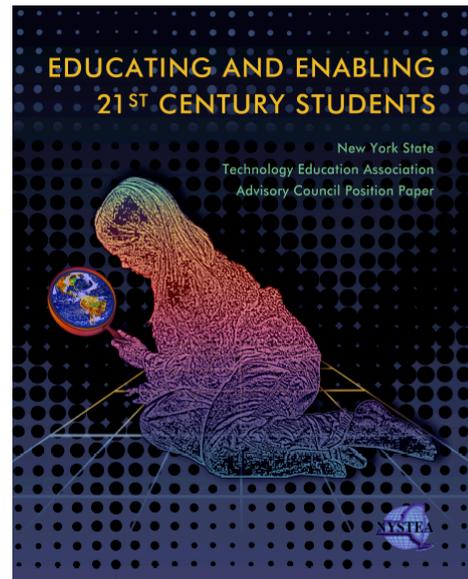


# New York State Technology Education Association

## NYSTEA Advisory Council Position Paper: *Educating and Enabling the 21<sup>st</sup> Century Student*

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### Summary

#### **Why was the position paper written?**

The NYSTEA Advisory Council and Executive Board discussed the impending NYS Board of Regents High School Reform initiative and decided that a position paper was needed in order to help establish, reinforce, and influence technology education's role in educating NYS citizens. Additionally, the paper can be a medium to communicate a common theme to technology educators in the field.

#### **Important definitions to share while discussing the position paper:**

- Technology is Human Innovation In Action
- Technology is the diverse collection of processes and knowledge that people use to extend human abilities and to satisfy human needs and wants.
- Technology Education is the study of the Human Made World.
- Science education is the study of the Natural World.
- Mathematics is the study of quantity, structure, space and change.
- Position paper's identified stakeholders include NYSED, NYS Board of Regents, NYS Legislature, business and industry, local school districts and higher education, taxpayers, parents and guardians, students, and of course, all teachers.

Technological literacy, to most people, relates only to computer and electronics uses per the Gallup Poll commissioned by ITEA. NYSTEA and all of its members must participate in conversations about technology literacy's role in its broader context. With that said, the following is most relevant to the position NYSTEA has put forward in this Position Paper:

*Achieving technological literacy is a purpose statement for technology education*  
ITEA Executive Director Kendall Starkweather.

**Technological Literacy** is knowing:

- what technology is,
- how technology works,
- what purposes technology can serve,
- how technology can be used efficiently and effectively to achieve specific goals.

**Technologically literate people:**

- understand the nature and role of technology;
- understand how technological systems are designed, used, and controlled;
- are able to value the benefits and assess the risks associated with technology; and
- are able to respond rationally to ethical dilemmas caused by technology.

**Technologically capable people are able to:**

- recognize problems needing practical solutions;
- develop and evaluate a variety of alternative solutions to a perceived problem;
- select, optimize, and apply knowledge and other resources to solve practical problems;
- work within imposed constraints and with limited resources;
- assess the effectiveness of technological solutions;
- make value judgments regarding possible and actual actions taken while solving problems;
- feel comfortable learning about and using systems and tools of technology in the home, in leisure activities, and in the workplace.

Technological Literacy cannot be fully realized without technology education working in concert with math, science and other subjects.

Technology Education classroom experiences significantly increase academic relevance and technological literacy.

Students need to process learning through integrated performance based approaches.

In order for the United States, to remain competitive in the world market place its citizens must be more conversant with technology than ever before.

All people should be equipped to work in contribute to benefit from and enjoy our technological society.

Integrating math, science and technology and / or connecting one to the other, in a planned way, with emphasis on conceptual thinking and problem solving is essential to achieving the MST Learning Standards.

Technology education is the perfect learning platform for strengthening and achieving “mastery of content” while placing learning in context and demonstrating the importance and application of the learning process.

The 1994 N.Y.S. MST Frameworks stated that math, science and technology are essential to the fundamental education of all students.

Science and Technology reinforce our economic strength and national security.

Technology education programs can be instrumental in helping student learners achieve skills with experiences that enable them to expand, transform, and strengthen themselves academically.

Of the 7 MST standards only math and science are consistently taught and assessed.

A critical response to achieving true high school reform and producing technologically capable students is contingent upon the rigorous delivery and assessment of ALL seven

MST Learning Standards. All technology educators need to fully understand and incorporate all MST Learning Standards.

Professional literature has identified the following skills as expectations of prospective employers: technological fluency, communication skills, teamwork, information fluency, leadership, problem solving, critical thinking skills, and creativity. The NYSTEA Advisory Council has, in the position paper, indicated that these skills and skill indicators are key to success in either post-secondary education or in the workplace.

There are ten primary NYSTEA Position Paper Recommendations and forty one secondary recommendations, which support and clarify the recommendations.

The 10 Primary Recommendations are summarized below:

1. Close the Achievement Gap: All high school completers must receive preparation for post-secondary education or the workplace.
2. Student Engagement: All students must have opportunities for engagement that supports community, profession, enthusiasm for learning.
3. Student Achievement: All students must have opportunities for improved achievement, not just highest performing students.
4. Articulation Agreements: Improved student success through high school and two and four year college articulation by assuring high school work is equal to college levels.
5. New Emerging Technological Challenges: Students need to be aware of emerging fields such as biotechnology, nanotechnology, medical technologies, and environmentally related technologies.
6. Literacy across K-12 Curriculum: All students deserve the right to read and communicate therefore these skills must be reinforced in all curricula.
7. Teacher Qualifications and Certification: With technology education identified as high needs, increased efforts are needed for recruitment and certifying qualified technology educators.
8. Professional Development: Providing and evaluating professional development within the discipline are key to keeping technology educators abreast of new teaching and learning materials as well as new curricula content.
9. CTE Program Approval: Providing a mechanism for evaluation in the CTE approval process can enforce the need for a defined technology education sequence at the high school level
10. Career Development: Incorporating career discussions in technology curricula encourages all students to consider careers involving technology in some form.

Data that supports the importance of technology education to students as well as the discipline and its collaborative abilities with math and science has been presented in the paper. Data was collected from the 2005 high school survey of 1551 participants.

All discussions of the position paper will be reinforced by a thorough read for understanding.

A second document addressing ways and means to accomplish the recommendations will be completed and presented to the same stakeholders as the position paper itself.