

**Draft of Refreshed ISTE NETS for Administrators
(11.Mar.2009)
Comments of the ISTE Special Interest Group—Computing
Teachers**

Proposed Changes

The Special Interest Group—Computing Teachers (SIGCT) proposes the addition of the following, underlined language to the third standard:

- 3. Excellence in Professional Practice.** Promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.
- Educational Administrators:
- a. ensure ongoing professional growth opportunities by allocating time, resources, and access to support effective technology integration.
 - b. facilitate and participate in learning communities that stimulate, nurture, and support administrators, faculty, and staff in the use of technology.
 - c. promote and model effective communication and collaboration among stakeholders using digital-age tools.
 - d. encourage investigation and evaluation of emerging trends and technologies for their potential to increase student learning.
 - e. promote an integrated K-12 core curriculum for computer fluency to the end that every United States high-school graduate will possess a fundamental understanding of how computer technology works.
 - f. promote and support information-technology programs in both the core and Career and Technical Education (CTE) strands.

Justification for Proposed Changes

Introduction. SIGCT requests the addition of items e and f above for three reasons: (1) The challenges to the United States's position as the world's technology leader can only be met by educating and encouraging our students in fields such as computer science. (2) As our society becomes more and more dependent upon computer technology, every citizen needs to understand its fundamentals. (3) Despite recent economic woes, the need for information-technology workers seems to be strong and will likely continue to be strong for the foreseeable future. Information-technology CTE programs help the economy as well as the students who participate in them.

Meeting the Challenges to U.S. Leadership in Technology Innovation. Computer fluency as a K-12 core requirement is critical to the U.S.'s position in the world. The United States's standing as the world's leader in innovation is under serious challenge. The Presidents of Stanford and Texas A&N, the Chairmen of Intel and DuPont, and 16 other technology leaders stated in a joint report to Congress that "in a world where advanced knowledge is widespread and low-cost labor is readily available, U.S. advantages in the marketplace and in science and technology have begun to erode." (Rising Above the Gathering Storm: Energizing and Employing United States for a Brighter Economic Future, 2007.) Also, the ACM K-12 Education Task Force Curriculum Committee reported that "the integration of computer science concepts into the K-12 curriculum has not kept pace in the United States. As a result, the general public is not as well educated about computer science as it should be, and a serious shortage of information technologists at all levels exists and may continue into the foreseeable future." (A Model Curriculum for K-12 Computer Science, 2003.)

Assuring That All Citizens Are Fluent in Computer Technology. Computer technology will take on a greater and greater role in our society. Citizens and governmental representatives will face critical decisions regarding how the government, corporations, and individuals will use computer technology. By the time current preschoolers graduate from high school, we will have to decide upon issues such as the following:

- Should there be restrictions upon the tasks that robots will be allowed to perform in our society?
- Should the government or other decisionmakers be permitted to rely upon computers using artificial intelligence to make certain kinds of decisions, for example, for routine governmental functions or in an emergency?
- What kinds of rights do persons have to keep personal information private?
- What kind of communication and collaboration tools should the government use to better inform and represent its citizens?

To engage in meaningful public debate on these issues and others will require that United States citizens possess computer fluency. Computer fluency does not entail simply how to use today's technology, but rather the foundation upon which the technology is built. In particular, it requires an understanding of the fundamentals of computer science. By analogy, public debate on issues such as stem-cell research is meaningful only to the extent that most of the public understands what a cell is and the basic biological processes by which it reproduces.

Meeting the Demand for Information-Technology Workers in the United States. According to the Department of Labor, "Employment of computer and information systems managers is expected to grow 16 percent over the 2006-16 decade, which is faster than the average for all occupations." (Occupational Outlook Handbook, 2008-09 Edition.) The Robert Half Technology recruiters report that, despite the economic downturn, "IT unemployment remains low relative to many other occupations, driven by the proliferation of new technology and the need for professionals to support Web 2.0 initiatives to foster information sharing and enable access to applications stored on web servers." (2009 Robert Half Salary Guides Identify Job Market Bright Spots, Oct 23, 2008.)

Predicted growth is evenly divided into the many IT areas covered by the IT Career Cluster recognized by the Department of Education (see <http://www.ed.gov/about/offices/list/ovae/pi/cte/factsh.html>). This is why administrators should provide educational opportunities in as wide a spectrum as possible following the Career Clusters IT plan. Moreover, state-wide technology assessment hold schools and their students accountable for knowledge and expertise in information technology and computer science. Finally, information-technology CTE programs provide an opportunity for students who desire college credit in high school for courses where no AP topics exist.

Conclusion. School districts and other policymakers look to the NETS for guidance. The NETS are the premiere set of standards for integrating technology into K-12 education. The NETS should extend beyond integration to the wide body of information and skills demanded by the nation's IT community. This is why we propose these additions to the NETS for Administrators standards.