

Engineering is Elementary®

A Summary of Research Results

Engineering is Elementary® (EiE) is a nationally renowned education project developed by the Museum of Science, Boston. EiE addresses America's pressing need for effective STEM education; or classroom instruction in science, technology, engineering, and math; through three initiatives:

- Curriculum development
- Professional development for teachers and teacher educators
- A comprehensive program of educational research and evaluation

EiE's signature accomplishment is a rigorously researched, classroom-tested curriculum that integrates engineering and technology concepts and skills with elementary science topics. Used in all 50 states, EiE has already reached nearly 5 million children in grades 1–5.

Highly Engaging. Cross Curricular Integration.

The EiE curriculum is expressly designed to

- Foster science and engineering learning and technological literacy
- Help all students; but especially girls, minorities, and other underrepresented groups; recognize their ability to engineer
- Build enthusiasm for engineering as a career choice
- Align with state and national science standards, as well as Common Core and NGSS
- Encourage critical thinking, collaboration, communication, creativity, flexibility, persistence, and learning from failure through hands-on engineering activities



Evaluation by EiE and external evaluators has repeatedly evidenced the curriculum's effectiveness. See the key findings on the reverse or visit eie.org/engineering-elementary/eie-research for more information.

Research Based. Classroom Tested.

EiE research on students suggests

- Students who experience EiE show greater gains in science learning than students who use traditional science curricula.
- EiE fosters improved attitudes about the value of science and engineering in all students, but particularly girls.



- EiE promotes students' interest in science and engineering careers.
- EiE addresses students' misconceptions about engineering and technology, helping them gain a more accurate, standards-based understanding.
- EiE promotes students' knowledge of engineering content and awareness of the diverse fields of engineering.

Research on teachers suggests

- Teachers who use EiE notice their students (especially underrepresented racial minorities) are more engaged. Students improve their performance in science, and in school in general.
- Teachers who experience EiE's professional development feel more prepared to teach engineering, technology, and problem solving.
- Teachers rate EiE as "thoughtfully developed," "easy to use," and "more effective than traditional science curricula alone" in helping students make real-world connections to classroom learning.
- Teachers find that EiE develops 21st century skills such as collaboration, creativity, and problem solving.



EiE's research team is currently undertaking a rigorous, NSF-supported efficacy study that further examines EiE's impacts on students and teachers by making direct comparisons with other curricula. Results of this study will be available by 2017.

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