

Analysis of a Statewide K-12 Engineering Program: Learning from the Field

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Engineering Our Future NJ

Statewide initiative based at Stevens to promote engineering in elementary, middle, and high schools in NJ



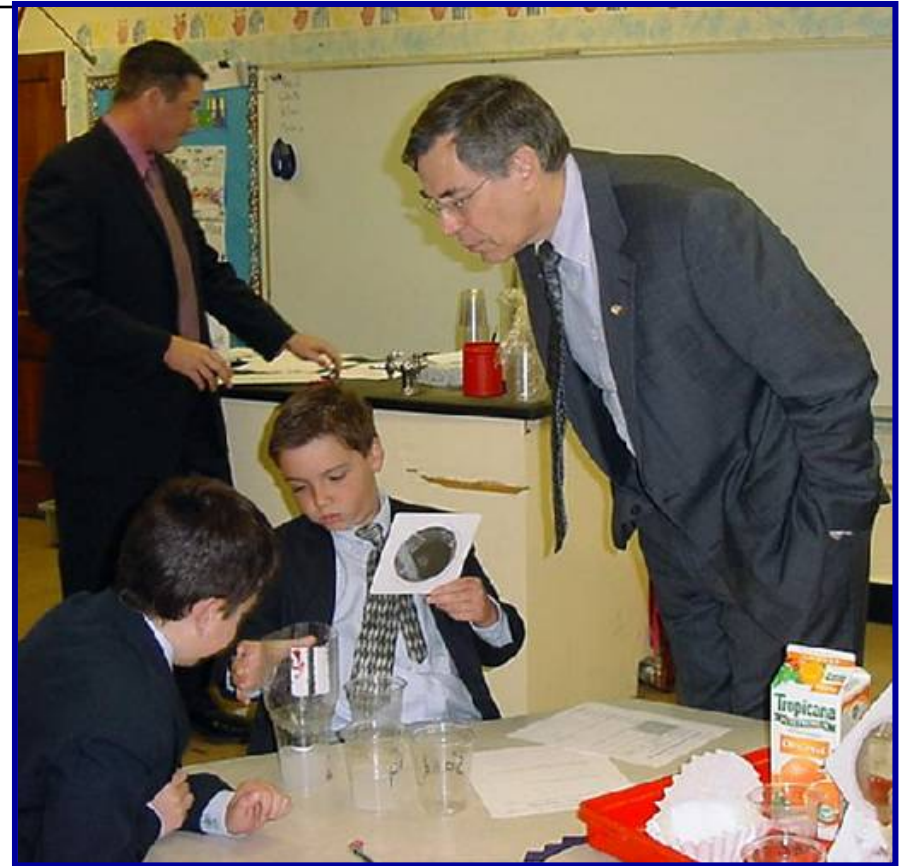
Goal



Ensure that all NJ children experience exemplary engineering curricula, ***with a focus on innovation***, as a requirement of their elementary, middle, and high school education by 2010

Key Initiatives

- Professional development
- Policy efforts
- Partnerships and capacity-building
- Promotion
- Research





EOFNJ Approach

Statewide PD and awareness-building effort

Phase 1 – Pilot project (2005-06) to understand student learning of science & engineering concepts and classroom implementation issues

Phase 2 - Scale-Up (2006-08) to reach 2,000 educators through a statewide network, influence policy, promote importance of engineering, continued research

Phase 3 – Best Practices (2009→) curriculum recommendations, PD, capacity-building

Professional Development

Varied by:

- Content
- Grade level
- Duration
- Classroom support
- Location



Program Curricula



- Engineering is Elementary
- A World in Motion
- Engineering the Future
- Building Math
- Pro/Engineer
- CIESE Online Engineering Projects

Phase 2 Accomplishments

- Over 2,400 NJ teachers trained at end of 2008
- Evidence of positive student learning impact
- Increased awareness among policy makers and educators
- Statewide network of 2-yr, 4-yr, and pre-service institutions





Phase 2 Research Activities

A study to determine the effectiveness of the EOFNJ program:

- Characterize overall program progress on teachers
- Analyze impact on classroom practice and students
- Based on follow-up survey and focus groups
- Case studies with relevant information that may be generalized to other programs

Impact on In-Service Teachers

Percent of teacher participants stating that their EOFNJ PD experience increased their knowledge considerably or moderately in each of the listed areas. (N = 161)

