



New York State Technology & Engineering Educators Association

Chartered by the Board of Regents of the State of New York

www.NYSTEEA.org

Policy Agenda 2012/2013

Technology Education: “The Study of the Human-Made World”

American Association for the Advancement of Science (AAAS): “Technology is in part a technical process. It is different from science whose role understands. Technology's role is doing, making and implementing things. The principles of science whether discovered or not underlie technology. The results and actions of technology are subject to the laws of nature, even though technology has often preceded or even spawned the discovery of science on which it is based.”

National Science Foundation (NSF): “Technology is not an instrument, but a field of study. It involves the application of learned principles to specific, tangible situations. In using this approach, students not only learn techniques of design and engineering, but receive practical problem solving experience in the principles of mathematics and science.”

New York State Education Department (NYSED) Standards: “Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.”

“America’s economic growth in the 21st Century will be driven by our nation’s ability to generate ideas and translate them into innovative products and services.”

- National Governors Association

NY has been a leader in *Technology and Engineering Education*.

1980’s: “Futuring Project” transitioned the discipline from industrial arts to *Technology Education*. Extensive Curriculum Writing; teacher training; test writing; and dissemination through Journals, State and Regional Conferences.

1990’s: Summit on *Technology Education* contributed to new **MST Frameworks and Learning Standards, CDOS Frameworks and Learning Standards**. Advisory Council formed, professional development continued.

2000’s: Summit on *Technology Education* produced the **“This We Believe”** statement; Advocacy increased through Position Papers, Website, Advisory Council. **Formed the NYS STEM Education Collaborative** among the professional associations of educators in the STEM disciplines. Professional development continued both within the discipline and in collaboration with other STEM disciplines.

2010’s: Career & Technical Education included in the **Regents Reform Agenda**.

...yet...

NY State is falling behind other states in maintaining its leadership.

- N.Y.S. *Technology Education* programs in middle and high schools are being reduced to meet budget pressures and/or taught by teachers without *Technology Education* credentials.
- The State of Maryland mandates *Technology Education* for all high school students – and is attracting new technology teachers graduating from SUNY Oswego and Buffalo State College.
- No significant N.Y.S. *Technology Education* curriculum development has been endorsed by NYSED over the past two decades despite significant advances in the field.
- N.Y.S. *Technology Education* standards are not supported by assessment tools or policy; at the same time, a national assessment has been developed and adopted by 22 states.
- The N.Y.S. *Technology Education* standard has not been refreshed over the past 16 years; at the same time, a common set of standards for technological literacy has been developed at the national level and used by 72% of the states in the country.

NYSTEEA recommends policy action to better prepare the NYS workforce:

1. Preserve the current *Technology Education* N.Y.S. middle school mandate.
2. Adopt a commencement (9-12) level unit of credit requirement or substitution option for *Technology Education*.
3. Increase the number of certified *Technology Education* teachers through incentives such as college tuition grants for students pursuing *Technology Education* teaching certificates.
4. Establish an institutional commitment by NYSED to the “Engineering by Design” pre-K-12 curricula and related professional development and consortium requirements.
5. Adopt the ITEEA Standards for Technological Literacy – a “common core” for *Technology Education*.
6. Re-authorize the N.Y.S. “Engineers of the Future” grant/law and the Excelsior Scholars grant/law to support statewide professional development for *Technology Education*.
7. Adopt the National Assessment of Educational Performance (NAEP) assessment for Technology and Engineering Literacy (planned for national implementation by 2014).

It’s an economic imperative.

“The Associated General Contractors of New York State and its 250 general contractor and construction management members support *Technology Education* classes as a mandatory component of STEM in New York State education. Our statewide membership requires employees to understand the newest and ever-changing technologies like Building Information Modeling, G.P.S and the use of Tablets in the field.

The Department of Labor now lists construction as one of the three industries that will create upwards of 25 percent of all jobs from 2010-2020. With that growth we will need more people that come to the industry prepared to run and excel at the latest technologies.”
Brendan Manning, Education and Environmental Director, AGC NYS LLC

“At Praxair Inc., a fortune 300 company, it has become increasingly difficult to find qualified and well trained individuals to work as Designers in today’s market place. There are excellent opportunities in the fields of manufacturing and industrial design, and teaching design and drafting skills in schools today can only benefit our students. This career path is an excellent choice for those students who are focused on engineering or are interested in developing skills to work alongside engineers to develop 3-D models to prove the overall design concepts. The job market today has a large and growing demand for people with these design and drafting skills to fill careers that offer high wages and salaries. Unfortunately, many people have a limited technological skill set, and *Technology Education* programs in both the middle schools and high schools in New York State suffer from lack of focus. We need our educational partners in New York State to broaden the reach of *Technology Education* as part of STEM programs, even to our youngest students and to demonstrate the importance of this career path and prepare them for college and the world of work. We need New York State to bring *Technology Education* back into the schools and develop the student’s skills to support the needs of industry in the field of design and drafting. This process needs to begin now, to enhance the future of our children and enable industry to find resources for the future.”
Jerry Falkowski, Engineering Manager, Praxair Inc.

“Over the past 161 years, Corning has developed a world class culture and legacy of significant innovation; innovations that are enabled by talented men and women of STEM fields from all over the world who we are proud to have as our colleagues. The national, state and regional focus on increasing the number of STEM-capable graduates in the United States is one that we’ve had for quite some time. High Tech companies like ours are already being impacted by a lack of available scientists, engineers and technicians due to fewer and fewer students pursuing (and even fewer completing) STEM related degrees while more and more current STEM professionals reach retirement age. Increasing the STEM capabilities of all students by supporting and maintaining the full integration of Science, Technology, Engineering and Math curriculum and problem based instruction, all four as core, from K to 12 is mission critical to the sustainability of our nation’s global leadership in technical innovation.”
Mark Vaughn, Ph.D., Technical Talent Manager, Corning Inc.

About NYSTEEA: NYSTEEA is the professional association specifically dedicated to the interests of Technology and Engineering Education, and to the interests of individuals associated with that field of education within New York State. Its members are actively engaged in the field of technology and engineering education, ranging from the early grades through higher education.