

Time to Improve Technological Literacy
A New Approach to Technology Education

by
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Technically Speaking: Why All Americans Need to Know More About Technology.
Committee on Technological Literacy, National Academy of Engineering and National
Research Council (2002, 170 pp.; ISBN 0-309-08262-5; available from National
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The committee was chaired by A. Thomas Young, Executive Vice President, Lockheed
Martin Corp. (retired), North Potomac, MD. The study was sponsored by the National
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Although many education reformers and business leaders have promoted the idea that all Americans should be better prepared to navigate the sea of high technology, the issue of technological literacy remains stuck on a sandbar.

Most Americans know little about technology, yet from day to day they must make critical decisions regarding it, such as whether to buy genetically engineered foods or conduct banking transactions over the Internet. The situation creates a paradox, given the dominant role that technology plays in modern society. Moreover, the use of computers as a learning tool in the classroom often is confused with the broader concept of being technologically literate.

On the whole, technology is the modification of nature to meet human needs. However, most people still think of it only in terms of tangible products, like computers and microwave ovens. But technology also comprises the knowledge and processes necessary to create and operate such products, and the infrastructure necessary to design, make, and repair them.

That is "technological literacy," then? It involves knowing something about the nature and history of technology, as well as having the capabilities and critical-thinking skills to consider its development and use. A new report from the National Academy of Engineering and National Research Council calls for a broad-based effort to place the issue of comprehensive technological literacy front and center on the nation's "home page," with the goal of increasing awareness and skills in this area among all segments of the population.

Boosting technological literacy would have numerous benefits, including helping to ensure that decisions made by citizens, business and government leaders, and others are well-reasoned, said the committee that wrote the report. Plus, a more technologically savvy population would be better prepared to enter today's high-tech workplace and would help bridge the "digital divide" -- the gap between parts of the country and people who are plugged into technological innovations and services, and those who for various reasons are not.

Learning about technology should begin in kindergarten, and its connection with all subjects should be emphasized throughout a student's education, the report says. Technology content should be infused into curricula, teaching materials, and student assessments. And all educators should be better prepared to teach about the subject.

At the federal level, the National Science Foundation and U.S. Department of Education should encourage publishers to include technology content in new textbooks about science, social studies, and other topics. Likewise, agencies with a technological focus,

such as NASA and the National Institutes of Health, should support the development of curricula for teachers of all subjects and grades, the committee said.

Action should not be limited to the classroom, however. The report urges government agencies and private foundations to support executive education programs designed to boost the technological literacy of leaders in the public and private sectors. And U.S. engineering societies should open their wallets to underwrite the costs of new government and media-fellowship programs that would create a cadre of policy experts and journalists with a background in engineering. Participating fellows could play a role in public outreach efforts. Through creative exhibits and programs, museums as well as science and technology centers also can help the general public be better prepared to participate in discussions about technological issues.