve in a general population of learners, and transcend the arbitrary nature of standardized assessment and grading. EAST has a great impact not only on individual students' education, but also on community development and economic health. The EAST model actually engages students in their educational careers, their vocational and college planning and in their communities. It raises the aspirations of students as well as their test scores. It works for a diverse population, both male and female, in ethnic, socioeconomic, academic and other demographic groups. It does this by helping students gain proficiency with the tools of emerging technology and vocational fields. In short, EAST prepares its students to lead and contribute, where other programs barely prepare them to subsist.

The “proof in the pudding” is really in the thousands upon thousands of EAST students prepared to succeed. Each year more EAST alumni enter into the adult work world. EAST's terminal research outcome will not be fully understood until, in time, these students are seen for what they have become: the best of the American educational system.

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