

# A PROACTIVE APPROACH TO TECHNOLOGICAL LITERACY

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*"Technological literacy is vital to individual, community, and national economic prosperity."*

(ITEA, 1996, p.6)

With the increasing complexity of technology, it is important for each citizen to be able to make informed decisions about the technology that he or she uses. This article suggests that a proactive approach to advocating technological literacy is important in changing the greater public's misconceptions of what it means to be technologically literate. The article further suggests several practical activities that technology education teachers may use while advocating technological literacy to students, parents, administration, and the community.

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## **The Public Misconception**

In the public there seems to be widespread misconception that being technologically literate means being able to use computer or information technologies proficiently (Rose, Gallup, Dugger, & Starkweather, 2004). If a researcher polled school districts to explore what technology means to the administration, one may interestingly discover that many responses would include computers, computer networks, and the Internet. The fact is that many school districts have spent large amounts of money

on implementing or installing educational technology and other technological devices to assist teachers in teaching. In many cases, administrators or teachers outside of technology education are deluded that elaborate, district-wide technology initiatives that teach students how to use educational technology are teaching them about technology (NAE & NRC, 2002).

The National Academy of Engineering and National Research Council joint report, *Technically Speaking*, states, "only one unit in the U.S. Department of Education, the Office of Educational Technology, promotes the use of technology as a teaching tool, but not the teaching of technology" (NAE & NRC, p. 58, 2002). One must acknowledge that computer skills are important to each citizen who lives in a technological society, but as illustrated in the report, technological literacy (TL) is more complex, encompassing three interdependent dimensions: (1) knowledge; (2) ways of thinking and acting, and (3) capabilities. With this in mind, each technology education teacher must advocate a holistic awareness of the dimensions of TL to his or her students, fellow faculty, administration, and community.

## **Being Positive and Proactive**

In the book, *The 7 Habits of Highly Effective People*, Stephen Covey (1989) illustrates what it means to be proactive. Covey states:

*Proactive people focus their efforts in the Circle of Influence. They work on the things they can do something about. The nature of their energy is positive, enlarging and magnifying, causing their Circle of Influence to increase (p. 83).*

Although the premise of Covey's book is personal change, his description of what it means to be proactive is applicable to educational initiatives. Many technology education teachers are frustrated with the greater public's misconception of what it means to be technologically literate. One would hope that if each technology education teacher takes Covey's proactive approach to heart, focusing his/her energy on changing the attitudes and perceptions toward TL within his/her local community, the collective effort will reshape the greater public's understanding of TL to be more holistic.

The federal No Child Left Behind Act (NCLBA) is making it even more difficult for states to distinguish the broad world of technological literacy from education technology literacy, by mandating that states have every child technologically literate by the 2005-2006 school year—but not outlining what constitutes technological literacy (Emeagwali, p. 17, 2004).

## **Technological Literacy and NCLB**

Many states are unaware of the differences between educational technological literacy and technological literacy and have initiatives focused entirely on using computers and electronic gadgetry (Emeagwali, 2004). With the implementation of the NCLB legislation and the reallocation of funding, many technology education teachers are fearful that evolving demands placed on the academic success of students, as well as the uncertainty of what constitutes technological literacy, will negatively impact technology education programs. Although this may be true in some school districts, technology

education teachers can be proactive by creating innovative ways to educate individuals about the complexities of technological literacy. More importantly, teachers can also be proactive by informing individuals who are responsible for mandating NCLB policies that technological concepts are present in academic standards (i.e., mathematics, science, and language arts, as well as history, and geography), which are often not found in corresponding curricula (NAE & NRC, 2002).

Each technology education teacher should grasp this as an opportunity to devise creative ways to educate community members and administrators about how these technological concepts are delivered effectively in the technology education classroom. Interestingly, if successful this also opens a "back door" for teachers to educate local administration about the holistic dimensions of TL.

### Students as an Alliance for TL

There is no one sure model, method, or strategy for advocating TL. Each demographic area has different educational needs, and access to technology varies. However, every teacher can start with those they know best—his/her students. If students are excited about what they are learning, they may be a teacher's greatest advocates when introducing the holistic meaning of technological literacy to parents and the community.

Educators can empower students with what they learn in the technology education classroom by involving them in educating parents and the community about TL. For example,

1. Put students in groups of 4-5.
2. On a note card ask students to write a definition of TL.
3. After each student has finished writing his/her definition, he/she is to share his/her work with the others in the group.

4. The students are required to write a group definition of TL.
5. Ask each group to read its definition.
6. Write the definitions on a piece of chart paper.
7. As a class, create a final definition.
8. Debrief the students by discussing any of the three dimensions that may have been overlooked in the definition. The terminology in the definition should be relevant to the students but also include the dimensions of knowledge, ways of thinking and acting, capabilities.<sup>1</sup>

After students have grasped the meaning of technological literacy, introduce reasons why being technologically literate in the twenty-first century is so important. Table 1 outlines potential standards-based activities that involve students in targeting specific audiences (parents, the community, and administration) in creating TL resources.

**Table 1. Communications activities for advocating technological literacy**

Target Audience	STL Benchmarks <sup>2</sup>	Activity	Design Considerations	Dissemination
Parents	STL 17 – J The design of a message is influenced by such factors as the intended audience, medium, purpose and nature of the message.	Create a brochure for parents that defines TL and the importance of being technologically literate.	Who is the audience? What misconceptions may parents have when they think of TL? What needs to be included in the message to make it stronger and in turn have an impact on parents?	<ul style="list-style-type: none"> <li>• Parent/teacher conferences</li> <li>• PTA meetings</li> <li>• School Open Houses</li> </ul>
Community	STL 17 – N Information and communication can be used to inform, persuade, entertain, control, manage, and educate.	Design and create a poster that that will describe TL so that community members will understand what it entails.	Who is the audience? What misconceptions may the community have when they think of TL? What needs to be included for the message to have a stronger impact on the community?	Bulletin boards: <ul style="list-style-type: none"> <li>• Within the school</li> <li>• At local retail and grocery stores</li> <li>• At local businesses</li> <li>• In health clinic waiting rooms</li> </ul>
Faculty and Administration		Create a brochure that will describe TL so that other teachers and school board officials will understand what it entails.	Who is the audience? What misconceptions may teachers and school board officials have when they think of TL? What needs to be included in the message to make it stronger and in turn have an impact on the teachers and school board officials?	<ul style="list-style-type: none"> <li>• Faculty lunchroom</li> <li>• School Board meetings</li> <li>• Faculty mailroom</li> </ul>

<sup>1</sup>Activity adapted from an activity used in the TACKLE (Technology Action Coalition to Kindle Lifelong Equity) Box Institute, UW-Stout, Menomonie, WI, 2000.

<sup>2</sup>From International Technology Education Association (2000/2002) *Standards for technological literacy: Content for the study of technology*.

**Table 2. Electronic communications activities for advocating technological literacy**

STL Benchmarks <sup>3</sup>	Mode of Communication	Activity	Dissemination
STL 17 – J The design of a message is influenced by such factors as the intended audience, medium, purpose and nature of the message.	Video	Design and produce a five-minute video that dispels misconceptions about TL and emphasizes why it is important to be technologically literate.	<ul style="list-style-type: none"> <li>• Where available, broadcasted through school announcements</li> <li>• Broadcasted on local community news channel</li> <li>• Play video as part of the technology education introduction to incoming middle school students</li> </ul>
STL 17 – N Information and communication can be used to inform, persuade, entertain, control, manage, and educate.	Web site	Design and create a simple Web site that dispels misconceptions about TL, emphasizes why it is important to be technologically literate and contains resources about TL.	<ul style="list-style-type: none"> <li>• Seek permission to post Web site on school, district and local community Web sites</li> </ul>
STL 17 – P There are many ways to communicate information, such as graphic and electronic means.	PowerPoint Presentation	Design and create a PowerPoint® presentation that dispels misconceptions about TL, emphasizes why it is important to be technologically literate and describes 21st Century job skills.	Presentation could be used during: <ul style="list-style-type: none"> <li>• Technology education introduction to incoming students</li> <li>• At PTA meetings</li> <li>• Faculty Meetings</li> <li>• School Board meetings</li> <li>• School Open House</li> </ul>

Dependent on the level, interests, and the technology that is accessible to the students, other modes of communication could be used to convey the important TL message to the community. In Table 2, potential standards-based electronic communication activities are outlined.

Many teachers may already be doing similar activities as those listed in Tables 1 and 2. Creating an alliance with students is one approach teachers may use to promote TL, but there are other successful approaches teachers across the discipline have used to market TL. An excellent venue to share ideas, materials, and resources is through the International Technology Education Association's (ITEA) IdeaGarden listserv. In sharing ideas at a national level, each teacher can be proactive in choosing the suggested materials that would have the greatest impact on his/her demographic area.

*"ALL persons must be knowledgeable of their technological environment so they can participate in controlling their own destiny" (ITEA, 1988).*

### Technological Literacy and the Future

As society is becoming increasingly dependent on technology, each citizen must be technologically literate. *Standards for Technological Literacy* (ITEA, 2000/2002) states, "corporate executives and others in the business world, brokers and investment analysts, journalists, teachers, doctors, nurses, farmers, and homemakers all will be able to perform their jobs better if they are technologically literate." A TEAM (Together Everyone Achieves More) effort may reshape the public's perception that technological literacy is important for everyone, even individuals not pursuing or practicing a technical craft or career.

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<sup>3</sup>From International Technology Education Association (2000/2002) *Standards for technological literacy: Content for the study of technology*.

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